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The self-report
presenting a description of scientific activities and achievements of

dr Artur Kacper Modliński

(Department of Management, Faculty of Management, University of Lodz)

Łódź, 23.02.2023

1. Name and surname

Artur Kacper Modliński

2. Diplomas, scientific or artistic degrees - with the entity awarding the degree, the year of obtaining them and the title of the doctoral dissertation

Year 2018

- PhD diploma in economics in the field of management sciences awarded by the Council of the Faculty of Management of the University of Lodz
- Doctoral dissertation entitled "Strategies of cultural institutions against consumer dissatisfaction and boycotts"
- Supervisor: prof. dr hab. Tomasz Domański
- Second supervisor: dr hab. Małgorzata Karpińska-Krakowiak, prof. University of Lodz
- Reviewers: dr hab. Magdalena Sobocińska, prof. UE and dr hab. Agnieszka Żbikowska, prof. UEK
- The doctoral dissertation was awarded by the Rector of the University of Lodz

Year 2013

- Completion of Master studies in the field of International Relations, International Marketing (studies in English)
- Master's thesis written in English, entitled “Brand portfolio management in the fashion industry. The comparative analysis of LPP and Inditex corporations”
- MA’s exam passed with a very good grade
- Supervisor: prof. dr hab. Tomasz Domański

Year 2013

- Completion of MA studies in the field of Political Science (Faculty of International and Political Studies, University of Lodz)
- Master's thesis entitled "Intercultural management in the era of globalization on the example of business and scientific projects in the Łódź Region"
- MA’s exam passed with a very good grade
- Supervisor: prof. dr hab. Andrzej Sepkowski

Year 2011

- Completion of BA studies in the field of Political Science (Faculty of International and Political Studies, University of Lodz)
- Bachelor's thesis entitled "The emergence of cultural archetypes and their use in the process of image creation on the example of ruling women in England and Great Britain"
- BA’s exam passed with a very good grade
- Winner of the competition for the best BA thesis defended at the Faculty of International and Political Studies in the academic year 2010/2011
- Supervisor: Dr. Hubert Horbaczewski

During my 1st, 2nd and 3rd degree studies, every year, I received a scholarship for the best students. Moreover, I received a scholarship from the Minister of Science and Higher Education twice, a 1st degree scholarship from the Marshal of the Łódź Voivodeship, a Santander Bank scholarship, a DAAD scholarship as part of the VIP program. I became a university laureate of the Student Nobel Prize organized by Independent Student Association as well as the Award of the University of Lodz Foundation for the best doctoral students in the field of social sciences.

3. Information on previous employment in scientific or artistic units

2019-present

Center for Research on Artificial Intelligence and Cybercommunication

Faculty of Management

University of Lodz

Position: Chief of the Center

2019-present

Department of Management

Faculty of Management

University of Lodz

Head of the department: dr hab. Tomasz Czapla, prof. of University of Lodz

Position: Assistant Professor

- 3rd degree award of the Rector of the University of Lodz for the book "Strategies of cultural institutions against consumer dissatisfaction and boycotts"
- 1st Degree Award of the Rector of the University of Lodz for organizational activity
- Member of the Faculty Committee for the Scientific Research Quality
- Member of the Council of Young Scientists nominated by the Rector of the University of Lodz

2019-2021

Leon Schiller State Film, Television and Theater School

Film Art Organization Department

Position: contract for conducting classes for master's studies and postgraduate courses

2018-present

CITAD International Research Center

at Lusiada University in Portugal

Head of the Centre: prof. Albert Pinto

Position: contract researcher with 30% of regular working time

2018-2019

Department of Management in the Network Society

Kozminski University in Warsaw

Head of the department: prof. dr hab. Dariusz Jemielniak

Position: Research assistant

- Distinction of the Rector of Kozminski University for work in the 2018/2019 semester

2013 - 2018

Doctoral studies

Faculty of Management at the University of Lodz

Unemployed doctoral student

4. Presentation of the achievements referred to in Article 219 para. 1 point 2 of the Act of 20 July 2018 Law on Higher Education and Science (Journal of Laws of 2021, item 478, as amended), taking into account the possibility of indicating achievements from the entire professional career

4.1. Scientific achievement constituting the basis for applying for the degree of habilitated doctor

4.1.1. The title of the publication series

Techno-empowerment in the perceptions of employee and consumer. The perspective of post-humanistic management.

4.1.2. The point value of the habilitation cycle

The publication cycle consists of 8 articles published in English in 2021-2022. All parts of the series are indexed in the SCOPUS database and have been reviewed by at least two anonymous reviewers appointed by the journal. Two articles from the series were published in journals with Impact Factor. In each article I was the first author or I was a co-author with at least 50% contribution to the completion of the paper.

4.1.2.1. Publishers of the habilitation cycle

Publisher name	Number of publications in the series
Taylor and Francis	2
Springer	2
Wiley	1
Emerald	2
Centre of Sociological Research (CSR)	1
Sum	8

* all articles included in the habilitation cycle are indexed in the **SCOPUS database**

4.1.2.2. Points by Ministry of Science and Higher Education

Number of points	Number of publications
140	2
100	2
70	3
40	1
Total	730 point

4.1.2.3. The language of the components of the habilitation cycle

Language	Number of publications
angielski	8
polski	0

4.1.2.4. Impact Factor value

Two publications from the series were published in journals with an Impact Factor of 7.09 and 2.44 (total: 9.53, which in terms of the cycle creates an average value of 9.53/8 = 1.19).

4.1.3. The rationale for the topic

The development of an organization in the era of the 4th Industrial Revolution is becoming one of the most dynamically exploring areas around which researchers specializing in "management studies" (in Poland "management and quality sciences") are focused. The foundations for this area of science were laid by numerous researchers in such publications as "The Fourth Industrial Revolution" by Klaus Schwab, "Human + Machine: Reimagining Work in the Age of AI" by Paul R. Daugherty and H. Jamess Wilson, and "Posthuman management" by Matthew Gladden, where they characterize the dynamics and nature of organizational changes taking place as a result of the emergence of artificial intelligence.

Relatively, the least explored topic in the management so far has been the strengthening of the role and status of technology in the organization as well as the identification of factors

influencing the willingness of consumers (users) to delegate tasks requiring intelligence (including decision-making autonomy) to technology. This is a significant research gap as autonomous, semi-autonomous and intelligent recommendation systems technologies already exist on the market, and global trend research organizations predict their even more dynamic growth in the next decade. In the literature, the issue of transferring intelligent tasks on technology and increasing its decision-making autonomy is described by researchers interested in posthumanism, which P. Zawojski (2017) defines as "(...) *the change that takes place in the perception of the position of man in the environment of living creatures synergistically interacting with him, machines, artificial intelligence (AI) and artificial life (ALife)".*

I have observed that although this issue is often discussed at foreign scientific conferences during plenary sessions and behind-the-scenes discussions, it becomes relatively rarely a problem posed in research projects. After reviewing the literature, I decided that a deeper understanding of the nature of the interaction between a human being (employee and consumer) and intelligent technology becomes important in order to be able to design new organizational solutions and relationships with consumers. The problem around which the publication cycle was created were the determinants and consequences of the transfer of tasks requiring intelligence (understood as multiple intelligence according to the concept of Howard Gardner (2011), who apart from mathematical and logical intelligence, distinguished, among others, spatial, motor or musical intelligence) by users (employees of the organization and consumers) onto the technology. The structure of the cycle is based on the analysis of the literature and empirical research.

The main goal of the series was therefore to explain what are the determinants and consequences of transferring tasks that require intelligence to technology. Since the existing literature only scarcely described the background of the main problem, it was pertinent to create an article initiating the series, in which the most important issues related to the functioning of intelligent technologies in organizations were presented in detail (Publication 1). On this basis, it became possible to specify three sub-goals:

Sub-goal 1: To describe consumers' perception of techno-empowerment

Sub-goal 2: To indicate the determinants of the transfer of decision-making autonomy to technology

Sub-goal 3: To describe the employees' reactions to techno-empowerment

To specify the research lacunas in each sub-goal, an in-depth analysis of the literature was carried out. Its aim was to determine what earlier researchers (also publishing in languages other than Polish and English) have already described in the literature, and which problem areas remain unexplored. On this basis, detailed questions were added to each sub-goal, illustrating the research gaps for which the existing literature did not provide answers:

Sub-goal 1:

1.1: How do consumers perceive creative products created by smart technology?

1.2: How do consumers react to organizations' decisions to transfer tasks that require intelligence and creativity to technology ?

Sub-goal 2:

2.1: How does gender influence consumer attitudes towards autonomous technologies?

2.2: How does religiosity affect consumers' attitudes towards autonomous technologies?

2.3: How does the physical form of technology affect consumers' intentions to give it decision-making autonomy?

2.4: When is the consumer willing to give decision-making autonomy to technology?

2.5: How does the country of origin of the technology affect the consumer's intention to give it decision-making autonomy?

2.6: How does the security certificate affect the consumer's intention to give technology decision-making autonomy?

Sub-goal 3:

3.1: Do employees conform to the suggestions of intelligent decision support systems?

3.2: Is the transfer of technology to tasks requiring intelligence a one-way phenomenon? (from human to technology?)

Literature in the field of management sciences and psychology allowed me for the formulation of 18 hypotheses for detailed questions 1.1-3.1. These hypotheses are presented in the following subchapters of this self-report (p. 13, 19-20, 28). In accordance with the idea of the series, in order to achieve the goals and fill research gaps, a series of own research was designed. Sub-goal 1 was achieved as a result of two experiments (described in Publications 2-3, synthetic description on p. 12-18 of this self-report). Sub-goal 2 was achieved as a result of conducting two experiments and one study using a survey (results are described in Publications 4-6, synthetic description on p. 19-27 of this self-report). Sub-goal 3 was achieved as a result of the conducted experiment and qualitative research (results are described in Publications 7-8, synthetic description on p. 28-32 of this self-report). To sum up, five experiments, one study using a questionnaire and one qualitative study were carried out to achieve three sub-goals. The

methodology and results of own research are presented in the next subchapters of this application (p. 13-32).

As the users' perception of new technological solutions in the era of the Fourth Industrial Revolution is dynamically explored by researchers (especially from the United States and China), the series was created in accordance with the layering approach - each subsequent article was written based on research gaps identified in the literature, complementing and developing the content of other researchers. At the same time, it was intended to avoid duplicating previous studies by referring to them in the process of formulating research questions and hypotheses.

In addition, in order to meet the standards required by journal editorial teams, research procedures approved by the academy, methodological patterns (e.g. experimental layouts) and reliably validated research scales were used. Due to the conviction of the need to apply recognized quality standards, each article in the series begins with a review of multilingual literature. The description of the research cycle begins with the initiating article (Publication 1, p. 9-12), and then subsequent publications are presented, taking into account their role in achieving sub-goals, hypotheses, methodology and results of own research.

4.1.4. Characteristics of the components of the publication cycle, including the methodology and research results

Publication 1: article initiating the series

Artur Modliński, Matthew E. Gladden, (2022). An Organizational Metaphor for the 4th Industrial Revolution: The Organization as Cyborg, World Futures: The Journal of New Paradigm Research, Volume 78, Issue 6, s. 372-391, DOI: 10.1080/02604027.2021.1996187

- *Editor in charge of the review process: Dr. Alfonso Montuori - Italy*
- *The percentage of the applicant's contribution: 90%*
- *A description of the individual contribution is indicated in Table 4 on pages 32-35*
- *Ministry of Science and Higher Education: 70 points*

The aim of the article was to construct an organizational metaphor that would illustrate an organization developing in the era of the 4th industrial revolution. The work is of a conceptual nature, extending and supplementing the previous work of Gareth Morgan.

In his groundbreaking book, Images of Organizations, Morgan constructed and described eight epistemological metaphors that help to understand how organizations work. These include the metaphor of organization as a machine, organism, brain, culture, political system, mental prison, flow and transformation, and tools of domination.

In the following years, researchers focused on management sciences expanded the pool of metaphors to include “place” (Walck, 1996), “jazz performance” (Hatch, 1999), "computer" (Hurme, 2005), "decorative object" (Cox & Minahan, 2006), "connectivity" (Kolb, 2008), "island" (Jermier & Forbes, 2011), "global brain" and "media" (Oswick & Grant, 2016), "ice hotel" (Pinto, 2016), "Wonderland" (McCabe, 2016), "football game" (Guldenmund & Smibert, 2019), "game" (Netterville & Cornelissen, 2015), "ladder" (Dean, 2020), or "vineyard" (Thomas, 2020). Unfortunately, none of the available metaphors illustrate the functioning of organizations experiencing changes related to the 4th industrial revolution, which Klaus Schwab defines as creating cyber-physical systems through the use of the Internet of Things, processing large amounts of data, cognitive processing and artificial intelligence.

Publication 1 is a consequence of the debate I had with the world's leading posthumanist - Mr. Matthew E. Gladden from Georgetown University (author of the textbook "Posthuman Management" published in 2016). Posthumanism defined by P. Zawojski (2017, p. 68) as "(...) *the change that takes place in the perception of the human position in the environment of synergistically interacting living beings, machines, artificial intelligence (AI) and artificial life (ALife)*" began to appear more and more often in the philosophical context of the Fourth Industrial Revolution, and has also become the leitmotif of my habilitation cycle. As Gladden (2016) shows in his book "Posthuman Management", the modern employees and consumers are increasingly surrounded by various (including intelligent) technology, interact with it in such the ways that it affects intra-organizational and consumer behavior.

In the article initiating my habilitation cycle, together with Matthew E. Gladden, we approached the subject of the organizational metaphor developing in the Fourth Industrial Revolution in a form of review. Using the suggestions of the aforementioned creators of organizational metaphors, we reviewed the literature to understand what changes occur in the organization under the influence of cyber-physical systems and the synergy of man with new technologies. After analyzing the obtained results, we came to the conclusion that the best descriptor for our metaphor is a cyborg, which Carvelko (2012) defines as “*any organism (not only human) with a technological element that increases its capabilities in a specific*

environment". Just as a cyborg combines biotic and technological elements that become integrated into a structural and functional whole, similarly the "organization as cyborg" has two distinctly different components - human workers and intelligent devices or systems that have become structurally and operationally integrated into a dynamic whole.

In our perspective, an organization as a cyborg is characterized by the following features:

- using technology to monitor and expand employees' capabilities by creating artificial training environments (e.g. augmented and virtual reality), decision support programs based on machine learning, cognitive implants (e.g. Eyeborg type), werables (e.g. fatigue monitoring);
- bifurcation of the structure understood as creating an intra-organizational division around the assignment of a task (to a person or technology), replacing a human worker by technology as part of the automation and robotization of internal processes, and a significant increase in the number of tasks entrusted to technology;
- techno-empowerment (technological empowerment) understood as the influence of technology on the decisions of employees and consumers or giving such technology a certain degree of decision-making autonomy, both consciously and unconsciously (e.g. by accepting algorithm suggestions without reflexion).

Creating a metaphor of an organization as a cyborg made it possible to define the strengths and weaknesses of organizations operating in the era of the 4th industrial revolution. First of all, functioning based on real-time data allows the organization to adapt to a rapidly changing environment. Access to internal and external data sources can help the organization gain a new view of the market and continuous development. Automation and robotization can reduce the costs of salaries, benefits and training for employees and prevent errors.

The disadvantages of this organizational form include too much control in the workplace. Constant monitoring and connection to systems can raise ethical dilemmas and discourage highly talented employees from working. In addition, allowing technology too much autonomy in decision-making and being trapped in information bubbles can lead to losing the sense of reality and making mistakes. Organizations built on algorithmic systems that make autonomous decisions can be taken over by external entities wanting to sabotage the organization (digital sabotage) or steal data for their own purposes.

The metaphor of the organization understood as a cyborg allowed for the formulation of a number of general research questions. I sought to answer them in subsequent publications included in this habilitation cycle. My intention was to expand existing literature and deliver the original value. Due to the fact that many teams from all over the world are currently working on the topic of decision-making autonomy of technology, it was necessary to monitor the latest research results in order not to duplicate their conclusions. On this foundation, three sub-goals were formulated and current research gaps were identified:

Sub-goal 1: To describe consumers' perception of techno-empowerment (p. 12-18)

Sub-goal 2: To indicate the determinants of the transfer of decision-making autonomy to technology (p.19-27)

Sub-goal 3: To describe the employees' reactions to techno-empowerment (p. 28-32)

Sub-goal 1: To describe consumers' perception of techno-empowerment

The replacement of workers by technology is not a new phenomenon. It has already taken place during the earlier industrial revolutions. At that time, however, workers performing physical tasks in factories were mainly replaced. The advent of computers during the Third Industrial Revolution partially relieved employees of analytical tasks (e.g. counting). Only technologies equipped with artificial intelligence were able to take over tasks requiring intelligence - although at the current stage of development this does not apply to all tasks of this type. Previous researchers have described the social and managerial implications of technology replacing blue-collar workers. Extensive literature material was created as a result of observations of the Luddite movement and their impact on the functioning of organizations during the Second Industrial Revolution (Jones, 2006). Relatively little space has been devoted to the consumer perspective, especially in the face of the emergence of technologies that perform tasks requiring intelligence on the market.

As I mentioned at the beginning of this self-presentation, intelligent technologies are now able not only to perform advanced mathematical operations, but also to create music and images. Although the issue of agency and actual authorship of these creative products raises great doubts, the appearance on the market of objects advertised as created by artificial intelligence is becoming a fact. Whereas my predecessors focused on examining consumer perceptions of e.g. food products (Nielsen et al., 2009) created by smart technology, little attention was paid

to creative products of this origin or to the perception of organizations where technology performing typically human tasks has been adopted.

As a result of the literature analysis, hypotheses 1.1.1-1.2.3 were formulated. Their shape and the result of verification are presented in the table below (Table 1). On pages 14-18, a detailed description of the components of the cycle and the method used to verify the hypotheses has been presented.

Table 1. Research hypotheses for sub-goal 1 and the results of their verification

Sub-goal 1: To describe consumers' perception of techno-empowerment			
Question 1.1: (Publication 2) How do consumers perceive creative products created by smart technology?		**Question 1.2: (Publication 3)** How do consumers react to organizations' decisions to transfer tasks that require intelligence and creativity to technology (high HMTRC)?	
Hypothesis 1.1.1 The perceived value of painting is lower when its author is AI than when the author is human.	**Supported**	**Hypothesis 1.2.1** Customers perceive techno-empowerment with high HMTRC as more unsuitable than techno-empowerment with low HMTRC (cognitive reaction).	**Supported**
Hypothesis 1.1.2 The impact of information that AI is the author of the painting is mediated by the author's perceived artistry and the overall impression the particular piece of art makes on the participants.	**Supported**	**Hypothesis 1.2.2** Consumers feel more negative emotions towards techno-empowerment when HMTRC is high than when HMTRC is low (emotional reaction).	**Supported**
Hypothesis 1.1.3 The painting's value is rated higher when the contextual cue is the information about the value of works created by AI than when the contextual cue is the information about the value of a painting created by a human.	**Supported**	**Hypothesis 1.2.3** Consumers are more likely to take action against an organization where the intensity of HMTRC is high than where HMTRC is low (behavioural reaction).	**Supported**
Hypothesis 1.1.4 The perceived value of figurative painting is rated higher than the perceived value of abstract art only if the author is a human, and this effect does not occur when the author is AI.	**Rejected**		

Publication 2

Paweł Fortuna, Artur Modliński, (2021). A(I)rtist or Counterfeiter? Artificial Intelligence as (D)Evaluating Factor on the Art Market. The Journal of Arts Management, Law, and Society, 51(3), p. 188–201. DOI:10.1080/10632921.2021.1887032

- *Editor in charge of the review process: Prof. Rachel Shane – USA*
- *The percentage of the applicant's contribution: 50%*
- *A description of the individual contribution is indicated in Table 4 on pages 32-35*
- *Ministry of Science and Higher Education: 70 points*

This publication is the first, which refers to the issues highlighted in Publication 1, while combining my interests before and after receiving my doctoral degree (management in the creative sector and new technologies). My review of the literature showed that at the time of designing the study, there was a significant research gap in terms of consumer perception of art products created by artificial intelligence. At the same time, in practice, more and more often such products were created, described in the mass media and sold at world auctions. The aim of the study was therefore to determine how consumers perceive artistic products depending on whether their creators are people or artificial intelligence.

After a thorough analysis of the literature in the field of management in the creative sector and consumer psychology (my co-author, Dr. Paweł Fortuna, represents the discipline of "psychology"), we formulated four research hypotheses:

Hypothesis 1.1.1

The perceived value of painting is lower when its author is AI than when the author is human.

Hypothesis 1.1.2

The impact of information that AI is the author of the painting is mediated by the author's perceived artistry and the overall impression the particular piece of art makes on the participants.

Hypothesis 1.1.3

The painting's value is rated higher when the contextual cue is the information about the value of works created by AI than when the contextual cue is the information about the value of a painting created by a human.

Hypothesis 1.1.4

The perceived value of figurative painting is rated higher than the perceived value of abstract art only if the author is a human, and this effect does not occur when the author is AI.

In order to verify the above hypotheses, an experimental study was designed in a 2 x 2 x 2 format, where the independent variables were a) author (human or AI), b) contextual price cue (similar work created by human or AI) and c) style of the image (figurative or abstract). The dependent variables were the perceived value of the work measured in Polish zlotys. All participants were shown an image (figurative or abstract) and the alleged author was identified. Half learned that the author is human, and half - artificial intelligence. Then, depending on the group, the participant found out that a similar work (created by a human or artificial intelligence) is worth PLN 1,000.

The experiment involved 296 participants (42.6% women), who were randomly assigned to one of eight experimental groups. Participants were recruited through advertisements posted on social media and discussion forums. The age of the participants ranged from 18 to 62 years (M = 35.30, SD = 10.76). After data collection, analysis of variance, structural equation modeling and mediation analysis were performed. As a result, 1.1.1, 1.1.2, 1.1.3 were positively verified, and hypothesis 1.1.4 was negatively verified.

The study showed that people do not see AI as equal to humans when it comes to creating images. We noticed that people perceive the same image as worth less money when it turned out to be artificial intelligence. Our results also indicated that people take contextual information into account when evaluating the value of images. The perceived value is higher when a given human-made image is accompanied by information about the value of similar objects made by artificial intelligence. The value of an AI-created image, on the other hand, is lowered when consumers learn about the price. In addition, a mediation effect was observed between the authors' perceived craftsmanship and overall image pricing impression, although this effect was not strong.

From the point of view of the development of the theory of management science and quality, this study showed that the status of the author of the image matters in its valuation. Previous researchers focused on the valuation of creative products have found four factors that affect their perceived value: (1) the uniqueness of the object (Newman and Bloom, 2012), (2) the effort put into creating such an object (Kruger et al., 2004), (3) the fame of the author (Dutton, 2003) and (4) the narrative behind the object (Jucker et al., 2014). Our study extended these

factors to include authorship status and signalled that there are areas of human activity where consumers are reluctant to accept technology (even such one that has the capacity to perform such activity).

From the point of view of business practice, it seems particularly important to distinguish between creative products created by humans and artificial intelligence. The unconscious combination of paintings by curators and art dealers in one sales space, the authors of which have different status, may affect the purchasing intentions of consumers and the price they are ready to pay for a given object.

Publication 3

Artur Modliński, Paweł Fortuna, Bohdan Rożnowski, (2022). Human-machine trans roles conflict in the organisation: how sensitive are customers to intelligent robots replacing the human workforce?, International Journal of Consumer Studies, artykuł w formie Online First, DOI: 10.1111/ijcs.12811

- *Editor in charge of the review process: Prof. Justin Paul – USA*
- *The percentage of the applicant's contribution: 50%*
- *A description of the individual contribution is indicated in Table 4 on pages 32-35*
- *Ministry of Science and Higher Education: 100 points*
- ***Impact Factor: 7,09***

While Publication 2 focused on the differences in the perception of specific objects created by artificial intelligence, Publication 3 focused on consumers' perception of transferring such organizational tasks on technology that were previously performed by humans. An important research gap observed by me during the literature review was related to the attitudes and behavior of consumers towards organizations in which technology performs functions commonly associated with human creativity and experience.

A review of the literature and case studies showed that in such organizations there is a role conflict between the employees and technology, but it has not been named and defined. After literature studies and expert discussion, we named this type of conflict as "human-machine trans role conflict" (HMTRC) and made a synthetic description of it. At the same time, we pointed out that the main axis of this conflict is the nature of tasks (giving the employee status in the organization), which are taken away from employees by technology.

Although previous research suggested the existence of this conflict, it did not explain whether consumers perceive it, whether it arouses emotions in them and whether it affects their behavior towards the organization. At the same time, we noticed that there is no reliable tool that would allow us to examine consumer perception in this area. The aim of the study was therefore to create and validate the tool, and to verify three hypotheses on its basis:

Hypothesis 1.2.1

Customers perceive techno-empowerment with high HMTRC as more unsuitable than techno-empowerment with low HMTRC (cognitive reaction).

Hypothesis 1.2.2

Consumers feel more negative emotions towards techno-empowerment when HMTRC is high than when HMTRC is low (emotional reaction).

Hypothesis 1.2.3

Consumers are more likely to take action against an organization where the intensity of HMTRC is high than where HMTRC is low (behavioural reaction).

Since our goal was both to verify the hypotheses and to create the tool, the research process consisted of three stages: (1) determining the source of HMTRC, (2) creating a reliable tool taking into account the full validation procedure consisting of three stages: a) creating a pool of questions, b) purification of the pool and c) validation, and (3) verification of research hypotheses. At the first stage, a quantitative study was conducted using a questionnaire. At the second and third stage, the 2 x 2 experiment was carried out. 513 people participated in the entire study. After statistical analyses Hypotheses 1.2.1, 1.2.2, 1.2.3 were positively verified. At the same time, a scale measuring consumer reactions to HMTRC was proposed, which consists of three dimensions and nine questions.

From the point of view of theoretical development, it is worth noting that the problem of HMTRC has not been addressed in previous studies, and the literature in the field of management and psychology has focused on role conflicts in organizations between people rather than between man and machine (Kahn et al., 1964). Our research has extended the CASA theory in the psychological and managerial areas. First, we have indicated that humans apply similar heuristics to machines and humans in conflict situations, which has not been empirically tested before. Second, research by Ahn et al. (2016) showed that "sustainable innovation"

has a positive effect on the willingness to use new technology. Our research has also shown that unsustainable innovation discourages customers from using the company's offer and can influence the willingness to engage in boycott activities. Third, we showed that clients' response to human-machine role conflict has three dimensions: cognitive, affective, and behavioral. Fourth, our study provided a robust and validated tool for measuring consumer responses to human-machine role conflict, which can be used by subsequent researchers to further develop the existing theory.

From the point of view of management practice, we have shown that managerial decisions to delegate tasks to technology have an impact on how an organization is perceived by consumers. If managers do not take into account the conflict of roles between employees and technology in their decisions, they can expect that consumers will notice this conflict, it will arouse negative emotions in them, and may even cause them to engage in boycott activities and refrain from consuming products or services of a given origin.

Consumer resistance to the increased role of smart technologies, presented in Publications 2 and 3, raises reflection related to the existence of factors and circumstances that encourage or discourage users to delegate tasks to technology (including decision-making autonomy). The next three publications focus on this issue, analysing the relationship between gender, religiousness, country of origin of technology, safety certificate and form of autonomous technology with consumers' intentions in terms of giving it decision-making autonomy.

Sub-goal 2: To indicate the determinants of the transfer of decision-making autonomy to technology

As a result of the literature analysis, hypotheses 2.1.1-2.6.2 were formulated. Their shape and the result of verification are presented in the table below (Table 2). On pages 19-27, a detailed description of the components of the cycle and the method used to verify the hypotheses has been presented.

Table 2. Research hypotheses for sub-goal 2 and the results of their verification

Sub-goal 2: To indicate the determinants of the transfer of decision-making autonomy to technology			
Question 2.1: (Publication 4) How does gender influence consumer attitudes towards autonomous technologies?		**Question 2.2: (Publication 4)** How does religiosity affect consumers' attitudes towards autonomous technologies?	
Hypothesis 2.1.1 (a-b) The effect of gender on attitudes toward AVs is moderated by Catholic religiosity such that (a) highly religious men will have more negative AV attitudes than nonreligious men; (b) highly religious men will have more negative AV attitudes than highly religious women.	**Supported for a-b**	**Hypothesis 2.2.1** Highly religious (Catholic) people will have more negative AV attitudes than less religious (Catholic) people.	**Supported**
Hypothesis 2.1.2 (a-b) The effect of gender on trust toward AVs is moderated by Catholic religiosity such that (a) highly religious men will demonstrate lower trust toward AVs than nonreligious men; (b) highly religious men will demonstrate lower trust toward AVs than highly religious women.	**Supported for a-b**	**Hypothesis 2.2.2** Highly religious (Catholic) people will be less trustful toward AVs than less religious (Catholic) people.	**Supported**

Question 2.3: (Publication 5) How does the physical form of technology affect consumers' intentions to give it decision -making autonomy?		**Question 2.4: (Publication 5)** When is the consumer willing to give decision-making autonomy to technology?	
Hypothesis 2.3.1 The more a non-human agent looks like a human, the higher the intention will be to allow it independence in decision-making—but only if the non-human agent simultaneously provides functional and visual anthropomorphic cues.	**Supported**	**Hypothesis 2.4.1 (a-d)** Intention to empower a non-human agent is positively correlated with (a) trust, (b) attitudes, (c) perceived usefulness, and (d) perceived ease of use that human empowerer has towards such the agent.	**Supported for a-d**
Hypothesis 2.3.2. A human name increases the intention to give a machine autonomy in decision-making.	**Rejected**		
Question 2.5: (Publication 6) How does the country of origin of the technology affect the consumer's intention to give it decision-making autonomy?		**Question 2.6: (Publication 6)** How does the security certificate affect the consumer's intention to give technology decision-making autonomy?	
Hypothesis 2.5.1 People have a stronger intention to allow autonomous office assistants to make independent decisions when the assistants' country of origin is unknown than when it is known.	**Supported**	**Hypothesis 2.6.1** People have a greater intention of allowing autonomous office assistants to make independent decisions if the assistants possess a safety certificate than if they lack such a certificate.	**Supported**
Hypothesis 2.5-6.2 Gender moderates the "label effect" so that females have a greater intention to allow autonomous office assistant to make independent decisions if they do not know the country of origin but a safety certificate is provided, whereas for males, neither of these labels significantly influences such intention.			**Supported**

Publication 4

Artur Modliński, Emilian Gwiaździński, Małgorzata Karpińska-Krakowiak, (2022). The effects of religiosity and gender on attitudes and trust toward autonomous vehicles, Journal of High Technology Management Research, 33 (1), DOI: 10.1016/j.hitech.2022.100426

- *Editor in charge of the review process: Prof. Marianna Makri – USA*
- *The percentage of the applicant's contribution: 40%*
- *A description of the individual contribution is indicated in Table 4 on pages 32-35*
- *Ministry of Science and Higher Education: 70 points*

Research on the acceptance of autonomous technologies focuses on determining the factors that influence this acceptance and on creating the characteristics of a consumer willing to use them. An analysis of the literature on the subject revealed over forty studies that focused on these two issues. Most of them concerned the currently most popular autonomous technology, i.e. self-driving cars. Among other things, it was indicated that the age (Bansal and Kockelman, 2018), education level (Hudson et al., 2019) or gender (Hudson et al., 2019) of consumers affect their attitudes towards autonomous vehicles.

Much attention has been given to the gender effect in this area. Earlier researchers wondered what motivated the fact that in some studies women and men differed in terms of attitudes and trust towards autonomous vehicles, and in others such differences were not found. At the same time, none of the studies took into account the conclusions we drew from the analyses presented in Publication 3. We found that the research gap was consumer attitudes towards autonomous technologies that take away the status assigned to them depending on the norms and values that guide them in life. One of the important sources of norms and values influencing consumer behavior is the religion professed by buyers. No research on attitudes towards autonomous vehicles has taken into account consumer religiosity. One of the reasons for this state of affairs could be the difficulty in obtaining declarations about their religion and religiosity from the consumers themselves.

Together with my co-researchers, we also experienced this problem when collecting data - a large number of potential subjects resigned after learning what type of questions we would be asking them. Maintaining anonymity, our perseverance and clearly indicating the purpose of the study became the key to obtaining consent to conduct the study. Ultimately, 227 people

responded. On their basis, four hypotheses formulated on the basis of literature analysis were verified:

Hypothesis 2.1.1: The effect of gender on attitudes toward AVs is moderated by Catholic religiosity such that (a) highly religious men will have more negative AV attitudes than nonreligious men; (b) highly religious men will have more negative AV attitudes than highly religious women.

Hypothesis 2.1.2: The effect of gender on trust toward AVs is moderated by Catholic religiosity such that (a) highly religious men will demonstrate lower trust toward AVs than nonreligious men; (b) highly religious men will demonstrate lower trust toward AVs than highly religious women.

Hypothesis 2.2.1: Highly religious (Catholic) people will have more negative AV attitudes than less religious (Catholic) people.

Hypothesis 2.2.2: Highly religious (Catholic) people will be less trustful toward AVs than less religious (Catholic) people.

As a result of the statistical analyzes carried out, all four hypotheses were positively verified, which contributed to the development of the existing theory in the field of management and quality science, and to the formulation of practical conclusions. From the point of view of theoretical development, the list of factors influencing consumer attitudes and trust towards autonomous vehicles has been extended. At the same time, it was proposed a possible reason for the discrepancy in the results of earlier researchers when it comes to the difference in attitudes and trust between women and men. It has been suggested that our predecessors did not take into account differences in consumer norms and values (including their level of religiosity). The obtained conclusions are additionally connected with the conclusions of Publication 3, which indicated that consumers feel more resistance to transfer the status-providing tasks to technology. It can therefore be concluded that the more a task or activity brings the status, the higher his resistance to transferring this task/activity to autonomous technology.

From the point of view of business practice, we suggested that consumers' religiousness may influence their attitudes towards the adoption of autonomous vehicles. Despite the COVID-19 pandemic, there are highly advanced projects to introduce autonomous vehicles to common use in the next decade. The creators of these projects note that consumer resistance (including

fear and low level of trust) is one of the main barriers to the introduction of this technology to use. Our research suggests which group of consumers may feel more resistance to autonomous vehicles, and why this resistance occurs. On this basis, it becomes possible to design promotional campaigns more thoughtfully and thus increase the chances of this technology's adopting.

Publication 5

Artur Modliński, (2022). The psychological and ethological antecedents of human consent to techno-empowerment of autonomous office assistants, AI & Society, Online First, DOI: 10.1007/s00146-022-01534-8

- *Editor in charge of the review process: Dr Angelo Trotta – Włochy*
- *The percentage of the applicant's contribution: 100%*
- *A description of the individual contribution is indicated in Table 4 on pages 32-35*
- *Ministry of Science and Higher Education: 40 points*

While autonomous cars have been given a place in the literature, semi-autonomous technologies accompanying consumers in everyday life have been omitted by researchers. This applies in particular to those technologies to which users can grant decision-making autonomy, or use them according to verification-acceptance approach (autonomous cars do not meet these criteria). Examples of such technologies include autonomous applications for investing money (so-called smart banking) or a wide range of applications that assist users at work.

My review of the literature showed that previous studies did not identify factors influencing consumers' intentions to grant consent to assistive applications to make decisions on their behalf (e.g. scheduling meetings or paying invoices). Earlier models (TAM, UTAUT) worked well in terms of testing the acceptance of the technology itself, but it has not been verified whether they are also helpful in the case of consumer intentions regarding the transfer of decision-making autonomy.

Due to the post-humanistic nature of the habilitation cycle, I analyzed the literature in the field of management and quality science, sociology, psychology and ethology. Based on this, I found that psychological (trust, attitudes, perceived usefulness, and perceived ease of use) and ethological (anthropomorphization) variables should be taken into account to determine

consumers' willingness to transfer decision-making autonomy to technology. Starting from the research of my predecessors, I formulated three research hypotheses:

Hypothesis 2.3.1: The more a non-human agent looks like a human, the higher the intention will be to allow it independence in decision- making—but only if the non-human agent simultaneously provides functional and visual anthropomorphic cues.

Hypothesis 2.3.2: A human name increases the intention to give a machine autonomy in decision-making.

Hypothesis 2.4.1: Intention to empower a non-human agent is positively correlated with (a) trust, (b) attitudes, (c) perceived usefulness, and (d) perceived ease of use that human empowerer has towards such the agent.

In order to verify the hypotheses, an 2 x 4 experimental study was conducted. The first manipulated variable in the study was the name of the autonomous assistant (numeric or human). The second manipulated variable was the form of the assistant. Four different forms were introduced: a disembodied algorithm, a non-anthropomorphic Amazon Echo-like device, a technomorph with a built-in screen to show facial emotions, and a humanoid Sophia. The study involved 278 participants randomly assigned to one of eight experimental cells. As a result of the analysis, Hypothesis 2.3.1 and 2.4.1 were positively verified, and Hypothesis 2.3.2 was rejected.

From the point of view of the development of the theory of management science and quality, this study indicated that the TAM model extended by the variable 'trust' can be used to study consumer intentions to consent to autonomous decision-making of assistive technologies. It was noted that the greater the trust, the more positive attitudes, the higher the perceived usefulness and the perceived ease of use, the greater the intention to allow technology to decision-making.

The second important conclusion was the impact of the form of autonomous technology on consumer intentions. An experimental study suggested that functional similarity to a human alone is not enough for consumers, but both functional and visual similarity (visual anthropomorphic cues) seems to increase their intention to grant decision-making autonomy to assistive technologies. In the case of algorithms and non-anthropomorphic assistants (no anthropomorphic visual cues), no linear relationship was observed between human likeness (functional) and the intention to give technology decision-making autonomy.

Such a correlation, however, appeared in the case of the technomorph and the humanoid (having visual anthropomorphic clues). This, in turn, suggests that the phenomenon of anthropomorphization of assistive technology is connected to the phenomenon of techno-empowerment and should be taken into account in further research.

From the point of view of business practice, it was shown what features of autonomous technology manufacturers should design in it so that consumers can take full advantage of its capabilities. First of all, an autonomous assistant should resemble a human in terms of visual and functional capabilities. Manufacturers should additionally ensure that this type of assistant inspires trust, is perceived as useful and easy to use, and that users have positive attitudes towards it.

Publication 6

Artur Modliński, Matthew Gladden, (2021). Applying Ethology To Design Human-Oriented Technology. An Experimental Study On The Signalling Role Of The Labelling Effect In Technology's Empowerment, Human Technology, Volume 17(2), s. 164–189, DOI: 10.14254/1795-6889.2021.17-2.5

- *Editor in charge of the review process: Dr Kristiina Korjonen-Kuusipuro - Finland / Prof. Adam Wojciechowski - Poland*
- *The percentage of the applicant's contribution: 95%*
- *A description of the individual contribution is indicated in Table 4 on pages 32-35*
- *Ministry of Science and Higher Education: 140 points*

Differences between men and women in attitudes and intentions towards autonomous technologies aroused my interest, especially since this effect has only been described scarcely in the marketing and management literature. The conclusions of Publication 5 inspired me to look for such stimuli that affect consumers (users) of autonomous technologies in the process of their adoption.

The analysis of the literature allowed me to notice that consumers pay attention to such signals sent by technologies that prove belonging and security. Women were to pay more attention to these signals than men. This, however, has not been verified in business studies. In earlier publication I found that product's country of origin may provide belonging, while appropriate

certificate can prove safety. Taking into account the existing literature, I formulated three hypotheses:

Hypothesis 2.5.1: People have a stronger intention to allow autonomous office assistants to make independent decisions when the assistants' country of origin is unknown than when it is known.

Hypothesis 2.6.1: People have a greater intention of allowing autonomous office assistants to make independent decisions if the assistants possess a safety certificate than if they lack such a certificate. Supported

Hypothesis 2.5-6.2: Gender moderates the "label effect" so that females have a greater intention to allow autonomous office assistant to make independent decisions if they do not know the country of origin but a safety certificate is provided, whereas for males, neither of these labels significantly influences such intention.

In order to verify the hypotheses, a 2 x 4 experiment was designed. The first manipulated variable was the security certificate (technology with certificate x technology without certificate). The second variable was country of origin (no country x China x United States x Russia). For the purposes of the experiment, I created eight advertising materials (experimental stimuli) according to the 2 x 4 layout. 274 people (54% of them women) participated in the study, who were randomly assigned to one of the eight experimental cells.

Statistical analysis allowed to positively verify all three hypotheses. Women are more likely to give decision-making autonomy to technology if its country of origin is not indicated and if it has a safety certificate. In addition (apart from the tested hypotheses), it turned out that in these cases consumers had greater confidence in this technology. For men, however, neither the safety certificate nor the country of origin had a significant impact on the intentions of transferring decision-making autonomy to the technology.

From the perspective of the development of management science theory, this study shows that there is a difference in consumer intentions and trust in autonomous technologies depending on gender and signals technology sends. At the same time, the results contribute to the earlier researchers focused on the impact of the country of origin of the product on the intentions of buyers. These researchers found the differences in intentions and trust in different types of products depending on their origin. My experiment has shown that gender of the consumer can be important in deeper understanding of this issues. At the same time, it was shown that

the formal confirmation of the safety (by certificate) of a given autonomous technology may affect consumers' intentions depending on their gender.

From the point of view of business practice, this study indicated that consumers, depending on gender, may react differently to advertising stimuli related to autonomous technologies. While for men the country of origin or safety certificate is not important, for women these stimuli can affect trust and intentions. Designers of advertising campaigns should therefore take this effect into account in their marketing activities. In addition, the study suggested the important role of security certificates for consumers of autonomous technologies, but the number of such certificates on the market is negligible. During the analysis, I was able to find only one such certificate, which was not widely used by manufacturers. Therefore, it seems important to ensure standards and develop such certificates in the coming years.

In addition to the value for the individual customer, smart technologies provide significant support for the entire organization. Intelligent decision support systems and solutions focused around the automation of business processes are particularly eagerly adopted. The available literature indicated a rather positive impact of these solutions on the functioning of the organization, disregarding the managerial challenges that are associated with them. The next two publications focus on the worker's perspective in terms of increasing the role of technology, complementing the studies of earlier authors with the limitations of the use of smart technological solutions.

Sub-goal 3: To describe the employees' reactions to techno-empowerment

As a result of the literature analysis, hypothesis 3.1.1was formulated. Its shape and the result of verification are presented in the table below (Table 3). Question 3.2 was answered in qualitative research. On pages 28-32, a detailed description of the cycle's and the methods used to verify the hypothesis have been presented.

Table 3. Research hypothesis for sub-goal 3 and conclusions from the study conducted by dint of an interview questionnaire.

Sub-goal 3: To describe the employees' reactions to techno-empowerment			
Question 3.1: (Publication 7) Do employees conform to the suggestions of intelligent decision support systems?		**Question 3.2: (Publication 8)** Is the transfer of technology to tasks requiring intelligence a one-way phenomenon? (from human to technology?)	
Hypothesis 3.1.1 HR system's supervisors display conformist behaviour towards recommendations related to disciplinary decisions made by IDSS.	**Supported**	Answering the question after qualitative research (employee interviews)	**Conclusion from the study:** Organizations are experiencing robotic processes re-manualization.

Publication 7

Marcin Bartosiak, Artur Modliński, (2022). Fired by an algorithm? Exploration of conformism with biased intelligent decision support systems in the context of workplace discipline, Career Development International, Vol. 27 No. 6/7, pp. 601-615, DOI:: 10.1108/CDI-06-2022-0170

- *Editor in charge of the review process: Prof. Jim M. Jawahar – USA*
- *The percentage of the applicant's contribution: 50%*
- *A description of the individual contribution is indicated in Table 4 on pages 32-35*
- *Ministry of Science and Higher Education: 100 points*
- ***Impact Factor: 2,49***

With the development of technologies based on artificial intelligence, there are more and more decision support systems dedicated for employees. This applies to doctors, judges,

stockbrokers, as well as business managers. Recommendation algorithms suggest treatment processes and penalties, investing option on the stock, rewards and disciplinary penalties for employees. Although these systems bring many benefits to the organization, it happens that they are burdened with errors (biases).

The literature to date has indicated that users of recommendation applications (e.g. GPS) tend to be submissive to such technology, failing to notice recommendation errors. However, little space in the literature is devoted to the submissiveness of employees (experts) to intelligent decision support systems, especially if these decisions are related to an ethical or moral dilemma (e.g. punishment or reward for the employee). Based on the literature in the area of information conformism, the following hypothesis was formulated in the publication:

Hypothesis 3.1.1: HR system's supervisors display conformist behaviour towards recommendations related to disciplinary decisions made by IDSS.

The research that forms the basis of this publication has been the most demanding experience in my career. Together with my co-author, Dr. Marcin Bartosiak (University of Pavia, Italy), we decided to conduct an experiment using a mock-up of a program imitating an intelligent decision support system.

At the beginning, we created five scenarios depicting the stories of employees violating work discipline in various ways. We contacted HR managers of various companies to determine what consequences these employees would suffer as a result of their decisions. Then we designed our system in such a way as to show users recommendations that have more serious consequences for the employee than those suggested by managers (e.g. dismissal instead of a warning). In the control group, we asked the subjects to indicate the disciplinary consequences without the suggestion of the program. The results of the research showed that the subjects in the control group decided on the same disciplinary consequences as the managers participating in the pre-test phase. In accordance with our predictions, which are illustrated by Hypothesis 1, people using the program with the bias decided on more serious consequences (suggested by the "algorithm") than respondents who made decisions without the recommendation of the algorithm.

From the point of view of the development of management sciences, this study showed the existence of a phenomenon that we called algorithmic conformism and classified as a subtype of information conformism. This phenomenon may have a negative impact on the functioning of the organization, as employees responsible for making decisions may not be able to

effectively resist the recommendations of support systems in the event that these decisions are burdened with bias. This, in turn, means that recommendation systems can become semi-autonomous systems, especially if the organization does not employ employees showing a certain degree of non-conformity. However, it remains unknown how conformist behavior towards recommender systems can be reduced. In view of this research gap, my co-author and I decided to submit a research grant to help us answer this question. At the time of writing this report, we are awaiting the results of the grant procedure.

From the point of view of business practice, this study indicated the risks of using intelligent decision support systems. It should be clearly emphasized that in view of the development of the 'business intelligence' concept, organizations should take care of the hygiene of data processed by algorithms as well as to select and educate employees who are competent to detect system biases and oppose them. A thorough analysis of the topic of algorithmic conformism and conversations with managers that enabled the design of the study made me realize that although employees behave in the conformist way towards decision support systems, their resistance can also be observed in the organizational space. The problem of workers' resistance to intelligent technologies was continued by me in Publication No. 8.

Publication 8

Artur Modliński, Damian Kedziora, Andres Jimenez, Adela del Rio Ortega, (2022). Rolling back to manual work: An exploratory research on Robotic Process Re-Manualization, Lecture Notes in Business Information Processing (LNBIP), vol. 459, s. 154-169, DOI: 10.1007/978-3-031-16168-1_10

- *Editor in charge of the review process: prof. Bernhard Axmann - Germany*
- *The percentage of the applicant's contribution: 70%*
- *A description of the individual contribution is indicated in Table 4 on pages 32-35*
- *Ministry of Science and Higher Education: 140 points*

One of the popular tools developed in organizations in the era of the digital revolution is automation and robotization. Robotization of business processes (RPA) is defined by the team of Prof. Syed (2020) as "*a technology consisting of software agents called bots - or software robots - that mimic the manual path that a human being takes through a series of computer applications while performing specific tasks in a business process*". Previous research has

shown that RPA allows organizations to improve their overall performance, reducing both operational costs and process time (Lacity et al. 2016). Due to its impact on the organization, RPA can be perceived as an important part of the techno-empowerment phenomenon - as a result of its application, some human workers are replaced by digital workers. This strengthens the technological component in the organization at the expense of the human workforce.

The analysis of the existing literature allowed me to notice that the main area of interest of researchers focused around RPA was the search for and description of an effective methodology for adapting this technology and the analysis of the impact of its application on the functioning of organizational processes. At the same time, industry reports and scientific discussions on RPA indicated that managers willingly adapt this technology to the organization, seeing it primarily as an opportunity to reduce operating costs. As a chair of new student's course (Business Process Automation), I was analysing the problems faced by managers using this RPA. During my numerous project meetings, I used the ethnographic methodology, which I learned from my colleagues when working at the Department of Management in the Network Society (led by Prof. Dariusz Jemielniak).

Using their good research advice, during working meetings I wrote down all managerial challenges, asked precise questions and confronted these challenges with the current literature on the subject. As a result of this process, I noticed that contrary to literature descriptions and industry reports, managers adapting RPA to their organizational space do not perceive it as a universal tool. Some of my interlocutors withdrew robots, and robotic tasks were put back into human hands. This phenomenon has never been described in the literature on the subject.

Identification of this research gap allowed me to initiate an exploratory process and interest three leading researchers in the world who specialize in the study of RPA. Together with Dr. Damian Kedziora (from the University of Lappeenranta-Lahti, Finland) and Dr. Adela del-Rio-Ortega and Dr. Andres Jimenez Ramırez (from the University of Economics in Seville, Spain), we designed the research that based on the interviews with managers. A large part of the experts refused to answer our questions, perceiving the withdrawal from robotization as an organizational failure, not wanting to expose their organization to image problems.

Nevertheless, we were able to convince six employees from three companies using RPA to participate in the study. On this basis, we found that the phenomenon I noticed in the organizational space actually takes place. As it has not been described in the literature before,

we proposed the name “robotic processes re-manualization”. As a result of the interviews’ analysis, we described four cause-and-effect sequences standing behind the re-manualization.

These include: (1) managers' excessive enthusiasm for RPA, (2) employees' low awareness and fear of robots, (3) changes in the company's offer, and (4) errors related to the robot's code. During conversations with company employees, we also noticed the phenomenon of employees stealing robot tasks, even when the robots were working properly. It was related to employees' fear of losing their jobs or lack of trust in technology. Nevertheless, for the organization, this means incurring a double cost (employee work and robot maintenance), and thus reduces the beneficial impact of RPA technology on the organization. The analysis of the interviews led to the conclusion that the organizations introducing the RPA technology do not expect that in the future, some of the tasks may return to the hands of human employees.

Thus, they do not store process maps and archival documents that would allow for manual reconstruction of processes. As indicated by the respondents themselves, very often employees responsible for performing tasks no longer work in an organization that uses RPA. Thus, if there is a need to introduce re-manualization, the organization does not have an "organizational memory" that would allow the process to be adapted to new conditions.

From the point of view of the development of the discipline of management sciences, the publication allowed to indicate the limitations of the RPA technology, describe the phenomenon unknown in the literature, which is the robotic processes re-manualization, and outline its causes. From the point of view of practical implications, the conducted study allowed to identify the risks associated with the so-called cost robotization and indicate good practices that can be followed by managers who want to protect their organization from challenges linked to robotic processes re-manualization (storing maps of manual processes, maintaining organizational memory, business continuity plans, preparing employees for the introduction of RPA technology).

4.1.5. Contribution to the development of the discipline of management and quality sciences

The problem around which this series was created were the determinants and consequences of transferring tasks requiring intelligence to technology. Three sub-goals were formulated, which I will address in the following summary. Referring to the first sub-goal, it is worth noting that as a result of the conducted research, the current literature was extended by indicating that

creative products created by smart technologies are not perceived by consumers on an equal footing with those created by man. The perceived value of a creative product is lower if its author is artificial intelligence than when it is a human. The level of artistry of the creator and general impressions mediate the impact of the information that artificial intelligence is the author of the creative product on the impression that this product has on the recipients. Moreover, when assessing and valuing the value of a creative product created by artificial intelligence, consumers take into account contextual clues in the form of prices of other products of a similar type. The results of own research also indicated that organizations adopting technologies performing tasks requiring intelligence and creativity should take into account the dissatisfaction of consumers (including boycott activities) if they perceive a conflict of roles between man and technology.

Referring to the second sub-goal, it is worth noting that the determinants of transferring tasks that require intelligence (and autonomy in their performance) to technology are related to both the beliefs and values of consumers, as well as the characteristics of the technology itself. Their explanation on the basis of management and quality sciences (planning the shape and function of the product at the stage of creation and development of sales plans) involves the use of interdisciplinary literature. Our own research deepened earlier studies by showing that there are differences between women and men in terms of attitudes and intentions towards autonomous technologies. Female users are more cautious, expecting a security certificate from the technology. In addition, they are more likely to agree to delegate decision-making autonomy if the country of origin of the technology is not known. For men, neither origin nor security certification play a role in the process of delegation of decision-making autonomy. In addition, it was noted that religiosity affects the attitudes and trust of consumers towards autonomous cars, which may be related to the issue of perceiving roles and identities that shape the status of the consumer in the community. High (Catholic) religious men have more negative attitudes and less trust in self-driving cars than low religious men. In addition, men with a high level of religiosity have more negative attitudes and less confidence in this technology than women with a similar level of religiosity. This effect was explained by the aforementioned process of technology taking roles perceived as constituting the status and identity of the consumer in a given community. In addition, it was noted that the more consumers perceive technology as trustworthy, useful and easy to use, the more willing they are to give it decision-making autonomy. The form in which the technology appears on the market is also important.

In order for the consumer to convey decision-making autonomy to it, it should not only resemble a human in terms of tasks performed, but also offer anthropomorphic visual cues.

Referring to the third sub-goal, it becomes important to note that the consequences of handing over technology to tasks requiring intelligence have usually been described in literature and industry reports in a positive context. This series has supplemented these perspectives with a more critical component, indicating that employees using intelligent decision support systems show conformity to the suggestions of the systems. Smart solutions themselves are neither a one-way and universal solution, nor the target form of every organization functioning in the fourth industrial revolution. The conclusion is that the digital evolution of the enterprise is more Boasian than Tylorian in nature, which is often overlooked or unnoticed on the basis of both theory and practice. Some enterprises experience re-manualization of business processes as a result of excessive optimism of managers, unpreparedness of the team, and numerous changes in the internal and external environment of the organization.

A diagram summarizing the problem, sub-goals and questions around which this publication cycle was created is shown in Figures 1 and 2.

Figure 1: Problem, areas, sub-goals and general questions of the habilitation cycle

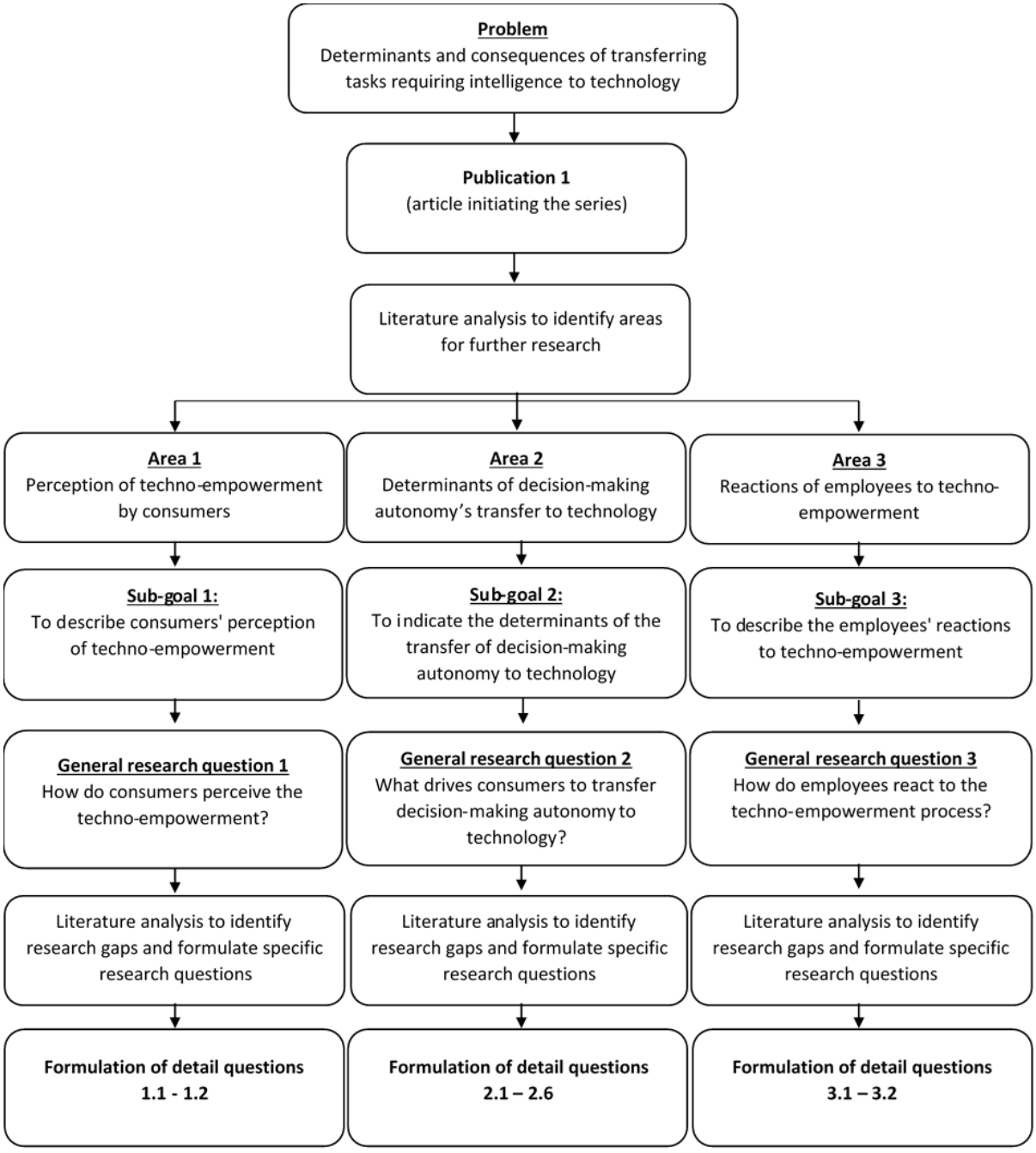
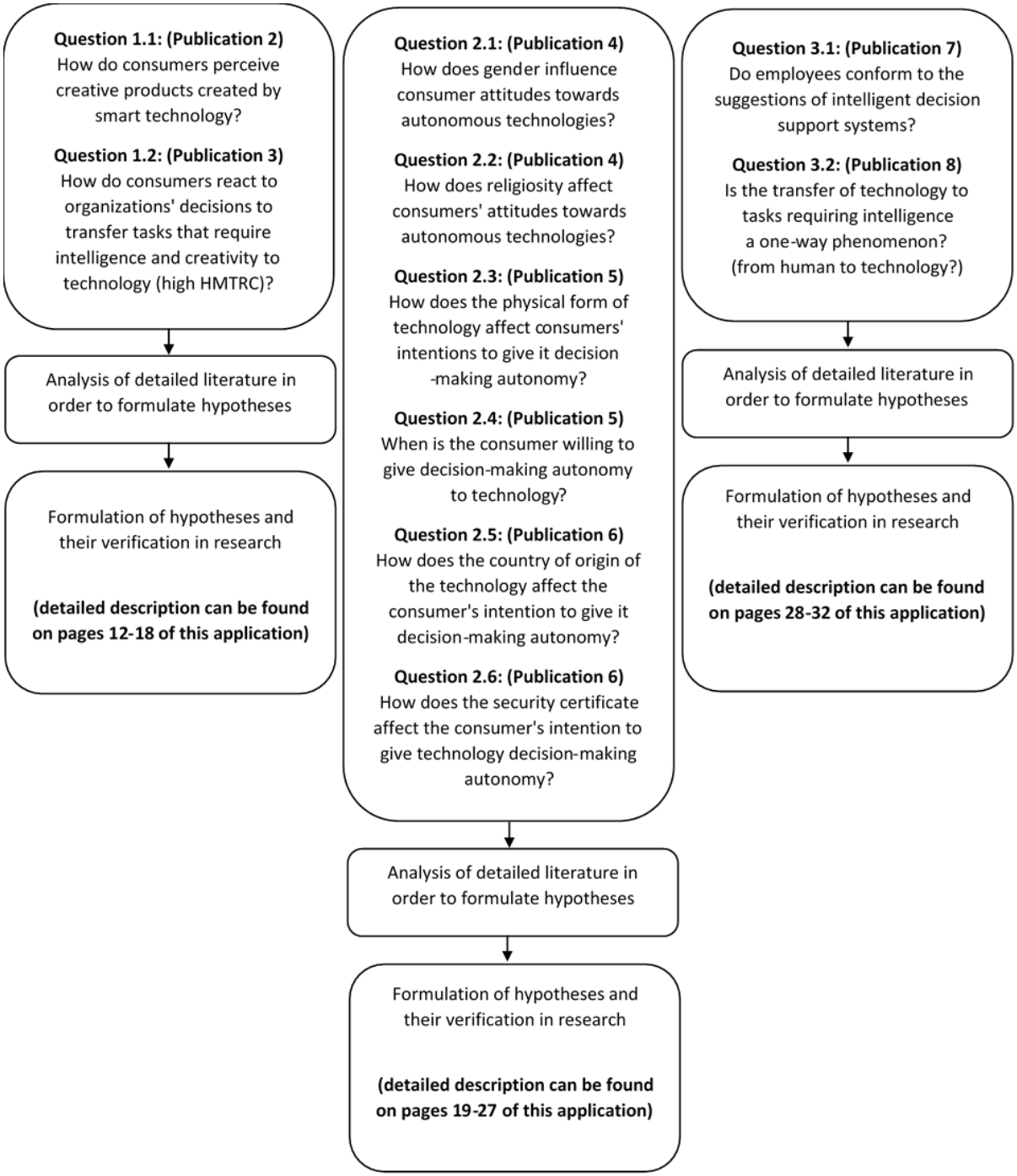


Figure 2: Detail questions of the habilitation cycle



The contribution of the individual components of the cycle to the development of the discipline of management and quality sciences as well as the application contribution have been described in detail in the previous section characterizing individual publications. A synthetic description is provided in Table 4.

Table 4. The contribution of the habilitation cycle to the development of the discipline of management and quality sciences

Publication number and name	**A synthetic description of the contribution to the development of management and quality sciences**
Publication 1 *Artur Modliński, Matthew E. Gladden, (2022). An Organizational Metaphor for the 4th Industrial Revolution: The Organization as Cyborg, World Futures: The Journal of New Paradigm Research, Volume 78, Issue 6, s. 372-391, DOI: 10.1080/02604027.2021.1996187*	- describing a new organizational metaphor in the digital era, characterizing it; - description of new organizational phenomena in the era of digital revolution: techno-empowerment, technoization, bifurcation of the organizational structure.
Individual contribution of the habilitation candidate to Publication 1 (90%) preparation of the research concept, analysis of the literature, development of the concept, structuring the article, writing the entire text of the article, formatting and sending the article to the journal.	
Publication 2 *Paweł Fortuna, Artur Modliński, (2021). A(I)rtist or Counterfeiter? Artificial Intelligence as (D)Evaluating Factor on the Art Market. The Journal of Arts Management, Law, and Society, 51(3), p. 188–201. doi:10.1080/10632921.2021.1887032*	- verification in empirical research that the status of the creator (human / artificial intelligence) affects the valuation and evaluation of a cultural product - the same product created by man is valued as worth more than an identical product created by artificial intelligence; - an indication that consumers look for and take into account contextual cues when pricing and evaluating creative products created by artificial intelligence.
Individual contribution of the habilitation candidate to Publication 2 (50%) analysis of literature in the field of management, identification of the research gap, preparation of the research concept, preparation of stimuli for the experiment, collecting a research sample, structuring the article, writing an abstract, introduction, discussion, help in deriving hypotheses, formatting and sending the article to the journal.	

Publication 3 *Artur Modliński, Paweł Fortuna, Bohdan Rożnowski, (2022). Human-machine trans roles conflict in the organisation: how sensitive are customers to intelligent robots replacing the human workforce?, International Journal of Consumer Studies, DOI: 10.1111/ijcs.12811*	- describing a new type of organizational conflict in the era of the digital revolution - human-machine trans role conflict (HMTRC); - development and validation of a scale to measure consumer and employee responses to HMTRC; - the discovery that consumers notice HMTRC, react to it emotionally and declare boycott actions against the organization where it occurs.
Individual contribution of the habilitation candidate to Publication 3 (50%) preparation of the research concept, analysis of literature in the field of management, identification of the research gap, preparation of stimuli for the experiment, collecting a research sample, creation of a list of literature in order to derive hypotheses, conceptual division of the article into subsections, writing an abstract, introduction, half of the chapter deriving hypotheses discussion, formatting the article, submitting the article to the journal.	
Publication 4 *Artur Modliński, Emilian Gwiaździński, Małgorzata Karpińska-Krakowiak, (2022). The effects of religiosity and gender on attitudes and trust toward autonomous vehicles, Journal of High Technology Management Research, 33 (1), DOI: 10.1016/j.hitech.2022.100426*	- supplementing earlier models of technology acceptance with a component of religiosity; - showing in the study that religiosity affects attitudes and trust in autonomous cars - the higher the level of religiosity, the more negative attitudes and less trust in autonomous cars; - indication that the influence of religiosity is moderated by gender; - the finding that highly religious men have more negative attitudes and less confidence in these technologies than less religious men - an effect not found among women.
Individual contribution of the habilitation candidate to Publication 4 (40%) preparation of the study concept, identification of the research gap, literature review, construction of the survey questionnaire, obtaining half of the respondents, analysis of the literature in the field of acceptance of new technologies, writing half of the text (abstract, introduction, hypotheses, discussion), formatting the text, sending the article to the journal.	
Publication 5 *Artur Modliński, (2022). The psychological and ethological antecedents of human consent to techno-empowerment of autonomous office assistants, AI & Society, DOI: 10.1007/s00146-022-01534-8*	- an indication that the basis of the consumer's intention to transfer decision autonomy technology can be explained by the extended TAM model - trust, attitudes, perceived usefulness and perceived ease of use are correlated with the intention to transfer autonomy to the machine; - noting that the more human-like a technology is, the greater the consumer's willingness to grant

	it independence in decision-making - but only if the technology provides both functional and visual anthropomorphic cues; - discovery and description of the 'corporal collapse effect' phenomenon and its impact on consumer decisions in terms of delegating decision-making autonomy to a machine.
Individual contribution of the habilitation candidate to Publication 5 (100%) The publication was prepared by the habilitation candidate entirely with his own effort (including data analysis)	
Publication 6 *Artur Modliński, Matthew Gladden, (2021). Applying Ethology To Design Human-Oriented Technology. An Experimental Study On The Signalling Role Of The Labelling Effect In Technology's Empowerment, Human Technology, Volume 17(2), DOI: 10.14254/1795-6889.2021.17-2.5*	- an indication that the literature on the theory of evolution can be used in management when designing an autonomous technological product; - discovery that country of origin and security certification influence consumers' intention to give autonomous office assistants decision-making autonomy; - finding that gender moderates the influence of the country of origin and having a security certificate so that women are more likely to delegate decision-making autonomy to an assistant when they do not have a country of origin but have obtained a security certificate - this effect does not occur among men (the desire to transfer autonomy is independent of the country origin and certificate).
Individual contribution of the habilitation candidate to Publication 6 (95%) preparation of the research concept, analysis of literature in the field of management, identification of the research gap, preparation of stimuli for the experiment, acquisition of a research sample, compilation of literature in order to derive hypotheses, acquisition of a research sample, conceptual division of the article into subsections, writing the entire text, conducting statistical analysis, reporting results from statistical analysis, formatting the article, submitting the article to the journal.	
Publication 7 *Marcin Bartosiak, Artur Modliński, (2022). Fired by an algorithm? Exploration of conformism with biased intelligent decision support systems in the context of workplace discipline, Career Development International, Vol. 27 No. 6/7, pp. 601-615, DOI:: 10.1108/CDI-06-2022-0170*	- demonstrating in an experimental study the existence of the phenomenon of algorithmic conformism among employees of organizations using intelligent decision support systems (IDSS); - finding that employees using IDSS are more likely to agree to biased system recommendations than employees not using such solutions.

<table>
<tr><td colspan="2">Individual contribution of the habilitation candidate to Publication 7 (50%)
analysis of literature in the field of conformity and management, identification of a research gap, deriving a hypothesis, preparing scenarios for the experiment, conducting pre-tests, obtaining a research sample, conducting a study in laboratory conditions, statistical analysis of results (50%), writing half of the introduction, writing half of the subchapter deriving a hypothesis, writing half of the section containing the discussion.</td></tr>
<tr><td>Publication 8
Artur Modliński, Damian Kedziora, Andres Jimenez, Adela del Rio Ortega, (2022). Rolling back to manual work: An exploratory research on Robotic Process Re-Manualization, Lecture Notes in Business Information Processing (LNBIP), vol. 459, DOI: 10.1007/978-3-031-16168-1_10</td><td>- description of a new phenomenon - re-manualization of robotic processes in organizations using robotization of business processes;
- indication of the reasons for the occurrence of re-manualization of robotic processes:
(1) managers' excessive enthusiasm for RPA,
(2) employees' low awareness and fear of robots,
(3) changes in the company's legal or offer, and
(4) bugs related to the robot's code.</td></tr>
<tr><td colspan="2">Individual contribution of the habilitation candidate to Publication 8 (70%)
defining the research problem, preparing the interview questionnaire, conducting the interviews, transcription of the interviews, analyzing the results and describing the conclusions, writing the introduction, the problem subchapter, describing the methodology and conclusions of the study, sending the article for review</td></tr>
</table>

4.2. Scientific activity before obtaining a doctoral degree

The first stage of the development of my scientific career took place in the years 2013-2018. During this period, I was preparing my doctoral dissertation under the supervision of Prof. Tomasz Domański. The time of my doctoral studies is primarily a period of searching for scientific interests, shaping the methodological workshop, getting to know the scientific environment in the field of conference and didactic presentations.

Before obtaining my doctoral degree, I specialized mainly in the area of qualitative research, exploring the methodology related to conducting interviews. It was the interviews that I used in my doctoral thesis, which I entitled "Strategies of cultural institutions against consumer dissatisfaction and boycotts". In 2018, I defended my thesis, which was recommended by the reviewers for the award of the Rector of the University of Lodz due to its innovative approach and application conclusions. Two years later, the book was published on the publishing market

by the University of Lodz Publishing House and was awarded by the Rector of the University of Lodz with **a third degree award**.

The period before obtaining my doctoral degree was an opportunity for me to gain significant design competences. I was involved in six scientific projects: two OPUS projects, one JUVENTUS PLUS project, one project financed by the Portuguese Fundação para a Ciência e a Tecnologia (FCT), one project financed by Campus Culturae and one project financed by European Commission Funds. Involvement in project activities allowed me to establish contacts with researchers from Spain, Italy, Portugal and the Netherlands, which I used in my later research activities. In all the above-mentioned projects, I acted as a contractor, learning both in the quantitative and qualitative methods. The project under the Campus Culturae and FCT programs taught me how to organize the project space and be systematics in the field of project management. I also used these experiences as good practices in my teaching work.

In the years 2013-2018, I conducted over 600 hours of classes with undergraduate and graduate students in various subjects taught in Polish and English. In 2016, I received awards in two categories: **Fairplayer of the Year and Personality of the Year**, which are awarded annually by students of the Faculty of International and Political Studies at the University of Lodz. In addition, I took part in **23 scientific conferences** (including 7 international ones, organized by centres in the Czech Republic (Zlin), Italy (Florence), Latvia (Riga), Lithuania (Vilnius), Croatia (Dubrovnik) and Portugal (Lisbon and Covilhã). In 2015, I taught classes in France at the University of Paris Descartes V as part of the Erasmus program. In the same year, I received a **VIP+ scholarship from the German DAAD Foundation** where I learned MAXQDA program – commonly used to analyze qualitative research.

In addition to grants and teaching activities, in the period before obtaining the doctoral degree, I was also involved in scientific activities**. I have published a total of 21 articles** (11 in English). For the first time, I was also the editor of the monograph of student and doctoral articles in the process of preparing the book "Innovative activities in the field of management and marketing". Although my dominant area of interest at that time was management in cultural institutions, my specialization was not strongly specified. I used various opportunities, grants and conferences to learn from my colleagues and expand the skills.

Table 5: Quantitative list of publications in the period before obtaining the doctoral degree (2013-02.2018)

Type of publication	Individual work		Group work		**Total**
	Polish	English	Polish	English	
Monograph	-	-	-	-	**-**
Editing of the monograph	-	-	1	-	**1**
Chapters in monographs	5	3	3	1	**12**
Articles in peer-reviewed journals:					
List A	-	-	-	1	**1**
List B	1	2	-	1	**4**
Articles in peer-reviewed journals not listed by the Ministry of Science and Higher Education	-	2	-	2	**4**
Total:	**6**	**7**	**4**	**5**	**22**

My involvement in publishing, grants, teaching and organizational activities has resulted in numerous scholarships and awards: 4 Scholarships of the Rector of the University of Lodz for the years 2013/2014, 2014/2015, 4 Doctoral Scholarships for the years 2013/2014, 2014/2015, 2015/2016, 4 Pro-quality scholarships for the years 2013/2014, 2014/2015, 2015/2016, Scientific Award of the Foundation of the University of Lodz for special achievements in the field of social sciences in the academic year 2014/2015, Distinction of the Rector of the University of Lodz for doctoral students for special merits for the University of Lodz in 2016, Bank Santander Scholarship for the best doctoral student of the University of Lodz.

Below I present a list of my publications prior to obtaining a doctoral degree:

- Małgorzata Karpińska-Krakowiak, Artur Modliński, The Effects of Pranks in Social Media on Brands, Journal Of Computer Information Systems, Nr 1/2017, s. 1-9.
- Artur Modliński, The concept of e-Portal as a specialized tool for conducting marketing experimental research on the Internet, International Journal of E-Methodology, 1 (2014), s. 137-146

- Małgorzata Karpińska-Krakowiak, Artur Modliński, Prankvertising – pranks as a new form of brand advertising online, Modern Management Review, 21(3/2014), s. 31-45, ISSN: 2353-0758.
- Artur Modliński, Transitive Business Model of Management in Central Europe – Torn between East and West, Entrepreneurial Business and Economics Review, Vol. 1, No. 2, 2013, s. 59-73, ISSN: 2353-8821.
- Artur Modliński, The Ice Bucket Challenge as an Innovative Social Campaign – An analysis of the concept, its mechanisms and effectiveness [w:] red. Marzena Starnawska, Social, innovative and financial dimensions of enterprising organizations, wyd. Gdańsk University of Technology, Gdańsk 2015, s. 108-117, ISBN: 978-83-62197-49-1.
- Artur Modliński, Miękkie i agresywne formy sprzeciwu konsumentów wobec niepożądanych zachowań rynkowych, [w:] red. Artur Modliński, Aron Wadlewski, Innowacyjne działania w obszarze zarządzania i marketingu, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2016, s 87-100, ISBN:978-83-7969-895-0.
- Artur Modliński, Academic center as a key driver of region al development. The case study of Campbridge, [w:] red. Tomasz Domanski, The role of universities in promotion of cities and regions, Wydawnictwo KMMiD, Łódź 2015, s. 219-237, ISBN: 978-83-63199-43-2
- Artur Modliński, Mityzowanie w procesie tworzenia współczesnej marki i jej relacji z konsumentami, Mity polityczne i stereotypy w pamięci zbiorowej społeczeństwa, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2015, s. 125-139, ISBN: 978-83-7969-631-4.
- Artur Modliński, Rola specjalizacji ośrodka miejskiego w komunikacji z otoczeniem - studium przypadku specjalizacji negatywnej, [w:] red. Artur Modliński, Aron Wadlewski, Nowe trendy marketingu, Wydawnictwo Piktor, Łódź 2015, s. 56-66, ISBN: 978-83-63199-45-6.
- Artur Modliński, The concept of trackvertising an introduction into the basic mechanisms, [w:] red. Artur Modliński, Aron Wadlewski, Nowe trendy marketingu, Wydawnictwo Piktor, Łódź 2015, s. 119-127, ISBN: 978-83-63199-45-6.
- Artur Modliński, Aron Wadlewski, Komunikacja monopolistów z klientami w ujęciu typologii Boccarda, [w:] red. Artur Modliński, Aron Wadlewski, Nowe trendy marketingu, Wydawnictwo Piktor, Łódź 2015, s. 66-75, ISBN: 978-83-63199-45-6.
- Artur Modliński, Luis Moreira Pinto, The concept of "icon streets" on the basis of Lisbon downtown, Journal of Arts & Humanities, USA, Maryland, Vol. 05, No. 01/2016 pp. 28-38, ISSN:2167-9045
- Artur Modliński, Luis Pinto, Antonio Polnais, The impact of audio-visual perspective on Trans-disciplinary studies [w:] Contribution to General Assembly 2016, UNESCO, s. 75-79.
- Artur Modliński, Pandemic strategy: Effective combination of viral marketing and targeting, Slovak Scientific Journal of Management: Science and Education, Volume 3 (2014) No. 1, s. 56-60.
- Artur Modliński, Suggestive comparative advertising in the campaigns of international fast-food brands in Poland [w:] 10th International Bata Conference, wyd. Faculty of Management and Economic, Thomas Bata University in Zlin, ss. 9, (Publication materiałów po międzynarodowej konferencji naukowej) ISBN: 978-80-7454-339-5.
- Artur Modliński, Luis Pinto, Antonio Polonais, Improving an emotive experience in the street, [w:] Red. Joanna Sokołowska-Moskwiak, Technological innovations and sustainability development in

architecture and construction, wyd. Państwowej Wyższej Szkoły Zawodowej w Raciborzu, Racibórz 2017, s. 507-518. ISBN: 978-83-64423-58-1.

- Artur Modliński, Przystosowanie oferty przedsiębiorstwa do wymagań konsumentów muzułmańskich w zakresie produktów spożywczych, [w:] Studia Ekonomiczne Regionu Łódzkiego, nr 11, wyd. Polskie Towarzystwo Ekonomiczne, Łódź 2013, s. 147-159, ISSN: 1897-7480.
- Artur Modliński, Aron Wadlewski, Proces utraty pozycji monopolistycznej przez Pocztę Polską, Studia Prawno-Ekonomiczne, Tom XCVII (2015), Łódzkie Towarzystwo Naukowe, s. 291-302, ISSN: 0081-6841.
- Artur Modliński, Funkcjonowanie branży odzieżowej w perspektywie promocji miast [w:] red. Tomasz Domański, Budowanie przewagi konkurencyjnej miast. Wyzwania przyszłości, Wydawnictwo Uniwersytetu Łódziego, Łódź 2014, s. 95-111, ISBN: 978-83-7969-148-7.
- Artur Modliński, Analiza porównawcza w badaniu zjawiska ekonomicznej dywersyfikacji segmentów mniejszości kulturowej [w:] Mateusz Hudzikowski, Wybrane metody badania polityki globalnej, wyd. Instytut Geopolityki, Częstochowa 2014, s. 163-175, ISBN: 978-83-931924-7-2.
- Artur Modliński, Aron Wadlewski, Japońskie struktury keiretsu wobec kryzysów gospodarczych i wyzwań globalizacji, [w:] red. Artur Modliński, Aron Wadlewski, Innowacyjne działania w obszarze zarządzania i marketingu, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2016, s. 67-76, ISBN:978-83-7969-895-0.

4.3. Scientific activity after obtaining a doctoral degree

The period between 2018-2023 is framed by two events: obtaining my doctoral degree (2018) and submission of my habilitation application (2023). In 2018-2019, I worked at the Kozminski University in Warsaw, in the Department of Management in the Network Society, whose employees specialized in conducting qualitative research (especially in organizational ethnography). Their experience allowed me to expand my research workshop, which before 2018 focused mainly on conducting and analyzing interviews. Thanks to them, I began to look at the organizational reality from the position of an observer-anthropologist, **ask precise questions, confront the existing reality with current literature and conduct observation linked with abduction.**

It was these valuable experiences gained at Kozminski University that allowed me to notice the phenomenon of robotic processes re-manualization, describe it in the prestigious Lecture Notes in Business Information Processing, present the concept at the most important international conference on business processes - the 20th Business Process Management Conference in Munster, Germany. The combination of my current interests (management in cultural institutions) with the inspirations found at Kozminski University resulted in an

unobvious research topic that I took up after 2018 - the use of new technologies to manage cultural institutions. Finishing my work at the Kozminski University, I received a distinction from the Rector of Koźmiński University for my work at this university.

In 2019, I returned to the University of Lodz to work as an assistant professor at the Department of Management at the Faculty of Management. At the same time, I became the head of the Center for Research on Artificial Intelligence and Cybercommunication. My work for four years in the Center resulted in cooperation with analogical centers from Germany, Italy, Finland, Spain, the United States, the Netherlands, Pakistan and Sri Lanka, and joined work on innovative research projects. Working time at the Department of Management at the University of Lodz is **a period of dynamic development of my research workshop in the quantitative area.**

This development was possible thanks to dr hab. Małgorzata Karpińska-Krakowiak who involved me for the international project she leads "The use and effects of humor in advertising - an attempt to explain intercultural differences" within Beethoven Classic 3. It allowed me to explore statistical methods and independent data analysis**. I got experience in creating linear and non-linear regression models, artificial neural networks (multilayer perceptrons), creating decision trees (CART, CHAID) and k-means clusters, conducting exploratory factor analysis.** In addition, I explored the basics of conducting meta-analysis and measuring the compliance of competent judges with Krippendorff's alpha. From Prof. Bohdan Rożnowski and Dr. Paweł Fortuna**, I learned the process of creating reliable research scales** - together we constructed a scale to measure resistance to entrusting technology with organizational tasks (RHMTC).

The space created around the Center for Research on Artificial Intelligence and Cybercommunication also allowed me to **specialize in designing and conducting experiments** (both online and in laboratory experiments). It is this method that dominates my research after obtaining a doctoral degree. Due to its specificity, it is extremely time-consuming. The result of using it is a relatively modest ratio of my annual publications appearing in journals (3.83 per year). Nevertheless, these publications had a higher qualitative component than my achievements before obtaining a doctoral degree - they were published mainly in English, in prestigious, foreign scientific journals published by Emerald, Tylor and Francis, Springer, Sage and Wiley. As at the date of submitting this application**, I had published five articles in journals with the Impact Factor** (four after 2018). The publication

of research results in these places is time-consuming, has a high risk of rejection (up to 95%), consists on multi-stage review rounds. Six articles made in collaboration with researchers from Pakistan, Sri Lanka, Italy, Finland and the Netherlands are under review at the time of submission (including Impact Factor journals).

After obtaining my PhD, I continued to develop my language skills **(I am fluent in English, German, Russian, French, Spanish and Swedish**), which enabled me to review the literature of other researchers, including those publishing in their native languages. Since 2021, I have been studying Italian and Portuguese, which I use at the A1-2 basic level.

The period after obtaining a doctoral degree is a time of specification of my scientific interests. I focused on developing science in three areas:

(A) the use of technology in the management of cultural institutions,

(B) designing and managing employee/consumer - technology interactions

(C) development and organizational challenges in the 4th industrial revolution

In the following paragraphs, I make a synthetic description of each of the areas, indicating the most important literature positions and findings.

Area (A) The use of technology in the management of cultural institutions

The first of the areas I developed after obtaining my doctoral degree was related to my interests in managing cultural institutions (period before 2018) extended by a technological component. As part of my projects conducted with researchers from Portugal, Ireland and Poland, I pointed out that technologies in cultural institutions can be of a substitutive or complementary nature and be used to make a profit or fulfill a cultural mission.

In the experimental study, I showed that the status of the creator affects the evaluation of the object of art (people, artificial intelligence, humanoid robots and cyborgs are assessed differently), which should be taken into account by curators and art dealers in their business practice.

This area is explored by me as part of my own research and business practice. Even before obtaining my doctorate, I was involved in consulting and organizing cultural events (including exhibitions and festivals). During my consulting work, I use the "window of opportunity"

approach of Professor Barbara Czarniawska - I tries to understand the problems of cultural institutions and artists, and then translate them into research problems.

Literature in area A:

1. Artur Modliński, Luis Moreira Pinto (2020). Managing substitutive and complementary technologies in cultural institutions: Market/mission perspectives, Management: Journal of Contemporary Management Issues, Vol. 25 No. Special issue, 2020.
2. Paweł Fortuna, Artur Modliński, Monika McNeill (2023). Creators Matter. Perception and Pricing of Art Made by Human, Cyborgs and Humanoid Robots, Empirical Studies of the Arts, (online first) ***Impact Factor: 1,675***
3. Artur Modliński, Proces wirtualizacji jako wartość i zagrożenie dla podmiotów zarządzających kulturą, [w:] red. Paweł Antonowicz, Paweł Galiński, Piotr Pisarewicz, Społeczny, środowiskowy I jakościowy wymiar kreacji wartości organizacji, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2020, s. 167-180.
4. Artur Modlinski, Luis Pinto, Valerij Dobrovolskij , Emilian Gwiaździński, Cultural heritage vs. Cultural tourism – the role of management, 20th General Assembly of the International Experts 2018, s. 89-92.
5. Artur Modliński, Strategie instytucji kultury wobec niezadowolenia i bojkotów konsumenckich, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2020, ss. 266.
6. Artur Modliński, Paweł Fortuna, Bohdan Rożnowski, Robots onboard? Investigating what personal predispositions influence the reactions of museums' employees towards the delegation of tasks to social robots, Museum Management and Curatorship **(w recenzji)**

Area (B) designing and managing employee/consumer - technology interactions

Designing interactions between employees/consumers and technology is one of the most dynamically developing areas in managing a digital organization at universities in the United States and Great Britain. In order to further develop it, I started cooperation with researchers from centers in Poland (psychologists, psychometrist), the United States and Italy. This area is the most convergent with the habilitation cycle presented on the previous pages. At the end of 2022, I initiated four more studies that addressed problems in this area. In 2022, I initiated in-depth research on the role of religiosity in the acceptance of autonomous technologies, this time they are conducting a broader study thanks to the cooperation of Prof. Udaya Mohan from Sri Lanka and Prof. Wisal Ahmad from Pakistan. At the same time, I established cooperation with researchers from the Erasmus University of Rotterdam to conduct cross-cultural research

on the acceptance of autonomous technologies. Both research projects are at the stage after statistical analysis and structuring of texts.

In the latest study conducted with a team of researchers from two Finnish universities (LUT and Hanken School of Economics), we described the methodology of introducing robots according to the 'bottom-up' principle. While conducting praxeographic research on the introduction of robotization at the Finnish post office, we noticed that this organization developed a methodology for implementing robotic solutions, unknown in the literature. Contrary to most of the described cases, the Finnish Post involves employees in the selection of tasks for robotization and the development of solutions at every stage of implementation. As a result of our research work, we mapped this methodology, distinguishing six stages of its application: brainstorming, task description, prototyping, testing, implementation, improvement. In addition, we noticed that at each stage employees experience different types of fears and we described their reasons (fear of robotization, fear of tests, fear of introduction). Based on interviews with managers, we identified ways to deal with employee concerns.

Continuing my collaboration with researchers Matthew Gladden and Paweł Fortuna, we conceptualized the so-called 'supervisory AI', i.e. artificial intelligence in the role of a superior. We reviewed the current literature and outlined scenarios for further research in this area.The interaction of the consumer/employee with autonomous technology is an area that I presented at scientific conferences and popularized in the media. Details of these activities can be found in subchapters 5.1, 6.2, 6.3 of this self-report.

Literature in area B:

1. Matthew Gladden, Paweł Fortuna, Artur Modliński (2022). The Empowerment of Artificial Intelligence in Post-Digital Organizations: Exploring Human Interactions with Supervisory AI. Human Technology, 18(2), 98–121. https://doi.org/10.14254/1795-6889.2022.18-2.2
2. Damian Kedziora, Artur Modliński, Wojciech Piotrowicz, Kari Smolander, Collaborative Implementation Of Software Robots: A Case Study, Thirty-first European Conference on Information Systems (ECIS 2023), Kristiansand, Norway (zgłoszenie konferencyjne oczekujące na decyzję).
3. Artur Modliński (in review – II round). To brag or not to brag. The influence of exposing autonomous algorithm in advertising of bank and hospital on customers and employees, Management: Journal of Contemporary Management Issues

4. Artur Modliński, Dominik Skowroński, (in review – II round).Robopowers? The Phenomenon of Techno-Empowerment in the Socio-Organizational Context, World Futures The Journal of New Paradigm Research

Articles related to area B, which were included in the habilitation cycle:

- Artur Modliński, Matthew Gladden (2021). Applying Ethology To Design Human-Oriented Technology. An Experimental Study On The Signalling Role Of The Labelling Effect In Technology's Empowerment, Human Technology, Volume 17(2).
- Artur Modliński, Emilian Gwiaździński, Małgorzata Karpińska-Krakowiak (2022). The effects of religiosity and gender on attitudes and trust toward autonomous vehicles, Journal of High Technology Management Research, 33 (2022) 100426
- Artur Modliński, Paweł Fortuna, Bohdan Rożnowski (2022). Human-machine trans roles conflict in the organisation: how sensitive are customers to intelligent robots replacing the human workforce?, International Journal of Consumer Studies, ***Impact Factor: 7,09***
- Artur Modliński (2022). The psychological and ethological antecedents of human consent to techno-empowerment of autonomous office assistants, AI & Society, (online first).
- Marcin Bartosiak, Artur Modliński (2022). Fired by an algorithm? Exploration of conformism with biased intelligent decision support systems in the context of workplace discipline, Career Development International, ***Impact Factor: 2.44***

Area (C) development and organizational challenges in the 4th industrial revolution

Development and organizational challenges in the 4th industrial revolution are the widest area of my interests after obtaining a doctoral degree. New technologies appear on the market, creating new challenges for the organization. The last two years have seen the dynamic development of microchips, biomedicalization, rating technologies and news in the field of social media (e.g. metaverse). As part of area C, I try to understand and translate into research the current organizational challenges related to new technologies. The achievements within this cluster of my interests include the metaphor of the organization as a cyborg, described earlier in the research cycle, the characteristics of the techno-empowerment phenomenon, the discovery and description of the reasons for the re-manualization of robotic processes, the indication of areas and organizational processes that are taken over by intelligent technologies and the reasons for such a state of affairs.

When analyzing organizational challenges in the field of advertising in social media, we noticed with dr hab. Małgorzata Karpińska-Krakowiak that promotional content built in the form of fiction receives the highest popularity rates. We found that humor mitigates this effect in a way that leads to less responsiveness to narrative content (compared to non-narrative content). Additionally, we've seen storytelling posts become more popular when they represent highly engaging product categories with a long buying cycle, while perishables or FMCGs are less likely to benefit from this form of promotion.

By reviewing current trends with Dr. Maria Czajkowska in the area of the sharing economy, we created a matrix illustrating the motivations of consumers and providers to engage in collaborative consumption. We distinguished altruistic and economic motivation and described the problems related to the differences in motivation between the offerer and the consumer of the common good.

Literature in area C:

1. Małgorzata Karpińska-Krakowiak, Artur Modliński (2020). Popularity of Branded Content in Social Media, Journal of Computer Information Systems, vol. 60, 10.1080/02650487.2019.1633841 ***Impact Factor: 3,31***
2. Artur Modliński, Decyzje konsumenckie w dobie rewolucji cyfrowej i sztucznej inteligencji - przegląd trendów, „Forum Socjologiczne" (2083-7763), 2018, nr 9, s. 181-189.
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1. Agnieszka Sopińska, Artur Modliński (red.), Współczesne zarządzanie – koncepcje i wyzwania, wyd. Oficyna Wydawnicza SGH, Warszawa 2020.

Table 6: Quantitative juxtaposition of publication published after obtaining the doctoral degree (03.2018-2022)

Type of publication	As sole author or first author with a minimum of 50% contribution		As co-Author		**Total**
	Polish	English	Polish	English	
Monographs	1	-	-	-	**1**
Redaction of monographs	-	-	1	-	**1**
Chapters in monographs	1	1	-	-	**2**
Article in peer-reviewed journals					
140 p. (MNiSW)	-	2	-	1	**3**
100 p. (MNiSW)	-	1	-	2	**3**
70 p. (MNiSW)	-	2	-	4	**6**
40 p. (MNiSW)	-	1	1	-	**2**
20 p. (MNiSW)	1	-	-	-	**1**
Articles in peer-reviewed journals not listed by the Ministry of Science and Higher Education	-	-	-	1	**1**
Total:	**3**	**7**	**2**	**8**	**20**

The total number of my publications published within 2013-2023 is equal to 42 (5 of them appeared in journals with Impact Factor). Six another papers are under review.

At the time of submitting this application, 14 of my papers are archived in the SCOPUS database, where they have been cited 29 times (h-index = 3). Google scholar indicates that the total number of citations (including self-citations) of my papers was 80 (h-index = 6).

The relatively low level of citation (despite the publication of papers in English, in prestigious journals) may be related to a) a relatively narrow area of research interest, and b) a short time since the publication of articles (most of my most important papers appeared after 2020).

Nevertheless, I consider as a great success that the results of my papers are cited by scientific authorities from Polish scientific institutions (Prof. Dariusz Jemielniak, Prof. Łukasz Sułkowski) and foreign universities (Prof. Chingching Chang from Taiwan, Prof. Marc G. Weinberger, Prof. Charles S. Gulas, Prof. Charles R. Taylor from the United States).

5. Information on significant scientific or artistic activity carried out in more than one university, scientific or cultural institution, in particular a foreign one

In accordance to Article 219 sec. 1 point 2 of the Act of 20 July 2018 Law on Higher Education and Science (Journal of Laws of 2021, item 478, as amended), I am obliged to present scientific activity carried out at more than one university (especially foreign). The detailed effects of my scientific activity carried out at more than one university are described in points 5.1 - 6.3 (p. 55-65). The main sources of this activity are listed below:

a) employment at the Department of Management in the Network Society at the Kozminski University in Warsaw in 2018-2019. The one-year period of work at the Academy allowed me to develop new teaching methods and deepen my knowledge in the field of qualitative research (including organizational ethnography). Thanks to the opportunity to acquire this knowledge, I was able to discover and describe the phenomenon of re-manualization of business processes;
b) work at the CITAD International Research Center in Lisbon (30% of my working time), where one of the areas of activity is popularizing culture and conducting research on its social reception. Working at CITAD allowed me to contact researchers specializing in the management of cultural institutions, present research results and co-organize four international conferences. As a result of my work at the Center, I established cooperation with Prof. Miguel Pinto, together we published the article Managing substitutive and complementary technologies in cultural institutions: Market/mission perspectives in Management: Journal of Contemporary Management Issues;
c) work at the IRIS ALKONA Institute in Riga (Latvia) - my involvement in the work of the Institute by prof. Natalia Konovalova resulted in organizational work in the preparation of international conferences (4th and 5th edition) International Conference Iris-Alkona Scientific Symposium.

d) heading the Center for Research on Artificial Intelligence and Cybercommunications resulted in establishing research cooperation with researchers from Finland (Damian Kedziora, Kari Smolander), Italy (Marcin Bartosiak), Latvia (Natalija Konovalowa), the Netherlands (Jorge Pereira Campos), Spain (Adela del Rio Ortega, Andrés Jiménez Ramírez), Sri Lanka (Udaya Mohan) and Pakistan (Wisal Ahmad). As a result of these works, studies and co-authored articles cited in the habilitation cycle were created;
e) work as a lecturer at the L.Schiller's State Higher School of Film, Television and Theater in Łódź, where I conducted classes for full-time and postgraduate studies on management and the application of new technologies for creative work;
f) work at the European Foundation for Human Development - conducting over 20 hours of training in the field of technology and related changes for various age groups from Romania, North Macedonia, Hungary, Lithuania, Latvia, Spain and Germany. As part of the training work, I also conducted cross-cultural research (including the use of narrative collage), which was used for my research work;
g) cooperation with researchers from the European University of Viadrina (Germany) on the international project "The use and effects of humor in advertising - an attempt to explain cross-cultural differences" financed by the Beethoven Classic program. As a result of this project, I deepened my knowledge in the field of statistical data analysis. The result of our cooperation were two submissions to prestigious international conferences (ICORIA in the Czech Republic and EACR in the Netherlands) and the development of an article that was submitted to the journal Impact Factor;
h) heading the project component (WP7) in the FEAST (Fair, healthy and environmentally-friendly food systems from primary production to consumption) project, which is financed from the HORIZON EUROPE program. At the time of submitting the promotion application, it was one of two HORIZON EUROPE grants that were implemented at the University of Lodz. As part of the grant, cooperation is carried out with over 35 partners from the European Union (the University of Lodz is the only partner representing Poland).

Below, it is provided a detailed description of scientific activity, including grant, conference, editorial, didactic, organizational and popularizing activities.

5.1. Grant activity

Before obtaining my doctoral degree, I participated in three nationwide grants financed by the National Science Center (two from Opus, one from Juventus Plus) as a contractor. After obtaining my doctoral degree, I also participated in three grants– this time international ones (one financed by the National Science Center and two financed by the European Commission). In two projekcts I was the contractor, and in one - the coordinator of the so-called 'WorkPackage'. A list of grants with a general description is provided below:

1) *"The use and effects of humor in advertising - an attempt to explain cross-cultural differences*" financed from **BEETHOVEN CLASSIC 3**, awarded by National Science Center in accordance with the agreement No. UMO-2018/31/G/HS4/00174, of January 15, 2020 01.2023). Grant coordinator on the Polish side was dr hab. Małgorzata Karpińska-Krakowiak, prof. in University of Lodz

This grant was crucial to my research skills acquired after obtaining my PhD. While earlier I mainly relied on qualitative methodology, after participating in this grant I learned to use statistical methods (using the SPSS program). I also learned the basics of preparing a meta-analysis and the so-called content analysis.

2) *"Gamification tools for youth learning"* awarded under the **KA2** program financed from European Funds (2020-2022) in accordance with the agreement 2020-1-PL01-KA205-079881. The project was implemented with the Republic of North Macedonia, Hungary, Estonia. It had a didactic character. The project manager was Mrs. Silvia Crocitta.

This project was a very important element of my didactic development. My task was to design and create nine digital educational games that were to help the workshop leaders to engage participants in the topic. As part of this project, I consulted and tested my teaching ideas. The project taught me how to create interactive didactic courses and workshops and how to use gamification in teaching.

3) *"FEAST" (Fair, healthy and environmentally-friendly food systems from primary production to consumption*) awarded under the **HORIZON EUROPE** program in accordance with the HORIZON-CL6-FARM2FORK agreement for the years 2022-2027. The project is implemented with 35 partners from 15 European Union countries and aims to study the eating habits and dietary needs of the elderly, taking into account

the gender perspective, and to create recommendations in the area of food policy. As part of the project, I manage the part of the package that is responsible for creating recommendations in the field of nutrition policy.

This project teaches me intercultural dialogue, research approach in accordance with the so-called 'active research' methodology. In addition, a wide range of partners makes it possible to learn about the differences in the methodologies in various countries.

At the same time, I would like to point out that I also applied for funding my own projects as a principal investigator in two NCN calls, in which I did not receive funding for formal reasons:

a) Miniatura - the refusal was motivated by the fact that I had received a DAAD scholarship five years earlier, which excluded the possibility of funding;

b) Sonatina - the refusal was motivated by my permanent employment, which excluded the possibility of financing.

5.2. Conference activity

After receiving my doctoral degree, I participated in 16 conferences (including 10 international ones) both as an active participant presenting a paper, and as an organizer: leading conference panels, and a member of organizational and scientific boards. Although the period from receiving the doctoral degree to submitting the habilitation application encompasses mainly the coronavirus pandemic, I did not give up the opportunity to participate and organize scientific conferences in a virtual form.

The total number of conferences I attended in 2018-2022 is comparable to the period between starting doctoral studies and obtaining a doctoral degree (2013-2018). Then I took part in 23 conferences (mostly nationwide). After I was awarded the PhD, I presented the results of my research in English, mainly in foreign research centers. Taking into account the period before and after receiving my doctoral degree, I took an active part in a total of 39 scientific conferences.

What is important for me, from the point of view of my experience, **in 2022, the results of my research were presented at two prestigious international scientific conferences** (position 15 and 16 on the list below), where papers are blindly reviewed by two experts, and the level

of rejection of applications is very high. At one of these conferences (ICORIA) a paper I helped prepare was nominated for the best paper award.

List of conferences in which I participated after obtaining my PhD.

1. Name: 4th International Conference Iris-Alkona Scientific Symposium
Place: Jurmala (Latvia)
Date: 10-14.07.2018
Presentation: „Architecture and heritage buildings as a key to improving tourism"

2. Name: Culture Studies in Business Conference
Place: Rome(Italy)
Date: 24-30.03.2019
Presentation: "City Business Model"

3. Name: 5th International Conference Iris-Alkona
Place: Jurmala (Latvia)
Date: 11.07.2019
Presentation: "Like it or not? Why customers click "like" even if they do not?"

4. Name: I International Multiplayer Event
Place: Covilha (Portugal)
Date: 02.05.2019
Presentation: "City vs. Business Mood"

5. Name: International Conference on Energy and Sustainable Built Environment
Place: Istambul (Turkey)
Date: 19.06.2019
Presentation: "Urban Sensitivity Emotions and technology"

6. Name: Konferencja "Zarządzanie Wartością - Kreatory i Destruktory Wartości Organizacji" -
Place: Uniwersytet Gdański (Gdansk/Stockholm)
Date: 23-25.09.2019.
Presentation: „Wirtualizacja i nowe technologie jako wartość i zagrożenie dla instytucji i rynku kultury"

7. Name: Konferencja „Etyka i Emocje"
Place: Uniwersytet Warszawski (Warsaw/Poland)
Date: 25-26.10.2019
Presentation: „Moralność scedowana w zarządzaniu zespołami organicznymi – szanse i zagrożenia"

8. Name: International Conference „Culture Studies in Business”
Place: Covilha (Portugal)
Date: 21.11.2019
Presentation: „New Technologies in Culture and Heritage Management”

9. Name: InterScience International Conference on Management and Social Sciences
Place: Uniwersytet Łódzki (Łódź/Poland)
Date: 29.11.2019
Presentation: “How humans differ in regards to intelligent technology and virtualization? A step towards technocentrism – technoscepticism dimensions”

10. Name: Konferencja “Transhumanizm: Idee, Strategie, Wątpliwości 3.0”
Place: Uniwersytet Warszawski (Warsaw/Poland)
Date: 22-23.02.2020.
Presentation: “Maszyna. Wsparcie czy substytut pracownika w dobie rewolucji cyfrowej”

11. Name: Konferencja “AI w Finansach”
Place: Uniwersytet SWPS (Warsaw/Poland)
Date: 8.09.2020
Presentation: Wirtualne cienie. Pułapki i zagrożenia w sieci w dobie brokerów danych.

12. Name: Konferencja “Ogólnopolska Konferencja Kognitywistyczna. Czas na umysł 3.0”
Place: Katolicki Uniwersytet Lubelski (Lublin/Poland)
Date: 19.03.2021
Presentation “Artyści czy hochsztaplerzy? Recepcja obrazów wykonanych przez człowieka, robota i cyborga – badania eksperymentalne”

13. Name: EuroDig2021 (The European Dialogue on Internet Governance)
Place: Rome (Italy)
Date: 29.06.2021
Presentation: "Social scoring - delusive carrot and stick approach"

14. Name: I Konisyliencyjna Konferencja Naukowa Ad Astra
Place: Uniwersytet Gdański (Gdansk/Poland)
Date: 26.11.2021
Presentation: “Etologia a zarządzanie technologią. Co mówią nam zwierzęta o naszych relacjach z inteligentnymi maszynami?”

15. Name: 20th International Conference on Research in Advertising (ICORIA)
Place: Prage (Czech Republic)
Date: 23-25.06.2022
Presentation: “A Meta-Analysis of Humor in Advertising: Explaining Cross-Cultural Variations”
Note: The conference was attended by a team led by dr hab. Małgorzata Karpińska-Krakowiak and Prof. Martin Eisenda. The team prepared a study of which I am a co-author. I did not take an active part in the presentation of the results; Presentation was nominated for an award

16. Name: 20th Business Process Management Conference
Place: Munster (Germany)
Date: 13.09.2022
Presentation: “Rolling back to manual work: An exploratory research on Robotic Process Re Manualization"

List of conferences in which I participated as a panel leader

1. Name: 5th International Conference Iris-Alkona
Place: Jurmala (Latvia)
Date: 11.07.2019

2. Name: III Międzynarodowa Konferencja Naukowo-Badawcza w obszarze Zarządzania, Ekonomii, Marketingu i Socjologii
Place: Łódź (Poland)
Date: 27.04.2021

3. Name: Współczesne zarządzanie. Koncepcje i wyzwania - Szkoła Letnia Zarządzania
Place: Łódź (Poland)
Date: 7.06.2021

List of conferences in which I participated as a member of the organizational/scientific board

1. Name: 4th International Conference Iris-Alkona Scientific Symposium
Place: Jurmala (Latvia)
Date: 10-14.07.2018

2. Name: Konferencja „Zachowania organizacyjne w świetle współczesnych koncepcji zarządzania”
Place: Łódź (Poland)
Date: 27-28.11.2019

3. Name: Konferencja „Rozwój metodologii w naukach o zarządzaniu”
Place: Łódź (Poland)
Date: 27.11.2019

4. Name: Konferencja „InterScience International Conference on Management and Social Sciences”
Place: Łódź (Poland)
Date: 27-28.11.2019

5. Name: Impact of Artificial Intelligence and Robotics (ECIAIR)
Place: Oxford (UK)
Date: 31.10-1.12.2019

6. Name: 5th International Conference Iris-Alkona Scientific Symposium
Place: Jurmala (Latvia)
Date: 11.07.2019

7. Name: European Conference on the Impact of Artificial Intelligence and Robotics (ECIAIR20)
Place: Lisbon (Portugali)
Date: 22-23.10.2020

8. Name: 3rd European Conference on the Impact of Artificial Intelligence and Robotics (ECIAIR)
Place: Lisbon (Portugal)
Date: 18-19.11.2021

5.3. Editorial and reviewing activity

After obtaining my doctoral degree, I actively participated in reviewing theses, scientific articles and grant applications. Since 2018, I have reviewed 35 diploma theses (bachelor's and master's) at the Faculty of Management and the Faculty of International and Political Studies at the University of Lodz, at the Kozminski University in Warsaw, and at the L. Schiller’s State Higher School of Film, Television and Theater in Łódź.

In 2021, I reviewed applications of Polish scientists willing to study in the United States as part of the **Fullbright Junior Awards** competition organized by the Polish-American Fulbright Commission. In 2022, I was a reviewer of applications from PhD students applying for funding for their projects under IDUB internal grants from the Initiative of Excellence - University Grants.

Since 2018, I have been reviewing scientific articles in Polish and foreign scientific journals (including journals with Impact Factor):

- Journal of Systems Science and Systems Engineering;
- European Business Review;

- IEEE Access;
- Zarządzanie w Kulturze;
- Ryzyko i Zrównoważony Rozwój. Studia Uniwersytetu Ekonomicznego w Katowicach;
- Studia i materiały Wydziału Zarządzania Uniwersytetu Warszawskiego.

I participated regularly in the reviews of student articles sent annually to the monographs published by Scientific Circles of the Faculty of Management of the University of Lodz. Since 2022, I have been the **deputy editor-in-chief** in Digital Business Review journal. Since 2022, I am also a **member of the Program Board** in Robonomics: The Journal of the Automated Economy.

6. Information on science popularization activities, teaching, and organizational achievements.

6.1. Teaching activity

After obtaining my doctoral degree, I conducted over 1,000 hourly units (45') of classes in Polish and English at the first, second, third degree studies, postgraduate studies and at the Doctoral School of Social Sciences. Schools and universities where I developed my didactic activity are:

- University of Lodz (Faculty of Management, Faculty of International and Political Studies, Doctoral School of Social Sciences);
- Kozminski University in Warsaw;
- L. Schiller's State Higher School of Film, Television and Theater in Łódź.

At the Faculty of Management of the University of Lodz, I teach both general classes and classes directly related to my specialty (including my own classes, the scenarios of which I developed myself). In addition, I am a co-author of the didactic program for the Automation of Business Processes - BPA, which I have been heading since 2019. This program received an award for its innovative approach and meeting the needs of the modern labor market. In my teaching activities, I developed simulation and project methods in particular, thanks to which I am able to interact with the participants. My classes, so far, have received maximum or almost maximum marks in student surveys.

The general subjects taught and co-taught by me during the first and second degree studies include:

- Human Resources Management and Organization Development,
- Business Ethics and Culture,
- Organization Architecture,
- Organization Theory and Design
- Business System Design,
- Management Toolbox,
- Business Environment,
- Business Reporting,
- Relacje organizacyjne,
- Organizacja i zarządzanie,
- Modele komunikacji społecznej z elementami psychologii,
- Podstawy Zarządzania.

The specialization subjects include:

- Współpraca człowieka z maszyną,
- Sztuczna inteligencja w zarządzaniu,
- Komunikacja w środowisku wirtualnym,
- Kierownik 2.0.

A very important part of my teaching achievements are classes conducted with doctoral students, during which I could work on their research competences and projects directly related to their doctoral theses. These items include:

- Literature review in research;
- Przygotowanie publikacji i wystąpień naukowych.

I also developed my teaching competences during postgraduate studies, which I conducted among practitioners both at the Faculty of Management at the University of Lodz and at the L. Schiller's State Higher School of Film, Television and Theater in Łódź. The following courses are worth mentioned:

- Digital Transformation and Data Science within the Polish-American MBA Program;

- Humanization or dehumanization of work in the era of 4.0 as part of Postgraduate Studies in Human Resources Management;
- Analysis of the development of technology in the audiovisual industry, forecasts for the future as part of the Postgraduate Studies for Creative Producers organized by the L. Schiller's State Higher School of Film, Television and Theater in Łódź.

I also consider my involvement in the creation of didactic classes for the International Police Association in the field of artificial intelligence and new technologies as a great distinction. Every year, police officers from over 30 countries participate in the Association's training. At the same time, I have conducted over 30 workshops in the field of new technologies (including awareness of online threats) for schools and foundations, in which participants were people from 6 to 70 years old.

6.1.1. Activity as a supervisor of bachelor's and master's theses

Since 2020, at the Faculty of Management of the University of Lodz, I have been conducting BA seminars in Polish and English for students from Management, Automation of Business Processes - BPA and Business Management. The seminars were related to my research interests and concerned management in the era of the digital revolution.

At the moment of submitting this application, 24 students participating in my seminars have passed their bachelor's exam. I consider it particularly important that my seminarians conducted their own research using qualitative (including ethnography) and quantitative methods. Some of the works were created in cooperation with business and corresponded to the digital challenges of practice. In accordance with the Study Regulations, I have not been entitled to conduct a master's seminar so far.

At the same time, I reviewed 35 bachelor's and master's theses at the Faculty of Management and the Faculty of International and Political Studies at the University of Lodz, one at the Kozminski University, and one at the L. Schiller's State Higher School of Film, Television and Theater in Lodz.

6.2. Organizational activity

My organizational activity after obtaining the doctoral degree was focused around scientific, training and didactic activities. At the Faculty of Management**, I am the head of the first-cycle studies: Automation of Business Processes - BPA.** At the same time, I am a co-author of this program and coordinator for Erasmus student exchange. The course was created in cooperation with the largest companies that deal with the robotization of business processes: Nordea, Fujitsu, Bosch, DXC Technology, Digital Teammates, Digital Workforce, Mindbox. Practitioners employed in these companies conduct classes with students within six semesters of studies. As the head of studies, I managed to introduce the course to the Blue Prism Academy based in Great Britain, which provides a program for robotizing business processes. Automation of Business Processes - BPA was awarded in a nationwide competition for best program.

At the same time, I take an active part in organizational work at the Faculty of Management and the University of Lodz. I am a member of the **Faculty Committee for the Quality of Scientific Research**, which develop strategies how to model the competence of researchers to help them conducting research and publishing in recognized journals. By Her Magnificence, the Rector of the University of Lodz, I was appointed to the **Council of Young Scientists**, whose task is to create solutions and give opinions on projects concerning young scientists working at the University of Lodz. Since 2020, I have been a member of the Steering Committee of the Ad Astra Scientific Consortium, which brings together entities from all over Poland (universities, associations, business clusters) developing issues related to space and new technologies.

I also consider managing the **Center for Research on Artificial Intelligence and Cybercommunication** as an important part of my organizational activity. Since 2018, I have established cooperation with scientists from Germany, France, Spain, Finland, Italy, the Netherlands, the United States, Pakistan, Sri Lanka and Australia, with whom I am preparing research. On my initiative, the Center organizes cyclical seminars and workshops (including workshops for schools devoted to artificial intelligence). From 2020, on behalf of the Centre, I participated in the organization of the Innovation Night at the Faculty of Management of the University of Lodz, and in 2020 the Center was nominated for the Polish Intelligent Development Award 2020 in the category: Supporting innovation and competitiveness of the

economy. Since 2021, I have been the **co-supervisor of the Doctoral Students' Scientific Circle at the Doctoral School of Social Sciences.**

Since 2017, I have also been co-organizing workshops and trainings for the **European Foundation for Human Development** (the four largest projects under which I organized workshops are "Mobility of Youth Workers", "Love, Not Hate", "Democracy building", "The development of Youth Centres"). At that time, I worked with trainers from Italy, Estonia, North Macedonia, Spain, Croatia, France, the Czech Republic, Hungary, and Cyprus. In each project, students of the Faculty of Management at the University of Lodz were involved in the workshop activities.

For my organizational activity in 2021, I received the highest distinction - the **1st degree Award from the Rector of the University of Lodz**.

6.3. Popularization of science

Popularization of science is one of the most dynamically developing areas of my organizational activity after obtaining a doctoral degree. Since 2019, I have been **a member of the WZ Expert Team**, whose task is to maintain constant contact with the media in order to comment on current events related to technology and business. From the moment I was appointed to the Team , I presented the results of my original research (including the habilitation cycle) in over 40 magazines.

Between 2019 and 2023, **over 100 articles were published in which I describe and comment on my discoveries, as well as over 3 hours of television and radio materials**. The most important media in which I appeared as part of my popularization activity include: Gazeta Wyborcza, Rzeczpospolita, TVN, Polsat, Puls Biznesu, Brief, Lenowo Zone, Polityka, Radio Eska, Radio TOK FM, Radio RMF RM. The media equivalent for the Faculty of Management for my popularizing activity until 2023 reached almost PLN 1,000,000.

In 2019-2023, I participated in numerous initiatives aimed at popularizing science in Poland:

- I conducted workshops for children entitled "My robot friend" as part of the Innovation Night organized by the Digitization Festival,
- I appeared in the documentary series of the CANAL+ TV station entitled "Black Domain",

- I co-organized and participated in the webinar "How to tame a robot" as part of the Innovation Night at the Faculty of Management of the University of Lodz,
- I popularized the methods of creating Digital Youth Centers as part of the project of the European Foundation for Human Development,
- I appeared in the program "Rzecznicy Nauki" talking about the process of cyborgization in business,
- I popularized knowledge in the field of cyberbusiness as part of a seminar organized by Polish-American Management Studies,
- I organized the "BluePrism Experts' Meeting" during which, together with experts from Great Britain, we popularized RPA technology among students,
- I popularized the results of my research during Human Tech Meetings organized by SWPS in Warsaw,
- I made a guest appearance in the series "Evening for adults" organized by EC1 in Łódź with a lecture "Co-evolution. Man and technology in the era of artificial intelligence development".

Concluding this self-report summarizing my scientific activity, I would like to recall the quote from the contemporary English novelist and essayist Julian Barnes, who in his Booker Prize-winning book "The Sense of an Ending" noted that "(...) *there is a difference between adding and increasing*" (p. 132). I hope that my research work and other scientific activity not only enriched the sciences of management and quality with subsequent publications in a quantitative sense, but above all, they allowed to increase knowledge about intelligent technologies and will contribute in the future to the construction of socially valuable practical conclusions.

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