
Revitalizing industrial policy through smart, micro-level and bottom-up approaches

Marta Gancarczyk¹ & Anna Ujwary-Gil²

Abstract

The purpose of this paper is to systemize the major characteristics and research areas of New Industrial Policy (NIP) and to identify the contribution of the current research monograph to these study areas. Recently, a new wave of industrial policies has been announced and called as new industrial policy by scholars and EU decision-makers. These policies are intended to address the challenges of the Fourth Industrial Revolution as well as concerns about the pace of economic growth and its uneven distribution. The new approach emphasizes place-based, micro-level and bottom-up approaches to growth-oriented industrial transformation and integrates a number of public support measures in this regard. The NIP institutions and implementation programs have already been launched and are in the experimentation phase. The more important are intense and concurrent research efforts that would both evaluate the on-going experience and enhance theoretical and methodological background. Based on the literature review, we systemize the constituent characteristics of NIP in terms of rationales, objectives, scope and governance levels, institutional framework, as well as major thematic areas and measures. When discussing these core elements, we point to i) their theoretical background, ii) their distinct nature in relation to the earlier industrial policy approaches; iii) major research issues and gaps. Next, we identify the contributions from the individual chapters in this volume and implications for further NIP-related research.

Keywords: *New Industrial Policy, industrial transformation, industrial upgrading, Industry 4.0, policy governance*

1 Marta Gancarczyk, Ph.D., Hab., Associate Professor, Department of Finance and International Economics, Institute of Economics, Finance and Management, Faculty of Management and Social Communication, Jagiellonian University, Prof. Stanislaw Lojasiewicz 4, 30-415 Krakow, Poland, marta.gancarczyk@uj.edu.pl (ORCID ID: 0000-0003-2078-9320).

2 Anna Ujwary-Gil, Ph.D., Hab., Professor of Institute of Economics, Polish Academy of Sciences, Laboratory of Process and Network Analysis, Nowy Swiat 72, 30-330 Warsaw, Poland, e-mail: ujwary@inepan.waw.pl (ORCID ID: 0000-0002-5114-7366).

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1. Introduction

Throughout the history of public interventions, the relevance of industrial policy has been recognized in times of considerable social, economic, and technological challenges (Bailey et al., 2019b; Bianchi & Labory, 2019). The current claims as to industrial policy revitalization, refreshing, and coming back to policy agenda are driven by similar challenges of insufficient and uneven economic growth and technological breakthrough of the Fourth Industrial Revolution, globalization, as well as deindustrialization (Aiginger & Rodrik, 2020; Bailey et al., 2019a). The New Industrial Policy has been recognized by the researchers and policy-makers, primarily in the EU. However, new approaches to this policy area can also be observed in other countries, both the most developed, such as the USA, those rapidly growing, such as China, and in less developed regions (Schrock & Wolf-Powers, 2019; Li & Wang, 2019; Kitson, 2019). The NIP approach integrates the stock of experience in other fields of policy interventions and is holistic in nature. The new comprehensive scope of industrial policy expands from manufacturing to related services and the public sector, and from purely technological and economic upgrading towards responsible innovation and environment protection through new technologies. Moreover, it at least partly departs from top-down and nationwide and vertical programs to pick up industrial and enterprise winners or/and nationwide horizontal programs targeted at framework conditions. The new approach turns to place-based as well as micro-level, bottom-up processes, and partnerships to design and implement the policies (Aiginger & Rodrik, 2020; European Commission, 2020). In the EU, a number of strategic documents have been formulated to launch and institutionalize NIP. The most recent one, *The New Industrial Strategy for Europe* (2020) presents a strategic view of major areas, targets, measures, actions, and institutions. The NIP is then a process in action and experimentation that requires on going engagement of interdisciplinary research community at different levels of economic analysis, including micro-, mezzo-, and macroeconomic perspectives.

This volume intends to respond to the referred challenges of NIP and to contribute to the important areas of industry-related issues, providing recommendations, and further avenues for research and practice. In the first part, this volume broadens the understanding of contemporary industrial policy in regional, national, and international contexts. The second part presents the insight from management and business theory and empirical evidence as to human resource- and technology-related challenges facing the contemporary industry. The third part assumes a perspective of governing networks and interests to ensure sustainable and socially responsible enterprises and industry.

Against the above background, this chapter aims to systemize the major characteristics and research areas of New Industrial Policy (NIP) and to identify the contribution of the current research monograph to these study areas. In the following sections, we present the essence and major characteristics constituting the concept of New Industrial Policy. Then, we synthesize the contributions from this volume to better understanding of industry and industrial policy issues. Ultimately, we propose the outlook for further academic and policy-related research.

2. The characteristics of New Industrial Policy

Industrial policy is focused on increasing the competitiveness of industry to ensure sustainable growth. Recently, both the academia and EU decision-makers underline the resurgence of this policy area against technological, economic, and social challenges. We systemize this discussion, presenting the core characteristics of NIP and discussing their conceptual background, research and policy-related problems, as well as distinct features in relation to the earlier industrial policy approaches.

2.1. The rationale for New Industrial Policy

In the neoliberal economics approach, public intervention has been justified by market failure, i.e., the incidence of inefficient markets due to externalities, abusive market power, public goods, information asymmetry, and transaction cost (Bator, 1958; Cowen & Crampton, 2002). According to the general assumption of the market as operating efficiently, government is supposed to intervene incidentally only when market failure has been recognized. Acknowledging the importance of the market, the research on technology development and innovation pointed to the role of non-market governance in these processes (Stam, 2015; Morgan & Marques, 2019). These are hybrid governance modes, such as long-term contracts, alliances, networks and joint ventures that are conducive for interactions and tacit knowledge exchange (Williamson, 1998, Block et al., 2020). The premise of non-market coordination in innovation processes led to the concept of innovation systems linking relevant actors in the repetitive, network-based, and systemic interactions (Asheim et al., 2019; Ujwary-Gil, 2020). The consequence was the concept of systemic failure or network failure, in which innovation processes are impeded by the lack of some systemic elements, such as finance provision, or interaction and cooperation among the extant elements, such as research and development institutions and start-up entrepreneurs seeking new technologies (Rowan & Mawson, 2019; Block et al., 2020).

Consequently, the systemic or network failure stands for the rationale of NIP rather than market failure (Stam, 2015; Brown & Mawson, 2019; Block et al., 2019). The promotion of this justification is accompanied by a rethinking of the role of the state in industrial policy. Some of the proponents of entrepreneurial ecosystems capture this role as assisting and enhancing rather than leading the transformations – they even indicate the privatization of entrepreneurship policy (Brown & Mawson, 2019). These expressions of the government role emphasize the importance of entrepreneurial actions and processes over state interventions. They also suggest government failure in designing a planned order and policy plan, instead proposing the engagement of public–private actions (Stam, 2015; Mason & Brown, 2014).

Nevertheless, the chief approach in new industrial policy resonates with that of a smart specialization (SS) policy concept. Similar to smart specialization strategies, NIP promotes the view of a proactive state that links a planning and entrepreneurial discovery process in its actions (Foray 2019; 2020; Aiginger & Rodrik, 2020; Bailey et al., 2019a; 2019b). The calls for an “experimentalist” or “smart” state propose the processual approach made by trial and error, as well as provisional goals and their adjustments to particular conditions of time and place. Ultimately, government is seen as learning and assisting a mission-lead transition rather than the surgeon performing spot interventions against market failures (Morgan & Marques, 2019; Gancarczyk et al., 2020).

2.2. The objectives of New Industrial Policy

The aforementioned social, economic and technological challenges drive the efforts of policy-makers and researchers to design a new agenda for industry-targeted regulations and support measures. The general principles of the EU industrial policy (European Parliament, 2020) state the major objective of that policy as making European industry more competitive to secure sustainable growth and employment. To accomplish this general purpose, the specific objectives include the adjustment of industry to structural changes, the development of initiatives and undertakings, particularly those of SMEs, an environment favorable for cooperation between undertakings, the exploitation of industrial potential through innovation, research, and technological development (Article 173, Consolidated version of the of TFEU, 2012).

The latest *New Industrial Strategy for Europe* (European Commission, 2020) emphasizes three major directions that include a globally competitive industry, an industry leading to climate-neutrality, and industry enhancing Europe’s digitalization. These directions indicate additional purpose, besides the ones of industrial productivity and progressive transformation, namely, the

purpose of environmentally responsible industry that acknowledges societal expectations (Aiginger & Rodrik, 2020).

2.3. The scope and governance levels

In the contemporary industrial policy, two major approaches have been intertwining. The first one assumed vertical and selective interventions to pick up winners, i.e. particular industries or national champions. The second one has been horizontal and focused on improving the overall environment for business activity, in the form of legal protection of competition, promotion of skills and education, as well as the development of R&D and tangible infrastructures (Bailey et al., 2019; European Parliament, 2020). The NIP approach turns to vertical orientation. However, it is not directed at picking winners, but on prioritizing some business domains and areas of infrastructure in a complex way, e.g., promoting transformation through cross-sectoral and inter-industrial convergence, accompanied by R&D support (Fagerberg & Hutschenreiter, 2019; Janssen & Frenken, 2019).

In the traditional approach, industrial policy has been designed and implemented top-down, by central government programs. NIP, following the SS concept, promotes a multi-scalar approach, starting from the top-down design to implementation and refinements with participation of regional and local governments, as well as other relevant actors, including businesses, academia, and societal stakeholders (Foray, 2014; 2015; 2020; McCann & Ortega-Argilés, 2015). Matching different levels of policy setting, as well as top-down and bottom up decision-making, NIP seeks to avoid threats, such as ignoring place-based and idiosyncratic needs of territories and communities from top-down; or incumbent stakeholder pressure preventing transformation and local myopia from bottom-up (Kitson, 2019; Fagerberg & Hutschenreiter, 2019).

The primary scope of industrial policies has been traditionally on manufacturing (Bianchi & Labory, 2019). Nevertheless, the importance of the service sector in the contemporary economy, as well as cross-sectoral and cross-industrial transformations, e.g., products turning to services and vice versa, product-service bundles, expand that scope in NIP to comprise manufacturing, services, and even agriculture (Janssen & Frenken, 2019; Aiginger & Rodrik, 2020; European Commission, 2020). Consequently, NIP assumes the expanded scope of entities, involving all the players in the value chain. These players might be large firms and SMEs, as well as clusters and ecosystems inserted in global value chains (Barzotto et al., 2019).

2.4. Institutional framework

We consider the institutional framework of NIP as encompassing formal laws and regulations, as well as organizations that act based on these rules (Grillitsch, 2014). As indicated above, national government institutions have been primarily in charge of industrial policy, while NIP emphasizes an additional place-based approach (Kitson, 2019). Thus, it acknowledges the uniqueness of particular territories, inviting regional and local governments to join the efforts. Other relevant institutions involve academia, business organizations, as well as clusters, technology parks, and other organizational forms of technology transfer and enterprise support (Asheim et al., 2019).

At the EU level, the general rules of industrial policy have been stated in a number of programmatic documents, such as the communications *For a European Industrial Renaissance*, 2014, *Digitising European Industry – Reaping the full benefits of a Digital Single Market*, 2016, and *Stronger European Industry for Growth and Economic Recovery – Industrial Policy Communication Update*, 2012. The latest strategy of NIP (European Commission, 2020) identifies the extant legal arrangements and organizations responsible for major objectives and thematic areas. Moreover, it indicates upcoming regulations and new bodies tailored to particular areas, such as Just Transition Platform offering technical and advisory support for carbon-intensive regions and industries, or strategy for smart sector integration.

2.5. Major thematic areas and measures

Given the scope and levels, NIP is holistic in nature and uses bundles of thematic areas, detailed related policies, and measures to accomplish its objectives (Bailey et al., 2019a; 2019b). Particularly, progressive structural change or transformation through new technologies and business models is emphasized to increase industry international competitiveness (c.f., Ujwary-Gil & Potoczek, 2020).

The crucial policy area research and *regional innovation and smart specialization strategies (RIS3)*, predominantly designed and implemented by regions (Morgan & Marques, 2019). Smart specialization (SS) is the most developed and comprehensive concept of NIP. RIS3 assumes prioritizing resources and directions towards concurrent exploitation of extant industrial competences and exploration of new prospective domains through entrepreneurial discovery (McCann & Ortega-Argilés, 2015). SS focuses on regional industrial transformation and encourages sets of objectives and measures dedicated to the transformation process (Foray, 2013; 2014). The experience in design and implementation of SS has been accumulating. Nevertheless, it is difficult to synthesize universally due to the uniqueness of each regional context

(Lane, 2019). The profiling and taxonomical methods to identify a number of alternative modes of design and implementation are more suitable than one universal model. One of the crucial issues in this regard is the evaluation of RIS3, which needs to assume long-term and medium-term perspectives to capture the results expected at different stages of this policy realization (Morgan & Marques, 2019; Lane, 2019). Ultimately, the RIS3 performance and outcomes are still research in progress, since ex-post evaluations of the SS projects are chiefly ahead of us (Morgan & Marques, 2019).

Regional industrial transformation is a thematic area and has a concept related to SS through industrial structural change as a focus (Bianchi & Lasbory, 2019). At the same time, it is discrete in its theoretical evolutionary background, referring to path dependence and regional industrial path trajectories (Hassink et al., 2019; Gong & Hassin, 2019; Isaksen et al., 2019; Asheim, 2019). In this concept, innovative activities are relevant, leading to the extension, renewal, exhaustion, or creation of regional industrial paths. Industrial transformation then denotes structural changes in industry and related innovation systems (Hassink et al., 2019; Grillitsch et al., 2018; Isaksen et al., 2019). The adjacent major thematic areas are *the Fourth Industrial Revolution and industry 4.0, research and development activities and entrepreneurial discovery* to create potential and implement innovation-led changes. Entrepreneurial discovery denotes both the innovative activity of entrepreneurs and the approach of policy-makers and relevant actors in accomplishing regional transformation. The EU innovation policy passed a way from creating framework conditions for innovation through programs supporting R&D activity, to supporting entrepreneurial activity that is instrumental for commercialization, i.e. making value of R&D investment and related knowledge (Foray, 2013; 2014; 2017; 2020). Entrepreneurial discovery as a policy-makers' approach consists of experimentation, information exchange, and debating to jointly implement policies (Foray, 2019; 2020). In a nutshell, it was also called bottom-up and place-based policy design and implementation.

Progressive transformation is often accomplished through *upgrading, i.e., advancing in value chains* towards higher value-adding activities (Gancarczyk & Gancarczyk, 2016). Since transformative processes through breakthrough innovation are rarely purely local, upgrading of enterprises and clusters needs to be considered in the context of global value chains (GVCs) (Gereffi & Lee, 2016; Gancarczyk et al., 2018; Humphrey & Schmitz, 2002; Piorelli & Rabellotti, 2011; Aslesen & Harirchi, 2015; Sturgeon et al., 2008). Upgrading and transformation can be accelerated by the adoption of Key Enabling Technologies (Ciffolilli & Muscio, 2018). The latter, paired with extant mature industries, can increase productivity and lead to the convergence towards new, emerging industries, such as biopharma, digital, and experience industries. Within industrial transformations, particularly

emphasized research and policy areas are socially responsible ecological and digital transitions (EU Commission, 2020).

To reach the transformations at the intersections of sectors and industries, it is necessary to create collaborative environments. These are represented by *industrial clusters as well as industrial and entrepreneurial ecosystems* (EU Commission, 2020; Götz, 2020b; 2020c; Gancarczyk, 2019; Mason & Brown, 2014; Stam, 2015; Lisowska, 2015). Cluster progressive evolution is often identified with localized industrial change. This change affects the entire industrial system of a particular territory, be it a country, a region, or a city (Barzotto et al., 2019). Since upgrading is largely technology-driven and technology has global scope, the innovation for upgrading and resulting advancement of the value chain position should be regarded in the context of GVCs (Götz, 2020a; Gancarczyk & Gancarczyk, 2018; Barzotto et al., 2019).

Challenged by the objective of transformation, NIP departs from selective, *ad hoc* policy interventions with individual measures against market failures. Instead, it adopts bundles of policies, measures, and related projects that comprehensively promote structural change. The policies contributing to and related with NIP are science, technology and innovation policies (STI), antitrust and competition policy, trade policy, regional policy, as well as internal market, procurement, and innovation policies (Aiginger & Rodrik, 2020).

Consequently, NIP applies a critical mass of related measures that stem from virtually all the above policies. In the case of the EU, these measures are included in a number of initiatives, such as cohesion policy, Horizon 2020, the Connecting Europe Facility, the EU program for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME). Additionally, the Investment Plan for Europe and the European Fund for Strategic Investments (EFSI) target, predominantly, SMEs, and innovation with the use of public and private funds (European Parliament, 2020).

3. Contributions

The first part of this volume broadens the understanding of contemporary industrial policy in local, regional, national, and international contexts. The chapter by Wojnicka-Sycz (2020) undertakes one of the most important challenges in RIS3, i.e. the evaluation of the impact of regional SS industries on the development of Polish regions. Based on the spatial panel models for 2012–2017, she reveals the positive impact of SS industries' employment dynamics on regional GDP per capita. The chapter responds to the research gap in a direct measurement of how SS areas affect regional development. The results provide the rationale for policy-makers to pursue these strategies

further. The chapter contributes to regional New Industrial Policy by proving the efficiency of SS in strengthening regional performance.

Factors and barriers to the development of smart mobility in medium-sized Polish cities are the focus of the chapter by Kachniewska (2020). The author applies a comprehensive set of methods to tackle this issue and identifies the conditions for smart mobility, drawing primarily on expert opinions. The results enable a natural generalization of the identified determinants to the similar context of Polish towns, the more important that the research on medium cities is much rarer than studies on metropolises. This contribution belongs to the research streams of city governance and data-based services, which are closely connected to and dependent on industrial digital transformation. Moreover, smart mobility addresses the objective of environmental protection, one of the crucial targets of NIP.

Godlewska-Dzioboń (2020) performs international comparisons between Central and Eastern European Countries in 2020–2018. Particularly, she focuses on the sectoral transformation of the employment structure in these countries. Besides the important observations of spatial dynamics in sectoral structures, the chapter points to the increased importance of services relative to manufacturing in contemporary structural transformations. Thus, it justifies the expanded scope of New Industrial Policy that encompasses not only industry, recently refreshed with 4.0 Revolution, but also services, particularly the digital ones.

The chapter by Czech (2020) identifies the impact of global debt on the national amounts outstanding of credit default swap contracts (CDS) in non-financial institutions. She finds the dynamics of the CDS notional amounts outstanding in response to global household indebtedness and total non-financial sector indebtedness in domestic banks. This contribution brings valuable practical insights about the core and dynamics of CDS and their usefulness in alleviating risks in international exchange. We find this input particularly relevant for industries and enterprises operating in global value chains.

Widera (2020) performs a spatial analysis of the induced population potential of the communes in the Opolska region in 2000 and 2018. The econometric analysis revealed both the own potential of the communes and the interactions with neighboring communes to develop this potential. These findings are important to theorize about the bottom-level sources of territorial units' potential, both internal and those stemming from spatial interactions. We find these conclusions relevant to understand local-level origins of regional transformations, as well as interdependencies among local territorial units.

The next two parts of this volume present micro-level and bottom-up contexts for industrial policy. Particularly, these are the insights from

management and business research and from the research on governing various stakeholder interests and networks.

In the second part, based on management and business theory and empirical evidence, the authors discuss human resource and technological challenges faced by the contemporary industry.

Potoczek (2020) performs a bibliometric research to recognize the advancement of the process approach in organizations. She finds the research on process improvement as emerging. The major research community in that area belongs to the IT field, while management researchers are still a minor group. The author recommends the increased interest from the management field as conducive to the 4.0 transformation of organizational processes. These results provide policy-relevant input to the understanding of how academic research tackles digital transformation in organizational processes.

The chapter by Igielski (2020) uses a survey among a sample of large enterprise senior managers headquartered in Poland to check whether and how they develop employee skills for the challenges of Industry 4.0. The results are pessimistic since they reveal the lack of adaptive and developmental actions in this regard. Nevertheless, there is also a positive sign, namely the awareness of the challenges posed by the 4.0 revolution. Thus, the chapter is valuable for the recommendations as to competence development in industrial transition to the digital economy.

Flak (2020) presents an interesting test for the system of organizational terms as to its usefulness in the practice of motivating people and in a dedicated software. Based on a research experiment in real-life business settings, the author proves the applicability of theory-driven organizational terms in software applications supporting managers in their motivating functions. The chapter contributes important observations as to the interrelations among managerial and technological resources in motivating employees.

Sztorc (2020) investigates lean management tools at hotels in Poland, based on a large sample of hotel representatives. The results are helpful in understanding the types of lean management tools, as well as their major targets in the researched organizations. The input of the study rests in filling the research gap as to the particular tools of lean management applied in the hotel industry to improve services and processes. The focus of this chapter on a particular industry provides a relevant basis for further application and upgrading of this service sector.

The chapter by Mazurkiewicz (2020) offers an assessment of the impact of national culture on career orientation and career values among Polish and Chinese students of economics. Surprisingly, the value system does not differ much between the two national samples, despite the distinct characteristics of the two national cultures, according to Hofstede's method. Consequently,

the author assumes national culture as moderator of career values rather than their determinant. These results provide a contribution to the understanding of job motivations among future corporate employees, a critical determinant of all industrial transitions.

Kowalik (2020) investigates the economic benefits perceived by student participants of scientific projects. Based on the survey, the author reveals students' recognition of scientific projects as bringing economic effects. The study offers practical implications for young people engaging in research activities, as well as for research policy that might acknowledge additional important outcomes, besides purely scientific objectives.

The third part discusses how governing networks and interests can ensure sustainable and socially responsible industries and enterprises.

Sectoral and industrial collaborations are supposed to enhance industrial convergence (EOCIC, 2019). In this vein, Lis (2020) focuses on collaborative attitudes in clusters and technological parks. Cluster organizations are established to rip the localization and agglomeration economies, as well as synergies from cooperative links. Despite some history of operations, the surveyed Polish cluster initiatives and technology parks still reveal low development of enterprise cooperation. The author suggests self-evaluation of management and participants of the researched organizations to understand the accomplished level of collaboration and derive practical implications. This contribution is important to understand the performance of some organizational measures of industrial policy and their real input to industrial transformation.

The chapter by Kowalczyk (2020) investigates sociocultural conditions of CSR-practices in the construction industry of selected European countries. Based on a survey with a large convenience sample, the author confirms the strength of stakeholder pressure on CSR practice as well as the mediating role of company culture in this relationship. At the same time, country differences were indicated as significant for CSR practice and worth further explanation of its variance. This study is valuable for the explanation of interests and stakeholder pressure affecting a particular industry, thus determining the development conditions of that industry.

Another industry-specific study has been proposed by Kurzak-Mabrouk (2020), who focuses on food businesses. This chapter addresses the critical strategic direction of NIP that refers to sustainable and responsible growth with regard to environmental protection. The author performed the interviews with top and middle managers of a large representative sample of Polish food companies. The findings are optimistic, since the majority of companies undertake the efforts towards comprehensive sustainable development strategies voluntarily, and not only due to legal enforcement. Still, the researched enterprises do not fully apply these strategies as yet.

Resonating with the study by Lis (2020), Flieger (2020) identifies network types according to the collaboration maturity level in a local government unit. The research on collaborative networks in public organizations still remains unique. Therefore, this study fills the research gap. The author uses a case-based approach to identify the network features that change according to the maturity level of relationships. The findings are useful for the practice of developing collaboration in local governments and contribute to our understanding of the context for industrial development.

4. Conclusion and implications for further research

Industrial policy has been recently broadened by smart, place-based, bottom-up, and micro-level approaches to industrial transformations towards competitiveness. The contributions gathered in this volume combine these new approaches with macroeconomic and international perspectives. Matching these two aspects is necessary to meet the New Industrial Policy purpose and specific objectives. Therefore, both dimensions need further investigation. Below, we present the prospects for further research in the referred areas as stemming from each part of the current volume.

In *the first part*, we find a number of thematic areas and methodologies proposed for the future investigation of local, regional, and international development policies. In the area of policy evaluation, Wojnicka-Sycz (2020) recommends the extension from the ultimate GDP outcomes towards the intermediate effects of smart specializations, i.e. R&D and innovation performance. Moreover, she seeks international comparisons of these effects, particularly in other EU countries. In depth, regional-level data are also needed to investigate more precisely the industrial scope of smart specializations. On-going evaluations focus largely on the implementation phase and the indirect, mediating effects of industrial strategies. In this vein, Kachniewska (2020) proposes further important research in the implementation strategies and methodologies towards smart mobility in medium cities. Widera (2020) sets out an interesting research perspective on internal regional dynamics and growth distribution, to identify functional areas and regional growth poles.

The international context of structural economic changes and industrial growth has been the focus of Godlewska-Dzioboń (2020) and Czech (2020). After evaluating sectoral structural dynamics, Godlewska-Dzioboń (2020) recommends the performance assessment of individual economic sectors in Central and Eastern European countries, as well as the causes of long-term employment dynamics in these settings. Czech (2020) calls for further studies on risk management in globalized economic exchange. This recommendation

is compelling, even in the case of localized industries such as clusters, since they are also inserted in global value chains.

In order to plan for industrial transformation and competitiveness, it is necessary to investigate further the micro-level transitions in management and business studies. Thus, *the second part* also sets out the agenda for future research, particularly in the area of matching employee competences, management methods, and digital technologies.

The chapter by Potoczek (2020) forms a basis for further specification of research questions and systematic literature reviews in business process management. Another research direction might be practically oriented studies that more tightly integrate management methods with 4.0 tools in organizational processes. The chapter by Igielski (2020) calls for the replication of the performed research on a random sample to enable robust generalization as to the development of employee competences towards digital transformations. The study by Flak (2020) reveals unique possibilities of applying software solutions in tackling soft management issues, such as those related to motivating people, recruitment or organizational culture diagnosis and management. The contribution by Sztorc (2020) encourages further in-depth studies on the causes and outcomes of particular lean management tools for economic performance in the hotel industry.

Career orientation of students as future employees was explored by Mazurkiewicz (2020) in the context of national cultures. According to the author, it would be relevant to expand the research to a larger research sample, diverse regional settings, and to acknowledge a wider range of factors influencing student career orientation. The interesting findings of Kowalik (2020) about students' perceptions of economic benefits from participation in scientific projects might be further explored with a large and random sample, to guide both students and policy makers in the area of R&D.

The design and implementation of industrial policies can only be successful with the comprehensive participation of stakeholders. Therefore, governing interests and networks is a prospective and fruitful area for further studies, as highlighted in *the third part* of this volume.

Lis (2020) proposes future research to identify relationships among motivation, efficiency and commitment in networking, with the use of quantitative studies and a representative, random group of business environment organizations. Similarly, based on the results of his explorative study of a local government's networking, Flieger (2020) intends to apply a quantitative measurement of local government networks and hypotheses testing. With reference to both studies, we would also recommend the investigation of how different levels of collaborations in clusters, technology

parks, and local governments translate into the performance of the enterprises and public organizations involved.

Synthesizing his research on CSR practices in European companies, Kowalczyk (2020) proposes the continuation of the investigations to explore the relationships between these practices and enterprise performance as well as national cultures. The recommendations to check causalities between sustainable growth practices and enterprise performance might also be relevant as a follow-up of the study in the food industry by Kurzak-Mabrouk (2020). A prospective avenue for future studies would be to test empirically the author's model of implementing sustainable growth in relation to economic outcomes.

This chapter has systemized the major characteristics of New Industrial Policy, pointing to its theoretical foundations, distinct nature, and major research areas. Ultimately, it has discussed the contributions from the chapters in this volume, both to their specific research areas and to the on-going challenges of industrial policy. We are in the emerging but rapidly growing phase of revitalizing industrial policy, where research has to accelerate to come up with empirical advancement. Even more importantly, we expect this research to demonstrate explanatory and predictive capacity, thus enhancing practice. We believe that this volume provides relevant support to these on-going efforts.

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Biographical notes

Marta Gancarczyk – (Ph.D., Hab.), Associate Professor at the Institute of Economics, Finance and Management, Jagiellonian University in Krakow, Poland. Her research, publication and consulting activities focus on entrepreneurship, firm growth, technology management and commercialization, industrial clusters, and public policy for small and medium-sized enterprises. She is an Associate Editor of the international scientific journal entitled *Journal of Entrepreneurship, Management and Innovation (JEMI)*, and a Member of the Editorial Advisory Board of the *Journal of Organizational Change Management*.

Anna Ujwary-Gil – (Ph.D., Hab.) is a Professor at Institute of Economics, Polish Academy of Sciences (Laboratory of Process and Network Analysis) in Warsaw, Poland, where she is also a director of two MBA programs. She earned her Ph.D. in economics and management from the Warsaw School of Economics, Poland. She is the Editor-in-Chief of the international and scientific journal named *Journal of Entrepreneurship, Management and Innovation (JEMI)*. She is also the founder and president of the *Cognitione Foundation for the Dissemination of Knowledge and Science*. Her research interests include organizational network analysis, knowledge management, intellectual capital, resource-based views, and dynamic approaches to organization and management.

Citation (APA Style)

Gancarczyk, M., & Ujwary-Gil, A. (2020). Revitalizing industrial policy through smart, micro-level and bottom-up approaches. In A. Ujwary-Gil & M. Gancarczyk (Eds.), *New Challenges in Economic Policy, Business, and Management* (pp. 11-29). Warsaw: Institute of Economics, Polish Academy of Sciences.