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Research Article

Research on the Combination Technology of Cultural and Creative Industries Based on TRIZ Theory

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In recent years, the cultural and creative industry has become an emerging industry that countries have vigorously supported and promoted in the new economic era. This article introduces the TRIZ innovation theory into the cultural and creative industry. As an innovative problem-solving theory, TRIZ has good practicability and operability. It seeks breakthroughs on the basis of original creative thinking and provides a scientific and efficient cultural creativity. Combining specific cases, analyze the innovative principles of TRIZ theory as the origin, stimulate creative methods that generate divergent thinking, aggregate thinking, and conversion thinking, and apply them to creative mechanisms and applications in cultural advertising creativity. The whole process is guided by rational principles to lead perceptual thinking, and concrete principles drive abstract imagination, exploring the source of thinking of the essence of cultural advertising creative design. This theory and its application mechanism have become a brand new thinking method and application attempt in the field of cultural advertising creativity.

1. Introduction

The term "cultural and creative industries" first appeared in the 1998 "British Creative Industries Path Document", emphasizing that individuals or teams use technology, creativity, and industrialization to develop, operate, and market industries with intellectual property rights. The main areas of this industry are computers, software, fashion design, advertising, architectural design, animation, music, radio, film and television, the Internet, mobile media, and so on. Our country also put forward the need to vigorously develop cultural and creative industries in the "Outline of the National Cultural Development Plan for the Eleventh Five-Year Plan Period" [1, 2]. At present, the main characteristics of the development of my country's cultural and creative industries are similar programs, products, and content, serious plagiarism in the industry, and insufficient innovation. The government proposed a change from "Made in China" to "Created in China". Since China's reform and opening up, developed countries such as the United States and Europe have taken advantage of intellectual property rights and brands to turn China into their manufacturing plants, paying cheap labor prices and earning high profits on their own, but they consume China's resources. Even at the cost of destroying the environment [3], China has become synonymous with "foundry". Chinese companies have insufficient R&D investment and very limited innovation capabilities. Although some companies have made considerable efforts, most of their products are plagiarism and follow suit. For example, Tencent is already a major Internet company, but the company's business philosophy still believes that "the ability to copy products must be regarded as the company's core competitiveness." Obviously, this society lacks an atmosphere and awareness of innovation. In the communications industry, it is very common for the United States to study Japan and Japan to study Korea. These phenomena are very common. Summarizing the development path of the "cultural and creative industries" in other

developed countries, it is not difficult to find that the core of the healthy development of this industry is people, with emphasis on human creativity as the core factor. The information age emphasizes human wisdom, creativity, intellectual property rights, and human proactive factors. Only by giving full play to the active creative factors of people can we lead the development of society in the information age [4–7].

At present, the development of my country's cultural and creative industries can be roughly divided into three echelons. The order is the developed eastern region, the developing central region, and the underdeveloped western region. With the change of the international trend, all countries are actively turning their development vision to the cultural industry. This is an excellent opportunity to build a cultural China, enhance the influence of the world, and enhance the people's recognition of their own culture. China's major cities are also undergoing policy reform, industrial adjustment, and transformation.

The cultural creative industry is a collection of industries that commercialize cultural or natural and human resources with cultural factors through modern technology and creativity. The high-quality development of the cultural and creative industry is concentrated in catalyzing the creation of new business formats, cultivating new kinetic energy, and releasing new vitality, thereby enhancing the core competitiveness of the industry [8]. From the perspective of rapid economic growth to the high-quality stage, labor productivity and total factor productivity have achieved simultaneous increases, which will inevitably promote industrial quality changes, efficiency changes, and power changes. Compared with traditional industries, cultural and creative industries have certain cultural attributes, but also economic attributes such as high technological content, high degree of creativity, high added value, and high degree of integration. Therefore, promoting the high-quality development of cultural and creative industries has rich connotations [9].

The research on creative thinking has a long history, and the creative thinking methods involved are unknown. However, the existing creative thinking methods are more generalized and formalized and lack specific principles to generate creative origins. As an innovative problem-solving theory, TRIZ has good practicability and maneuverability. Try to combine the two, based on the TRIZ principle, seek a breakthrough on the basis of original creative thinking and provide a scientific and efficient cultural and creative industry integration technology. In addition, it provides an application basis for expanding the multifield development of TRIZ theory [10–14].

2. Creative Thinking Method

2.1. The Connotation of Creative Thinking Method. Creative thinking is the creative abstract summary and behavioral potential of the brain's essential attributes and internal connections of objective things. Creative thinking is specifically divided into divergent thinking, convergent thinking, and conversion thinking. Thinking method is the tool and means by which people realize the purpose of thinking through thinking activities. According to different scopes, it can be divided into general thinking methods, specific scientific common thinking methods, and different scientific unique thinking methods. The creative thinking method is a systematic thinking mode, which can be materialized mental activities and high-level expressions. It is a necessary ability to engage in creative thinking activities, and it is the basis of inspiration and behavioral navigation for the completion of creative design. The creative thinking method is constantly changing and evolving.

2.2. The Importance of Creative Thinking Methods. Creative thinking methods play an important role in the design of graphic advertising, enabling designers to give full play to their imagination and creativity, combining good design concepts and artistic skills, combining actual needs and integrating them into their works, thereby enhancing the meaning and communication value of graphic advertising design. Humanistic and artistic value: in the field of design, creative thinking methods are more important than design skills. Especially in today's era, computer software technology is widely used in the field of graphic design. First, the difference between design technologies has become smaller, and the second has prompted more people to chase and update software. The operation technique creates the so-called "designer" who has no ideas, creativity, and mechanical work. Print advertising design urgently needs scientific and creative thinking methods as theoretical guidance and applied to specific design practices. The creative thinking method is not to construct a perfect idealistic plan. Its value is to propose creative, clear, concise, efficient and operable best ideas for the work, thereby increasing the difference between the design and other works and avoiding uninspired ideas, the same while making the viewer experience fresh and intuitive [15].

3. Summary of TRIZ Theory

3.1. The Concept of TRIZ Theory. TRIZ is the abbreviation of English, and its meaning is the theory of solving invention problems. It originated in the Soviet Union. It was the Soviet Genrich Altshuller. After summing up tens of thousands of invention patents, he found that innovation is also regular. Follow his core ideas: first, he believes that no matter what product is a simple or complex system, his core technology must follow objective laws and models to gradually evolve and develop; second, he believes that the driving force for the development of things is due to the technology. Difficulties, conflicts, and contradictions are constantly being resolved; the third is to use as little resources and energy as possible to promote technological breakthroughs and development. The difference between TRIZ theory and traditional innovation methods is that it is a methodology, a summary of laws, and reveals the laws and methods of innovation [16, 17]. This theory has been proven to be correct. For example, the renewal of military systems, equipment, and products in the early Soviet Union was later used by famous companies in

the United States, Japan, and other countries. It was discovered that TRIZ's method was used when innovating products. Able to effectively analyze the problem, find the bottleneck and crux of the problem, and quickly grasp the essential problem. It plays a very important role in helping R&D personnel research, break through the fixed thinking, adopt new thinking, summarize the law, and predict the future [18–20].

The most basic three theoretical bases are as follows: (1) in the process of solving problems, people will encounter many contradictions, and corresponding solutions to these contradictions will often appear; (2) there are few innovative ways to solve problems thoroughly, which researchers can learn and master; and (3) generally speaking, the most effective way to solve problems usually comes from some knowledge in other fields. After hundreds of years of development, TRIZ theory has been widely used all over the world.

3.2. The Relevance of TRIZ Theory and Cultural Creative Thinking. Through research, it is found that the research heat of TRIZ theory in innovation is rising. Up to now, TRIZ theory has been developed in many fields such as management science and social science. When people encounter problems that are difficult to solve, they can not only solve them with the knowledge of their own discipline but also use the knowledge of other disciplines to find some solutions in other fields. Therefore, the application of TRIZ theory to cultural and creative industry technology in this paper is consistent [21].

The TRIZ innovation principle is to use the principles and methods of scientific discovery to rationally analyze and thoroughly solve problems. It contains the common principles followed by human innovation and is the earliest, most basic, core, and most practical content of TRIZ theory. It is effective and easy to learn and master, as shown in Table 1.

3.3. TRIZ Innovation Principles and Traditional Creative Thinking Methods. Traditional creative thinking methods are divided into divergent thinking, convergent thinking, and conversion thinking. Divergent thinking is a thinking form in which the brain presents a multidimensional diffusion state. It is a thinking method to put forward abundant ideas and find various ways to solve specific problems from a thinking starting point and break away from traditional practices and create more possibilities. Convergent thinking refers to sublimating logical conclusions from existing representations and gathering broad thinking paths into a focus. It is a convergent thinking mode with scope, direction, and order. The transformation of thinking is to observe objects from different aspects and angles from the perspective of connection and development, to change a new perspective, to avoid stereotypical thinking, and then to get a comprehensive understanding of objects and perfect solutions.

In terms of suitability, logicality, and efficiency of combining TRIZ theory with traditional creative thinking methods, most of the existing creative thinking methods in the field of graphic design, their procedures, steps and measures are based on overcoming psychological barriers of creation to stimulate creative thinking. Its methods are highly abstract and generalized and tend to be formalized [22–24]. TRIZ reveals the inner laws and principles of creation. Compared with traditional creative thinking methods, it adopts scientific methods to boil down particularity problems into general problems of TRIZ and form solutions to problems. In terms of methods and processes of solving problems, TRIZ is faster, more accurate, and more efficient than traditional creative thinking methods. TRIZ is a controllable and effective method and powerful tool for generating innovative thinking from the original origin [25, 26].

Break the inertia, inertia and one-sidedness of thinking, and avoid the blindness and limitation of traditional creative process. TRIZ theory confirms that the basic principles of creativity exist objectively, and these principles can be sorted out and summarized into targeted design creativity theories, which can shorten the design creativity cycle and improve the success rate. To sum up, TRIZ can make up for the obvious deficiencies of the existing creative thinking methods, thus generating a more suitable creative method for design. The design lacks the guidance of innovation theory of rational dimension, while TRIZ can solve problems creatively in a scientific and rational way to achieve design innovation. In order to better grasp the entry point of TRIZ theory in creative thinking, it is necessary to define the TRIZ innovation principle and traditional creative thinking. Among them, TRIZ innovation principle focuses on analyzing the expression law of creative generation from microscopic angle. In contrast, traditional creative thinking focuses on the macro perspective to analyze the general rules of creativity in the process of operation. In the field of combining cultural and creative industries, in addition to the known traditional creative thinking methods, it is necessary to further explore the origin of thinking that can induce its generation. This topic tries to introduce TRIZ theory into the combined field of cultural and creative industry, focusing on the study of modern creative thinking methods based on TRIZ theory.

4. Advertising Culture Creative Industry Technology Based on TRIZ Theory

This article mainly introduces the combination principle, versatility principle, and reverse action principle of TRIZ innovation principle to stimulate divergent thinking, convergent thinking, and conversion thinking in traditional creative thinking and produce methods suitable for creative thinking in advertising. The whole process is guided by rational principles. Thinking, abstract imagination driven by concrete principles, seeks the origin of thinking of the essence of advertising creative design.

4.1. Methods of Using the Principle of Multifunctionality to Stimulate Divergent Thinking

(1) Principle of operation: The famous German philosopher Hegel once said that "creative thinking requires rich imagination". Divergent thinking is listed as the top creative thinking in design.

Table 1: 40 innovative principles of TRIZ theory.

Serial number	Principles of innovation	Specific description
1	Principle of segmentation	1. Divide the whole into independent small parts. 2. Divide the whole into parts that are easy to assemble and disassemble. 3. Improve the separability of the whole and realize the overall transformation
2	Combination principle	1. Spatial dimension, combining the same or similar objects. 2. Time dimension, combining the same or related operations
3	Principle of versatility	1. An object has multiple different functions. 2. Cut objects with unnecessary functions
4	Reverse action principle	1. Turn the object upside down or upside down. 2. Turn the object or the environment into motion and static motion.
...	...	...
40	Principles of composite materials	Replace homogeneous ingredients with composite ingredients

Figure 1: "One World" Figure.

Figure 2: "Symbiosis-building a green city with beautiful China".

According to the multifunctional principle of TRIZ theory, the principle of using an object to have multiple different functions stimulates the emergence of divergent thinking. A subject has multiple interpretations and an object has multiple uses, which is an important manifestation of the principle of multifunctionality. At any time, place and environment, when objects are versatile, they can have more collaboration and value-added effects.

(2) Application examples: using TRIZ's multifunction principle of "one question with multiple solutions" and "one thing with multiple uses" triggers divergent thinking and produces print advertising creativity. In the creation of the series of print advertisements "One World" shown in Figure 1. The main image is not only the biological representatives of the ocean, land, and sky but also the continents of the world. It not only expresses the biological image but also symbolizes that we live in the same world. The peace and beauty of the world are the theme of our common home. One type of graphic represents multiple content, and the ultimate goal is to express more levels of meaning and connotation. Guided by the same principle, in the creation of the "Symbiosis" theme print advertisement design, as shown in Figure 2. The content of the promotion is to call for environmental protection. The hourglass is used as the main image to convey, indicating that as time passes, glaciers melt, sea level rises, and other issues. Although the current degree is not large, people's real life changes are not easy to detect, but as the time continues to accumulate small problems, they will eventually cause huge problems. The problem, the end point is determined to be a devastating burying of our living environment. The images arouse viewers' deep thoughts. We need to immediately cutoff the problem and pay attention to protecting the environment, otherwise the good life will slowly disappear. The hourglass is treated in a multifunctional way, and its image expresses the double standard of material and time. With the existence of problems and the aggravation of time, small problems will eventually become catastrophic catastrophes.

(3) Summary of experience: The design ideas that have never appeared in the creativity are minimal. The elements that everyone knows are superimposed and synthesized to produce a new image, and then express rich meanings, and they are superior in skills.

Creativity is by no means blindly pursuing the absurd or uncanny. Creativity that comes from the simple elements of life is often the most touching. Using divergent thinking to discover creative points from every bit of life is a corner that is easily overlooked in the creative thinking process. Ensuring the quality of divergent thinking is the basic guarantee for the apparent accumulation of daily knowledge and experience.

4.2. Methods of Using the Principle of Combination to Stimulate Convergent Thinking

(1) Operation principle: The combination principle of TRIZ is to combine the same objects in space or time or objects that complete similar operations. The deconstruction and reorganization of design elements and the introduction of new colors, new textures and new materials into old objects are all important means of the operation of the combination principle, and then the combination principle leads to the aggregation thinking. Such as the complete image split into a single visual elements and repeated distribution in the picture, using the same or similar approach to "processing" one by one, so that the main body repeated and set a certain order, adjust the size of specifications or color texture, the final effect is often able to produce creative and highly visual impact.

(2) Application example: Create print advertising works that promote traditional Chinese folk culture, as shown in Figure 3. First of all, it is planned to use the allusive but well-known positive vocabulary "Hundred Flowers" as the theme to describe culture or literature and use flower patterns as design elements to reorganize the main body in an orderly manner with changes in size, direction, and location. Second, the same noumenon elements are "processed", and the visual element floral cloth representing traditional folk culture is selected to adjust the color and texture of the main body. The shape of blooming flowers and traditional calico patterns imply the beautiful blooming of traditional Chinese folk culture. The finished effect image is full, the meaning is clear, and the visual impact is strong. Figure 4 shows the work "This Cycle," an advertisement for the protection of water resources, which uses clean water droplets and polluted water droplets. After changes in size, color, and texture, they are reorganized in order to form the image of Tai Chi. Tai Chi expresses the process of transformation of all things, and its ultimate goal is to hope that human activities conform to the great virtues and the laws of nature. The emphasis on design elements is gradual, the black and gray water pollution expands, and the blue clean water source decreases. With strong visual contrast, people are called to pay attention to the water cycle, stop water pollution, and keep water clean.

(3) Summary of experience: Convergent thinking uses the TRIZ combination principle as the creative origin in the creative thinking method of print advertising and re-deconstructs and reorganizes the same object into a new image by completing similar operations. Divergent thinking takes the TRIZ multifunctional principle as the origin of creativity and uses the principle of using one object to perform multiple different functions to stimulate new ideas. Convergent thinking and divergent thinking are the

Figure 3: "A Hundred Flowers" theme of traditional Chinese folk culture.

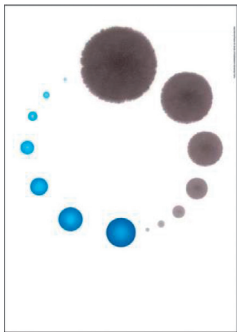

Figure 4: "So Circulation" to protect water resources and public welfare.

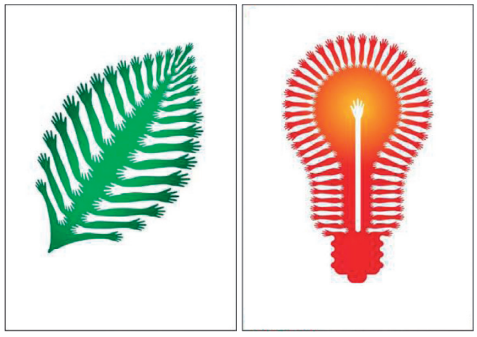

Figure 5: "Request and Rescue" "Utilization and Conservation" energy conservation and environmental protection theme.

Figure 6: Animal protection theme poster.

opposite of the thinking path. These two ways of thinking make a dialectical combination of the expansion and convergence of the creative thinking of print advertising.

4.3. Methods of Using the opposite Principle to Stimulate Conversion Thinking

(1) Operation principle: The opposite principle is a different conventional way to solve the problem and the way of thinking. The application of the opposite principle is to stimulate the transformation of the method of thinking, and the poster design is often simple and powerful, but also can lead viewers into deep thinking. Specific principles include (1) attribute conversion: swap objects with opposite attributes to produce a new image, such as size, speed, and weight; (2) positional and structural transformation: things are arranged in places where they should not appear to change the normal structure of things; (3) process transformation: reverse the natural law of development of things; and (4) theoretical transformation: convey profound meaning and arouse the audience's resonance and reflection.

(2) Application example: The method of transforming thinking is generated through the opposite principle of TRIZ. The application in the design of graphic advertising can use the principle of the relationship between the positive and negative forms of the main image to cleverly connect the bottom of the picture to complete the composition. This achieves the balance between the visual and psychological spaces of the viewer. Using the same picture to complete the conversion of thinking is not only a conversion of visual thinking but also a conversion of abstract thinking, so that the viewer can get a complete interactive experience and comprehensive cognition. Use the opposite operation path to stimulate the transformation of thinking and create energy-saving and environmentally friendly posters. Take the works "Request and Rescue" and "Utilization and Saving" as examples, as shown in Figure 5, the author cleverly uses the opposite principle and uses the positive and negative patterns of the basic styling elements to convey the theme of the poster. The positive and negative patterns are interdependent and complement to each other. At the same time, it expresses the concepts of claiming, using and saving, and saving. The poster "Extinction" is shown in Figure 6. Using the same method, superimpose the shape of the hand and the pattern of endangered animals. The two sets of different works achieve the same effect, which first activates the viewer's visual interest, and then promotes the viewer's deep reflection.

(3) Summary of experience: The most extreme way of thinking in conversion thinking is reverse thinking, that is, thinking about problems from a completely opposite perspective. In the creative thinking of print

advertising, we must dare to go the other way and carry out in-depth exploration of the problem in the opposite direction, which can generate new ideas. Reverse thinking can overcome the solidified deadlock of fixed thinking and inertial thinking.

5. Conclusion

In recent years, the cultural and creative industry has become an emerging industry that countries have vigorously supported and promoted in the new economic era. This article introduces the TRIZ innovation theory into the cultural and creative industry, combined with specific cases, analyzes the creative methods of TRIZ theoretical innovation principles as the origin, stimulates the generation of divergent thinking, convergent thinking, and conversion thinking, and applies it to the creative mechanism and creativity in cultural advertising application. The whole process is guided by rational principles to lead perceptual thinking, and concrete principles drive abstract imagination, exploring the source of thinking of the essence of cultural advertising creative design. This theory and its application mechanism have become a brand new thinking method and application attempt in the field of cultural advertising creativity. Logical analysis verifies the feasibility of combining TRIZ theory with creative thinking. The article mainly introduces TRIZ's combination principle, versatility principle, reverse action principle and divergent thinking, aggregate thinking, and conversion thinking combination mode. The use of thinking in a large number of design practices may not be a simple one-way combination, but may appear in a complex and intersecting form. Therefore, there are still a lot of research vacancies in this topic. In the follow-up research, it should include a large amount of content such as the combination of TRIZ's innovation principle and thinking method and the choice of combination. This article introduces the TRIZ theory into the related fields of advertising creative thinking methods, only to provide a new research field and direction for the future.

As a "content industry" that reflects the national culture of a country, the development of the cultural innovation industry reflects the strength of a country's comprehensive national strength to a certain extent. The emergence of artificial intelligence, a new technology with trans-era significance, has changed the product content form, dissemination form, and consumption mode of the cultural innovation industry. With the continuous development and innovation of artificial intelligence technology, the cultural innovation industry is facing major changes. Therefore, we should constantly explore ways to realize the in-depth integration of artificial intelligence and culture, so that my country's excellent cultural industry can truly integrate into people's lives with the help of intelligent technology, so as to meet the spiritual and cultural needs of the public.

Data Availability

The data set can be accessed upon request.

Conflicts of Interest

The authors declare that they havee no conflicts of interest.

References

[1] Q. Zou, "Thoughts on ceramic handicrafts in cultural and creative industries taking jingdezhen as an example," *International Journal of Intelligent Information and Management Science*, vol. 8, no. 4, 2019.

[2] J. B. Li, "Application of TRIZ theory in steel rolling production," *IOP Conference Series: Materials Science and Engineering*, vol. 668, 2019.

[3] L. Elisabetta and N. Douglas, "A comparative analysis of US and EU regulatory frameworks of crowdfunding for the cultural and creative industries," *International Journal of Cultural Policy*, vol. 27, no. 5, 2021.

[4] C. Silvia and P. Elisa, "Cultural and creative cities and regional economic efficiency: context conditions as catalyzers of cultural vibrancy and creative economy," *Sustainability*, vol. 13, no. 13, 2021.

[5] Z. Yun, "Application research of Chinese traditional pattern design in cultural and creative products," *Frontiers in Art Research*, vol. 2, no. 7, 2020.

[6] L. Qin and Y. Guo, "An exploratory study on benefit evaluation of cultural creative enterprises," *International Journal of Economics, Finance and Management Sciences*, vol. 8, no. 6, 2020.

[7] S.-L. Hsueh, B. Zhou, Y.-L. Chen, and M.-R. Yan, "Supporting technology-enabled design education and practices by DFuzzy decision model: applications of cultural and creative product design," *International Journal of Technology and Design Education*, pp. 1–18, 2021.

[8] J. Snowball, D. Tarentaal, and J. Sapsed, "Innovation and diversity in the digital cultural and creative industries," *Journal of Cultural Economics*, vol. 45, no. 4, 2021.

[9] M. Mercedes, D. P. C. Elena, and Á. D. Marcos, "Exploring creative tourism based on the cultural and creative cities (C3) index and using bootstrap confidence intervals," *Sustainability*, vol. 13, no. 9, 2021.

[10] Y. Zhang and R. Xu, "Application of new Chinese style in interior design--take the cultural and creative museum of the palace museum as an example," *IOP Conference Series: Earth and Environmental Science*, vol. 768, no. 1, 2021.

[11] L. Xue, B. Lin, and S.-B. Tsai, "The development and design of artificial intelligence in cultural and creative products," *Mathematical Problems in Engineering*, vol. 2021, Article ID 9942277, 10 pages, 2021.

[12] L. Yuan, "Research on cultural and creative design industry under the background of computer Internet," *Journal of Physics: Conference Series*, vol. 1648, no. 2, 2020.

[13] S. Zhang, Z. An, P. Su, and J. Su, "Research on design of Tibetan cultural and creative products based on prototype theory," *E3S Web of Conferences*, vol. 179, 2020.

[14] Y. Dai, "Digital art into the design of cultural and creative products," *Journal of Physics: Conference Series*, vol. 1852, no. 3, 2021.

[15] Y. B. Zhong, "Research on the design of modern cultural creative products based on cultural inheritance," *International Journal of Educational Technology*, vol. 2, no. 1, 2021.

[16] Y. Su, "Market research and design of integrated cultural and creative processing system," *Journal of Physics: Conference Series*, vol. 1802, no. 2, 2021.

[17] Q. Sun, "Analysis on the blending of embroidery and papercut culture in cultural and creative products," *International Journal of Intelligent Information and Management Science*, vol. 10, no. 1, 2021.
[18] Y. Wu, "Design of tourism cultural and creative products based on regional historical and cultural elements," *E3S Web of Conferences*, vol. 251, 2021.
[19] H. Cheng, "Research of user-centered intelligent technology in China's cultural and creative product design," *E3S Web of Conferences*, vol. 236, 2021.
[20] S. Nikiel, "New business models for cultural and creative institutions," *Management*, vol. 23, no. 2, 2019.
[21] X. Huang, "Research on urban cultural heritage protection and cultural city construction based on cultural creative industries," *International Journal of New Developments in Engineering and Society*, vol. 3, no. 4, 2019.
[22] J. Shang, "An exploration of the application of smart sponge city engineering system based on TRIZ theory," *Journal of World Architecture*, vol. 3, no. 4, 2019.
[23] E. Ismail and E. N. Emine, "Triz methodology and applications," *Procedia Computer Science*, vol. 158, no. C, 2019.
[24] L. Frizziero, G. Donnici, G. Caligiana, A. Liverani, and D. Francia, "Project of inventive ideas through a TRIZ study applied to the analysis of an innovative urban transport means," *International Journal of Manufacturing, Materials, and Mechanical Engineering*, vol. 8, no. 4, 2018.
[25] V. S. Gadakh and A. Kumar, "FSW tool design using TRIZ and parameter optimization using Grey Relational Analysis," *Materials Today Proceedings*, vol. 5, no. 2, 2018.
[26] Z. Bai, S. Zhang, and M. Ding, "Research on product innovation design of modularization based on theory of TRIZ and axiomatic design," *Advances in Mechanical Engineering*, vol. 10, no. 12, 2018.