

**CORPORATE SOCIAL RESPONSIBILITY STUDY AMONG STUDENTS FROM THE REPUBLIC OF GEORGIA: LEARNING THE CONTEXT OF AWARENESS AND APPROACHES**

*Salome Svanadze, Ilia State University, Georgia, salome.svanadze.1@iliauni.edu.ge*

*Jerzy Gołuchowski, University of Economics in Katowice, Poland, jerzy.goluchowski@ue.katowice.pl*

*Barbara Filipczyk, University of Economics in Katowice, Poland, barbara.filipczyk@ue.katowice.pl*

*Joanna Paliszkiewicz, Warsaw University of Life Sciences - SGGW, Poland,*

*joanna\_paliszkiewicz@sggw.pl*

*Ketevan Marshava, Tbilisi State University, Georgia, ketevan.marshava@tsu.ge*

*Sławomir Jarka, Warsaw University of Life Sciences – SGGW, Poland, slawomir\_jarka@sggw.pl*

**Abstract**

Corporate Social Responsibility (CSR) is a perception of the companies working on integrating social and environmental concerns in their business operations and subsequent interaction with their stakeholders on a voluntary basis. Therefore, CSR is believed to cover the economic, legal, ethical, and discretionary expectations that society has in regard to the same entities and organizations. CSR basically addresses the set of operations that an organization conducts for the benefit of society. Typically, such entities practice their principles on a voluntary basis thus aiming to achieve a clear competitive advantage and stimulate a more creative solution. The aim of this study was to understand the concept of awareness and approach to CSR among students in the Republic of Georgia. The research was done from January to March 2019, among 125 students (males & females), who are at the same time employed (part-time or full time). This research was conducted at the Economics and Law Faculties at the Tbilisi State University, Ilia State University, Georgian Technical University and International Black Sea University in Tbilisi. The survey instrument was translated from English to Georgian language and administered to the students. The results of the survey allow measuring the awareness and the attitudes to CSR among currently working students. Future research could develop country-specific indicators for assessing the awareness and approach to CSR. Also, long-term studies are needed to observe how CSR has changed over time in organizations or countries.

**Keywords:** Corporate Social Responsibility (CSR), millennials, management.

## CONSUMERS ENGAGEMENT IN BUSINESS PROCESS INNOVATION – CASES FROM POLAND AND UK\*

*Monika Eisenhardt, University of Economics in Katowice, monika.eisenhardt@ue.katowice.pl*

*Ewa Ziemia, University of Economics in Katowice, ewa.ziemia@ue.katowice.pl*

*Roisin Mullins, Faculty of Business and Management, University of Wales Trinity Saint David, United Kingdom, r.mullins@uwtsd.ac.uk*

*Sandra Dettmer, Faculty of Business and Society, University of South Wales, United Kingdom, sandra.dettmer@southwales.ac.uk*

### Abstract

The main purpose of this paper is to identify how Poland and UK-based ICT companies engage consumers in innovation in business processes. The methodology adopted for this research was a case study approach with two target research samples – Poland and UK-based companies that engage consumers in innovation in business processes. Ultimately, 1053 case studies of consumers' engagement in business processes were evidenced as the basis of our research. We used the UK Standard Industrial Classification of Economic Activities (SIC 2007) as a means to classify and verify the assignment of an industry to the case studies gathered. We were focused on the companies applicable to the J category – Information and communication. Finally, we confirmed a sample of 48 ICT companies – consisting of 24 from Poland and 24 UK-based ICT companies. We employed statistical tests to analyse differences and similarities between Poland and UK-based ICT companies in the innovations they expect consumers to engage in. Our results present a detailed insight into business processes in which consumers' innovation can be utilized. Particularly, they show that for three out of four business processes – BP 3.0; BP 4.0; and BP 5.0 (according to APQC Process Classification Framework) there were significant differences between Poland and UK-based companies in the range of innovation in business processes that companies expect consumers to engage in. Also, our results make more understandable the means of consumers' engagement in innovations. Particularly, they show that the significant differences between Poland and UK-based ICT companies are concerned with only one mode of consumer innovations, i.e. creating and designing products or their parts. What is more, the results provide insight into incentives encouraging consumers to engage in innovation activities. More specifically they show that the differences between the two countries were related to tangible incentives, i.e. material reward, monetary compensation, and bonus points with financial values. As to the technologies, our results show that in four cases – e-mails; specialized organizations' websites; popular information websites; and mobile applications – there were significant differences between Poland and UK-based companies in ICTs offered to consumers to facilitate their engagement in process innovations. Our results can be useful especially for Poland companies as they show that UK-based ICT companies offer more opportunities for engagement, more incentives, and more ICT solutions to their consumers than Poland ones. In turn, it may mean that UK-based ICT companies will be more able to gather and implement consumers with innovative ideas to better improve their business processes.

**Keywords:** Consumers engagement, business process innovation, ICT companies

*\*Selected to appear in JCIS*

## BUSINESS INTELLIGENCE BASED PRODUCTIVITY DEVELOPMENT

*Kaisa Ylinen, University of Vaasa, kaisa.ylinen@uva.fi*

*Josu Takala, University of Vaas, josu.takala@uvasa.fi*

*Teppo Forss, TVT, teppo.forss@tv.t.fi*

### Abstract

The aim of the research was to evaluate the productivity of a service process in the context of housing services. The study was done as a case study and the case company was a housing company in Finland. The intention was to provide an overview of the process over multiple internal departments and compare the changes over a period of time. This case study viewed a service process with the Total Productivity Model by Dr David J. Sumanth (1998). The inputs and outputs of the process were identified via interviews and they formed the basis of the processes' productivity model. The main output was the output of the service process, whereas the number of inputs was higher since the process requires the participation of multiple internal departments. The case company provided data from its operational and financial systems from 2016 to 2019. The analysis utilised a Business Intelligence tool (PowerBI) in order to combine data from multiple sources. This case study was able to provide an overview of the main aspects of the service process and enable comparison between each year. Discussion with the case company confirmed that the results are aligned with their previous understanding of the business process. The study detected certain parts of the process could be the biggest potential for productivity growth. Additionally, the study provided insights into company data availability and quality. The case company has a lot of operational data, but since all parts of the process are not yet digitalised, the relevant data is not available and the model needed to be modified accordingly. This research provided multiple implications. Firstly, due to the nature of services, evaluation of service productivity is a challenging task. Sumanth's Total Productivity Model required certain customisation in order to fit the case. Nevertheless, this study was able to combine data in a way that is novel for the case company, consequently providing practical suggestions for process improvement. As implications for digitalisation, this research shared light on available data and suggestions for process digitalisation, so that management would get transparency on the process, and therefore be able to make better business decisions. Due to the nature of services, it is not straightforward to build a model for productivity evaluation. Nevertheless, Sumanth's Total Productivity Management model provided a basis for evaluating the partial productivity of this service process. Consequently, the model was able to show an overview of the process productivity and its changes over the years. Additionally, the study detected productivity improvement suggestions. Lastly, this research provided practical insights and proposals for the case company on their productivity assessment, process digitalisation and the potential of utilising data in their operational planning and improvement.

**Keywords:** Business intelligence, productivity development, housing services

### References

Sumanth, D. J. (1998). *Total productivity management (TPMgt): a systemic and quantitative approach to compete in quality, price and time*. CRC Press.

## BLOCKCHAIN TECHNOLOGY FOR RENEWABLE ENERGY: PRINCIPLES AND APPLICATIONS

*Oskar Juszczyk, University of Vaasa, oskar.juszczyk@uwasa.fi*  
*Josu Takala, University of Vaasa, josu.takala@uwasa.fi*

### Abstract

Blockchains, or distributed and immutable ledgers, are an innovative technology that is emerging in the various sectors and industries across the globe. It has attracted the attention of different interest groups such as e.g. energy companies, SMEs and start-ups, information technology developers, financial institutions, national authorities or the university community. This decentralized ledger is widespread mainly in the banking industry, often through corresponding banking, or syndicating and peer-to-peer (P2P) loans. Importantly, Blockchain technology enhances transparency and authenticity of processes throughout the whole supply chain and thus, auditability of all of the transactions recorded and updated every 10 minutes. Moreover, it assures the anonymity and privacy of all of the actors involved. These factors are connected with an intangible, but a highly significant asset for the modern entrepreneurs, which is trust. Through the digitalization of the transactional mechanisms, Internet of Things (IoT) implementation and smart contracting, the improvement of the business day-to-day operations is firmly forecasted. However, this revolution in the Fintech sector is spreading across divergent industries. Another significant benefit that Blockchain technology provides, mainly coming from its transparent nature, is the capability to decrease the information asymmetries among the collaborating partners. In the energy sector, the digitalization is already present in solutions such as smart grids, electric vehicles, vehicle-to-grid (V2G), etc. Moreover, a new concept of the Internet of Energy (IoE) has been introduced in the academic literature. In this article, the level of trust and maturity of Blockchain technology implementation is investigated through the *Blockchain maturity questionnaire*, developed by the author. The database consists of upper management professionals from the energy industry, including renewable energy companies. This methodology, as well as specific target groups selected, makes this study an insightful and unparalleled information provider. The study yields numerous applications not only for the renewable energy industry experts but also for the interest groups coming from different industries, as well as public authorities and researchers scrutinizing the fields taken into its scope.

**Keywords:** Blockchain; Internet of Things (IoT); Internet of Energy (IoE); Peer-to-Peer (P2P); Renewable Energy

## CORE AGILE PRACTICE ACCOMPLISHMENT IN PROJECTS

*Rosarito Sánchez-Morcilio, University of Puerto Rico, Río Piedras Campus, rosarito.sanchez@upr.edu*  
*Francisco Quiles-Torres, University of Puerto Rico, Río Piedras Campus, francisco.quiles@upr.edu*

### Abstract

Many projects require the incorporation of technology as part of its scope. Agile project management is the direction leaders follow today. The purpose of this study is twofold. First, we research and define core agile practices. Second, we explain how projects accomplish core agile practice. Core agile practice is a set of practical concepts that, when applied, transform the project into a well-managed and successful endeavor. We use qualitative and quantitative methodologies to research both the core agile practice definition and the core agile practice accomplishment in projects from organizations around the world. We find the core agile practice definition according to literature, as well as give examples of the core agile practice implementation on a project from a wide variety of organizations. In conclusion, even though each project scope is unique, we present the application of core agile practice effectively to improve project management.

**Keywords:** core agile, Agile Project Management, agile adoption, agile in organizations

**SOCIAL NETWORKING SITES AND RESEARCHER'S SUCCESS\***

*Anna Górska, Koźmiński University, amg@kozminski.edu.pl*

*Grzegorz Mazurek, Koźmiński University, gmazurek@kozminski.edu.pl*

*Paweł Korzyński, Koźmiński University, pkorzynski@kozminski.edu.pl*

*Susana Silva, Católica Porto Business School – Universidade Católica Portuguesa, ssilva@porto.ucp.pt*

**Abstract**

The purpose of this paper is twofold: to identify whether how the use of SNS may enhance the impact of the research and thus contribute to the academic success in terms of citations, and to gain a more comprehensive understanding of which SNS may have a positive relation to the academic citations. This study drew from the research on social networks, SNS and higher education; and empirical study results. Researcher's SNS use is positively correlated with the academic citations rate – the higher the scholars' presence in academic, professional, relationship, microblogging SNS, the higher scholarly success. This paper explores the association between a researcher's social media presence on fathomable SNS (ResearchGate, LinkedIn, Facebook, Twitter) and the level of citations – academic success.

**Keywords:** Academic success; Scholarly success; Researcher's success; Google citations rate; Academic citations; Scholarly communication; Social networking sites; Social media

*\*Selected to appear in JCIS*

**IOT-BASED KNOWLEDGE MANAGEMENT IN HEALTHCARE SYSTEMS IN POLAND**

*Ewa Stawicka, Warsaw University of Life Sciences, ewa\_stawicka@sggw.pl*  
*Agnieszka Parlińska, Warsaw University of Life Sciences, agnieszka\_parlinska@sggw.pl,*

**Abstract**

Poland has all the resources needed to develop telemedicine: technology, private capital ready for investment and patients waiting for new solutions. Just the shift interest and the stream of money in this direction are needed. The benefits of using telemedicine solutions are obvious: savings resulting from the possibility of reducing investment: outlays on infrastructure; better use of working time of medical staff and increase of service quality through faster diagnosis and monitoring of treatment. In Poland, the growth rate of private spending on healthcare is 6 % per year and is almost two times faster than public spending. Among the positives is the reduction of service costs resulting, among others, from reducing their number and shortening queues due to increased resource efficiency. In Poland over 80% of patients have Internet access, and 60% declare that they own a smartphone. The teleconsultation services reach 110 percent growth per year, which means that the number of teleconsultations doubled during 12 months and amounted to over 110,000 in all of Central and Eastern Europe. The advanced technology used in healthcare can be a solution to the lack of budget money. The aim of the research is to assess the use of IOT (Internet of Things) knowledge management in the healthcare system in Poland. Information and data were taken from the literature and the reports of the Ministry of Digital Affairs, PWC Reports and National Health Found Development Strategy for 2019-2023. The analysis was based on selected statistical measures and results from the survey which help to answer the following research's questions:

1. How does knowledge management affect the development and use of IoT in healthcare systems?
2. What trends can be observed in the demands and interests of patients in telemedicine?
3. What are the main technologies supporting the development of telemedicine?

In addition, selected results of the survey of the healthcare system and examples of IOT solutions in private and state healthcare were presented.

**Keywords:** knowledge management, IoT, telemedicine, healthcare systems

**SHARING LOGISTICS - LITERATURE REVIEW AND FUTURE RESEARCH DIRECTIONS**

*Konrad Michalski, Warsaw University of Life Sciences, Konrad\_michalski@sggw.pl*

**Abstract**

The article is a review aimed at presenting the subject of and available knowledge on sharing logistics and at indicating further research objectives in this area. Research methods used in the study included an extended literature review, along with its critical analysis and logical deduction. The perspective of perception of sharing logistics adopted by the author corresponds to organization management. The analysis shows that sharing logistics – based on the sharing economy – could take full advantage of the opportunities created by the conditions in the ubiquitous integration of systems and value creation processes. Logistics processes are activities of this kind that play a significant role in creating a value of delivered products. But acting in the conditions of the opportunities created by sharing, not only material resources, requires logistics managers a changed approach to many aspects of the current operation. However, the subject requires further empirical research. Limitations of the article apply to both the subject of sharing logistics itself and the literature review. There is a lack of complex reviews and scientific studies or in-depth empirical research on this topic. Certainly, however, the set of literature used in the review does not exhaust the topic taken. The issues discussed in the article require further scientific researches, first of all, empirical ones. The raised research should cover various aspects, such as a revision of existing paradigms, also in the area of management. To sum up, this is one of the first publications in this field that falls within this research gap. This study constitutes a significant contribution to the development of research on the subject of sharing logistics.



## SYSTEMIC APPROACH TO BIG DATA IN THE ORGANISATION

*Hubert Szczepaniuk, Warsaw University of Life Sciences, hubert\_szczepaniuk@sggw.pl*

### Abstract

Modern trends related to the development of IT systems supporting management imply the need for effective utilisation of information processed in conditions of heterogeneous and incoherent Big Data sets. Current research within the aspect of Big Data indicates that for the purpose of their effective use in management, the classic analytical tools are no longer sufficient. Most of the work from the field of the subject mainly focus on theoretical concepts from the fields of management or they consider detailed technical analyses within the aspect of IT. Modern management concepts often use IT technologies for the purpose of increasing the effectiveness of the functioning of an organisation and realisation of processes within them. Certain research gap is present within the aspect of lack of a systemic and synergistic research apparatus within the aspect of the potential which utilisation of Big Data in an organisation carries. Due to this fact, there is a need for research regarding a systemic approach to Big Data which would include achievements of management and quality sciences, IT and security sciences. The aim of this article is to develop a model of a systemic approach to Big Data which would include the organisation perspective, covering elements of informational process and management and the IT systems perspective, and also the requirements within the aspect of information security. Realisation of the adopted research goal will enable to detail the theory within the aspects of modelling Big Data processes and systems, also regarding theory and practice of organisation management and implementation of IT systems on the stage of designing and selection of system architecture and data models. Research results show that it is possible to indicated and systemically approach the key fields determining the effectiveness of IT processes functioning in the conditions of heterogenous Big Data sets. Research results have enabled to develop a model of a synergistic approach to Big Data in an organisation and to identify challenges within the aspect of usage of Big Data and the field of information security.

**Keywords:** Big Data, systemic approach, data models, information security

**A FLEXIBLE SYSTEM FOR INCREASING THE COMPETENCES OF TECHNICAL SERVICE EMPLOYEES USING VIRTUAL REALITY TECHNIQUES**

*Wojciech Drożdż* – University of Szczecin, [Wojciech.drozd@wzieu.pl](mailto:Wojciech.drozd@wzieu.pl)  
*Maciej Wachowiak* – Enea Operator, [wachowiakmaciej@gmail.com](mailto:wachowiakmaciej@gmail.com)

**Abstract**

This paper presents the possibilities of using virtual reality techniques in interactive training of technical employees of a Distribution System Operator (DSO). It also describes the concept, assumptions and implementation method of the created Flexible Training System. Thanks to its capabilities, employees can participate in sophisticated training conducted in an innovative way eliminating the current disadvantages and limitations of classic – “real” training approaches. The System enables practice in two main categories of training used in the DSO environment: commutating operations and live-line works. Benefits and risks associated with system implementation in DSO structures are presented.

**Keywords:** virtual reality training system, virtual learning environment, training in the energy sector, training scenarios for transformer stations

## EVALUATION OF THE PERCEPTION OF CRYPTOCURRENCIES AND THEIR ONLINE EXCHANGES IN POLAND IN 2019

*Marek Zborowski, University of Warsaw, mzbowski@wz.uw.edu.pl*  
*Oskar Szumski, University of Warsaw, szumski@wz.uw.edu.pl*

### Abstract

The main objective of this article is to identify the opinions of Internet users concerning cryptocurrencies as well as to evaluate online exchange websites dedicated to this solution. The research was carried out with the application of the CAWI (Computer Associated Web Interview) method and examined a group of active Internet users. The selection method was the case of a random-purposeful sampling of 239 participants. The survey was conducted on the perception of the issue of cryptocurrencies and their online exchange websites in Poland in 2019. The study allowed for assessing the issue of cryptocurrencies considering the following criteria: familiarity with the concept, sources of information about the phenomenon, investment preferences, awareness regarding security as well as the knowledge concerning the advantages and disadvantages of the solution. The study into selected cryptocurrency online exchanges has pointed to significant factors that determine the respondents' choice of a particular website to invest in. The conclusions and recommendations indicated in this article can contribute to improving the design of cryptocurrency online exchange websites as well as the development of awareness of the examined issue.

**Keywords:** cryptocurrencies, alternative currency exchanges, website quality assessment

**ROLE AND MEANING OF EQUILIBRIUM AND LIMIT STATES IN RISK ANALYSIS, SECURITY  
AND FORENSIC SCIENCE**

*Dagmar Kopencova, University of Finance and Administration, dagmar.kopencova@seznam.cz*

*Miroslav Felcan, Academy of Police Forces at Bratislava, miroslav.felcan@minv.sk*

*Roman Rak, University of Finance and Administration, roman.rak@irisident.cz*

**Abstract**

Basic terms such as ‘phenomenon’, ‘event’, ‘state’, and ‘situation’ are defined for risk analysis and security needs. Other important terms include ‘equilibrium’ and ‘stability’ (as well as related terms ‘instability’ and ‘lability’). These terms can be found in both security and technical sciences as well as economics and social sciences. This paper generally defines and explains these key concepts across different disciplines and fields of human activity. Equilibrium states are known mainly from the field of physics - mechanics of solids. However, equilibrium states, stability and their changes are of great importance in the analysis of risks and safety, of various processes and objects in engineering practice, but also in other areas of human activity. Steady state analyzes help to understand, define threats and risks and manage them effectively; improve the reliability, safety of technological and other components or units. The paper is mainly of a theoretical nature and originated in research within the security sciences.

**Keywords:** Equilibrium, equilibrium position, balance of forces, stability

**THE USAGE OF SMARTPHONE AND MOBILE APPLICATIONS FROM THE POINT OF VIEW OF CUSTOMERS IN POLAND**

*Witold Chmielarz, University of Warsaw, witek@wz.uw.edu.pl*

**Abstract**

The main objective of this article is to identify the conditions for the use of smartphones and mobile applications in Poland in the second half of 2018. The scope of the present analysis was limited to a selected sample of more than 470 respondents and examined the group of the most active users of smartphones and mobile applications. The author adopted the CAWI - Computer Associated Web Interview method in his study, which was previously verified by a randomly selected pilot sample. The obtained results were compared with the findings of other studies. They indicated that users of smartphones and mobile applications in Poland do not differ in their assessments from users in Europe and around the world. In this context, the key implication for researchers is the identified level of development of the use of smartphones and mobile applications in Poland at the end of 2018. The main limitation of the research was the selection of the research sample which consisted only of members of the academic community. The scope of this article aims to fill a gap in terms of the quantitative and qualitative methods which are applied to examine the use of mobile devices and mobile software. At the same time, this study creates the foundations for further research on intercultural differences. It is important to note that the present research sample needs to be extended beyond the academic community for the research results to be fully generalised.

**Keywords:** smartphones, mobile applications, evaluation of mobile applications

## PURCHASE OF FOOD IN LARGE PACKAGES IN THE ASPECT OF FOOD WASTE IN POLAND

*Magdalena Ankiel, Poznań University of Economics and Business, magdalena.ankiel@ue.poznan.pl*  
*Urszula Samotyja, Poznań University of Economics and Business, urszula.samotyja@ue.poznan.pl*

### Abstract

Food waste has become one of the top issues for individuals and organizations involved in food marketing and food policy. The presence of food waste and ways to reduce food waste has generated debate among industry stakeholders, policymakers, and consumer groups. According to FAO data, one-third of world food production is wasted, equivalent to 1.3 billion tonnes. Every year, almost 90 million tonnes of food are wasted in the European Union, i.e. around 173 kg per person, which represents around 20% of EU food production. It is forecast that by 2020 the total amount of food wasted in Europe will increase by 40%. In Poland, around 9 million tons of food is wasted, of which over 6.5 million tons are in the manufacturing sector, and over 2 million are in households. According to the European Commission, the share of food wasted at the consumption stage increases as the wealth of the population increases. In Poland, bread, fruit, vegetables, milk and its products as well as meat and its products, as well as unconsumed remains of ready meals are most often thrown away. Among the key reasons for wasting food in households, first of all, non-consummation of the product in a timely manner is given, which results in its deterioration or expiration. Often this is due to the purchase of products in non-standard, large packaging, which, due to the favourable price (per 100 g of product), enjoys great interest among consumers on the food market. Unfortunately, the purchase of food in large packages often involves not consummating the product, as the shelf life has expired. Such a product must be thrown away because its consumption has a health risk. In the context of the above, an interesting research issue is the identification of consumer purchasing behaviour in relation to purchases of food in large packages and the identification of consumer behaviour in relation to food in large packaging (e.g. product portioning, freezing) in the aspect of reducing food waste in the household. In the article, the authors presented the results of research on purchasing and consumption behaviour on the food market in Poland, with particular emphasis on purchasing products in large packaging. The research method used was a direct individual questionnaire interview, the surveyed population was constituted by consumers purchasing food products (N= 1144). In the course of the analysis of the results, consumers' purchasing and consumption behaviours in relation to large packaging on the food market in Poland were identified, as well as the impact of packaging size and labelling of food packaging on behaviours associated with food waste in Polish households.

**Keywords:** food waste, food labeling, large packaging, food, consumer behavior,

**SOCIAL MEDIA MARKETING IN CREATIVE INDUSTRIES: HOW TO USE SOCIAL MEDIA MARKETING TO PROMOTE COMPUTER GAMES?**

*Iwona Otola, Czestochowa University of Technology, iwona.otola@wz.pcz.pl*  
*Bartosz Wawrowski, Czestochowa University of Technology, bartosz.wawrowski@pcz.pl*

**Abstract**

Currently, almost every business entity has one or more social media accounts. This statement is true for companies operating in creative areas as well. Social media make it possible to perform widely understood marketing-oriented undertakings. They allow for the toll-free presentation of a particular company, its history, products, achievements, as well as for encouraging prospective customers to visit its website. Social media marketing plays an important role in the satisfactory advertising of creative brands, companies, and products. The aim of this article is to discuss the possibilities of utilizing social media marketing by a creative company dealing with the production of computer games. The authors have attempted to analyze selected elements of computer game promotion opted for by the Cd Projekt Capital Group. As of currently, the *Witcher* game is a product that is well known and highly appreciated all over the world. Nevertheless, its promotion has required the utilization of a proper marketing strategy based on social media-specific tools.

**Keywords:** computer games, creative companies, social media marketing,

**SELECTED ASPECTS OF EVALUATING KNOWLEDGE MANAGEMENT QUALITY IN  
CONTEMPORARY ENTERPRISES**

*Olga Sobolewska, Warsaw University of Technique, Olga.Sobolewska@pw.edu.pl*  
*Agnieszka Bitkowska, Warsaw University of Technique, Agnieszka.Bitkowska@pw.edu.pl*

**Abstract**

The main aim of the article was to estimate the selected aspects of evaluating Knowledge management quality in contemporary enterprises from a theoretical and practical perspective. Measuring Knowledge management is the biggest challenge for both theoreticians and practitioners. The survey was addressed to organizations, conducting business activity in Poland. The research was carried out in 2019 in the form of an online survey. For international organizations, the survey was intended for representatives of these companies' local branches. It has been shown that among the factors that most strongly affect the quality of knowledge are directly related to infrastructure, as well as IT systems. The article contributes to managerial practice by pointing out the importance of evaluating knowledge management quality in the process perspective. The article's originality of the work lies in the contribution to the literature on evaluating knowledge management quality by empirically analyzing it in contemporary enterprises. The results of research in the field of assessing the quality of knowledge management have shown the need to focus not only on IT tools related to infrastructure but also on processes approach, taking into account the priority role of the employees.

**Keywords:** knowledge, knowledge management, knowledge management quality



## EVALUATION OF INTERNAL COMMUNICATION TOOLS IN A BANK

*Barbara Wyrzykowska, Warsaw University of Life Sciences, barbara\_wyrzykowska@sggw.pl*

### Abstract

The article presents the results of research on Bank employees' opinions on information provision effectiveness. Empirical research was conducted in March 2019, covering 60 randomly selected employees. In addition, the communication tools at the Bank were identified and analysed. As a result of the conducted survey, communication tools that are - according to employees - the most effective at conveying information have been selected.

**Keywords:** internal communication, internal communication tools, effectiveness of information transfer, Bank, social media.

**COMMUNICATION STRATEGIES IN SOCIAL MEDIA IN THE EXAMPLE OF ICT COMPANIES**

*Anna Losa-Jonczyk, University of Economics in Katowice; anna.losa-jonczyk@ue.katowice.pl*

**Abstract**

The article aims to present the results of pilot studies on the involvement of the four largest ICT companies in promoting the SDGs through social media. Studies examine which communication strategy is used by companies in social media. The research was carried out using the method of the content of messages posted on the official Facebook and Twitter accounts of the ICT companies' analysis. The analysis showed that the companies prefer corporate ability communication strategy over CSR or hybrid one. Posts rarely concern the company's activities related to social and environmental responsibility. Although they engage in activities supporting the achievement of the SDGs and inform about it on their corporate websites, the topic of sustainable development has been taken up in small numbers in the posts examined.

**Keywords:** communication; social media; strategy; sustainable development; corporate responsibility; ICT industry.

**THE ROLE OF SOCIAL MEDIA IN GENERATION Y TRAVEL DECISION MAKING PROCESS**

*Agnieszka Werenowska, Warsaw University of Life Sciences – SGGW, Agnieszka\_werenowska@sggw.pl*  
*Maciej Rzepka, LOT Team sp. z o.o, astrolabium22@gmail.com*

**Abstract**

Technological development at the turn of the 20th and 21st centuries determined the possibilities of communication. Internet access has resulted in the rapid development of social media bringing together users from around the world. Social media affect all aspects of human life, including leisure and tourism. The article focuses on the element of this influence, namely the selection of tourist destination made by generation Y. It presents the influence of social media on consumer choices in tourism and the specificity of the tourist product. The main purpose of the study was to indicate the most commonly used social medium in the process of selecting a tourist destination and implementing the journey by generation Y. The analysis of research results shows the important place of social media in the life of generation Y. They mostly trust materials shared in social media, although they are aware of giving colors to reality, sharing impressions from tourist destinations is per se the purpose of the trip. Facebook, YouTube, Instagram are the most-used social media for generation Y. The survey method and the analysis of the literature and available reports were used.

**Keywords:** Social Media, Generation Y, Internet, tourist destinations, communication

## DETERMINANTS OF PURCHASING DECISIONS OF AESTHETIC MEDICINE SERVICES IN POLAND

*Bogdan Sojkin, University of Economics and Business in Poznan, bogdan.sojkin@ue.poznan.pl*  
*Magdalena Ankiel, University of Economics and Business in Poznan, magdalena.ankiel@ue.poznan.pl*  
*Anna Gogolek, University of Economics and Business in Poznan, anna.gogolek@ue.poznan.pl*

### Abstract

Aesthetic medicine is a relatively new and currently dynamically developing field of medicine, theoretically situated between plastic surgery and cosmetology. Its main task is to use non-invasive methods to renew skin rejuvenating and body contouring. Aesthetic medicine derives from the so-called wish-fulfilling medicine, whose activities are directed mainly at improving the mental well-being and quality of life of healthy people. The market of aesthetic medicine services, both in Poland and in the world, has been in recent years one of the broadest segments of the medical services. Among the determinants of the development of aesthetic medicine are both consumer trends (associated with the cult of beauty, the desire to maintain a young and attractive appearance, greater care for the health and condition of the body and skin) as well as the development of medical sciences, techniques, and technologies (creating new opportunities to improve beauty or reducing body defects). Due to the growing interest of consumers with minimally invasive aesthetic medicine procedures, the number of facilities (surgeries and clinics) providing such services increases significantly. Therefore, we state that the identification of the choice determinants of aesthetic medicine services is a promising, yet under-researched area of study. In this article, we present the results of an empirical study on the determinants of the selection and purchase of aesthetic medicine services in major cities in Poland (Poznań, Gdynia, Warsaw, Łódź, Kraków). We used a direct individual questionnaire interview as our main research method to diagnose the prerequisites for using aesthetic medicine services, determinants of choosing a medical facility, and the type of services offered in this market. Our respondent group included clients/patients of aesthetic medicine clinics and surgeries, whose sample was selected in a targeted manner (N = 745). To analyze data, the factor analysis was performed that helped to identify key determinants of the selection and purchase of aesthetic medicine services by clients/patients of these facilities in Poland.

**Keywords:** aesthetic medicine, consumer behavior, purchasing decision, factor analysis

**ANTECEDENTS OF INNOVATIVE BEHAVIOUR: KNOWLEDGE SHARING, OPEN INNOVATION CLIMATE AND INTERNAL COMMUNICATION**

*Maria Eduarda Soares, Universidade de Lisboa, mes@iseg.ulisboa.pt*

*Pilar Mosquera, Universidade de Lisboa, pilarconde@iseg.ulisboa.pt*

*Maria Cid, Universidade de Lisboa, mariacid@aln.iseg.ulisboa.pt*

**Abstract**

Innovative behaviour is currently considered as a key factor for the competitive advantage of organizations. In this study, we analyse the role of three antecedent variables of Innovative Behaviour - Knowledge Sharing, Open Innovation Climate, and Internal Communication. Three dimensions of Internal Communication are considered - Organizational Communication, Communication with Superiors and Communication with Peers. We used a sample of 138 employees from a consulting firm to test a conceptual model with Partial Least Squares (PLS). Results indicate that only Knowledge Sharing is an antecedent of Innovative Behaviour in the organization studied. Communication with Superiors and Communication with Peers are antecedents of Knowledge Sharing but not of Innovative behaviour. Results also indicate that Knowledge Sharing mediates between Communication with Superiors and Innovative Behaviour. Organizational Communication and Communication with Superiors are antecedents of Open Innovation Climate, but the latter does not have a significant relationship with Innovative Behaviour.

**Keywords:** Innovative Behaviour, Knowledge Sharing, Open Innovation Climate, Internal Communication

**UNIVERSITY GRADUATES' SKILLS-AND-EMPLOYABILITY EVALUATION IN POLAND – A  
CASE STUDY OF A FACULTY OF MANAGEMENT IN WARSAW**

*Malgorzata Cieciora, Polish-Japanese Academy of Information Technology, Malgorzata.Cieciora@pja.edu.pl*

*Piotr Pietrzak, Warsaw University of Life Sciences, Piotr\_pietrzak1@sggw.pl*

*Piotr Gago, Polish-Japanese Academy of Information Technology, pgago@pja.edu.pl*

**Abstract**

The purpose of this paper was to present an attempt to build a system of gathering and analyzing reliable, accurate and up-to-date feedback on the employability of academic graduates in Poland. After a literature review on the nature of the mismatch between the labor market requirements and the knowledge and skills of higher education graduates, as well as challenges connected with obtaining feedback from graduates, a case study devoted to collecting and analyzing labor market stakeholders' feedback undertaken by a small faculty of a non-public academy in Warsaw, Poland is presented. A sample of 31 opinions of the Faculty's graduates was gathered and analyzed, in the form of arithmetic mean, minimum and maximum values and cross-plot charts. The main conclusion of both the literature review and the case study is that the labor market highly values technical, especially IT skills and business-related soft skills, such as team-working. The two main challenges for the academic decision-makers are to develop curricula that would foster the development of the desired knowledge and skills and to build effective communication channels with all their stakeholders. A further, more comprehensive research into the matter will be worth conducting.

**Keywords:** graduates' employability, labor market, university stakeholders, competency gap

**COLLABORATIVE ECONOMY AND ITS AWARENESS IN VISEGRAD GROUP COUNTRIES AND WITHIN THE EUROPEAN UNION**

*Tünde Zita Kovács, University of Debrecen, kovacs.tunde.zita@econ.unideb.hu*

*Forest David, University of Debrecen, forestdavid5@gmail.com*

*Krisztián Kovács, University of Debrecen, kovacs.krisztian@econ.unideb.hu*

*Péter Popovics, University of Debrecen, popovics.peter@econ.unideb.hu*

*András Nábrádi, University of Debrecen, nabradi.andras@econ.unideb.hu*

**Abstract**

The explosion of platform-based collaborative economy (CE) into the tertiary sector has changed the balance of power of the market. The purpose of the study aims at introducing the CE, with special regard to its varieties and definitions and its awareness in Visegrad Group (V4) countries and EU. The article includes both primary and secondary research. The international literature review was carried among definitions of CE from the last 10 years' articles. It was found that there is no uniform definition of CE, and it also turned out that the scope of activities related to the concept is not uniformly organized. This article is also focused on the economic markets of the (V4) countries CE from supply and demand-side aspects by analysing EU database with SPSS software. The estimation of CE services reveals a more positive picture among Polish and Czech residents, whereas Slovak respondents are an average of EU-28. Despite the fact that Hungarian respondents are most familiar with the CE, they are the most conservative in with consideration. The most popular CE platforms are accommodation and transport services in V4 countries. To the best of our knowledge, the analysis of this topic has not been carried out.

**Keywords:** Collaborative Economy, Sharing Economy, Collaborative Consumption, Spreading of Collaborative Economy in V4, SPSS Analysis.

**DIGITALLY TRANSFORMING THE PROFESSIONAL SCHOOL COUNSELOR**

*Kodey S. Crandall, Utah Valley University, kcrandall@uvu.edu*

*Matt North, Utah Valley University, mnorth@uvu.edu*

*Kalee Crandall, Utah State Board of Education, kalee.crandall@schools.utah.gov*

**Abstract**

In the Internet Age, digital transformation has touched nearly every profession and industry, and K-12 school counseling is no exception. In the modern public school, counselors are expected to meet a variety of demands using evidence-based practices. Many school counselors, however, still struggle to meet the expectation to use data. In our current research, we surveyed 263 school counselors in the State of Utah to explore the challenges surrounding data-driven decision-making. The research revealed the most prominent barriers regarded data and a perceived lack of time. Computerized systems can automate many of the tasks required of counselors saving them time and can also process data in a structured way that facilitates analysis leading to the identification of essential patterns, opportunities, and risks in the student body. By using methods of quantitative analysis, we correlate the counselor's responses to possible technology tools that could assist them in making data-driven decisions.

**Keywords:** Digital transformation, Barriers to technology adoption, Technology acceptance



**A MACHINE LEARNING APPROACH TO IMPROVING FORECASTING ACCURACY OF HOTEL DEMAND: A COMPARATIVE ANALYSIS OF NEURAL NETWORKS AND TRADITIONAL MODELS**

*Misuk Lee, Seattle University, leem@seattleu.edu*  
*Xinpan Mu, Microsoft, xinpan.mu@outlook.com*  
*Yiqiao Zhang, Expedia Group, sakuraisuri25@gmail.com*

**Abstract**

Demand forecasting is a key component of successful hotel operations and revenue management. In this research, we suggest a combined neural network method that incorporates heterogeneous data sets - time series and advance booking information along with seasonality components. We provide a comparative analysis to improve forecasting accuracy by investigating various forecasting methods including advance booking models, time series models. Our exhaustive study shows that the neural network approach outperforms traditional forecasting models overall. Moreover, we observe that the true behavior of daily demand may be a more complex phenomenon than single type data can capture and that our combined neural network model may improve forecasting accuracy.

**Keywords:** Forecasting, Time Series Neural Network, Combined Neural Network, Machine Learning, Hotel Demand.

**MANAGING CYBER SECURITY COMPLIANCE ACROSS BUSINESS SECTORS**

*Kevin J. Slonka, University of Pittsburgh, slonka@pitt.edu*

**Abstract**

Cybersecurity is a key consideration in ensuring the privacy and safety of organizational data. This need extends beyond individual business sectors up to and including national security. Due to the varying regulatory requirements for cybersecurity, a Western PA IT firm needed to create a cybersecurity management strategy that allowed them to manage compliance for their customers, which span most major industries, in such a way that is time and cost-effective. The IT firm solved this problem by creating a master database that contains all necessary regulations (plus many additional details) mapped to a master set of security controls. This cybersecurity management strategy not only allows the IT firm to bring customer networks into compliance by finding and remediating deficiencies but also manage and maintain their compliance throughout the years.

**Keywords:** cyber, security, management, compliance, CUI, PHI, FTI, IRC, CJIS, PCI, GDPR, GLBA

**ONLINE STUDENTS' PERCEPTIONS OF EMBEDDED LIBRARIANS: A PILOT STUDY**

*Scott C. Spangler, Middle Georgia State University, scott.spangler@mga.edu*  
*Dana Casper, Middle Georgia State University, dana.casper@mga.edu,*  
*Deborah Stanfield, Middle Georgia State University, Deborah.stanfield@mga.edu,*

**Abstract**

The purposefulness of this pilot study is to gauge students' perceptions of embedded librarians in an online learning environment. The data were collected through a random sample of volunteer participants (n=32) after course completion through an electronic survey tool. The study, with permission, uses key literature's methodology to analyze and validate the findings. Additionally, the researchers utilized the institutional research administrator to oversee the survey (post-courses) to further validate data, maintain integrity, and eliminate researcher biases. To form the research questions and survey tool, the past literature's models were paralleled with scholars' permissions. The data were organized and processed through Google's software. The pilot study concurs with prior literature's three main constructs: comfort, confidence, and recognition. Additionally, this study recognizes the need for the visualization of embedded librarians in online coursework and students' interpersonal growth. Finally, this study acknowledges its limitations and recommendations for future research.

**Keywords:** Embedded librarian, course-integrated instruction, online instruction.

**HEALTH-RELATED MOBILE APPLICATIONS FOR SMART DEVICES ON INSURANCE PROVIDERS:  
AIDING CUSTOMER RETENTION**

*Shravan Santosh Baratam, Harrisburg University of Science and Technology, Sbaratam@My.Harrisburgu.Edu*

*Chaza F. Abdul, Harrisburg University of Science and Technology, cabdul@harrisburgu.edu*

*Loreen M. Powell, Bloomsburg University of Pennsylvania, lpowell@bloomu.edu*

**Abstract**

This empirical research explores the number of healthcare insurance providers/payers using mobile applications for smart devices and analyzes the significance between the use of mobile applications for smart devices and their customer retention. A questionnaire was used to gather data. Forty-one employees from health insurance and private insurance providers completed the questionnaire. The results found that only 51.21% of healthcare insurance providers/payers utilize/require mobile applications and 75.61% plan to utilize/require mobile applications. A significant relationship was found between the use of mobile applications and customer retention; however, no significant correlation was found between gender and the use of mobile applications and customer retention. This work serves as an important step towards recognizing the business value aspects of health-related mobile applications for smart devices on insurance providers.

**Keywords:** Healthcare technology, health-related mobile applications, smart devices, health insurance providers, customer retention

**APPLICATION OF MICROSOFT EXCEL SOLVER TECHNIQUES TO COMPUTE CLUSTER SIZE  
IN CELLULAR WIRELESS NETWORK**

*Abhijit Sen*, Kwantlen Polytechnic University, abhijit.sen@kpu.ca

**Abstract**

Microsoft Excel is one of the most popular software programs that is used by individuals and businesses to record, manipulate and analyze data. Microsoft Excel offers a number of data analysis tools collectively called “what if analysis”. Many business problems are solved using these tools. However, in Engineering and Computing Science these features of Excel are seldom used to solve appropriate problems. Instead, most of the problems are solved using specific tools such as MATLAB or specific Computer programs. In cases where Microsoft Excel is used, only basic operations such as formula, mathematical functions, and graphing or charting are utilized. In this paper, the author attempts to show with examples of how Excel Solver techniques can effectively be used to model and solve common problems in Wireless Communication networks. Many of the wireless network problems require extensive problem-solving skills to manipulate mathematical expressions to produce solutions. This pedagogical approach of using Excel Solver in handling some difficult computation problem in Wireless Communication network is especially aimed at students who do not have strong mathematical aptitude in solving computational problems. A very common example of finding Cell clusters in Wireless Cellular network is used to demonstrate the usefulness of Excel Solver in modeling and solving complex optimization problems. The author also discusses the limitations and practical issues related to using Excel solver.

**Keywords:** cell clusters, cellular network, channel, frequency, signal-to-co-channel interference

**THE ROLE OF HIGHER EDUCATION INSTITUTIONS IN RESKILLING THE WORKFORCE**

*Karen Paullet, Robert Morris University, USA, paullet@rmu.edu*  
*Diana Behling, Sentara Healthcare, Inc., USA, djbehling@msn.com*  
*Robert Behling, Arrow consulting, USA, behlingr@hotmail.com*

**Abstract**

In today's economy, the skills and technologies needed to gain a competitive edge are constantly changing. Improving worker productivity is essential in any organization and the reskilling of the existing workforce becomes a necessity. The primary goal of this paper is to highlight and discuss the role of higher education institutions in reskilling the workforce and provide recommendations for systematic reskilling or upskilling the workforce.

**Keywords:** Upskilling, reskilling, workforce, higher education institutions

**USING MACHINE LEARNING ALGORITHMS TO ANALYZE IMPACT OF CRIME ON  
PROPERTY VALUES**

*Preslav Angelov, Seattle University, angelovp@seattleu.edu*

*Huy Le, Seattle University, lehuy@seattleu.edu*

*Evin Tolentino, Seattle University, torenti4@seattleu.edu*

*Ben Kim, Seattle University, bkim@seattleu.edu*

**Abstract**

Since predictions of property values require an integration of a great deal of data, machine learning can play an important role. There are many factors influencing the sale price of private properties. In this paper, we focus on how different types of crimes affect the residential property sale price in an urban county in the USA - Pierce County, Washington. We are interested in what machine learning algorithms can be more effective in predicting the sales values. We worked on two sets of data. The first data source includes the physical attributes of a property, such as the square footage, quality, the year built and/or remodeled. The second data source contains the crime data for Pierce County from July 2018 to July 2019. We combined these two data sources into one full dataset. Then, we divided the full dataset into three clusters using the EM (Expectation Maximization) algorithm. The full and three clustered datasets were used to build two sets of data mining models – one with crime data, and the other without them. We built our models using three algorithms – decision trees, artificial neural networks, and random forests. In total, we created 32 models and evaluated them by calculating prediction errors of each model. We found that the random forest models produced the lowest values of errors. Using those models, we concluded that crime is a significant factor in predicting the sale price of residential properties in Pierce County, Washington.

**Keywords:** Property Values, Crime, Machine Learning, Random Forests, Clustering

## **KNOWLEDGE MANAGEMENT FOR VIRTUAL TEAMS**

*Anne Shepherd, Robert Morris University, vasst262@mail.rmu.edu*

*James Cooper, Robert Morris University, jecst232@mail.rmu.edu*

### **Abstract**

As organizations create and evolve their digitization and future workforce strategies, knowledge management becomes an important consideration in building an evolutionary digital strategy. A pivot point has emerged in how organizations use knowledge to achieve agility, innovation, and competitiveness in the digital world. Virtual teams open new possibilities and challenges for knowledge creation and sharing in organizations. Tacit and explicit knowledge transfer is fundamental to effective knowledge management in a rapid-paced digital world. This research studies the factors influencing knowledge creation and knowledge sharing in a high velocity, networked environment.

**Keywords:** Knowledge management, Virtual Teams, Distributed Worker, Tacit knowledge



**BROADENING PARTICIPATION OF RURAL COMMUNITY COLLEGE TRANSFER STUDENTS  
IN STEM DEGREES AND CAREERS**

*Karen Paullet, Robert Morris University, paullet@rmu.edu*  
*Debra Nakama, University of Hawaii Maui Colleg, debran@hawaii.edu*  
*Natalya Bromall, Robert Morris University, bromall@rmu.edu*  
*Diane Igoche, Robert Morris University, igoche@rmu.edu*

**Abstract**

The Bureau of Labor Statistics projects that computer and information technology occupations are expected to grow by 12% from 2018 to 2028, this will translate to an additional 546,200 new positions. The demand for skilled workers in the computing fields needs to be addressed to fill these positions with talent from diverse backgrounds. The diversity in the computing workforce will enrich the innovations developed and enhanced while ensuring fairness and representation of all groups. Colleges, universities, and boot camps are creating avenues to close the skill gap. However, the STEM fields, including computing, are shown to have barriers to entry for typically underrepresented groups. The National Science Foundation (NSF) has funded a five-year project to support XYZ University's efforts to broaden the participation of underrepresented groups in the STEM fields. This paper will highlight the beginning stages of this project and add to the discussion on engaging low-income, academically talented community college transfer students in computing majors (cyber-forensics, computer information systems, data analytics or information science). Additionally, this paper will address the significant role of mentoring to help students achieve success in the STEM fields.

**Keywords:** STEM-C, community college, transfer students, broadening participation, cybersecurity

**THE EFFECT OF RELIGIOSITY ON DECISION MAKING IN SELF-DRIVING CARS: THE CASE OF “THE ETHICAL KNOB”**

*Kiana Stephen, Texas Christian University, kiana.stephen@tcu.edu*  
*Beata M. Jones, Texas Christian University, b.jones@tcu.edu*

**Abstract**

This study focuses on the ethical dilemmas of self-driving cars and how religiosity levels affect consumers' perceptions of morality. The research examines how religiosity affects consumers' comfort levels and moral perceptions of the “ethical knob” and the “ethical knob's” settings, which would allow the passenger of a self-driving car to determine how the car reacts in an unavoidable accident. The study does not support hypotheses concerning the effects of religiosity; however, the vast majority of respondents regardless of religiosity believed the Impartial setting was most moral, and they were most comfortable with it. This study concludes that religiosity levels alone do not affect consumers' moral perceptions of the “ethical knob” and the “ethical knob” settings, and it exposes some interesting disconnects. One would believe that more religious individuals would prefer the Impartial setting over those who are not religious due to the moral principles laid out by their religion, but the study does not support this assumption. It is likely that overall cultural differences affect consumers' moral perceptions rather than one element of culture. We must conduct more research on society's cultural elements to fully understand the moral perceptions involved and how they will affect the future of self-driving cars.

**Keywords:** Ethical decision-making, Self-driving cars, Ethical knob, Religiosity

**ESSENTIALS ISSUES FOR E-GOVERNMENT EFFICIENCY**

*José Jorge-Pagán, Universidad Ana G. Méndez, jorgej1@uagm.edu*  
*Angel M. Ojeda-Castro, Universidad Ana G. Méndez, aojeda5@uagm.edu*  
*Juan Valera-Márquez, Universidad Ana G. Méndez, valeraj1@uagm.edu*  
*Macedonio Alanís- González, Tecnológico de Monterrey, alanis@itesm.mx*

**Abstract**

The main purpose of this study was to establish a model to measure the relationship between successful factors for e-government efficiency. Theoretical bases were employed for the hypothesis's formulation. The variables identified were classified as internal and external factors, maturity, strategies, interoperability, and standards as independent factors. The exchange of information was identified as the dependent factor. As part of the methodology, a survey was administered to 87 specialists in information systems and statistics. A multivariate analysis was applied to generate the structural equation model. The results showed that internal and external factors such as organizational, economic, and political influences, legislative, and technical; and private procedures and interagency agreements are not related to the exchange of information. However, when internal and external factors are related to maturity, it generates a positive relationship with the exchange of information. There exists association in the collaboration of two or more agencies, and the potential to increase productivity and efficiency of government operations. The research model explains the existence of three composite relationships where information exchange occurs and that justify the efficiency of e-government. In a scenario where change is a constant, e-government faces the challenge of dealing with the technological trends on which to build the resources to enable the exchange, integration, dissemination, and effective use of multiple data sources.

**Keywords:** Electronic Government Interoperability, Government to Government

**CONSUMER ATTITUDES TOWARDS FASHION INFLUENCERS ON INSTAGRAM: IMPACT OF PERCEPTIONS AND ONLINE TRUST ON PURCHASE INTENTION**

*Joanna K. Santiago, Universidade de Lisboa – ISEG, joannas@iseg.ulisboa.pt*

*Daniel Magueta, Universidade de Aveiro, dmagueta@ua.pt*

*Cataria Dias, Universidade de Lisboa – ISEG, catarinavdias@ua.pt*

**Abstract**

The growing importance of digital influencers has been already acknowledged both by companies and by the academy. However, due to its contemporaneity, the literature regarding this topic still faces some limitations. Thus, the present study intends to explore the antecedents of trust in influencers and the consequent purchase intention. To develop their digital strategies, companies must understand consumers' attitudes towards digital influencers. Consequently, they have to identify the antecedents of trust in influencers as well as their consequences on purchase intention. The research objectives of this study are (1) to design a framework of the relationship between customer perceptions that will determine the trust, influencer trust and intention to buy, and (2) to test and validate this framework using a sample of Portuguese consumers. The research followed a quantitative approach with a non-probabilistic convenience sampling. To achieve the objective of this research an online survey was conducted (n=242) among individuals who are following fashion influencers on Instagram. The results showed that purchase intention is indeed influenced by influencer trust and brand credibility is an important antecedent both to build trust and purchase intention. This study allowed a better understanding of the role of fashion influencers in social media from the user perspective, allowing the enrichment of information in the Portuguese context. At the business level, this research has provided evidence that the use of digital influencers is a successful tool for marketers in the fashion segment.

**Keywords:** Digital Influencers, Influencer Marketing, Influencer Trust, Purchase Intention.

**CYBERSECURITY IN THE DENTAL HEALTHCARE SECTOR: THE NEED OF KNOWLEDGE FOR SMALL PRACTITIONERS**

*Eliel Melon, University of Puerto Rico, eliel.melon@upr.edu*  
*Wilnelia Hernandez, Independent Researcher, wiheca@hotmail.com*

**Abstract**

Dental healthcare technology requires planning and time. This sector is a vulnerable organization to cyber-attacks and threats because they are not kept up with the threats. The objective of the study was to identify academic literature that presents the problem of cybersecurity in dental healthcare and the necessity to expand the literature as an educational resource for these small medical practitioners. The researchers did a systematic literature review and conducted searches through four databases. Using keywords and database filters they found 4 articles that met the criteria. The analysis showed that this sector lacks knowledge in cybersecurity and there are not enough threats documented in the academic literature about these specific practitioners. The dental healthcare industry is a prime target right now, because of a phenomenon to digitalize all of the equipment during the past years. Time and economic resources must be invested to maintain and ensure the protection of dental healthcare technologies and the confidentiality of patient information from unapproved access. In our findings, this systematic literature review confirms the necessity to expand the amount of academic literature of cybersecurity for dental practitioners and consideration of creating a model solution that will help other small medical practitioners.

**Keywords:** cybersecurity, threats, dental healthcare, cyber-attack, resilience, cyber resilience, holistic, systematic literature review

**CYBERSTALKING...NO MEANS NO: AN EXPLORATORY STUDY OF UNIVERSITY STUDENTS**

*Karen Pullet, Robert Morris University, pullet@rmu.edu*  
*Adnan Chawdhry, California University of PA, chawdhry\_A@calu.edu*

**Abstract**

Increased use of technology and the internet have allowed for better means of communication while removing the geographic boundaries that once existed. However, the added benefit can soon be diminished when technology is in the hands of a stalker. Cyberstalking is relatively new but has posed life-threatening safety concerns for individuals around the world. This exploratory study of 121 students examines incidents of cyberstalking by evaluating the style and length of communications between a stalker and victim along with the perceived level of fear related to the incident. The study illustrates that it is essential to report these incidents immediately and to the right authority before it is too late. Awareness of cyberstalking and guidelines to mitigate the risk are essential steps to keep yourself safe from incidents, no matter how harmless they may seem.

**Keywords:** Cyberstalking, Online Harassment, Stalking, Electronic Communication

**SOCIAL NETWORKING FOR A LEARNING MANAGEMENT SYSTEM – SHOULD FACEBOOK BE USED TO SUPPLEMENT BLACKBOARD?**

*Vinay Kumar Reddy Anumula, Harrisburg University, xxxxx@harrisburgu.edu*

*Chaza F. Abdul-Al, Harrisburg University, cabdul@harrisburgu.edu*

*Wenli Wang, Robert Morris University, wangw@rmu.edu*

*Paul Kovacs, Robert Morris University, kovacs@rmu.edu*

*Loreen M. Powell, Bloomsburg University, lpowell@bloomu.edu*

**Abstract**

This study analyzed web advancements by studying the pros and cons of using social media such as Facebook as a supplementary component for learning management systems such as Blackboard. The theoretical explanation in the research is that online learning innovation can be connected to improve separate instruction in institutions of higher education. The advantages, challenges, and possibilities of the innovation were also surveyed. The research confirmed the positive effects of using social media in facilitating collaborative learning and student engagement. It is evident that students value the benefits of online social networking in terms of enhancing course identity and collaborative student learning.

**Keywords:** Communication, Learning Management Systems, Social Media, Online Education

**TRUST IN LEARNING FROM BIG DATA: THE TWO SIDES OF THE SAME COIN**

*Dimitar Christozov, American University in Bulgaria, dgc@aubg.edu*  
*Emanuela Mitreva, American University in Bulgaria, emitreva@aubg.edu*

**Abstract**

Building application in a way to support reaching the confidence and trust is based on the way how the user acquires, understands and interprets obtained information. In the case of Big Data information is in the form of summary statistics, aggregations, and especially important – visual forms.

Producing an active knowledge, or building an informative application, requires that the user trusts the information, obtained via the Big Data processing application. The source data and the data processing application is considered often like a black box, which results in different users' attitude toward confidence in applying it.

The two extreme kinds of users' acceptance and consequently attaining knowledge are:

- Over trust: the user believes that once the information is produced by computer application it is correct, valid, and trustful.
- Under trust: because the user cannot observe the entire story from data generation, storing and processing, toward generating results, the information produced is doubtful and cannot automatically result in action.

Both extremes are risky from point of view of the success of the application to inform the user. Optimists, over-trusting obtained information, will act according to it not critically assessing whether it is true or applicable to the problem domain. Pessimists, under trusting, may not act even if obtained information is useful, because they are unable to trace how it is created and are not ready to adopt it.

The paper discusses the aspects of designing of a user interface (UI) in a way to achieve confidence toward conclusions and mitigating the above risks.

**Keywords:** trust, machine learning, informing, users' profiling, UI architecture



**INTRODUCING THE DEEP AND DARK WEB INTO HIGHER EDUCATION PEDAGOGY: AN  
EXPLORATORY STUDY**

*Gary Janchenko, Robert Morris University, janchenko@rmu.edu*

*Karen Paullet, Robert Morris University, paullet@rmu.edu*

*Frank Hartle, Robert Morris University, hartle@rmu.edu*

**Abstract**

Present-day television, Internet, and radio advertisements portray the deep and dark web as an underground place where nefarious and frightening activities occur. A place where drug lords reign and credit card information flows like mighty rivers. Research finds that the general population in the United States tends to understand very little about what the deep and dark web actually are and that most people access the dark web in some form almost daily. The purpose of this exploratory study is to examine the existing literature to understand more of what information is currently published related to the public's knowledge of the dark web as a base for a future publication. From this research, the authors propose two training scenarios: one for university students and another for law enforcement. The results of future studies on this topic will serve to fortify both of those courses.

**Keywords:** Dark Web, Dark Net, The Onion Project, Silk Road, Cryptomarkets

**SOFTWARE CO-DEVELOPMENT BETWEEN SUPPLIER AND BUYER – BENEFITS, RISKS AND ENABLERS**

*Antti Rantala, VTT, antti.rantala@vtt.fi*  
*Josu Takala, University of Vaasa, josu.takala@uwasa.fi*  
*Helena Kortelainen, VTT, helena.kortelainen@vtt.fi*

**Abstract**

Digitalization changes many industries since manufacturers are increasing the automation level in their products. Novel business needs require developed software, and that often leads companies to seek external skills for software development either by hiring more software engineers or by purchasing tailored software from software companies. However, prices in the software industry can be high, and hiring new software engineers or purchasing tailored software may become expensive. Co-developing software with other companies could be a convenient method for sharing the costs and risks in software development. As a result of this literature review study, different co-development models - such as contractual alliances and joint ventures - are proposed as potential governance models for software co-development. In addition, an interview template for evaluating other companies' willingness for inter-organizational software development was developed.

**Keywords:** Collaboration, Software, Joint Venture, Contractual alliance

**EXAMINING THE RELIABILITY, VALIDITY, AND STRENGTH OF A UNIFIED MODEL FOR INFORMATION SECURITY POLICY COMPLIANCE\***

*Alex Koohang, Middle Georgia State University, alex.koohang@mga.edu*

*Jeretta Horn Nord, Oklahoma State University, jeretta.nord@okstate.edu*

*Vicky Sandoval, Middle Georgia State University, vicky.sandoval@gmail.com*

*Joanna Paliszkievicz, Warsaw University of Life Sciences, Joanna\_paliszkiewicz@sggw.pl*

**Abstract**

The purpose of this paper was to first examine the reliability, validity, and strength of a unified model for information security policy compliance that includes eight constructs explaining information security policy compliance. Second, seven hypotheses were developed and tested based on the constructs in the model. An instrument with eight constructs was used to reflect the traditional survey statements method that measures current or retrospective behavior for the items of each construct. A sample of 187 faculty and staff from a mid-sized university in the USA participated in the study. Data were collected electronically and analyzed through SmartPLS 3.0, a partial least square structural equation modeling software. The results indicated strong support for the models' reliability, validity, and strength. The results also showed support for five hypotheses. Two hypotheses were rejected. The findings with implications are discussed. Recommendations for future research are made.

**Keywords:** Information security policy, compliance, behavior

*\*Selected to appear in JCIS*

## STRESS AND COPING IN THE RELATIONSHIP BETWEEN ORGANIZATIONAL SUPPORT AND IN-ROLE PERFORMANCE: THE MODERATING ROLE OF WORK OVERTIME

*Fatih Çetin, Omer Halisdemir University, Turkey, fatih\_cetin@ymail.com*  
*Argjenta Plakolli, Omer Halisdemir University, Turkey, argjentalakolli@gmail.com*

### Abstract

The purpose of this study is to explore the mediating roles of perceived stress (PS) and coping (PC) in the relationship between organizational support (POS) and in-role performance (IR-P) with the moderating effect of work overtime (WO). POS is a perception of employees indicating that their contributions and well-being are valued by the organization (Eisenberger et al, 1986). Some study findings showed that POS is positively related to PC and IR-P, negatively related to PS in the workplace (Stamper & Johlke, 2003; Wallace et al., 2009). Thus, the present study proposed the possible mediating roles of PS and PC in the POS-I-RP relationship. Furthermore, WO indicate voluntarily or involuntarily working long hours in the workplace (Beckers et al, 2008). This study also explores whether the high or low level of WO strengthens or weakens all possible interactions. Using a convenience sampling method with the questionnaires, the research was conducted on 376 employees mainly working in the customer-care industry in Kosovo. The results indicated that POS significantly increases I-RP and PC and decreases PS; merely PC has a mediating role in between POS and I-RP; WO plays a moderator role in the relationship between POS and I-RP. Based on the findings, POS is essential particularly for individuals who have a higher level of WO for increasing job performance.

**Keywords:** Perceived organizational support, Perceived stress, Perceived coping, In-role Performance, Work overtime

### References

- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71, 500–507.
- Wallace, J. C., Edwards, B. D., Arnold, T., Frazier, M. L., & Finch, D. M. (2009). Work stressors, role-based performance, and the moderating influence of organizational support. *Journal of Applied Psychology*, 94(1), 254–262.
- Beckers, D. G. J., van der Linden, D., Smulders, P. G. W., Kompier, M. A. J., Taris, T. W., & Geurts, S. A. E. (2008). Voluntary or involuntary? Control over overtime and rewards for overtime in relation to fatigue and work satisfaction. *Work & Stress*, 22, 33–50.
- Watanabe, M., & Yamauchi, K. (2016). Psychosocial factors of overtime work in relation to work nonwork balance: A multilevel structural equation modeling analysis of nurses working in hospitals. *International Journal of Behavioral Medicine*, 23(4), 492–500.
- Stamper, C. L., & Johlke, M. C. (2003). The impact of perceived organizational support on the relationship between boundary spanner role stress and work outcomes. *Journal of Management*, 29(4), 569–588.

## DATA PRIVACY: WHY IS EVERYONE SO CONCERNED?

*Grzegorz Mazurek, Kozminski University, gmazurek@kozminski.edu.pl*  
*Karolina Małagocka Kozminski University, kmalagocka@kozminski.edu.pl*

### Extended Abstract

Companies collect private information to better recognise customers' needs and to tailor their offer and marketing tools to their preferences, lifestyle or Internet usage. Advances in information technology have increased the possibilities to aggregate and use data in ways that were previously impossible or economically inefficient. The collection and processing of information create new issues concerning privacy, perceptions of its limits and possibilities to control data flows. The disclosure of private information has become a feature of social life, and thus most people have learned to accept the demands related to this (Zafeiropoulou et al, 2013). Studies on privacy issues suggest that customers tend to exchange a certain amount of data for social or economic benefits (e.g. Acquisti, John and Loewenstein, 2015). The sharing of private information does not imply a complete loss of privacy or acceptance thereof. However, the complete concealment of personal data is not a prerequisite for privacy. Research indicates (Acquisti and Gross, 2006; Turow et al., 2009; Tsai et al., 2011; Savage and Waldman, 2013; Spikerman et al, 2015; Goldfarb and Trucker, 2019) that in some cases customers are willing to disclose information, which does not mean that they agree to lose control over it completely. For both companies and customers, data is perceived as a type of "currency". This is needed to maintain a two-way communication flow between the market and customers.

Increasingly, how companies and the technologies they use relate to customer privacy is an important factor in purchasing decisions, on a par with hot slogans like 'organic' or 'fair trade'. This situation has been influenced by the distorted sense of fairness and justice in the long-term exchange of information resulting from the social contract theory. Clients do not feel safe not only in passing on information by purposefully filling out forms, but also feel tracked and observed, and their behaviour seems to be under constant analysis. Especially in the era of expanding the use of artificial intelligence technology or automated decision-making systems. They are blamed in the messages dominating public discussion for the existing deadlock in privacy. At the same time, it is technology such as de-identification, anonymisation, zero-knowledge or the development of privacy-enhancing technologies that can support the trend of "privacy". Growing concerns about privacy, on the one hand, result in a burst of trust and lead to actions such as falsification of information about oneself until the adaptation of new technologies and trends aimed at tightening legislation in this area is rejected. This is particularly evident if the introduction of GDPR-like regulation is analysed. Currently, more than 60 jurisdictions have been or are in the process of complying with the privacy requirements of the law.

According to Gartner's latest estimates (2020), by 2023 nearly 65% of the world's population will be covered by privacy regulations based on GDPR records. In addition to the European Economic Area and California, as well as China, where the law has already entered into force, they include Argentina, Australia, Brazil, Egypt, India, Indonesia, Japan, Kenya, Mexico, Nigeria, Panama, Singapore, and Thailand. The aim is to regulate an area of public concern, often also in an attempt to resist the technological dominance of China and the United States. Companies adapt to the changing social, legal and economic environment. In two years, according to Deloitte estimates (2019), more than one million of them will appoint a privacy officer to ensure that the organisation's activities are consistent with the stricter regulations. This applies not only to the technology industry but also to all entities that are in the process of implementation or have plans to implement artificial intelligence or automated decision-making processes. While in China the systems of facial recognition or the awarding of social points have become everyday life, in a democracy rooted in Western values, a debate is beginning on the regulation of this phenomenon, its impact on citizenship and equality in access to goods and services. Based on the changing legal reality, which is a response to the growing awareness of users in terms of collecting and processing their data, we introduce an article rooted in the theories describing the user's decision making process regarding the willingness to disclose private information in terms of perception and risk assessment, as well as analyses of privacy concerns based on social contract theory ( Malhotra et al, 2004; Acquisti, 2015; Barth & de Jong, 2017).

The purpose of the considerations is to respond to calls for research based on theoretical models that take into account the diversity of personal data and diversity of privacy issues (Kokolakis, 2017; Ichihashi, 2019). We have suggested 3 stages of the research process, with an analysis of the model of privacy concerns, the impact of perceived risks and the inclination to provide private information on two levels, the attitude and behaviour in an experimental situation. We started by creating a catalogue of private information that is seen by managers as

important for a business. This stage of the process seemed to be necessary as privacy studies are usually conducted on an ad hoc basis (Preibusch, 2013). For this reason, there are no complete sets of private information that can be used for research. The interviews were conducted with people working in managerial positions who prepare and carry out product campaigns on the Internet.

In the next stage, we applied a quantitative method using an online survey to verify contextual variables such as age, gender, education, income and experience with social media vs the level of privacy concerns. It was necessary to verify the impact of contextual variables as the existing literature concerns a large part of the American market, where medical data or social security number, which is a universal identifier of a person, are included in this collection. The survey involved 617 respondents from Poland, thus from the area covered by pan-European regulations and the process of creating a single market for digital services. The conclusions from the research allowed to select age and education as variables important for the selection of samples of respondents with a low and high level of privacy concerns, and for these two variables a correlation was shown. The verification of the impact of the factors at this stage was intended to facilitate the collection of responses from individuals who may have significantly different levels of concern. Then, in the last stage of the survey, the level of privacy concerns was verified in a survey of 861 respondents concerning perceived risks and inclination to disclose private information. An experimental element and a questionnaire part were used in the study. Respondents to the survey were selected taking into account the characteristics identified in the previous study, which enabled conclusions to be drawn for groups with low and high levels of privacy concerns.

The analysis of the results of the undertaken research allowed us to conclude that there is a positive correlation between the concerns about privacy and the conviction about the risk of their application in companies' operations. The sensitivity and amount of data that respondents were willing to disclose depended significantly on the level of risk perception. More than twice as many people giving all the data were in a group with a lower level of risk awareness. At the same time, to create a more complete picture of the views expressed by the respondents, we proposed that their attitudes towards the market use of the data should be described using four axes, covering control over the data, maintaining its confidentiality, security and the ability to identify the person. They reflect areas that, in the era of expanding the use of data-driven technology, are under special legal protection and the focus of the regulator. At the same time, such an analysis allows for additional insights into the attitude towards the application of particular customer information about values such as security, the possibility of delimiting the boundaries of the personal sphere or one's self, as well as confidentiality. This article is an attempt to analyse customer attitudes after the discussion on data collection and use by companies related both to the implementation of GDPR and numerous controversies concerning the Cambridge Analytica, the Internet of Things and client quality assessment systems, as well as building relationships through the analysis of various data. Apart from legal sanctions, organizations face reputational risks if they fail to ensure data privacy protection. To maintain customer trust today, a company must demonstrate that data privacy is one of its core values, as evidently customers demand it.

**Keywords:** GDPR, data privacy, privacy concerns, Artificial Intelligence, data security.

## References

- Acquisti, A., Gross, R. (2006). Imagined communities: Awareness, information sharing, and privacy on the Facebook. . *International workshop on privacy enhancing technologies* (pp. 36-58). Berlin, Heidelberg: Springer
- Acquisti, A., Brandimarte, L., & Loewenstein, G. (2015). Privacy and human behavior in the age of information. *Science*, 347(6221), 509-514.
- Barth, S., & De Jong, M. D. (2017). The privacy paradox—Investigating discrepancies between expressed privacy concerns and actual online behavior—A systematic literature review. *Telematics and informatics*, 34(7), 1038-1058.
- Goldfarb, A., Tucker, C. (2019). Digital economics. *Journal of Economic Literature*, 57(1), 3-43.
- Ichihashi, S. (2019). Online privacy and information disclosure by consumers. Available at SSRN 3112905.
- Kokolakis, S. (2017). Privacy attitudes and privacy behaviour: A review of current research on the privacy paradox phenomenon. *Computers & security*, 64, 122-134.
- Malhotra, N. K., Kim, S. S., Agarwal, J. (2004). Internet users' information privacy concerns (IUIPC): The construct, the scale, and a causal model. *Information systems research*, 15(4), 336-355

- Preibusch, S. (2013). Guide to measuring privacy concern: Review of survey and observational instruments. *International Journal of Human-Computer Studies*(71(12)), 1133-1143.
- Savage, S., & Waldman, D. M. (2013). The value of online privacy. Available at SSRN 2341311
- Spiekermann, S., Acquisti, A., Böhme, R., & Hui, K. L. (2015). The challenges of personal data markets and privacy. *Electronic markets*, 25(2), 161-167.
- Tsai, J. Y., Egelman, S., Cranor, L., Acquisti, A. (2011). The effect of online privacy information on purchasing behavior: An experimental study. *Information Systems Research*, 22(2), 254-268.
- Turow, J., Kingy, J., Hoofnagle, C. J., Bleakley, A., Hennessy, M. (2009). Americans reject tailored advertising and three activities that enable it. *Departmental Paper*. University of Pennsylvania: Annenberg School for Communication. Retrieved 10 2 2020, from [http://repository.upenn.edu/cgi/viewcontent.cgi?article=1138&context=asc\\_papers](http://repository.upenn.edu/cgi/viewcontent.cgi?article=1138&context=asc_papers)
- Zafeiropoulou, A. M., Millard, D. E., Webber, C., O'Hara, K. (2013). Unpicking the privacy paradox: can structuration theory help to explain location-based privacy decisions? *Proceedings of the 5th Annual ACM Web Science Conference* (pp. 463-472). ACM.

## KNOWLEDGE MANAGEMENT AND SUSTAINABLE DEVELOPMENT OF A FAMILY BUSINESS

*Barbara Rychta*, Szkoła Główna Handlowa w Warszawie, br86197@doktorant.sgh.waw.pl  
*Beata Żelazko*, Szkoła Główna Handlowa w Warszawie, bzelaz@sgh.waw.pl

### Extended Abstract

In the case of a family enterprise, succession is one of the key factors conditioning the implementation of the idea of sustainable development. Succession is the process of passing the company on to the next generation in the founding family. It is linked to the knowledge management process. The preparation of the successor for taking over power in a family enterprise involves a number of various activities that go beyond the scope of knowledge transfer. It is a long and complex process, the course of which is determined by the competences of potential successors. They constitute an important element of the intellectual capital of a family enterprise perceived as a kind of security for further functioning and development of business. Both in the search for the successor and in shaping his competences an important role is played by knowledge management by the senior. This mechanism has not yet been recognized. In Poland, the urgent need to undertake research into this sphere of functioning of a family enterprise is justified by the fact that the vast majority of Polish business entities are still in the hands of founders who have already reached retirement age or will reach this age in a short time. Their further action depends to a large extent on succession. In addition, given the large impact of the social, cultural, economic context and business traditions on the organizational form and sphere of family business management, the possibility of transposing solutions based on the results of analyzes carried out in other countries seems to be very limited. Meanwhile, there is a need to identify factors that affect the succession process. So far, the attention of Polish researchers has been focused on such issues as: succession attitudes [J. Klimek, K. Leszczewska, B. Żelazko, J. Sadkowska], competence of successors [E. Więcek-Janka], succession strategies [K. Safin, J. Pluta B. Pabjan], family order [A. Lewandowska], intellectual capital of a family enterprise [P. Pypacz, K. Peter-Bombik]. They are also documented attempts to determine the role of the successor in the development of a family business [A. Hadryś-Nowak, E. Więcek-Janka]. As for knowledge management in family businesses, attempts have been made to identify the relationship between the development of knowledge of employees of family businesses and such features as the size of the enterprise, market range, and type of business [I. Steinerowska-Streb], characteristics of the knowledge sharing process in a family enterprise [E. Szul]. It should be emphasized that the initiatives taken were fragmentary and most often involved a small group of economic entities. The authors of this study focused their attention on the impact of the knowledge management sphere on the sustainable development of a family enterprise through succession. The theoretical basis of their considerations was the concept of knowledge integration with the non-economic goals of the enterprise by J. C. Carr and J. K. Ring. As the main goal, they adopted the study and explanation of the mechanism for developing succession competences by means of activities undertaken as part of knowledge management in a family enterprise. On the basis of the conducted literature analyzes, as well as analyzes of the collected empirical material regarding the succession process in selected Polish family businesses and career paths of successors and potential successors, they concluded the role of knowledge management in implementing the concept of sustainable business development. In addition, they formulated recommendations regarding the use of selected knowledge management methods and tools. In the course of the study, the authors verified the thesis that succession competences, on which the continuation of a family business depends, are created primarily thanks to the skills and activities undertaken by the senior in the field of knowledge management (i.e. knowledge localization skills, knowledge sharing, motivating to acquire and develop knowledge). The effect of the study is to point out the importance of company management style as a factor that enables or limits the initiation of knowledge transfer and thus the start of the process of preparing a potential successor for taking over a family business, as well as - in the instrumental layer - for the need to deepen the knowledge of mentoring principles among senior members.

### References

- Carr J.C., Ring J.K. (2017), *Family Firm Knowledge Integration and Noneconomic Value Creation*, "Journal of Managerial Issues", Vol. XXIX Number 1, p. 30-56.
- Klimek J., Leszczewska K., Żelazko B., Sadkowska J. (2018), *Postawy sukcesyjne studentów kierunków ekonomicznych - aspekt teoretyczny i wyniki badania pilotażowego*, „Przedsiębiorczość i Zarządzanie” Tom 19, z. 7, s. 41-56.
- Lewandowska A. Lipiec J. (2018), *Konstytucje firm rodzinnych. W kierunku długowieczności*, Oficyna Wolters Kluwer, Warszawa.



- Pyplacz P., Peter-Bombik K. (2015), *Specyfika zarządzania kapitałem intelektualnym w firmach rodzinnych*, „Acta Universitatis Nicolai Copernici” Zarządzanie XLII, nr 2, s. 189-198.
- Safin K., Pluta J., Pabjan B. (2016), *Strategie sukcesyjne polskich przedsiębiorstw*, DIFIN, Warszawa.
- Steinerowska-Streb, I. (2017), *Zarządzanie wiedzą w przedsiębiorstwach*, „Przegląd Nauk Ekonomicznych”, nr 26, s. 103-116.
- Szul E., (2017), *Sharing Knowledge in Family Businesses: Selected Aspects*, T. 83, “Studies & Proceedings of Polish Association for Knowledge Management”, p. 73-82.
- Więcek-Janka E. (2014), *Sukcesorzy o własnych kompetencjach*, „Relacje – magazyn firm rodzinnych”, nr 1(9), 2015, s. 17-19.