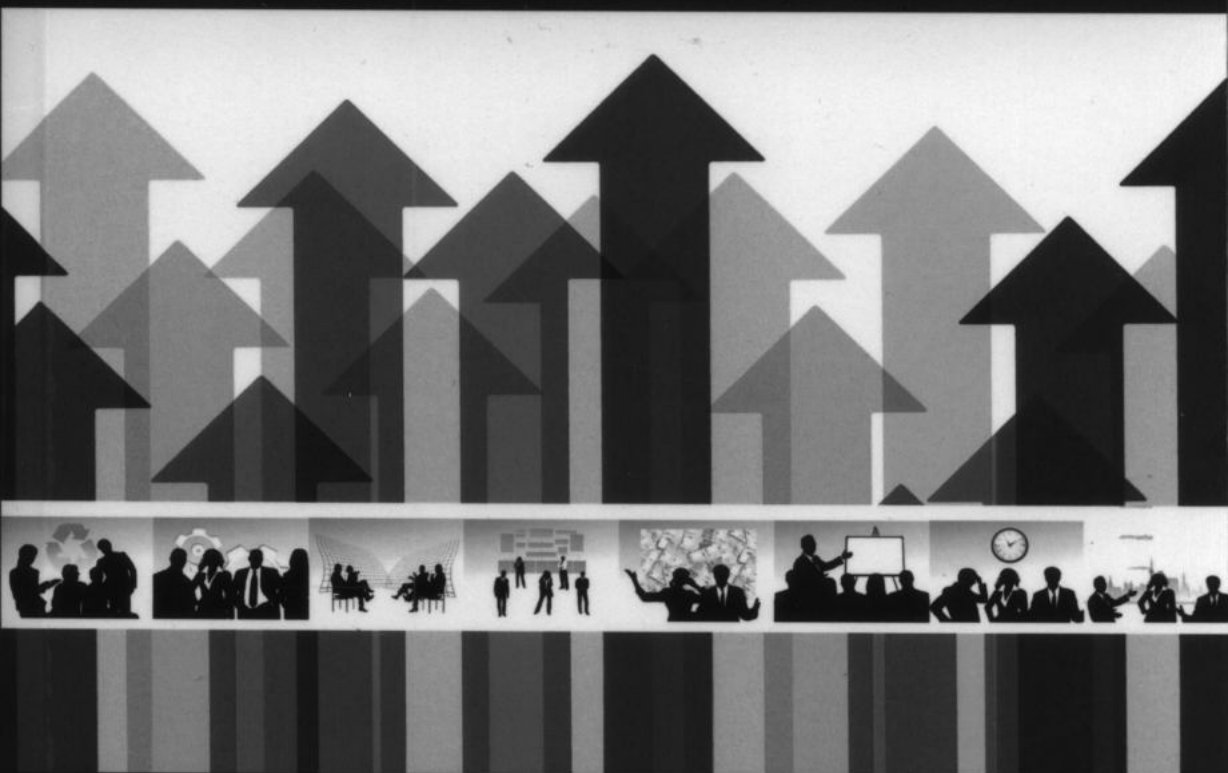


**SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS**

ORGANIZATION MANAGEMENT

No. 155



**ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE**



**Silesian University
of Technology**



GLIWICE 2022

CONTENTS

Foreword	7
1. John Ayieko AKOKO – New infrastructures in enhancing mobility in the city of Nairobi	9
2. Maria BAJAK – Beacons as the touchpoints on the customer journey	17
3. Robert BALCERZYK – Sustainable talent management during a pandemic COVID-19	31
4. Krzysztof FIRLEJ, Sebastian KUBALA – Innovativeness of the food industry enterprises in the European Union in conditions of changing economic situation	45
5. Anna GEMBALSKA-KWIECIEŃ – Conflict in work environment – its causes, prevention, methods of solving	59
6. Anna GEMBALSKA-KWIECIEŃ – Depression in work environment – its causes, symptoms and prevention	71
7. Marcin GOŁEMBSKI, Beata SKOWRON-MIELNIK, Grzegorz WOJTKOWIAK – Identification of human resource risk by managers and employees through the lens of the COVID-19 pandemic	83
8. Adam JANISZEWSKI, Agnieszka DZIUBIŃSKA – The adaptation of impression management and symbolic communication to counteract the loss of the company's legitimacy	101
9. Ireneusz J. JÓŹWIAK, Alicja M. KRUPA – Information technology system for establishing industry contacts in the process of architectural design	117
10. Marta JURCZYK, Marcin BAŃSKI, Aleksandra CIPORA, Marta JURECZEK, Wiktoria SZRAM – A study on the perception of quality of life by students of the Silesian University of Technology during the pandemic	127
11. Agnieszka KARMAN, Antonina GAVRYSHKIV – Circular economy from the perspective of SMEs sector	143
12. Norbert KAWĘCKI – Innovative technologies, human capital and the company's mission from management outlook	175
13. Anna KOSIERADZKA, Jacek WĘGRZYK, Wojciech SMĘTEK, Przemysław STRZELEC – Maximising performance of a hospital's HBOT laboratory using the theory of constraints	187
14. Agnieszka KRAWCZYK-SOŁTYS – The influence of personal competencies on organizational competences of Emergency Medical Units	209
15. Anna KWIOTKOWSKA – The interplay of resources, dynamic capabilities and technological uncertainty on digital maturity	221
16. Guangyan LUO, Katarzyna TWOREK – E-leadership as a booster of employees' dynamic capabilities influence on job performance	237

17. Malgorzata MARKOWSKA, Mariusz KRUCZEK, Malgorzata DESKA – The role of entrepreneurial discovery process in technological development of Silesian voivodeship	249
18. Ryszard MARSZOWSKI, Leszek DROBEK, Piotr HETMAŃCZYK, Malgorzata MARKOWSKA – Innovation as a determinant of current ecology	271
19. Ryszard MARSZOWSKI, Pawel LEJWODA – Demographic change and automation and their impact on the labor market. National research results	291
20. Ryszard MARSZOWSKI, Malgorzata MARKOWSKA, Tomasz SKOWRONEK – Development conditions of the health resorts in the Lower Silesian voivodeship. Selected socio-demographic aspects	311
21. Ryszard MARSZOWSKI, Tomasz SKOWRONEK – Mining municipalities and districts in a phase of demographic change in an equitable perspective of transformation	339
22. Rafał MATWIEJCZUK – From competency-based human resources management to competence-based strategic management	365
23. Anna MISZTAŁ – The entrepreneurial determinants of sustainable development of enterprises in emerging EU economies	375
24. Anna MUSIOŁ – Philosophy of values in leadership coaching: leader in selected types of leadership	393
25. Janet Awino OKELLO – The dilemmas of implementing smart mobility in Cape Town	405
26. Marcin OLKIEWICZ, Malgorzata CABAJ – The problem of burnout in the judiciary	413
27. Grażyna OSIKA – Industry 4.0: selected aspects of algorithmization of work environment	431
28. Paweł POSZYTEK – Erasmus+ project leaders' learning potential as a sustainability facilitator in the times of COVID-19 pandemic	451
29. Dominika SIWIEC, Andrzej PACANA, Lucia BEDNÁROVÁ – Approach to predict product quality considering current customers' expectations	461
30. Barbara SORYCHTA-WOJSCZYK, Jarosław JAMROZY – Application of the Balanced Scorecard in a selected mining services company	473
31. Jerzy STADNICKI, Andrii TEREBUKH – Placement prospects of the business in terms of pandemic threats	491
32. Olena STRYHUNIVSKA, Katarzyna GDOWSKA, Rafał RUMIN – Implementation of synergetic planning for factory	503
33. Iwona SZKUDLAREK – Internal conditions of professional aspirations	513
34. Krzysztof S. TARGIEL – Project success and communication with stakeholders	527
35. Anna WIATR – Leaders' support in organizational change	535
36. Malgorzata Z. WIŚNIEWSKA, Aleksandra KOWALSKA, Louise MANNING, Ewa MALINOWSKA, Piotr KOWALSKI – Consumption and home preparation of fermented vegetable products in Poland	557

SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION & MANAGEMENT

No. 156



ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE



Silesian University
of Technology



CONTENTS

Foreword	7
1. Krzysztof ANDRUSZKIEWICZ, Magdalena KASPROWICZ, Małgorzata MICHALCEWICZ-KANIEWSKA – Innovation in industrial enterprises in Poland in 2017-2019	9
2. Krzysztof ANDRUSZKIEWICZ, Magdalena KASPROWICZ, Małgorzata ZAJDEL, Jakub SKORUPA – Co-operation between Polish enterprises within the scope of innovation-focused activities in 2017-2019	23
3. Beata BĘDZIK, Sylwia GOŁĄB – Occupational burnout syndrome in the context of organization management	35
4. Małgorzata BLASZKE, Teodor SKOTARCZAK – Housing cooperatives in a competitive real estate market	55
5. Małgorzata BLASZKE, Aneta ZAREMBA – Environmental restrictions on agricultural properties located in protected area in the Western Pomeranian Voivodship	71
6. Łukasz BRZEZICKI, Irena ŁĄCKA – Cost efficiency of administrative service in public higher education in Poland	81
7. Mariusz CHMIELEWSKI, Joanna PIOCH, Renata PŁOSKA – Infrastructure projects and transport exclusion – case study of the Pomorska Kolej Metropolitalna ..	99
8. Katarzyna J. CHOJNACKA – Problems of sustainable economies during the pandemic	117
9. Wiesław CIECHOMSKI – Marketplace trade – selective development or inevitable decline?	127
10. Anna DZIADKIEWICZ, Ewelina SOKOŁOWSKA, Magdalena JERZEMOWSKA – Stakeholder identification as a determinant of sustainable project management	141
11. Grzegorz DZIEŻA, Marek SIKORA – The use of managerial dashboards in manufacturing companies	157
12. Marie GABRYŠOVÁ, Wiesław CIECHOMSKI – Cieszyn and Český Těšín mayors' management of the public communication between the municipal authorities and residents	169
13. Jakub GRABOWSKI – The role of information in planning regional and local development on the example of demographic data	183
14. Aleksandra GRZESIUŁ, Ewa FRĄCKIEWICZ – The attitudes of young Polish consumers towards energy costs of smart products	199
15. Edward JAKUBOWSKI – Tourist aspects of the Lubuskie voivodeship – the region's development potential	215
16. Urszula KĘPROWSKA – Analysis of virtual event marketing opportunities	227

17. Monika KLEMKE-PITEK – Model teacher training schools in Poland – diagnosis of teachers' needs in the light of the research	239
18. Ewa KORELESKA – The importance of the Servqual method in the management process of an ecological enterprise in the aspect of the Covid-19 pandemic	249
19. Malgorzata KOSZEMBAR-WIKLIK – Ecology in marketing of the city and attachment of residents – based on selected city	259
20. Joanna KOWALIK, Andrei TSIMAYEU – The role of educational projects in building an ecosystem of university startups	277
21. Malgorzata MICHALCEWICZ-KANIOWSKA, Malgorzata ZAJDEL, Maciej SCHULZ, Krzysztof ANDRUSZKIEWICZ – The use of renewable energy sources and their influence on the natural environment in selected European states ...	293
22. Anna MURAWSKA – Trends of change in the development of sustainable cities and communities in Poland in comparison with European Union countries	303
23. Lech NIEŻURAWSKI, Joanna NIEŻURAWSKA-ZAJĄC – Factors shaping job satisfaction of employees	321
24. Elżbieta PIERZGALSKA – Music in the awareness of retail trade customers	333
25. Malgorzata PINK, Magdalena WOJNAROWSKA, Joanna SZAREK, Krzysztof RUDZIŃSKI, Erica VARESE – Conventional or organic wine production? Establishing the hierarchy of values in the producer's decision-making model	347
26. Iwona POSADZIŃSKA, Patrycja SIEG, Marek JÓŻWIAK – New product concept development as an effect of revitalizing the Old Market in Bydgoszcz	375
27. Katarzyna RADECKA – Improving business maintenance processes using Lean Manufacturing tools – case study	395
28. Beata ROGOWSKA – Economic conditions of legal regulations during the Covid-19 pandemic	407
29. Robert ROMANOWSKI, Joanna LEMAŃCZYK, Julianna STASICKA – Factors' exploration of the innovative delivery formats' development in e-grocery	425
30. Robert ROMANOWSKI, Joanna LEMAŃCZYK – The dynamics of new delivery forms development of grocery products in Poland – Frisco case study	441
31. Marcin SPYCHAŁA – Differentiation of the regional development in the Czech Republic, Slovakia and Poland	457
32. Łukasz STRĄCZKOWSKI, Piotr BARTKOWIAK – Poznań primary housing market: changes and sustainable development	471
33. Aleksandra SZTUK, Paweł WANIOWSKI – Forming of Polish regions' visual identification system. A qualitative research approach	485
34. Joanna TOCZYŃSKA – Financial and economic analysis of infrastructure transport projects with the participation of EU funds	497
35. Izabela WIELEWSKA, Marzena KACPRZAK – Smart village – using new opportunities in the development of rural areas	511
36. Karolina WILEŃSKA, Marek KRANNICH – Organizational culture of a judicial unit	523

37. Mateusz ZACZYK – Distributed ledger technology for supply chain and public governance as a response for sustainability issues	539
38. Sławomir ZAWISZA, Izabela WIELEWSKA, Przemysław TOŁCZYK – The use of the European Union funds for the development of agricultural farms in Pomorskie Province of Poland	557
39. Dagmara K. ZUZEK, Monika ODLANICKA-POCZOBUTT – Eco-innovations as an opportunity for sustainable development of enterprises based on the example of Małopolskie Province	575

Presented number of Silesian University of Technology. Scientific Papers. Organization and Management Series. Contemporary management. The number consists of 39 papers published by international authors.

The papers presented in the number concentrate on many topics connected with organization and management. The authors of paper in their research focus on following topics: innovation management, human resource management, marketing, environmental management, public management, sustainable economy, information management, Industry 4.0, Smart City, quality management, production management, organizational culture, logistics and finance.

Radosław Wolański

Beata Skotnicka-Zatuchian

SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION & MANAGEMENT

No. 157



ESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE



Silesian University
of Technology



GLIWICE 2022

CONTENTS

Foreword	7
1. Dorota BALCERZYK, Dariusz KARCZEWSKI – The competencies of a manager as a factor contributing to the success of a company in the VUCA environment	9
2. Agnieszka BARCIK – Selected aspects of crisis management in the workplace with regard to pandemic challenges	25
3. Beata BARCZAK, Mariusz SOŁTYSIK, Szymon JAROSZ, Małgorzata ZAKRZEWSKA, Artur KOZŁOWSKI – The impact of digital transformation on changes in business models. Will Covid-19 accelerate change?	45
4. Jan BETTA, Joanna IWKO – Quality of scrum team management using fuzzy numbers	63
5. Radosław DROZD – Health safety of bread in small bakeries	83
6. Piotr DZIWIŃSKI – Leadership and managing stress in the organization	97
7. Bożena GAJDZIK, Michał GREBSKI – Human factor in Industry 4.0: about skills of operators in steelworks 4.0	119
8. Bożena GAJDZIK, Grzegorz KOPEĆ – General assumptions for project management in Industry 4.0	133
9. Michał Eva GREBSKI, Bożena GAJDZIK – Psychological safety of employees (necessity or option)	145
10. Marzena HAJDUK-STELMACHOWICZ, Paulina BŁECH, Dominika SIWIEC, Lucia BEDNÁROVÁ, Andrzej PACANA – Instruments used to improve the betterment of products quality	157
11. Szymon JAROSZ, Mariusz SOŁTYSIK, Małgorzata ZAKRZEWSKA, Karol WŁODYKA, Czesław MESJASZ, Artur KOZŁOWSKI – Innovation and sustainability as a crucial trend in energy sector project management – literature review	173
12. Robert KAMIŃSKI – Project manager type and project success	195
13. Włodzimierz KAMIŃSKI – Application of risk management in day-to-day operation of sea-going vessels	207
14. Włodzimierz KAMIŃSKI – Implementation of energy efficiency management in shipping companies and ships in operation	223
15. Włodzimierz KAMINSKI, Marcin SZCZEPANEK – Analysis of hot work procedures applied on board sea going vessels required by safety management system	237
16. Włodzimierz KAMIŃSKI, Marcin SZCZEPANEK – Risk management as a shipping companies tool for safe management of sea-going vessels	255
17. Norbert KAWĘCKI – Historical aspects of management, technology, innovation and economic growth in Great Britain	267

18. Norbert KAWĘCKI – The global automotive consumer – case study	281
19. Aleksander LOTKO – The identity of the selected automotive brand based on the analysis of advertisements	293
20. Mariola MAMCARCZYK – Cultural and sports activity of seniors in the Małopolskie voivodeship	309
21. Ryszard MARSZOWSKI, Piotr KUCHARSKI, Anna PILCH – Mining municipalities and districts in Poland in the perspective of equitable transformation	327
22. Ryszard MARSZOWSKI, Piotr KUCHARSKI, Anna PILCH – Pszczyna powiat in the perspective of a green economy. Case study in well-being and living research ...	345
23. Katarzyna OLEJNICZAK-SZUSTER, Katarzyna ŁUKASIK – Perception of sustainable sport sponsorship in terms of sustainable development and corporate social responsibility in the era of the Covid-19 pandemic	363
24. Andrzej PACANA, Karolina CZERWIŃSKA, Michalene Eva GREBSKI – Analysis of development processes effectiveness using KPI	387
25. Mieczysław PAWŁOWSKI, Łukasz WIECHETEK – Customer engagement projects within the organizational context: a case of B2B e-commerce	397
26. Jerzy RÓŻAŃSKI, Justyna BOGOŁĘBSKA – Capital structure of enterprises in the process of internationalization	417
27. Adam SAMBORSKI – Business targets and corporate governance models	431
28. Urszula SAMOTYJA, Magdalena ANKIEL – Shelf-life labelling system in the opinion of food market participants in Poland	447
29. Maria SCHULDERS – Political instability as a risk factor for PPP project success – a case study of the Hungarian M1/M15 motorway project	469
30. Katarzyna SIENKIEWICZ-MAŁYJUREK – Social capital and resilience of public governance networks	483
31. Dominika SIWIEC, Paulina BEŁCH, Marzena HAJDUK-STELMACHOWICZ, Andrzej PACANA, Lucia BEDNÁROVÁ – Determinants of making decisions in improving the quality of products	497
32. Kinga SMOLIŃSKA, Karolina JÓZEFOWICZ, Lucia BEDNÁROVÁ – European integration and development of the EU-10 countries in view of selected social phenomena	509
33. Julianna STASICKA, Igor SZYMAŃSKI – Employee satisfaction – empirical study among medical record clerks in Poland	523
34. Joanna STASZEWSKA – The impact of energy transition on the changes to the energy company's business model	537
35. Waldemar SZCZEPANIAK – Success of the project implemented in a consortium – analysis of key factors from the enterprises point of view	559
36. Bożena SZCZUCKA-LASOTA, Kamil WALIGÓRA, Tomasz WĘGRZYN, Łukasz WSZOŁEK – Initial assessment of the quality of road surfaces	571
37. Katarzyna SZUPER – Methods of managing innovation in the enterprise	579

38. Tomasz TROJANOWSKI, Paweł Tadeusz KAZIBUDZKI – Survey of society expectations towards sustainable 4P in the new public management perspective	589
39. Agnieszka TYLEC – ESG reporting framework in Poland – the current state of affairs and perspectives	609
40. Tomasz WĘGRZYN, Bożena SZCZUCKA-LASOTA, Kinga KUROWSKA-WILCZYŃSKA, Adam DORING – New concept of gas mixtures for welding high-strength steel S960 MC	623
41. Małgorzata Z. WIŚNIEWSKA, Tomasz GRYBEK, Piotr GRUDOWSKI – The protective measures against SARS-COV-2 infection in the seafood company from the perspective of the employees	631
42. Małgorzata WIŚNIEWSKA, Ewa MARJAŃSKA, Piotr GRUDOWSKI – Just culture maturity questionnaire validation in a Polish hospital	649
43. Radosław WOLNIAK – Management of engineering teams	667
44. Radosław WOLNIAK – Project management in engineering	685
45. Małgorzata ZAKRZEWSKA – Sustainable project management concept development and research directions review	699
46. Wojciech ZALEWSKI, Magdalena OSIŃSKA, Mirosława ŻUREK – Do telematics technologies help to manage road transport enterprises? Evidence from SME in Poland	723
47. Paulina ZWOLENIK, Andrzej PACANA, Lucia BEDNÁROVÁ – Improvement of the machine control process using the work standardisation card	743

SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION & MANAGEMENT

No. 158



ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE



Silesian University
of Technology



GLIWICE 2022

CONTENTS

Foreword	7
1. Ewa BADZIŃSKA – Exploring an entrepreneurial ecosystem with regard to business-science-government cooperation: preliminary research findings	9
2. Izabela BAGIŃSKA – Tax law as viewed by entrepreneurs	27
3. Agnieszka Izabela BARUK – Hierarchy of benefits achieved by final purchasers thanks to cooperation with offerors vs. the environment and specifics of this cooperation	43
4. Milena BERA, Wojciech LEWICKI, Agnieszka BRELIK – Optimization of energy cogeneration processes of district heating systems based on biogas sources – case study of a municipal area	59
5. Michał BOCZEK – Judicial reporting as a guarantor of the rule of law	73
6. Justyna BOGOŁĘBSKA – Signaling theory in dividend policy	85
7. Anna BUDZIK – The need of supervision and control over transport of slaughter animals as the part of growing awareness of animal rights and sustainable development	95
8. Mateusz BYCZYK – The core of team communication. Trend, organization value and affection on management	121
9. Monika CHŁAD – Analysis of a company's activity in terms of distribution costs ...	137
10. Iwona CZERSKA – Psychosocial consequences of the Covid-19 pandemic in the context of psychiatric care	147
11. Krzysztof FIRLEJ, Sebastian KUBALA – Influence of the production direction of European Union farms on the level of financial liabilities	163
12. Małgorzata GAJOWIAK – Age diversity management in small and medium enterprises from the Poznań powiat – results of the study	175
13. Sandra GRABOWSKA – Key components of the business model in an Industry 5.0 environment	191
14. Piotr GRAJEWSKI, Piotr SLIŻ, Dorota JENDZA, Jędrzej STRUMIŁŁO – The concept of multi-hierarchical assessment of process orientation implementation – production organization experience	201
15. Marcin JAKUBIEC – Improvement of the production process using Lean Management – case study	229
16. Zdzisław JEDYNAK – Choosing a supplier of fuels and energy in large-format retail enterprises	243
17. Przemysław JURA – Improving the eco-efficiency of manufacturing processes with the use of Industry 4.0 technologies in the circular economy	257

18. Jadwiga KACZMARSKA-KRAWCZAK – The influence of innovations co-financed from the European Union funds on the development of health care institutions – a regional approach	267
19. Elżbieta KARAŚ, Katarzyna MAZUR-WŁODARCZYK – Organizational culture – Asian concepts of kaizen, gongfu and xiushen	281
20. Magdalena KRACZLA – The personality maturity of managers and their effectiveness in performing their role	295
21. Agnieszka KRAWCZYK-SOŁTYS, Laura PŁATKOWSKA-PROKOPCZYK – Modelling of managerial competences in health care units – preliminary assumptions ..	317
22. Anna KWIECIEŃ, Magdalena WÓJCIK-JURKIEWICZ – Corporate governance as a tool supporting management during a crisis	337
23. Anna KWIECIEŃ – The role of human capital in recovering from crisis	355
24. Andżelika LIBERTOWSKA – Correlations between trust, cooperation, norms and values in high-tech enterprises in Wielkopolska region	369
25. Paulina MAJOR, Seweryn SPAŁEK – Communication and building positive relationships within project teams in non-governmental organizations	383
26. Izabela MARZEC – Leader-Member Exchange and learning climate in increasing employee motivation: a post-pandemic perspective	395
27. Szymon MICHALAK, Paweł BARTKOWIAK, Magdalena ANKIEL, Tomasz OLEJNICZAK, Magda STACHWIAK-KRZYŻAN – Determinants of participation in collaborative fashion consumption – provider perspectives	413
28. Jadwiga NYCZ-WRÓBEL – Waste management in Polish organisations participating in EMAS	443
29. Agnieszka OCIEPA-KUBICKA – The impact of the pandemic on the functioning of business models with an example of selected family businesses	461
30. Klaudia PANASEWICZ – Perspective of future use of autonomous robots in e-commerce	473
31. Judyta PRZYŁUSKA-SCHMITT, Dorota JEGOROW, Jaroslava BUČKOVÁ – Investments in gold or cryptocurrencies? Safe haven during the Covid-19 pandemic ...	489
32. Beata REFORMAT – Socially responsible innovations and sustainable development of retail chains in Poland	501
33. Olha RESHETNIKOVA, Joanna DYCZKOWSKA, Marcin OLKIEWICZ – The concept a logistic network organization Lviv-Rzeszow	513
34. Aleksandra RZEPECKA – Motivation of retired officers of the Polish Army to take up work after the service	525
35. Sebastian SANIUK, Sandra GRABOWSKA – Development of knowledge and skills of engineers and managers in the era of Industry 5.0 in the light of expert research	537
36. Izabella STEINEROWSKA-STREB, Grzegorz GŁÓD – Innovation of small and medium enterprises in times of Covid-19	549
37. Agnieszka STRZELECKA – Evaluation of the innovation activities of companies in the competitive EU market – external factors	563

38. Bożena SZCZUCKA-LASOTA, Tomasz WĘGRZYN, Maciej KAZANOWSKI, Łukasz WSZOLEK – Influence of selected parameters on the quality of technical tests braking system	589
39. Bożena SZCZUCKA-LASOTA, Tomasz WĘGRZYN, Maciej KOWAL, Piotr CYBULKO – Elimination of inconsistencies in the process of expanding the fleet of electric buses	599
40. Anna TOMASZUK – Constructs of quality relations in cooperation of innovative enterprises with scientific and research and development institutions	607
41. Krzysztof WALISZEWSKI – Managing personal finance by robo-advice users during the Covid-19 pandemic and in the post-pandemic period. A comparative analysis of Poland and Slovakia	623
42. Anna WASILUK – On the way to turquoise organizations and turquoise leadership ...	647
43. Monika WAWER – Student internships as a tool for assessment of the employer brand	663
44. Łukasz WIECHETEK, Marek MĘDREK – Improving the university recruitment process with web analytics	679
45. Paweł WITKOWSKI – Management of the association formation process	697
46. Anna WOLAK-TUZIMEK – Identification of the main components of the competitive potential of enterprises operating in crisis conditions	713
47. Agnieszka ZIELIŃSKA – Knowledge sharing behaviors in virtual teams – results of empirical research	727

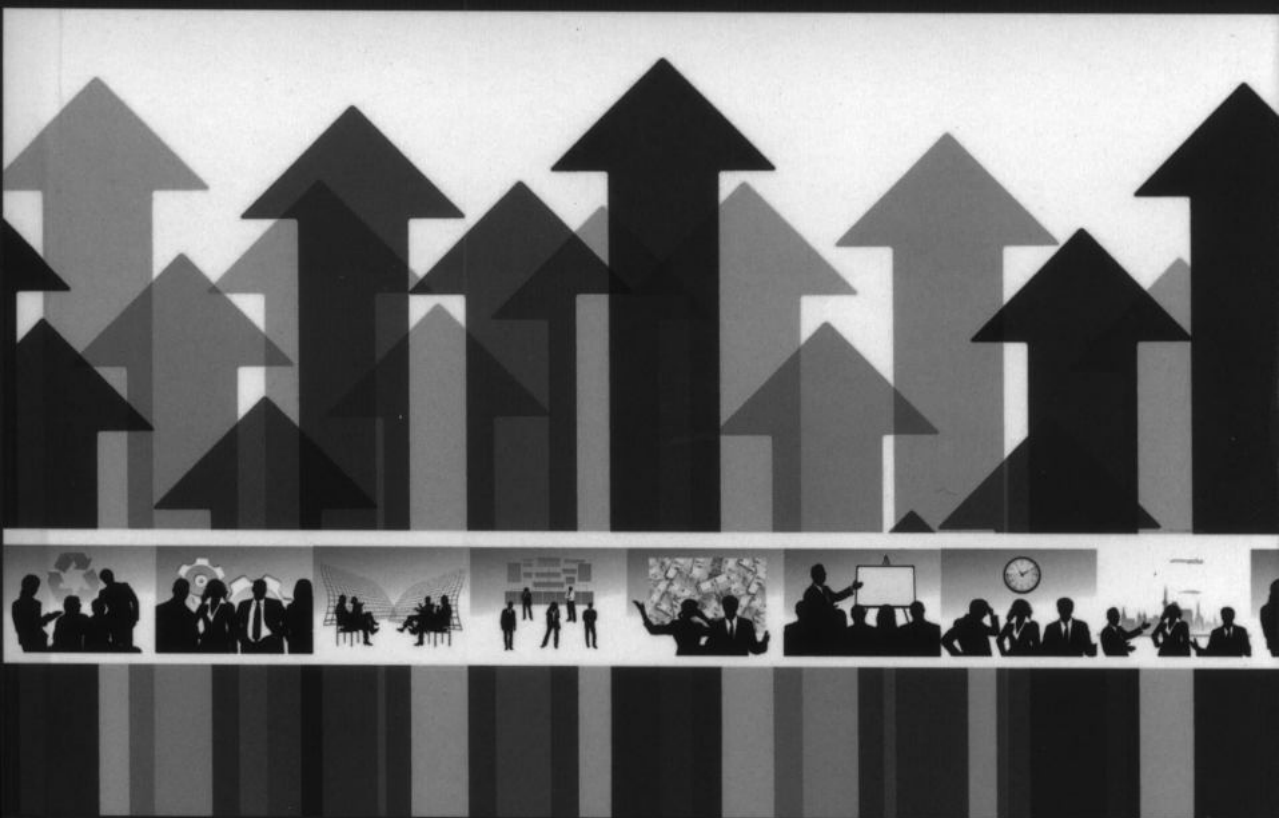
Polish Journal of Management

Polish Journal of Management

SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION & MANAGEMENT

No. 159



ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE



Silesian University
of Technology



GLIWICE 2022

CONTENTS

Foreword	7
1. Anna ALBRYCHIEWICZ-SŁOCIŃSKA – Work environment management and sense of health security among healthcare professionals	11
2. Ewa BECK-KRALA – Employee well-being from the perspective of human resources professionals	27
3. Marcin BERLIK – Identification and evaluation of ergonomic inconsistencies in the manner of performing control activities by the glider pilot	39
4. Magdalena BSOUL-KOPOWSKA – Communication with patients and the quality of medical services (on the example of handling patients at the reception desk)	53
5. Felician BYLOK – The role of leadership in stimulating the growth of vertical trust in companies	67
6. Wiktoria CZERNECKA – Input data of scenarios for the implementation of ergonomic projects in a manufacturing company	81
7. Daniel GAJDA – Implications of talent management: impact of development practices on the work engagement of talented employees	91
8. Magdalena GRACZYK-KUCHARSKA – The role of green competencies for the sustainability manufacturing grow: preliminary research	105
9. Maria JABŁOŃSKA-WOŁOSZYN, Marzena PIOTROWSKA-TRYBULL, Stanisław SIRKO – Improving the technical training process in the Armed Forces – research report	119
10. Wojciech JARECKI – Studying "management" as a challenge to develop your own competences	135
11. Monika KLEMKE-PITEK – Support for teachers' competences in the teacher training school model – a case study	143
12. Jolanta KORKOSZ-GĘBSKA, Katarzyna MODRZEJEWSKA, Dariusz PARZYCH – Social innovation in solving significant and complex problems of the Mazovia region	157
13. Elżbieta KOWALCZYK – Digital competences of generation Z in the area of work and professional development	169
14. Grażyna KRZYMINIEWSKA – A methodology to research competencies of the young generation in the economy of the future. A proposal of new research tools	183
15. Marek KUNASZ – The impact of personality traits of individuals on organizational silence in its four forms	193
16. Anna LEMAŃSKA-MAJDZIK – Digital competences of human resources of organizations and competitiveness of SME enterprises	203
17. Anna LIPKA, Monika KARCZEWSKA – Perception of pandemic illustrations in the times of homo videns and heightened health risks	215

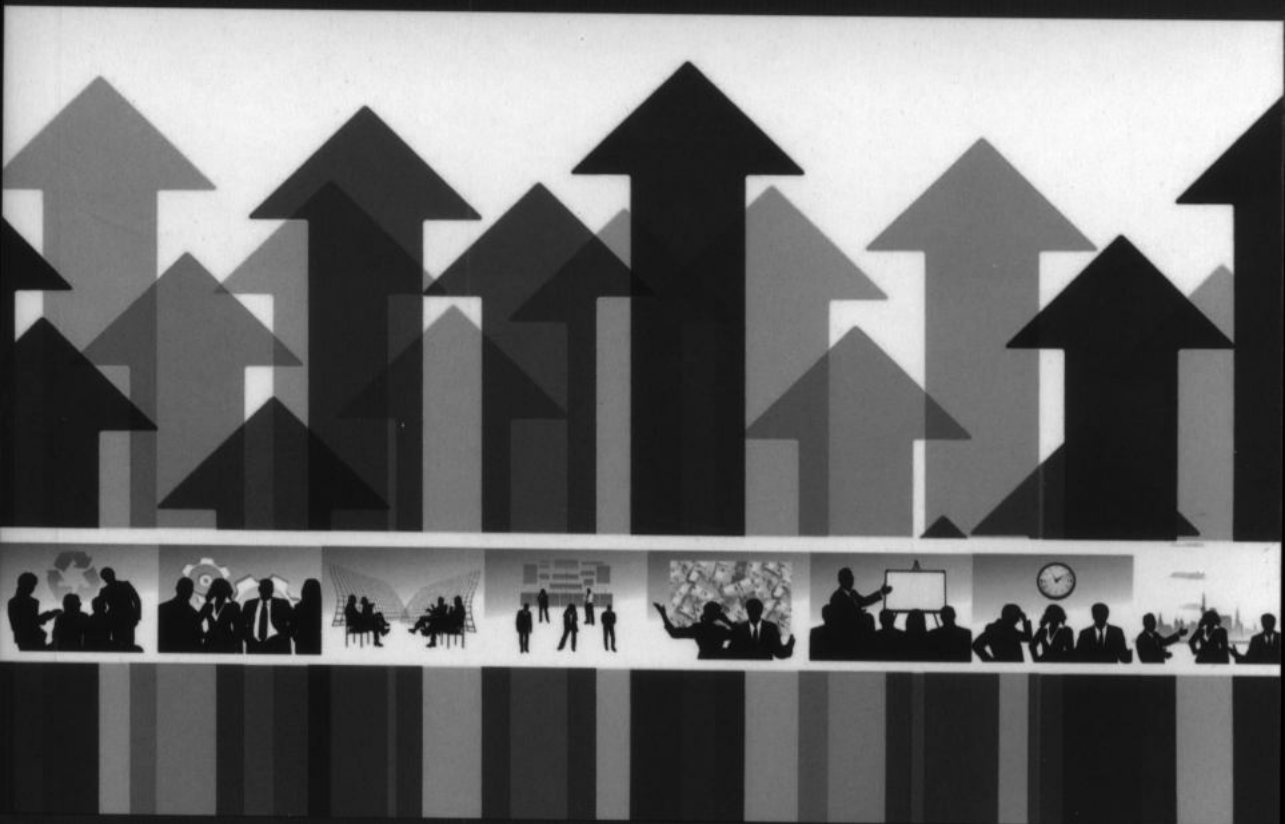
18. Maria MAJEWSKA, Joanna NIEŻURAWSKA-ZAJĄC – The impact of the Covid-19 pandemic on the expectations of employees belonging to generation Z towards the incentive system	229
19. Agnieszka MALKOWSKA, Mariia VIKHASTA – Evaluation of internal communication of an organisation on the example of a student self-government	243
20. Urszula MARKOWSKA-PRZYBYŁA – Internal social capital of enterprises in Poland	255
21. Marta MISZCZAK – Leader's digital competence in motivating employees during the Covid-19 pandemic – research findings	269
22. Teresa MIŚ, Dariusz ZAJĄC – Barriers to the purchase of organic food from local producers	281
23. Joanna M. MOCZYDŁOWSKA – Women managers' professional career versus motherhood	293
24. Dorota MOLEK-WINIARSKA, Katarzyna MIKOŁAJCZYK – Case studies of well-being practices in companies during the pandemic	305
25. Malgorzata OKRĘGLICKA – Digitization of business activities and human resources orientation on sustainable consumption and production	317
26. Katarzyna OLEJNICZAK-SZUSTER – Is employee diversity relevant? Assessment of the impact of diversity management on soft and hard aspects of management	327
27. Iwona OLEJNIK – The concept of lifelong learning – managers' expectations and youth attitudes	337
28. Agata PIETROŃ-PYSZCZEK, Magdalena BOROWSKA – Employee competencies as a factor conditioning the application of empowerment	351
29. Jarosław POTERAŁSKI – The ESF support for the improvement of workers' qualifications at a regional level	365
30. Olena SHELEST-SZUMILAS – Digital competences of young people: the results of a study of secondary-school students in the Greater Poland Province	377
31. Malgorzata SIDOR-RZĄDKOWSKA – VUCA or BANI? – The challenges of human capital management in post(?)pandemic times	393
32. Agnieszka SOKOŁOWSKA-DURKALEC – Socially irresponsible actions in the economic area towards employees in a small enterprise	403
33. Aneta SOKÓŁ – Creative life orientations of employees of creative organisations ...	415
34. Izabela STAŃCZYK, Magdalena M. STUSS – AL tools applied in HR 4.0 – research findings	425
35. Jolanta TARAPATA – Modern technological means used by modern companies in marketing communication	437
36. Anna TOMASZUK – Determinants of the relationship quality in the perspective of the enterprise – business environment institutions	449
37. Anna WALIGÓRA – Social entrepreneurship of the New Generation in the New Economy	463

38. Małgorzata WESOŁOWSKA – Long-term emigration of Polish women from the perspective of motives and consequences in the professional field	475
39. Grzegorz WOJTKOWIAK – Implementation and use of remote work tools	489
40. Katarzyna ZADROS – Social responsibility in human resources management in public institutions during Covid-19 pandemic – a Smart City perspective	501
41. Agnieszka ŻARCZYŃSKA-DOBIESZ, Barbara CHOMĄTOWSKA, Iwona JANIĄK-REJNO, Andrzej STRUGAŁA – Generation Z in uncertain time of Sars-Cov-2 – how do they feel far away from office?	513

SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION & MANAGEMENT

No. 160



ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE



Silesian University
of Technology



GLIWICE 2022

CONTENTS

Foreword	7
1. Peter AKPAMAH, Andrea MATKÓ – Trial of distributed leadership in institutional management	9
2. Maria BAJAK, Paweł MAJERCZYK – Identification of areas for optimising marketing communications via AI systems	25
3. Maria BAJAK, Łukasz SPENDEL – Building consumer engagement and loyalty while traversing the customer journey in the online space	39
4. Dorota BALCERZYK, Mikołaj ŻELAZNY – Competences of the project manager ..	53
5. Yuliia BASHYNSKA – Small Carpathian Circle as the most significant infrastructure project in western Ukraine	71
6. Ewa BILEWICZ – The impact of external debt on Poland's economic growth	83
7. Agnieszka BITKOWSKA, Piotr KORNETA, Liliana HAWRYSZ – Business processes and performance management of medium-sized outpatient clinics through the Sars-Cov-19 period. A case study from Poland	95
8. Rafał BUŁA, Bartłomiej JABŁOŃSKI – Investing in dividend vs. non-dividend stocks – efficiency assessment using fractal measures	109
9. Felicjan BYŁOK – Social capital as a factor of development of a smart city	129
10. Mateusz CHŁAD – Optimization of transport processes in an enterprise by the SMED method	149
11. Patryk FELICZEK, Justyna GÓRNA, Aleksandra BUSZCZAK – Handling of medical devices' customer complaints on the example of companies based in Poland	159
12. Magdalena FOLWARCZNY-DRAGA – Directions for improving reports on environmental costs by mining companies	173
13. Bożena GAJDZIK – Steel company in Industry 4.0: diagnosis of changes in direction to smart manufacturing based on case study	193
14. Andrzej GAZDA, Dominika SIWIEC, Andrzej PACANA – Analysis of pro-environmental awareness and approach to making decisions in the context of sustainability	213
15. Adam GUMIŃSKI, Marek KUREK – The concept of the main dewatering model in a coal mine considering technical, managerial, and economic criteria	227
16. Nataliia HUSIATYNSKA, Mykola HUSIATYNSKYI, Tetiana CHORNA – Analysis of the main trends in the hotel and restaurant industry of Ukraine under the conditions of the Covid-19 pandemic	245
17. Anastasiia HUSIATYNSKA, Iryna SAMOILOVA – Modern aspects of civil society interaction with local government bodies	261

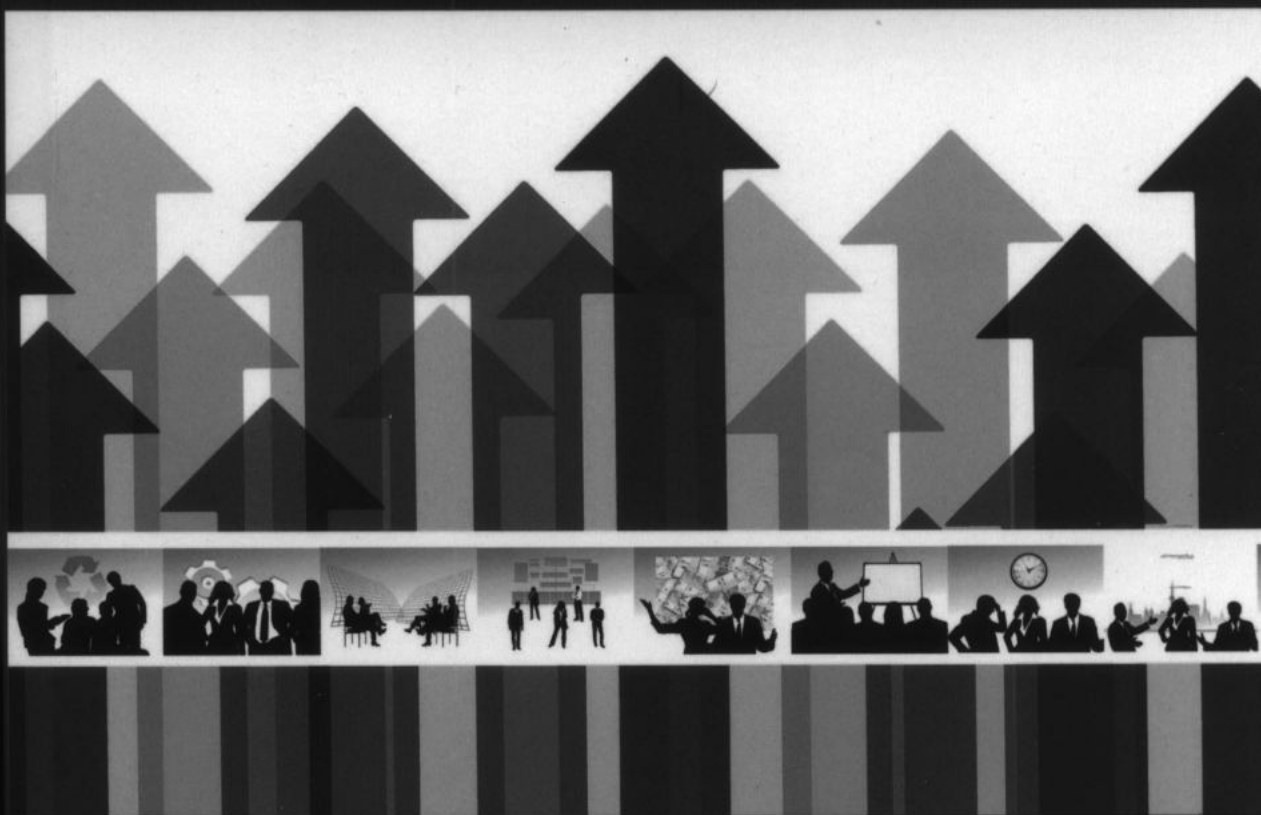
18. Judyta KABUS – Managing the distribution process with an example of the FMCG market	275
19. Jacek KARCZ – Assessment of investment opportunities for distribution center location in Poland	287
20. Ivan KATRENCIK, Monika ZATROCHOVA – A study of household investment behavior in Slovakia due to the Covid-19 pandemic	301
21. Leszek KAZMIERCZAK-PIWKO, Arkadiusz ZAGAJEWSKI, Tomasz ŁAGUTKO, Marcin SIKORA – The development of the e-commerce market as a challenge for maritime transport and shipping	315
22. Marcin KOŁODZIEJSKI – Permit to work and risk analysis as an element of safety management systems applied on oil and gas installations	327
23. Piotr KORDEL – Entrepreneurial digital strategy as managerial tool for building smart hospital	347
24. Jolanta MAJ – Satisfaction and performance of Generation Z in virtual and face-to-face teams	363
25. Ewa Wanda MARUSZEWSKA, Monika EISENBARDT, Maciej TUSZKIEWICZ – Covid pandemic as a disruptive factor enhancing ICT use in social sciences' teaching practices	383
26. Rafał MATUSIK – The concept of compulsory governance structure	409
27. Katarzyna MAZUR-WŁODARCZYK, Iwona DROSIK – Chinese goldsmithing – luxury craft or luxury products?	429
28. Bartosz MICKIEWICZ, Joanna KOWALIK, Andrei TSIMAYEU – Problems in decision-making by young people to participate in entrepreneurial education programs	443
29. Csilla MIZSER – Conflict management and leadership styles. Comparative case study with future leaders	455
30. Anna MUSIOŁ, Mariola PARUZEL-CZACHURA – Know yourself: psychological concepts of the human being applied in helping professions using the example of coaching	469
31. Katarzyna OLEJNICZAK-SZUSTER, Michał DZIADKIEWICZ – The perception of the municipal housing manager's CSR activities in the context of its stakeholders	487
32. Zaid OWAIS – Agile project management as a change management tool in dynamic construction projects, a necessity to coop with projects' increasing complexity and uncertainty	499
33. Szymon PAWLAK – The impact of Industry 4.0 on the employment structure in production plants	515
34. Łukasz SIENKIEWICZ – Cultural determinants of evidence-based human resources management: a cross-country analysis	527
35. Łukasz SKIBA – E-government – socially expected or officially imposed?	547

36. Jan Krzysztof SOLARZ, Krzysztof WALISZEWSKI – From social distancing to the financial and medical services disintermediation during the Covid-19 pandemic	561
37. Mirosław SOLTYSIAK, Dariusz ZAJĄC – Diversification of the financial situation of territorial self-government units in terms of changes in the number of inhabitants (example of eastern and western regions of Poland)	577
38. Kata Rebeka SZUCS, Regina Zsuzsanna REICHER – Mobile health application evaluation possibilities	595
39. Dorota TENETA-SKWIERCZ, Małgorzata SOBIŃSKA, Piotr BIAŁOWĄS – The importance of teachers' cultural intelligence for the internationalization process of higher education	613
40. Tomasz WĘGRZYN, Bożena SZCZUCKA-LASOTA, Adam DÖRING – Welding of 690 QL steel for the construction of vehicles and antenna elements	631
41. Radosław WOLNIAK – Project management standards	639
42. Radosław WOLNIAK – Sustainable engineering	655
43. Marzena WÓJCIK, Wiesław ŁUKASIŃSKI – Challenges determining the implementation of remote work in the opinion of the representatives of Generation Z in Poland	669
44. Wojciech ZALEWSKI, Magdalena OSIŃSKA, Lidia CHYLEWSKA-BARAKAT – Covid-19 pandemic as a factor increasing truck drivers' stress	685

SILESIAAN UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION & MANAGEMENT

No. 161



ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE



Silesian University
of Technology



GLIWICE 2022

CONTENTS

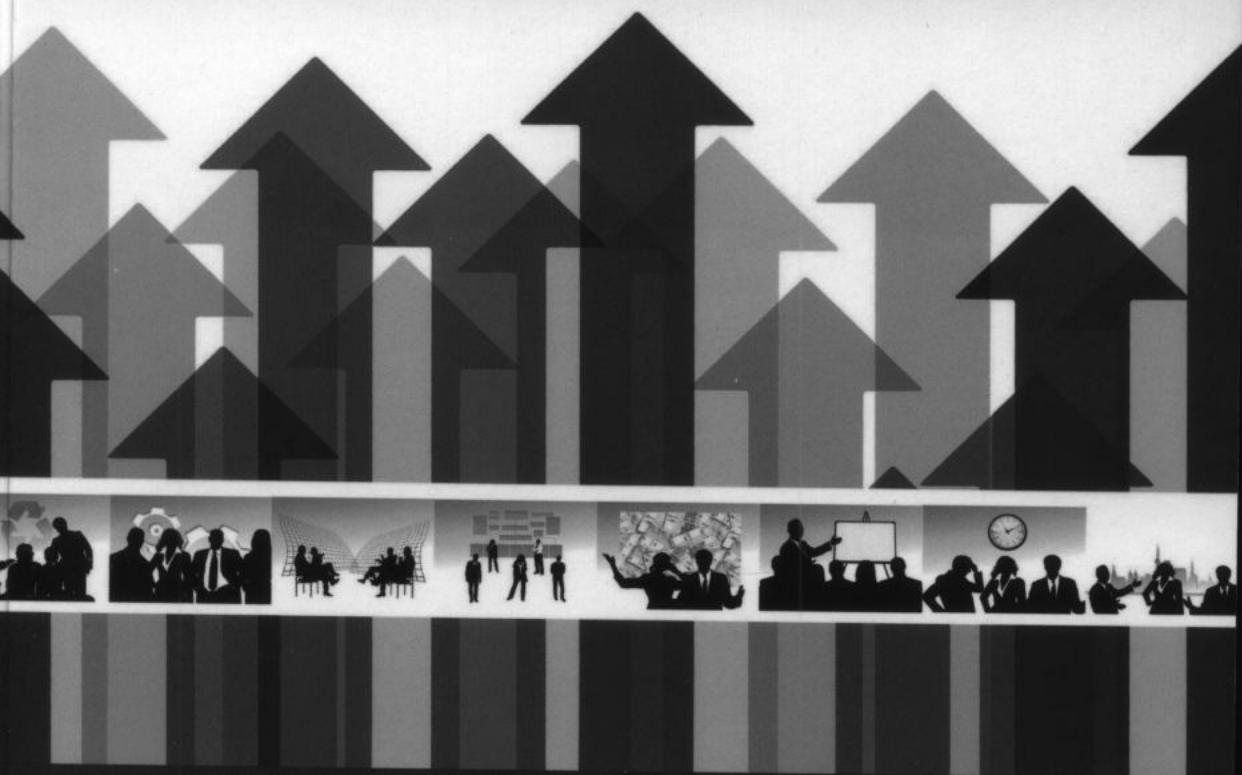
Foreword	5
1. Anna GEMBALSKA-KWIECIEŃ – Selected methods of project and data analysis ..	7
2. Beata HYSYA, Aneta KARASEK – Tourists' motivations for using social media	23
3. Izabela JONEK-KOWALSKA, Tomasz KURDELSKI – The usage of renewable energy sources by countries in the Visegrád Group. Diagnosis and environmental effects	37
4. Marcin KOŁODZIEJSKI, Zbigniew MATUSZAK, Iwona ŻABIŃSKA – Possibilities of using hydrogen buses in urban transport	53
5. Agnieszka KOWALSKA-STYCZEŃ, Janusz SIWY – Demand side respond in the context of renewable energy prosumers	65
6. Patrycja KWOSEK, Mariusz J. LIGARSKI – Quality of life assessment in terms of residents – example of a large city	79
7. Mariusz J. LIGARSKI – How cities measure quality of life – concept of the second stage of the research	97
8. Zbigniew MATUSZAK, Ewelina ZŁOCZOWSKA, Iwona ŻABIŃSKA – The impact of selected cooling systems on the urban natural environment	111
9. Krzysztof MICHAŁSKI – Study of the impact of the pandemic on the functioning of micro-enterprises in the Silesian voivodeship	121
10. Anna MICHNA, Joanna KRUSZEWSKA – Study on key competences for the implementation of Industry 4.0 solutions	137
11. Elżbieta MILEWSKA – Functionality analysis of the software supporting the production of spare parts used in the complaint repair: a case study	155
12. Anna MULARCZYK, Iwona ZDONEK – Development of solar energy in Poland in the context of European countries	171
13. Tomasz NAWROCKI – Human capital and its efficiency on the example of industrial and new technologies companies	187
14. Tomasz OWCZAREK, Adam SOJDA, Maciej WOLNY – The study of the interdependencies of areas and aspects of smart city in Polish cities	203
15. Magdalena PICHLAK – Environmental sustainability orientation from a dynamic capabilities perspective – a conceptual approach	217
16. Joanna RYDAROWSKA-KURZBAUER – Disparities in regional development on the example of Polish provinces between 2000 and 2020	231
17. Alina RYDZEWSKA – Green finance to combat climate change	251
18. Seweryn SPALEK – Project management in turbulent times of complexity of social and technological systems	263
19. Bartosz SZCZĘŚNIAK – Online forms and spreadsheet as means to support quality measurement by the SERVQUAL method	275

20. Danuta SZWAJCA, Alina RYDZEWSKA – Digital transformation as a challenge for SMES in POLAND in the context of crisis relating to Covid-19 pandemic	291
21. Danuta SZWAJCA – Different faces of CSR: greenwashing in the context of its impact on corporate reputation	309
22. Marcin WYSKWARSKI – Responsibilities of project managers. A text mining analysis of job advertisements	327
23. Michał ZASADZIEN – Education at technical secondary schools for the needs of Industry 4.0 in Poland with particular consideration of the Śląskie voivodship	351
24. Dariusz ZDONEK – Web data scraping for digital public relations analysis based on the example of companies installing photovoltaic systems	367

SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION & MANAGEMENT

No. 162



ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE



Silesian University
of Technology



GLIWICE 2022

CONTENTS

Foreword	7
1. Karolina BĘBEN, Marzena NOWAKOWSKA – The analysis of Polish patent applications in the solar energy technology with the use of text mining methodology .	9
2. Stanisław BORKOWSKI, Wacław GIERULSKI – Description of the company's mission in the plastics processing industry	35
3. Marta BRZOZOWSKA, Jadwiga KACZMARSKA-KRAWCZAK, Katarzyna KOLASIŃSKA-MORAWSKA, Ewa STROIŃSKA – Competences 4.0 in the logistics sector against the challenges of sustainable digital transformation of the economy in the Polish perspective	53
4. Barbara CHOMĄTOWSKA, Iwona JANIĄK-REJNO, Agnieszka ŻARCZYŃSKA-DOBIESZ – Essential competencies for Gen Z remote workers – research results	87
5. Anna CHWIŁKOWSKA-KUBALA, Kamila MALEWSKA, Katarzyna MIERZEJEWSKA – Digital transformation of energy sector enterprises in Poland. Rationale and practices	101
6. Beata DETYNA, Jerzy DETYNA – Lean management in improving the organization – case study	121
7. Dariusz DOBROWOLSKI, Jakub ŚWIĄTKOWSKI – Semantic product personalization based on the CogniPy environment	141
8. Olaf FLAK – Impact of artificial management on the work of a team of humans. Result of research	153
9. Edyta GAŚSIOROWSKA-MĄCZNIK – The impact of Covid-19 pandemic on consumer purchasing decisions	167
10. Justyna GÓRNA, Adam BRZECHWA, Anna KOWALCZYK – Prevention of threats from the area of food defence and food fraud on the example of the sushi&food factor company	181
11. Justyna GÓRNA, Krzysztof WÓJCICKI, Marta BIEGAŃSKA, Beata PALIWODA – The identification of quality control methods used in the packaging production process	197
12. Anna GÓRSKA, Anna MAZURCZAK, Łukasz STRĄCZKOWSKI – Customer preferences of modern technologies (PropTech) on the primary housing market	213
13. Anna GÓRSKA, Anna MAZURCZAK, Łukasz STRĄCZKOWSKI – Implementation of modern technologies (PropTech) by developers on the local housing market	229
14. Joanna HERNIK – Dangerous products on the contemporary EU market – characteristics of the non-food products	245
15. Bożena KACZMARSKA, Wacław GIERULSKI – Shaping pro-engineering attitudes of young people – research results	259

16. Magdalena KAŻMIERCZAK – A literature review on the difference between CSR and ESG	275
17. Katarzyna KILIAŃSKA, Michał PAJĘCKI – Identification of customers' purchasing behaviour profiles in the context of corporate social responsibility	291
18. Sławomir KOCZUBIEJ, Marzena NOWAKOWSKA, Paweł STAPÓR, Paweł ŚWIETLIK – Dedicated data management system for university didactic processes	315
19. Izabela KONIECZNA – The importance and state of general resources: the analysis of housing cooperatives from Świętokrzyskie and Małopolskie voivodeships from Poland	339
20. Anna KONONIUK – Organizational ambidexterity – the results of bibliometric analysis	353
21. Janusz KOT, Ewa Monika KRASKA – Bioeconomy development level at a macro scale and from a regional perspective in Poland	373
22. Maria KRECHOWICZ, Katarzyna KILIAŃSKA, Artur SOBOLEWSKI – Risk assessment of unfavorable interorganizational relationships in CSR projects considering the logistic aspects	391
23. Robert KUČĘBA, Waldemar JĘDRZEJCZYK – The strategy for the internal development of Ecolabnet's eco-innovation partners in the Baltic Sea region – analysis and evaluation	417
24. Alina MATUSZAK-FLEJSZMAN, Sebastian ŁUKASZEWSKI – Development of the functionality of mobile applications in crisis situations: the case of Polish commercial banks	435
25. Dorota MILEK, Paweł R. KOZUBEK – The spatial diversity of socio-economic development in Ukraine	455
26. Agnieszka MISZTAŁ, Milena DRZEWIECKA-DAHLKE, Roma MARCZEWSKA-KUŻMA, Józef GRUSZKA – Identification of leading factors supporting decisions in preventive quality management	473
27. Łukasz MORAWIŃSKI, Sławomir ŚWILŁO, Andrzej KOCĄŃDA – Application of laser barcode technology to sheet metal parts identification	501
28. Daria MOSKWA-BĘCZKOWSKA – Evaluating the usefulness of cost accounting in selected business entities in light of the Covid-19 pandemic — results of the author's survey research	517
29. Marzena NOWAKOWSKA, Michał PAJĘCKI – A production company size and workplace safety hazards	527
30. Oleksandr OKSANYCH – Factors and mechanisms of creating an innovative culture in an organization	543
31. Agnieszka PADZIK-WOŁOS – Trust and control manifestations in employee-driven innovations	561
32. Agnieszka PIOTROWSKA-PIĄTEK – Internationalization of Polish higher education in the context of demographic challenges. Selected aspects	583

33. Katarzyna PIWOWAR-SULEJ, Anna CIERNIAK-EMERYCH, Ewa MAZUR-WIERZBICKA – Socially responsible human resource management towards migrant workers with the focus on the employees' interests	599
34. Kamil PRZYŁUSKI – The cryptocurrency AML challenge – sanction 2022 new threats	623
35. Piotr ROGALA, Bartosz BARTNICZAK, Marta KUSTERKA-JEFMAŃSKA, Agnieszka PANASIEWICZ, Adam PŁACHCIAK, Sabina ZAREMBA-WARNKE – The difficulties in ensuring justice in temporary teams – managers' perspective	633
36. Jan RYBAK, Agata WOLANIN – Towards positive organization. The evolution of gratitude	651
37. Maja SAJDAK, Michał MŁODY, Paweł BARTKOWIAK – In search of a competency gap in the era of Industry 4.0 – the case of Manager 4.0 in Poland ...	665
38. Joanna TABOR-BŁAŻEWICZ – The challenges of HR departments in hybrid work conditions	691
39. Wiesław URBAN, Daniel TOCHWIN – Lean journey success factors – a case study of lean tools implementation sequence in a manufacturing company	703
40. Zygmunt WAŚKOWSKI, Katarzyna RADWAN-CHO – Network organizations on the sports market – the case of WTA	721
41. Danuta WITCZAK-ROSZKOWSKA – Digital transformation of the labor market – a challenge for young Poles	739
42. Sławomir ZAPŁATA, Piotr KWIATEK – The market and quality perspective of CSR and crisis management – a literature review	755

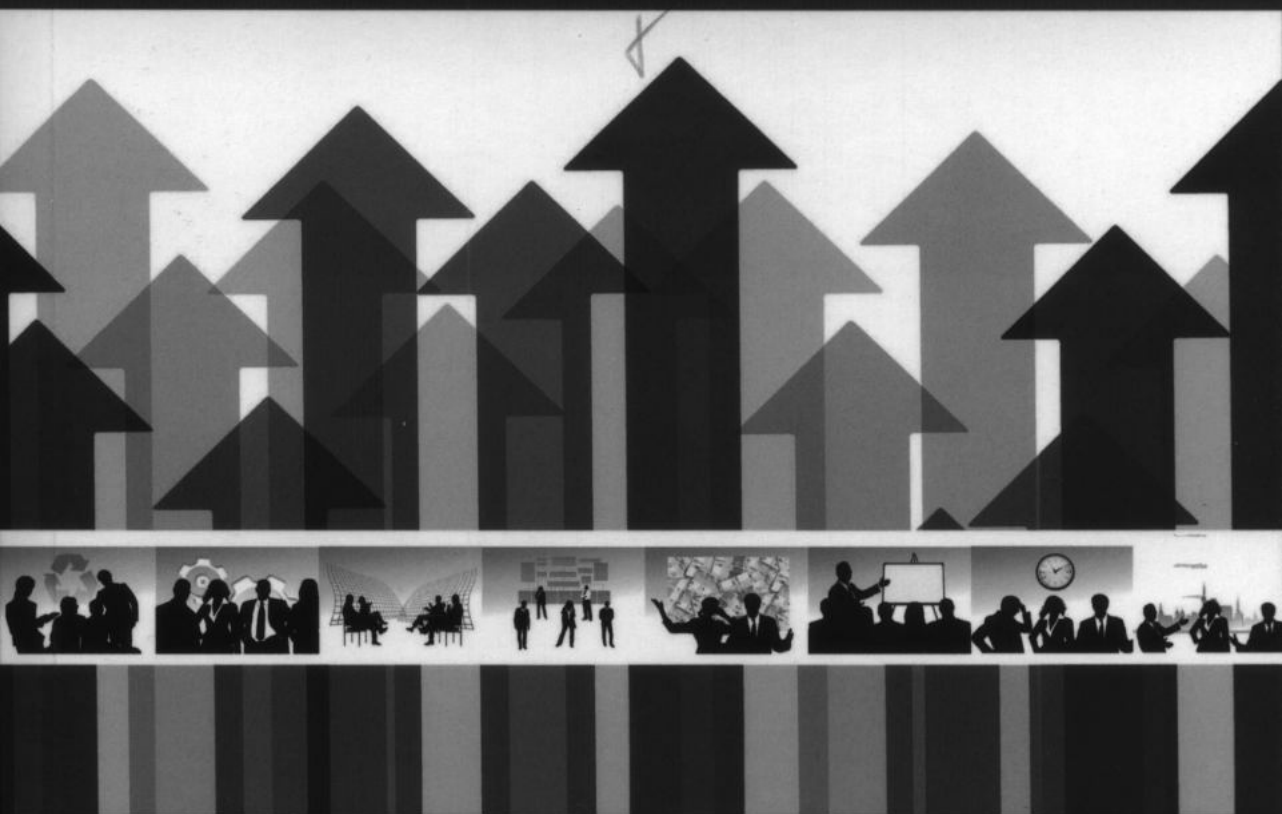
Kamila Malawski

Magdalena Murdin

SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION & MANAGEMENT

No. 163



ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE



Silesian University
of Technology



GLIWICE 2022

CONTENTS

Foreword	7
1. Agata AUSTEN – Work-life balance and work overload in a pandemic world	9
2. Piotr BERNAT – Definable functional linkages as a tool for shaping organisational space in management strategies	21
3. Marek BUGDOL – Punishment for poor product quality – qualitative research results	33
4. Zbigniew CHYBA, Ewelina PALUCKA – Smart polymer materials and the development of technology entrepreneurship	47
5. Agnieszka DZIUBIŃSKA – Unraveling organizational dynamics under uncertainty ...	85
6. Liliana HAWRYSZ, Grażyna GIERSEWSKA, Renata WALCZAK, Magdalena KLUDACZ-ALESSANDRI – The impact of self-efficacy and social impact on the acceptance of teleconsultations by general practitioners during the Covid-19 pandemic in Poland	101
7. Natalia JAGODZIŃSKA – Information security management in crisis (ISMC) according to the standard PN- ISO/IEC 27001: 2017. Introduction to useful of the system in small and medium enterprises (SME)	123
8. Adam JANISZEWSKI – Institutional conditions for effective communication in legitimate organizations	133
9. Dorota JENDZA – The phenomenon of passivity in public and business organisations	169
10. Bartłomiej KABAJA, Erica VARESE – The popularity of EU ecolabel product certification in Poland	185
11. Kamil KARSKI – Selected applications of artificial intelligence in the factors of production	199
12. Dominika KOŁODZIEJ – The flexibility of organizational culture in shaping strategy under uncertainty	213
13. Izabela KONIECZNA – The importance of features of the offer for the customer in the area of quality and the financial situation of dairy cooperatives from the Świętokrzyskie and Małopolskie voivodships	225
14. Bartosz KORDECKI – High-tech vs high touch – challenges in managing the consumer experience with brands in the digital age	235
15. Jolanta KORKOSZ-GĘBSKA – The university social responsibility strategy in supporting the sustainable development goals	253
16. Aleksandra KOSZAREK-CYRA – Spatial management in rural communes around large context cities in the of the region's development	265
17. Andrzej KOZINA – Negotiations 4.0 – review of research areas	283

18. Teresa KRAŚNICKA, Izabella STEINEROWSKA-STREB – Dynamic capabilities and the performance of family and non-family businesses. A perspective on environmental volatility	297
19. Marcin KRZESAJ – Tools of improving the quality of information on websites	323
20. Anna LEWANDOWSKA-CISZEK – The Lean Industry 4.0 approach on the example of an automated line for dosing loose raw materials	343
21. Dorota LORENC – The impact of the Covid-19 pandemic on hotel management	357
22. Józef MYRCZEK, Piotr TWOREK – Managing finance and risk in Polish property development enterprises in the period of Sars-Cov-2 pandemic	365
23. Tomasz NAWROCKI – Criteria for assessing corporate innovativeness based on open source data	381
24. Katarzyna OLEJKO – Assessment of the implementation of corporate governance mechanisms on the basis of “best practice scanner” - selected problems	397
25. Ilona PAWEŁOSZEK, Dorota JELONEK – The role of social media in the strategy of Polish enterprises. Survey results from the years 2020-2021	409
26. Agnieszka PIOTROWSKA-PUCHAŁA – Purchasing decisions of food in innovative packaging and the knowledge of students of UR Cracow	427
27. Marzena PYTEL-KOPCZYŃSKA, Piotr OLEKSIK – Mobbing at the work place and the sustainable human resource management in an organisation	445
28. Marzena PYTEL-KOPCZYŃSKA – Sustainable health management in an organisation as the indicator of work process productivity	457
29. Elżbieta ROBAK – Work-life relations and remote work management of the Generation Z employees	469
30. Danuta ROJEK – Strategic management-related factors of enterprise innovativeness	485
31. Adam SAMBORSKI – Resilience of Polish non-financial corporations under economic shocks	505
32. Sylvia SIERACKA, Marek WIRKUS – Conditioning factors of industry- university cooperation from the perspective of enterprises	521
33. Marlena SMUDA-KOCON – The causal relationship between intellectual capital and financial performance	535
34. Anna STANKIEWICZ-MRÓZ – The impact of integration activities in the area of HRM on the assessment of the effectiveness of company acquisitions	549
35. Paweł SZEWCZYK – Blockchain based waste management	563
36. Danuta SZWAJCA – Changes in priority stakeholder groups of multinational corporations in the context of corporate reputation management	573
37. Krzysztof S. TARGIEL – The impact of the Covid-19 pandemic on the level of sentiment in IT projects implemented in the open source formula	597
38. Piotr TWOREK, Marcelina KOZUBEK – On the nature of risk and risk management in non-profit organisations: from the experiences of a Polish foundation – part 1	609

39. Piotr TWOREK, Marcelina KOZUBEK – On the nature of risk and risk management in non-profit organisations: from the experiences of a Polish foundation – part 2	623
40. Wiesław URBAN, Daniel TOCHWIN – Success conditions for lean management implementation, a multifaced literature review	637
41. Renata WALCZAK, Paweł ZAKRZEWSKI – Factors driving the acceptance of IoT technology for universal design purposes in the city of Płock	655
42. Alicja WINNICKA-WEJS – Digital transformation in the development services industry in Poland	681
43. Magdalena WIŚNIEWSKA – Regional dimensions of public value of academic spin-offs	699
44. Dariusz WYRWA – Expenditure on research and development as a factor stimulating innovativeness of European Union economy	715
45. Katarzyna ŻAK – Environmental reporting as an imperative of the ESG standard ...	727

Krzysztof Wolniak

Bożena Skonieczna-Zasada

SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION & MANAGEMENT

No. 164



ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE



Silesian University
of Technology



GI EWICE 2022

CONTENTS

Foreword	7
1. Sylwester BIAŁOWAŚ, Anna WALIGÓRA – Economic preparation of young people for Economy 4.0 – multi-competency or specialization?	9
2. Joanna BOHATKIEWICZ-CZAICKA – Calculation methodology of the hourly rates on the example of a specialist engineering company	23
3. Wiesław DANIELAK, Przemysław NIEWIADOMSKI – Managerial competences in relation to management level - a survey among manufacturers in the sector of agricultural machinery	37
4. Karolina DRELA – Professional burnout of Polish employees in enterprises during the Covid-19 pandemic	55
5. Katarzyna DURNIAT – Relations between exposure to and acceptance of mobbing – an explorative study on a sample of Polish employees	69
6. Tomasz GIGOL – Impact of organizational identification on unethical pro-supervisor behavior: moderating role of charisma	85
7. Milena GOJNY-ZBIEROWSKA – The significance of leader transgression for the psychological safety of employees with a high level of sensory sensitivity	97
8. Alena IVANOVA – Employee propensity to professional development and its measurement	109
9. Sławomir KAMOSIŃSKI – Trust as the resource and informal institution in economic activity after 1988	121
10. Katarzyna KLIMKIEWICZ, Marzena STASZKIEWICZ – Social sensitivity among HR business partners as determinant of CSR attitudes	137
11. Magdalena KOGUT-JAWORSKA – Towards searching for a gap in network relations for smart specialization strategy – results of bibliometric analysis	151
12. Anna KRASNOVA – Decruitment in project teams – determinants and ways of implementation	165
13. Sebastian KUBASIŃSKI – A proactive strategy of the organization, and action-taking efficiency having an impact on work safety	175
14. Marek KUNASZ – Motives for employee silence in an organization – a correlation analysis of a Polish sample	189
15. Dorota KUREK – Attractiveness of the Polish Army as an employer – results of empirical research	201
16. Agnieszka KWARCZIŃSKA – Assessment of the preferences of CSR activities addressed to employees in the light of the results of primary research	215
17. Regina LENART-GANSINIEC – Ghost workers – the essence and importance for creating scientific knowledge	229

18. Kamila LUDWIKOWSKA – Employee support for HRM Covid-19 strategies as a factor shaping job redesign influence on job performance	243
19. Karolina ŁUDZIŃSKA – Diagnosis of educational needs and expectations for mentoring entrepreneurial competence: the case of the European food sector	255
20. Joanna MACALIK – Personal brand of a start-up leader in creating the online employer's brand	271
21. Ewa MAZUR-WIERZBICKA – Greenwashing – consumer's perspective	283
22. Michał A. MICHALSKI – Family policy and social justice – or why invest in human capital?	299
23. Alicja MIŚ – Sustainable careers. Implications for HRM	311
24. Patrycja MIZERA-PĘCZEK – Recruitment and selection of artists in the media discourse	319
25. Marta MŁOKOSIEWICZ – Development of workplace safety culture – implications for management practice	329
26. Alicja NERĆ-PEŁKA – The teacher in the age of pandemic	341
27. Agata OPOLSKA-BIELAŃSKA – Irresponsible actions of socially responsible companies towards the political situation in Ukraine	351
28. Anna PAWŁOWSKA – Turnover of employees with employability market orientation versus affective commitment in the context of superior support, role and intra-organisational employability	363
29. Wojciech PAWNIK – Recruitment lying and trust in an organization	379
30. Agnieszka POSTUŁA, Tomasz ROSIAK – Human resource management in the public sector. The challenges of the Industry 4.0	391
31. Janusz ROSIEK – Social policy and poverty and income inequalities in Poland in 2008-2020	407
32. Gabriela ROSZYK-KOWALSKA, Janusz KRAŚNIAK, Tomasz KLIMANEK – Attitudes of managers of the high-tech enterprises in Poland	423
33. Janusz RYMANIAK – Remote workplaces over the time of Covid-19 in Poland as a form of organisational space	437
34. Monika SIPA – Trends and challenges in talent management – mind map	449
35. Alicja SMOLBIK-JĘCZMIENIŃ, Patrycja PALEŃ-TONDEL – Do representatives of different generations identify with their stereotypical characteristics?	465
36. Barbara A. SYPNIEWSKA – Counterproductive behavior and job satisfaction – based on the study of Polish employees	477
37. Agnieszka WALCZAK-SKAŁECKA – Personal brand as a tool for shaping organizational culture	489
38. Krzysztof WĄSEK, Przemysław ZBIEROWSKI – Interactivity, proactivity, community – the pillars of onboarding. Test tool proposal	503
39. Arkadiusz WIERZBIC, Agnieszka TAUROGIŃSKA-STICH – The formation of student leadership competence at selected military academies in the world	513

40. Kamil WRÓBEL – Management of ergonomic interventions in Industry 4.0	527
41. Wiesława ZAŁOGA – Digital competences of the information society era in the aspect of safety in cyberspace	541
42. Halina ZBOROŃ – The ethical and civic competence of young people in the region of Wielkopolska	553
43. Patrycja ZWIECH – Approaches to socio-economic inequality in economic theory ...	565

The idea of human resources management rightly attracts attention in the economy, society, and scientific research, while human capital management handles the question of how to function rationally in the increasingly complex reality. To better identify the processes taking place in the two areas it is necessary not only to apply a scientific approach and work out rules and theories to describe the new reality, but also to implement them effectively in business practice.

The multitude of concepts and approaches to human capital, considered on both macro- and micro-scales, derives from the interdisciplinary nature of the term. Even though hitherto the predominant analyses in the area of human capital were part of economic and management sciences, more and more frequently it is possible to encounter subdisciplines derived from diverse areas of research, which are integrated by this broad term (e.g. psychology of labour, sociology of labour, business ethics). The human capital category thus becomes an object of detailed analysis shared by environments which focus on joint research of similar analytical phenomena, though most probably taking different viewpoints.

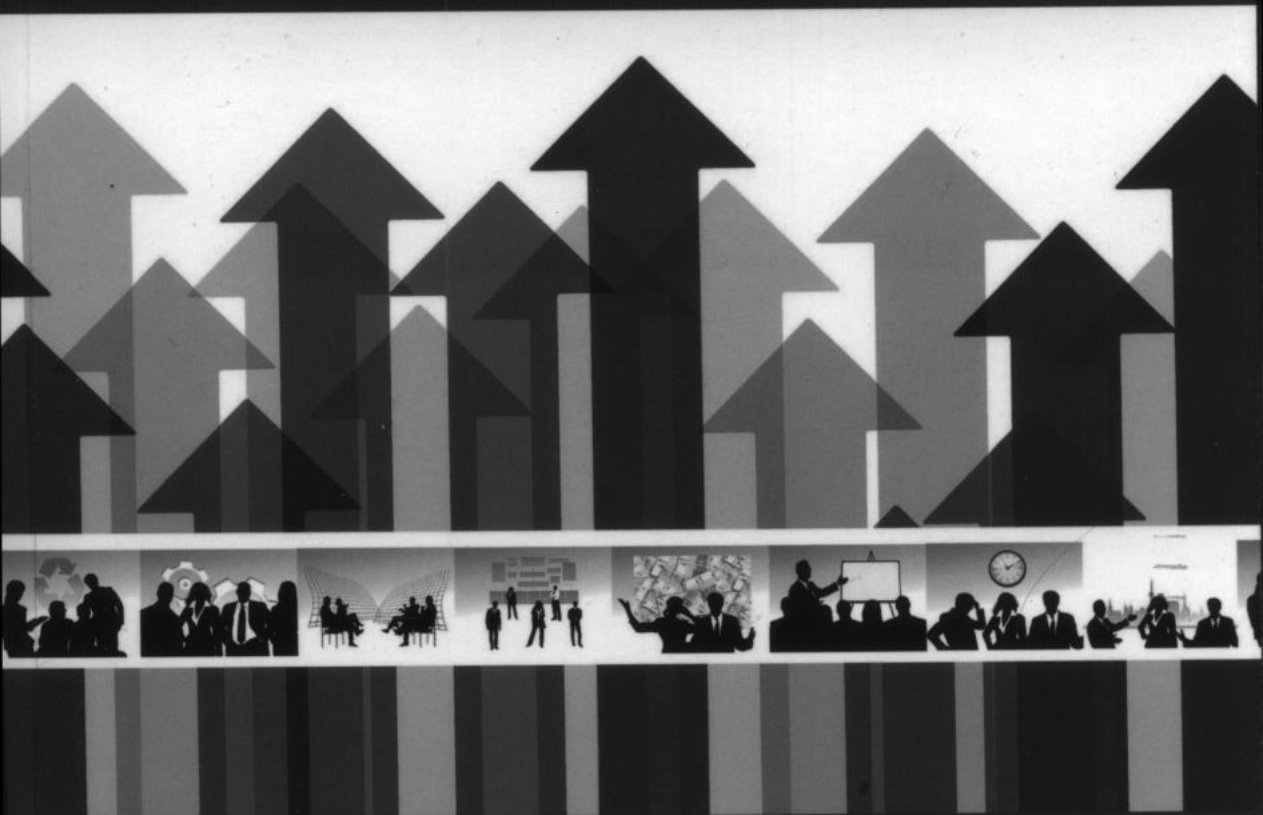
Therefore, research topics are in abundance. Representatives of various research disciplines engage in research projects on human resources and human capital management, thus participating in the exchange of knowledge, research results, views and experiences in the said areas. This publication is an example of activity demonstrated by academic circles and business practitioners, who are interested in contemporary challenges of human resources and human capital management.

This publication of The Silesian University of Technology Scientific Papers, Organization and Management Series contains 43 articles which are the outcome of the research and analyses completed by researchers from renowned research centres in Poland. The issues addressed in these articles regard in particular the challenges of public sector management in the context of the social policy and social justice, flexible management of human capital, human resources competences and developing organisational relationships in enterprises, corporate social responsibility, and support to be provided to employees at different stages of their careers.

SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION & MANAGEMENT

No. 165



ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE



Silesian University
of Technology



GLIWICE 2022

CONTENTS

Foreword	5
1. Michał BOCZEK – Copyright – protection of intelligent man or artificial intelligence?	7
2. Małgorzata CHRZANOWSKA-GANCARZ – The dark side of the Internet and the ontological sense of safety	21
3. Waldemar CZAJKOWSKI – Introductory remarks on ontology of technology	33
4. Piotr CZAKON – Academic potential of Polish cities. From centres of advantage to centres of vulnerability	53
5. Barbara GRZYB – Quality in education – success of management or system. Theoretical considerations	67
6. Bartłomiej KNOSALA – Industry 4.0 and the limitations of rhetoric of technoptimism in Polish popular science discourse	79
7. Grzegorz KOPIJ – The role of the health and safety service in shaping the culture of occupational health and safety in the enterprise	89
8. Dariusz KRAWCZYK – Implementation of Smart City projects on the example of activities prepared by the local government and subordinate units	103
9. Dariusz KRAWCZYK – The importance of Facebook profile management in communication activities of local government. Case study in Poland	117
10. Henryk A. KRETEK, Janusz DWORAK – Thought experiment as a form of initiating and supporting innovation research	131
11. Henryk A. KRETEK – Current assumptions of the European Union's energy and climate policy in the aspect of opportunities and threats	149
12. Aleksandra KUZIOR, Inna BALAHUROVSKA – Interaction between the manager and the hidden informal leader	173
13. Izabela MARSZAŁEK-KOTZUR – Ethical perspective of the development and use of modern military technologies	183
14. Aldona MUSIAŁ-KIDAWA – Whether artificial intelligence is intelligent. Philosophical dilemmas	199
15. Anna MUSIOŁ – Philosophical psychotherapy in VUCA world and BANI reality: reflections on health coaching	211
16. Małgorzata NADZIAKIEWICZ – The quality and safety of medical services and the patients rights	223
17. Marek NIEZABITOWSKI – Social aspects of Smart City – some sociological remarks on the issue	233
18. Zbigniew ORBIK – Corporate social responsibility and the Smart City concept	245
19. Grażyna OSIKA – Humanistic and social dimensions of cobotization in the context of implementation Industry 5.0	259

20. Katarzyna POSTRZEDNIK-LOTKO – Managing quality of life in the post-pandemic period	275
21. Barbara PRZYBYLSKA-CZAJKOWSKA – Introductory remarks on axiology of technology	285
22. Lukáš SIEGEL – How to care? An analysis of the contemporary social issues through the lens of care ethics	297
23. Mariya SIRA – Artificial intelligence and its application in business management ...	307
24. Brygida SMOLKA-FRANKE – The city as a brand. About the importance of creativity in city development and promotion	347
25. Iwona SOBIERAJ – Evaluating citizen science projects	359
26. Aleksandra SYNOWIEC – Barriers of cultural adaptation in the context of the influx of Ukrainian war refugees to Poland	371
27. Paweł WAWRZAŁA – A model to support the formation and work of design thinking teams	383
28. Piotr WERYŃSKI, Dorota DOLIŃSKA-WERYŃSKA – Public sphere of social media and the idea of Society 4.0 and 5.0. Study of a selected media discourse	393

**SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS**

ORGANIZATION MANAGEMENT

No. 167



**ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ
ORGANIZACJA I ZARZĄDZANIE**



**Silesian University
of Technology**



GLIWICE 2022

CONTENTS

Foreword	7
1. Arkadiusz BANASIK, Aleksandra CZUPRYNA-NOWAK – An overview of the development of renewable energy sources in Poland	9
2. Roman BIHUN, Vasyl LYTVYN – Decision-making support system for territorial communities	33
3. Paweł CABALA – Barriers in the organization design process	49
4. Mateusz DUDA, Ireneusz J. JÓŹWIAK, Jan SWITANA, Roman SWITANA – Development of the hard drives in a portable computer devices	59
5. Dorota GAWROŃSKA – Analysis of electricity from renewable sources in the European Union member states in the years 2004-2020	67
6. Krzysztof GROCHOWSKI – The significance of the ERP class IT system in strategic decision-making	85
7. Mateusz GUZE, Natalia WCISŁO, Ireneusz J. JÓŹWIAK – The analysis of the factors having influence on organization's image	99
8. Beata HYSA – Cybersloaking and cyberloafing – impact of social media use in the workplace	107
9. Anna JANIGA-ĆMIEL – A study on the extent of differences in ICT usage by enterprises in European countries during the Covid-19 pandemic	123
10. Jan JAŚKOWIAK, Kacper STAROŚCIAK – City management during the process of acquiring investors to municipalities on the example of Świdnica in years 2002-2014. Economic aspects	139
11. Piotr P. JÓŹWIAK, Ireneusz J. JÓŹWIAK, Krzysztof JUSZCZYSZYN, Tomasz MAŁACHOWSKI – Randomness testing of the random number generators using Dieharder tool	151
12. Małgorzata JÓŹWIAK, Alicja M. KRUPA – Strategy of choosing a mobile application for small architecture design	161
13. Robert KAMIŃSKI – Factors contributing to the formation of a project team subculture – case studies	169
14. Krzysztof KANIA, Jan KOZAK – Preference-driven classification for cooperation and resolving decision-maker – AI conflicts	195
15. Aneta KARASEK – Generation Z's expectations towards the employers	209
16. Wojciech M. KEMPA, Arkadiusz BANASIK – A queueing model of patient service in accordance with the S.T.A.R.T standard	219
17. Andrzej LETKIEWICZ – Sustainable mobility within green smart cities – a challenge for local governments. Case study of Tri-City	231

18. Malgorzata ŁĘGOWIK-MAŁOLEPSZA – The potential of selected registration modules of the integrated IT environment in the practical building of financial monitoring of the enterprise	249
19. Beata MAJECKA – Behavioural aspects of the use of telemedicine systems in healthcare entities	263
20. Adrianna MASTALERZ-KODZIS – Alternative investments - measuring risk and investment efficiency	277
21. Piotr MAŚLOCH – The concept of using artificial intelligence in the process of building a marketing communication strategy (avatar model)	289
22. Aneta MICHALAK, Michał ZOCHOREK – The analysis of selected incentives in the Polish mining from the perspective of different employee groups	303
23. Aneta MICHALAK, Michał ZOCHOREK – The relationships between managers and the people answering to them as an incentive system component based on the example of a mining company	317
24. Monika MIŚKIEWICZ-NAWROCKA – The impact of the Covid-19 pandemic on the financial condition of large enterprises in Poland	335
25. Anna MULARCZYK – Analysis of the development of renewable energy sources in Poland	351
26. Tomasz NAWROCKI – Issues of intellectual capital evaluation in an enterprise in relation to the method basing on the difference between its market and book value ...	365
27. Tomasz NITKIEWICZ, Piotr PACHURA – Conditions of introducing circular business models into craft breweries – LCA approach	383
28. Marian OLIŃSKI – Diversification of revenue as a contemporary challenge in the activities of public benefit organizations	399
29. Magdalena RACZYŃSKA, Krzysztof KRUKOWSKI – Information and communication technology and the implementation of business process management in public organizations in Poland	423
30. Katarzyna ROZPONDEK – The significance of the smart city concept for creators of Big Data solutions	443
31. Joanna RYDAROWSKA-KURZBAUER – Contribution of selected factors to the creation of regional and national economic growth. Example of Poland in years 2000-2020	459
32. Dariusz SOBOTKIEWICZ – Decentralization in multi-entity organizations as a contemporary challenge for parent company	477
33. Anna SVITANA, Jan SWITANA, Roman SWITANA – Outsourcing management concept as a distinct legal construction	489
34. Izabela SZTANGRET – Contemporary challenges facing companies. “Occupational burningout” in the concept of sustainable development	501
35. Danuta SZWAJCA – Customer service in the digital reality. Challenges for contemporary companies	521
36. Monika SZYMURA – Patent and other intellectual property in a company: challenges and opportunities	539

37. Mateusz TRZECIAK – Research issues in programme management: a systematic review of literature	551
38. Natalia WCISŁO, Mateusz GUZE, Ireneusz J. JÓŹWIAK – Artificial intelligence models supporting economical decisions compared to traditional decision making strategies in the example of stock market	569
39. Karolina WIELICKA-GAŃCZARCZYK – Organisation concept in relation to hospitals	579
40. Katarzyna WITCZYŃSKA – The development of e-commerce during Covid-19 pandemic	587
41. Radosław WOLNIAK – Problems of Covid-19 influence on small and medium enterprises activities – organizing function	599
42. Marcin WYSKWARSKI – Sentiment analysis concerning heat pumps - analysis of tweets published in Polish	609
43. Katarzyna ZEUG-ŻEBRO – Causal relationships between the metals market and the stock market in the face of the changes taking place in the modern world	623
44. Daniel ZWIERZCHOWSKI – Knowledge management as a tool supporting the implementation process of an integrated ERP system	637

reality: economic, socio-cultural, political, legal and technical. The decisions undertaken can only affect the competitive position of the organization, but also trigger specific consequences in the further and closer environment. The organization's interaction with its environment affects the strategies should assume attention not only to the achievement of economic success, but also to social relations and the natural environment. This publication from the University of Technology, Scientific Papers, Organization and Management Series, Contemporary management is concerned with such challenges faced by organizations in the modern world. The authors of 44 articles from numerous Polish research centers focus on a number of issues in the field of organization, management and decision-making strategies in organizations in the broad sense. The papers presented in this issue concern human resources management, strategic management, quality management, knowledge management, intellectual property management, production management, efficiency management, organizational culture management, health care management, financial management, international management, risk management, environmental management, service management, issues of multidimensional consequences of the COVID-19 pandemic, implementation of artificial intelligence and IT technologies, development of renewable energy sources and smart cities, aspects of sustainable social development and corporate social responsibility.