

## WICKED PROBLEMS AND THE DESIGN THINKING METHOD AS A TOOL TO SOLVE THESE PROBLEMS. THE CASE ALIEN PROJECT

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**Abstract:** *Today's global challenges are characterized by increasing complexity. This makes it possible to call these challenges so-called wicked problems, which are difficult to define clearly, have no single solution and require the involvement of multiple stakeholders for its purpose. Such complication can include a group of contemporary migration and refugee problems, which include dilemma of adaptation and integration of immigrants, or social conflicts between locals and newcomers, etc. The Design Thinking (DT) method, which is recipient- and user-oriented solution, can be used to try to solve these issues. Importantly, the beneficiaries themselves can also be involved. The purpose of this study is to present the essence of wicked problems, as well as the DT method as a tool for solving contemporary problems, including migration and refugees. The study fills the research gap on presenting a proposal for a tool in the form of the Design Thinking method for solving contemporary wicked problems, including in the setting of migrants and refugees, using the results of the ALIEN project as an example. A synthetic review of the literature on wicked problems was also conducted. The study used a qualitative method in the form of logical inference, as well as a review of the literature on the subject, studies, and reports. By addressing this issue, the authors intended to expand the existing body of global analysis in this area. As demonstrated in this paper, the DT method has been successfully used to solve wicked problems among migrants and refugees in Norway as well as Ethiopia, Senegal, USA, Colombia, Australia, France, Germany, Greece, Jordan and Iraq. International research teams, including the ALIEN project team, are seeking effective solutions to wicked problems accompanying migration and refugee processes. This empirical study discusses the application of this method to solving wicked problems surrounding migrants and refugees, especially their solution proposals developed within the ERASMUS+ ALIEN Strategic Partnerships project. The authors believe that they could be successfully used today on a large scale.*

**Keywords:** *wicked problems, migration, refugee, Design Thinking, UNHCR*

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### Introduction

A peculiarity of recent decades has been the emergence of new types of problems that are characterized by, among other things, a high degree of complication, difficulty in solving them, or limitations in the objective evaluation of the solutions adopted. In reference to these problems, H. W. J. Rittel and M. M. Webber used the term wicked

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problems (Rittel&Webber, 1973), understood as “vicious circle” problems, as opposed to tame problems, ie, ones that are easy and simply solvable. They can occur locally, nationally, but also globally and relate especially to climate, environmental, economic and social issues like public health, income inequality, local underdevelopment etc., as well as those related to adaptation and integration of immigrants and refugees.

The priority challenge regarding wicked problems is to formulate them. It is important to recognize especially their causes. However, even at this stage, the difference in positions and perspectives with which the international community defines the same dispute becomes apparent. The different positions and perspectives are a consequence of differences in culture-history, economics, lobbying and attitudes toward social innovation (Chrisidu-Budnik, 2017). The causality of these dilemma is clearly non-linear. There are a lot of reasons between which there is their unpredictable interaction and dynamics (Zybała, 2013). Therefore, a precise and unambiguous identification of a wicked problem is very difficult. This is because each has a unique nature.

Similarly, there is no single, specific way to solve a malicious issue . Sometimes their solution can even cause undesirable repercussions. This is because the solution to each wicked problem creates new conditions that determine situations and decisions later on. In addition, there is no way to verify the developed solution to the problem, and its implementation causes unpredictable and multiple economic, social, and political consequences. Each wicked problem can therefore be a symptom of another, even more serious complication . In view of the above-mentioned features, the expected outcome of efforts to solve these disputes is never certain but is also irreversible and causes consequences.

There is also difficulty in determining the point at which a wicked problem can be considered definitively solved. As a result, the solution to a wicked problem is usually one-sided, not reflecting all of its complexity. Sometimes there are also multiple solutions or even no solution to a given difficulty. This is because each such issue is embedded in a specific context, for the solution of which different tangible and intangible resources are needed, and its eventual solution is not unequivocally satisfactory to all actors. Their solution creates a discrepancy between the actual state and the desired state. The actors involved in the process of anticipating the desired state may take different perspectives. The discrepancy between the actual state and the desired state becomes particularly apparent when a particular wicked problem is global in nature. Then, the mechanisms for developing and agreeing on common positions, cooperation and international coordination between actors become decisive. Therefore, an effective means of solving contemporary wicked problems, including migration and refugee challenges with the involvement of various actors such as migrants, students, members of organizations, local governments, etc. seems to be the Design Thinking method (Buchanan, 1992).

## 1. Literature review on wicked problems

Ritchey (2013) notes that some complex economic, social, and organizational problems cannot be effectively explained and solved by traditional analytical, or linear, approaches. At the same time, in the conclusion of his argument, he stresses that wicked problems can carry consequences for those who undertake to solve them without exploring the true origin of these problems.

Jordan and Kleinsasser (2014) encourage the dissemination of this issue across the educational spectrum. The authors base their discussion on previous studies of wicked problems that have been conducted in literacy learning. They explain the significance of malingering issues and present the response to them by educators, teacher educators, parents and policy makers. They conclude with precisely defined recommendations for dealing with their effects. Among the solutions, they envision intensifying discussions with stakeholders and promoting continuous observation .

On the other hand, Guy Peters (2017) studies the terminology of the concept of wicked problems and concludes that only a few of them meet the definition of wicked. Based on this analysis, a research program has been implemented to answer the extent to which problems that are considered wicked problems represent real difficulties in solving them.

According to Alford and Head (2017), wicked problems tend to add up, creating difficult-to-solve multiple complexities that escape the framework of common definition and accepted solutions. They differ in the criterion of the sophistication of their “wickedness”, by such dimensions as the irreconcilability of the institutions involved and their individuals, as well as cognitive complexity. The authors propose a typology of wicked problems. They present a framework and proposals for different types of cooperation for their solution, generally geared to a specific type of problem. In the final phase of the article, they conclude that establishing a standard for solutions to these problems proves not only impossible, but perhaps unnecessary from their point of view.

Krause (2012) analyzes poor quality in higher education as a wicked problem. The author advocates a more concrete theorization of the issue of wicked problems in the local, institutional, and national space . On the other hand, Ricker-Gilberst (2013) review and analyze a critical assessment of subsidy programs for selected inputs in African countries. The authors are of the opinion that production subsidies should be considered a wicked problem because of the difficulty and indeterminacy involved in their evaluation. Another interesting example of a study that critiques existing models of decision-making and classifying decisions in the theory of strategic managers’ and organizations’ capabilities using the complexity of wicked problems as an example is presented by McMillan and Overall (2016).

As the main ideas of the article, Coyne (2005) presents how we can use creativity and emerging ideas of wicked problems to debate the meaning and terminology of understanding the contemporary paradigm.

The findings of researchers Lönngren and Van Poeck (2021) indicate that the concept of wicked problems is not always consistently applied as a theoretical concept. It

is clearly attributed many different meanings, different epistemological assumptions, and a full and wide range of rhetorical functions.

The existing research gap on wicked problems in the literature is related to their categorization under challenges of migration and refugee processes. It is not the intention of the authors within the framework of this study to analyze in detail the wicked problems occurring in the environment of migrants and refugees. This is a separate research problem that could be considered within the framework of a separate article.

## **2. Design Thinking method: a concept of a tool to solve modern wicked problems**

The DT method is a method of solving problems.. The essence of it is to creatively design in teams, various solutions to difficulties , especially malicious issues, responding as much as possible to the needs of the audience and users. It is an intuitive, but at the same time structured method of work, as well as affair solving thanks to which in teams, often interdisciplinary, innovations are created in a broad sense.

The method originated at Stanford University in California, where it was developed and popularized by Professor David M. Kelly. Its origins lie in designing products and services for Silicon Valley technology companies. Nowadays, non-governmental organizations (in the USA, e.g., the Rockefeller Foundation or the Bill and Melinda Gates Foundation), UN agencies (e.g., the Office of the UN High Commissioner for Refugees (UNHCR)), or public administration units (in Poland, e.g., the City Hall in Lodz, the City Hall in Wroclaw) are using the Design Thinking method more and more often.

Design Thinking assumes that the focal point of the design process is the recipient, the user, to whom the result of the design work is dedicated. It also involves connecting to this process the audience to whom the result of the work is directed (Brown, 2016). Including various social groups, including such as immigrants, students, youth or members of organizations and local governments in active participation in society, and equipping them with the necessary knowledge, skills and attitudes to make a meaningful contribution to solving disputes , including “wicked problems,” includes not only the educational process, but also practical experience (Eurydice, 2012).

An important element of this method, therefore, is to listen to the needs of the potential audience and actively involve them in the design, and the philosophy of the method can be summarized in four rules (Plattner, Mainel& Leifer, 2011):

- Human, according to which design is a social activity, and problem solving should strive first and foremost to satisfy human needs.
- Ambiguity, which means the ability to experiment and see certain things and problems differently.
- Redesign, which says that it is worthwhile to learn about existing solutions and methods of dealing with a given problem, as completely new and improved solutions can be built on their basis.

- The rule of tangibility, according to which visualization and prototyping foster better communication between project team members.

Design thinking thus refers primarily to the ability to think with so-called solutions, that is, to think and act creatively (Antoszkiewicz, 2015), focusing on human expectations and needs, hence the focus is on the living being. In order to get an answer to the question about the expectations of future recipients or users, it is necessary to use deep empathy so that needs that have not yet been articulated explicitly can be identified (Lockwood, 2010). This is because such an approach has a significant impact on the design process as a whole: from the original concept to the final solution to the problem.

The Design Thinking process itself consists of stages, based on which the progress of the work is monitored (Helmann&Rosienkiewicz,2016). As a multidisciplinary approach, it has adapted techniques and tools from different fields of knowledge, such as art, engineering, anthropology, psychology, etc., to DT (Tschmmel, 2012). One of the more popular schemes of the Design Thinking concept is the so-called Stanford model, which is based on iterative cycles consisting of five stages (Brodnicki, 2015). The first stage is empathization, which involves deeply recognizing the true needs of users and understanding them in different situations. The second stage is to define the problem and identify the design challenge based on the information and data collected. The third step is to generate a large number of diverse ideas, representing potential solutions to the problem defined earlier. The richness and diversity of ideas submitted is most welcome according to the principle that bad ideas do not exist (Chyba, 2017). Above all, openness, and willingness to work together as a team play a key role. The final decomposition of ideas into those that are obligatory, realistic, and feasible, far-reaching, but also within the range of action, is made, and the best one for the team is selected. In the next, fourth stage, quick and inexpensive prototypes are created as a visual representation of the solutions, in order to hand them over to the public for testing. The final stage is testing, which involves the use of prototypes by audiences in a real environment and collecting comments from them. Gathering feedback from different test stakeholders makes it possible to devise a set of different solutions. Positive tests indicate that the solution is ready for final implementation.

The DT method therefore promotes and supports important 21st century skills such as critical thinking and action, underpinned by curiosity, attentiveness, critical thinking, perseverance, flexibility, and commitment, as well as creativity, communication, and teamwork skills. One can also add to these somewhat “harder” skills, such as analytical and synthetic thinking, the ability to do project work, move between different disciplines (transdisciplinarity) and cultures (interculturalism). The main premise of Design Thinking is the ability to look at a given wicked problem from the point of view of the people who are affected by the problem and for whom a solution is being sought.

The essence of design thinking is to determine what kinds of issues exist in a given environment, including among immigrants, refugees and their host communities, analyze these complications, select the ones worth addressing, and then seek innovative solutions

to them. Design Thinking enables complex, ambiguous tasks to be undertaken, resulting in unique solutions. The effect is achieved using a creative and even abstract approach.

The method, therefore, is the continuous experimentation and search for innovative solutions with special attention to the social, cultural, and economic context of the wicked problem and on providing such an innovative solution that meets the criterion of usefulness from the point of view of its audience (human centered design). In doing so, the method is not assigned to a specific work algorithm but is based on stimulating creativity through continuous prototyping of potential solutions, requires both the use of a variety of tools to stimulate creativity and mobilize resources. It is thus a non-linear and flexible approach that balances research, analytical and creative thought processes (Serrat, 2017).

### 3. Using Design Thinking to solve migration and refugee problems

The phenomenon of migration and refugees is characteristic of virtually every state or region, and has become a defining feature of the modern global economy (Vaculovschi, 2021). It is a fundamental, unavoidable and potentially beneficial economic and social element of the functioning of any country or region. However, the problem may be how to manage this phenomenon. As a rule, the management of this phenomenon should be directed at the positive impact of this phenomenon on the state of the economy of the host countries, or at increasing its positive and reducing its negative effects. At the same time, in order to meet the growing challenges of migration and refugee management, it is very important to involve numerous actors, as well as migrants and refugees themselves. The Design Thinking method can be applied to problem solving in many areas related to migration and refugee issues. These problems can relate, for example, to faster adaptation of migrants and refugees socially, culturally, economically and politically, and to building inclusive and tolerant relationships between migrant and host populations.

One of the forerunners of the application of Design Thinking in the area related to immigrant integration is Norway. It was used to examine gaps in the system of asylum and integration of immigrants in the Austrheim municipality. It was intended to allow participants in the project process to better understand the complexities of the local system and to identify key success factors for the integration program (Armond, Percy & Nielsen, 2014).

Another example of using the Design Thinking method to solve migration and refugee problems is Ideas Box dedicated to Somali refugee children and youth staying in refugee camps in the Dollo Ado region of Ethiopia close to the Somali border. It was initiated by UNHCR Sub-Office Melkadida and implemented in December 2015 in two refugee camps, Malkadida and Bokolmany, by Save the Children and Libraries without Borders, in coordination with the UNHCR Innovations Service in Geneva. Ideas Box is a multimedia library containing books and ICT devices such as tablets, laptops, and audio and cinema components. It aims to provide access to information, culture, and education to refugees and people in refugee-like situations, especially children and youth, to empower them and promote their rights (UNHCR, 2015) (UNHCR, n.d.) (Ideas Box, n.d.). However,

the Ideas Box programmes are present in many other places and offered as pop-up libraries and media centres to users and beneficiaries other than refugees. In 2019, ongoing implementations around the world included Senegal, the US, Colombia, Australia, France, Germany, Greece, Jordan, and Iraq, and among the recipients were refugee populations, street children, inhabitants of underserved and local communities, and low-income city districts (Ideas Box, n.d.).

DT was the key axis of the migration-oriented project ALIEN (Advanced learning and inclusive environment for higher education through greater knowledge and understanding of migration) too, implemented in 2016–2019 and co-financed by the European Union within the framework of the Erasmus+ Programme (‘Key Action 2: Cooperation for innovation and the exchange of good practices: Strategic partnership for higher education’). The international consortium was managed by the Polish Japanese Academy of Information Technology (Poland) in cooperation with different European partners, including universities SGH Warsaw School of Economics (Poland), Aalto University (Finland), University of the West of Scotland (UK), Glyndwr University (UK) and one non-academic institution, Technopolis City of Athens S.A. (an NGO in Greece). The idea behind the project was to combine the knowledge and expertise of diverse stakeholders representing different scientific disciplines, such as economics, social work, education, social sciences, and art and design studies, to face important social problems and challenges related to the migration situation in Europe and its consequences. The project aimed to ‘contribute to greater equity and social cohesion within Europe through a series of knowledge-exchange activities with diverse stakeholders (academics, national and local authorities, migrant community organisations), and through the understanding of the complexity of the flow of migration’ (PJATK, n.d.). It was inspired by the recent migration and refugee crisis, which led to an increasing interest in migration issues in the EU Member States. This was done via forming interdisciplinary and participatory educational collaborations to enrich their expertise on multiple social science disciplines with stakeholders’ engagement. So, these events not only served to test innovative teaching methods, but also facilitated knowledge exchange and network building between the project’s key players: academics and project partners, students as well as diverse stakeholders, including NGOs, public institutions and migrants. The project advanced young people intercultural competences, knowledge and understanding of migration through transnational, multi- and interdisciplinary collaboration. At the same time the project developed lasting engagement of HEIs with local and international migrant organizations as well as regional authorities to build bridges and share knowledge, good practices and raise awareness of issues around migration. Thus, it contributed to greater equity and social cohesion within Europe through a series of knowledge exchange activities with diverse stakeholders (academics, national and local authorities, migrant community organisations).

It should be emphasized that the project produced the following outputs: Method’s Report on inquiry-based and project-based learning with activities on migration, the Understanding Migration Processes manual for Educators of Social Science, the

Understanding People Through Art manual for Educators of Design containing the guidelines on implementing our experimental and innovative teaching methods as well as Modules on Migration including thematic course content from the perspective of particular social science discipline including Economics, Education, Politics/Sociology/Social Policy and Social Work and Workshop and Living Lab scenarios. Living Labs worked as interactive think tanks, where issues and opinions of public concern related to migration was discussed. Living labs served as an input for the projects' learning materials and thus they operated as the meeting point of the diverse stakeholders of the project and they involved interchanging of ideas, methodology forming and collection of data.

The Polish team of academics from SGH Warsaw School of Economics that was involved in the ALIEN project included Jan Misiuna and Marta Pachocka and was led by Magdalena Proczek. They were dealing with socio-economic and demographic aspects of migration and integration using the example of the EU and selected Member States. They were focused on the issues of international migration in an interdisciplinary approach, with an emphasis on the social sciences, including economics. There were two subtopics of the project: access to social services (i.a., social assistance, healthcare, education, housing) and access to the labour market (i.a., rights, obligations, procedures, labour market situation, institutions, consequences). Following the project guidelines and own teaching experience, the SGH team asked the students and PhD students during living labs to submit aresearch product – a design thinking product in which students were offered more freedom and space for their creativity. They were supposed to prepare and deliver this product as a result of their work on small team research projects. In general, the projects proposed by the young people teams concerned the following specific social or public policy problems:

- Pitchbook, informing and promoting the initiative of We need books: Providing multicultural spaces in Athens (cooperation with NGO We need books in Athens).
- An awareness campaign – What are we made of? – for the residents of Athens, aimed at increasing the awareness of one's own origin and integrating the foreign population into the local society (in cooperation with the City Hall of Athens).
- Performative art in Warsaw – Detention camp – Box metaphor – regarding the problem of asylum seekers in detention centres and alternatives to it (in cooperation with the NGO Association of Legal Intervention in Warsaw).
- Animation addressed to refugees in Poland informing them about the individual integration programme (in cooperation with the Warsaw Family Support Centre in Warsaw).
- IT mobile application (prototype) for victims of violence (in cooperation with NGO METAdrasi in Athens).

The mobile app, in particular, nowadays seems like an ideal product that could be introduced on a large scale to solve the problem of violence and avoid suffering of its



victims. All projects proposed by the young people teams are applicable to Ukrainian refugees today.

## Conclusions

Thanks to the promoted values and attitudes such as empathy, solidarity, creativity, curiosity, openness, or innovation, the Design Thinking method responds to the needs related to contemporary global challenges. Among the most important of these are the challenges and problems associated with migration and refugees in the broadest sense. These are wicked problems. The migration and refugee crisis of 2015 and 2022 has revealed many areas where action and solutions are needed. However, they should be systemic, considering a wide variety of actors, interests, global processes. The Design Thinking method can therefore provide an answer to solving the most complex challenges of the 21st century, including migration and refugee problems.

Design Thinking is characterized by working in multidisciplinary teams, and what is related to this diversity, creativity can be stimulated through this diversity (Starostka, 2015). Thanks to the fact that the team's competencies are diverse, it has a chance to develop out-of-the-box solutions (Bruce & Bessant, 2022). The process also leaves room for choices based on intuition, which, when dressed in context, allow for a deeper exploration of the problem. This allows innovative conclusions to be reached that prove to be meaningful and usable once they are subjected to systematization in the face of further data gathered through the Design Thinking process in an attempt to find a solution to the wicked problem.

However, it is worth emphasizing that the Design Thinking method is not and has never been just a scheme of action or a set of techniques. It represents a particular style of thinking and set of skills focused on solving wicked problems and challenges that are real needs of specific users or their entire groups. Migrants and refugees are exceptional. DT is a process in which stages of work progress are defined, but each phase of design thinking can differ from each other depending on the type of problem, and thus can bring many possible options for further action, the choice of which is at the discretion of the project team and the user. Therefore, it reduces the risk of potential failure, and thus allows modifications and upgrades to be made while still in the initial phase (Drucker, 2002) that is, it introduces the possibility of including the necessary corrective actions for the achievement of planned results and continuous improvement. Great freedom and flexibility in the application of the concept is definitely its a positive aspect. This makes it accessible and applicable to all interested parties (Studzińska, 2017). Above all, however, as a social process, it entails multidimensional cooperation with the external environment (Arabasz & Sińczuk, 2016).

Due to the occurrence of wicked problems in migration and refugee processes, it seems helpful to use the DT method to try to solve them. A public entity in Norway and an international entity, the UNHCR, have reached for this method. Also, within the framework of the ERASMUS+ ALIEN Strategic Partnerships project, a number of interesting solutions to wicked problems occurring around migrants and refugees have

been developed through this method. Among the most interesting is an IT mobile application (prototype) for victims of violence. It seems that it would be worthwhile to apply it, especially in the contemporary circumstances of increased migration and refugees in various parts of the world, of which from Ukraine.

## References

- Alford, J., & Head, B. (2017). Wicked and less wicked problems: a typology and a contingency framework. *Policy and Society*, 36(3), 397–413. <https://doi.org/10.1080/14494035.2017.1361634>
- Antoszkiewicz, J. D. (2015). Metody heurystyczne podstawą przygotowania i wprowadzania innowacji. *Przedsiębiorczość i Zarządzanie*, 16(11), 12.
- Arabasz, M., & Sińczuk, M. (2016). *Design thinking* (p. 5, 39). Studio Graficzne Piotr Kurasiak.
- Brodnicki, K. (2015). Zastosowanie koncepcji Design Thinking w funkcjonowaniu przedsiębiorstw. *Quarterly Journal*, 4(15), 38.
- Brown, T. (2016). *Zmiana przez Design. Jak Design Thinking zmienia organizacje i pobudza innowacyjność* (p. 14). Libron.
- Bruce, M., & Bessant, J. (2002). *Design in Business. Strategic Innovation Through Design* (p. 49). Pearson Education Limited.
- Buchanan, R. (1992). Wicked Problems in Design Thinking. *Design*, 8(2), 17.
- Chrisidu-Budnik, A. (2017). Złośliwe problemy w otoczeniu administracji publicznej. *Acta Universitatis Wratislaviensis*, 3802, 36. <https://doi.org/10.19195/0137-1134.111.3>
- Chyba, Z. (2017). Myślenie projektowe w kreowaniu innowacyjności i przedsiębiorczości technologicznej. *Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania*, 48(3), 97. <https://doi.org/10.18276/sip.2017.48/3-08>
- Coyne, R. (2005). Wicked problems revisited. *Design studies*, 26(1), 5–17.
- D'Armond Percy, I., & Nielsen, B. F. (2014). Sustainable integration in Norway: A design thinking approach. In *Relating Systems Thinking and Design*: working paper. [www.systemic-design.net](http://www.systemic-design.net)
- Drucker, P. F. (2002). They're Not Employees, They're People. *Harvard Business Review*, 80(2), 70–77.
- Eurydice. (2012). *Edukacja obywatelska w Europie*. Urząd Oficjalnych Publikacji Wspólnot Europejskich.
- Guy Peters, B. (2017). What is so wicked about wicked problems? A conceptual analysis and a research program. *Policy and Society*, 36(3), 385–396. <https://doi.org/10.1080/14494035.2017.1361633>
- Helmann, J., & Rosienkiewicz, M. (2016). *Design Thinking jako koncepcja pobudzania innowacji* (p. 63). [http://www.ptzp.org.pl/files/konferencje/kzz/artyk\\_pdf\\_2016/T1/t1\\_0062.pdf](http://www.ptzp.org.pl/files/konferencje/kzz/artyk_pdf_2016/T1/t1_0062.pdf)
- Ideas Box. (n.d.). *Programs*. <https://www.ideas-box.org/index.php/en/programs>
- Ideas Box. (n.d.). *Somalian refugees in Ethiopia*. <https://www.ideas-box.org/index.php/en/programs/somalian-refugees-in-ethiopia>

- Jordan, M., & Kleinsasser, R. (2014). Wicked problems: inescapable wickedity. *Journal of Education for Teaching*, 40(4), 415–430. <https://doi.org/10.1080/02607476.2014.929381>.
- Krause, K. (2012). Addressing the wicked problem of quality in higher education: theoretical approaches and implications. *Questioning theory-method relations in higher education research*, 31(3), 285–297. <https://doi.org/10.1080/07294360.2011.634381>
- Lockwood, T. (2010). *Design Thinking: Integrating Innovation, Customer Experience and Brand Value* (3rd edition, p. 8). Allworth Press.
- Lönngren, J., & Van Poeck, K. (2021). Wicked problems: A mapping review of literature. *International Journal of Sustainable Development & World Ecology*, 28(6), 481–502.
- McMillan, Ch., & Overall, J. (2016). Wicked problems: turning strategic management upside down, *Journal of Business Strategy*, 37(1), 34–43. <https://doi.org/10.1108/JBS-11-2014-0129>
- PJATK. (n.d.). *Alien*. <https://alien.pja.edu.pl/alien-about.html>
- Plattner, H., Meinel, C., & Leifer, L. (2011). *Design Thinking: Understandn – Improve – Apply* (p. 15). Springer.
- Ricker-Gilbert, J., Jayne, T., & Shively, G. (2013). Addressing the Wicked Problem of Input Subsidy Programs in Africa. *Applied Economic Perspectives and Policy*, 35(2), 322–340. <https://doi.org/10.1093/aep/ppt001>
- Ritchey, T. (2013). Wicked Problems. Modelling Social Messes with Morphological Analysis. *Acta Morphologica Generalis*, 2(1), 1–8. <https://doi.org/10.1007/978-3-642-19653-9>
- Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning, *Policy Sciences*, 4(2), 155–169. <https://doi.org/10.1007/BF01405730>
- Serrat, O. (2017). *Knowledge Solutions: Tools, Methods, and Approaches to Drive Organizational Performance* (p. 131). Asian Development Bank.
- Starostka, J. (2015). Myślenie projektowe, jako sposób na tworzenie innowacji. *Logistyka*, 2, 1071.
- Studzińska, M. (2017). Narzędzie wspomagające projektowanie usług. *Design-Thinking, Zeszyty Naukowe Politechniki Śląskiej Seria: Organizacja i Zarządzanie*, 113, 472.
- Tschimmel, K. (2012). Design Thinking as an effective Toolkit for Innovation. In *Proceedings of the XXIII ISPIM Conference: Action for Innovation: Innovating from Experience* (p. 11). <https://doi.org/10.13140/2.1.2570.3361>
- UNHCR. (2015). *UNHCR initiated an innovative pilot project, the IDEAS BOX, in Dollo Ado*. <https://data2.unhcr.org/en/news/10090>
- UNHCR. (n.d). *The IDEAS BOX, a multi-media library for Somali refugees in Melkadida Operation*. <https://data2.unhcr.org/en/documents/download/30858>
- Vaculovschi, D. (2021) The Impact of Migration Processes on Development. *Eastern European Journal of Regional Studies*, 7(2), 28. <https://doi.org/10.53486/2537-6179.7-2.02>
- Zybała, A. (2013). Polityki publiczne wobec wzorców zarządzania publicznego. *Zarządzanie Publiczne*, 4(26), 36. <https://doi.org/10.7366/1898352942603>.