
Creative Industries in a Pandemic: Cross Sectoral Innovation

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Abstract:

Purpose: The creative and cultural industries (CCIs) are inherently digital-oriented. All CCIs include both physical and digital products and services. Still, most of all, growth currently generated by CCIs is digital - the non-digital part of economic activity is generally stagnant or even shrinking. The purpose of this article is to explore how CCIs as key drivers can influence sustainable social progress and meet growing societal needs.

Design/Methodology/Approach: Taking advantage of the research niche, the authors of this study surveyed between September and December 2020, selecting for the research pool entities that have collaborated with CCIs in the last two years in providing the innovative product, service, business model or process solutions. The research objective was to explore collaboration between the traditional and creative sectors in five areas: Social, Process, Financial, Corporate and Socio-Environmental.

Findings: Due to the lack of methodological tools to study the cross-innovation process, the following article presents the selection of questions and correctly constructed scales.

Practical Implications: The study considers the current challenges companies face due to the significant change in economic realities in the form of the COVID-19 pandemic.

Originality/Value: This article is also a scientific contribution to the topic that can help overcome the economic downturn in the form of unconventional cooperation of various actors who will be stronger together.

Keywords: Pandemic, creative and cultural industries, innovation.

JEL Classification: I0, I1.

Research Type: Research Article.

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1. Introduction

As a result of the growing importance of creative industries and the role they play in regional development (Ioppolo *et al.*, 2019; Florida, 2016), the impact on sustainable development (Klein *et al.*, 2021; Marcolin, Marshall, and Pascual, 2021), innovation, social capital formation, in recent years there has been an increasing number of publications and studies on creative and cultural industries (CCI). Studies cover different aspects of functioning, some are concerned with the contribution of creative industries to the economy, especially in terms of employment, regional development, and urban dynamics (Cook and Schwartz, 2007; Stryjakiewicz, 2008; Klein, Spsychalska, and Wojtkiewicz, 2020; Caetano, 2017), others focus on the role of innovation in creative industry enterprises and innovation activities in an organization belonging to the creative industry (Miles and Green, 2008; Stoneman, 2007; Handke, Chrostan, 2006).

Several studies address the role of creative industries in contributing to innovation in the broader economy, particularly concerning inputs from creative endeavors that can be used in innovation processes in other sectors (Bakshi, McVittie, and Simmie, 2008; Klein, Spsychalska, and Wojtkiewicz, 2020). According to Belgrave (2012), recent reports indicate that creative industries play a more significant role in innovation than previously recognized.

2. Literature Review

The Hidden Innovation report cites the results of a survey of UK creative entities, which indicates that the creative sector is among the most innovative sectors of the economy (Miles and Green, 2008). This research showed that as many as 32% of them introduced product innovations, compared to 21% in other areas of the economy at the same time. Subsequently, 16% of CCI entities implemented process innovations, while entities from different sectors only 11%. This disparity increases even more, when we talk about so-called breakthrough innovations, defined as "at the market level." The introduction of breakthrough innovations was declared by 14% of companies from the creative sector, while in other companies, it was half as much, i.e., only 7%. This shows that the essence of the creative industry is the creation of new ideas that fall under the category of innovation and that the entire business is based on leveraging the talent and creativity of the people involved in creating the company. However, innovation is not measured by the amount of R&D investment or the number of patents, which can distort the innovative nature of the sector.

The report on the transformative power of design-based innovation highlights the high potential for improving European competitiveness through this type of innovation. "Design-based innovation and creativity is a European specialty. It creates jobs and income - 4% of European GDP with a spillover effect into other sectors." Anna Athanasopoulou, Head of Unit - Tourism, Emerging and Creative Industries at the European Commission. This highlights the role of design-based innovation in the

context of today's societal challenges, such as climate change, pressure on resource limitation and selection, and an aging population. This approach has become a central tenet in achieving the goals of the New Deal through the creation of the New European Bauhaus program. The objectives of this initiative are in line with the identified needs, to raise awareness of design and creativity as a driver of innovation and to identify and strengthen the role of design as a critical discipline in providing ideas and transforming them into user (citizen) friendly products, processes, and services offered by organizations, companies, and public institutions. The main motto is to step out of one's silos and collaborate between the sectors. Subsequent initiatives, institutions, and forums at the European level indicate a growing need to address design and its applications in research, entrepreneurship, and innovation (Culture2030Goal campaign, 2019).

The authors of this article were involved in a complex three-year international project whose main objective was to design and facilitate a cross-innovation process between the creative industries and the so-called blue and green industries (green and maritime industries). It was vital for them to explore how CCIs as primary drivers can influence sustainable social progress and meet opposing, growing societal needs.

Taking advantage of the research niche, the authors of this paper surveyed between September and December 2020, selecting for the research pool entities that represent the Green and Blue sectors and have collaborated with CCIs in providing the innovative product, service, business model, or process solutions. The research objective was to investigate the collaboration process between the traditional and creative sectors in five areas: social, strategy, financial, corporate, and socio-environmental. Due to the lack of methodological tools to study such a process, the following article presents the selection of questions and correctly constructed scales.

3. Research Methodology

The specifics of cross-sectoral partnerships for innovation and sustainable growth are complex. Thus, authors decided to quantitative survey to deepen the phenomena accompanying these issues in enterprises. Computer-assisted personal interviews (CAPI) have been chosen as the technique given the specifics of the respondents, who were managers of enterprises belonging to the blue and green sector (maritime, agriculture, coastal tourism), who had experience in the cross-innovation process with creative industries. Respondents came from Germany, Poland, and Lithuania, mainly from small and medium-size companies' sector (SMEs) from the key for the region sectors, Blue and Green. Thirty-four entities participated in the study, representing 100% of the firms that participated in the designed cross innovation process.

The authors of the paper conducted interviews. Interviews lasted about 40 minutes and were recorded on the computer following the principles of anonymity of the interviewees. To study the behavioral patterns and models of operation of companies from Poland, Germany, and Lithuania, it is necessary to create scales consisting of a

dozen or so questions, assessing various aspects of their operations. These questions allow us to determine the presence or absence of a particular phenomenon and determine its diversification in companies from the countries mentioned. However, such a solution leads to another problem: does the scale presented to respondents measure exactly the phenomenon it is supposed to measure? To determine this fact, it is necessary to point out various aspects of scale accuracy, to determine the degree of precision with which the scale reflects the natural variation of the phenomenon surveyed, i.e., to assess its reliability.

Determining the usefulness of a measurement tool in specific conditions requires examining its accuracy and reliability to the extent possible. Reliability measures the time when a test result reflects the actual value of the studied characteristic and the importance of this measurement distortion by measurement error coming from various sources (Brzeziński, 2002). Operationally, reliability is defined as the repeatability of results. In other words, the higher the reliability of a test measurement, the more similar the results of the two tests are to each other, which in practice will mean a high correlation between them. Repeating tests, especially on the same sample, can be problematic. For this reason, reliability measures based on a single examination of the same group of people are most used.

The most used method to estimate internal consistency considered the best way to assess the reliability (Hornowska, 2003) is Cronbach's formula. This formula, known as Cronbach's alpha, is as follows:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k s_i^2}{s_c^2} \right) \quad (1)$$

k = number of test items

s_c^2 = variance of overall test results

$\sum_{i=1}^k s_i^2$ = sum of variances of test items.

According to Nunnally's criterion (Nunnally, 1978), correctly constructed scales are characterized by a Cronbach's alpha coefficient value higher than 0.7 (Cronbach, 1951). Internal consistency indicates to what extent a given test is homogeneous, i.e., all items in the test refer to the same characteristic (factor). The more homogeneous the set of questions (tasks) making up the test (i.e., highly correlated with each other), the higher the internal consistency will be obtained.

The individual scales comprising them were subjected to factor analysis using the principal components method to test the theoretical accuracy of the statement sets used. It was assumed that the variables making up the scale would correlate at a level of at least 0.6 with the first principal component, representing the assumed theoretical characteristics of the group that the scale measures.

In the next part, reliability analysis was performed as already mentioned using the method of examining the scale's internal consistency. Correctness of the obtained results was checked in terms of Kline's criterion (Kline,1986) (correlations of individual variables with the total scale score should be higher than 0.4) as well as Nunnally's criterion (the tested scales should be characterized by Cronbach's alpha coefficient value above 0.7). The analytical package Statistica 13.0 was used to test the reliability of the scale.

In this study, groups of questions were assigned specific characteristics, which were referred to as areas. The following division was adopted:

- Area I - Social Level
- Area II - Process Level
- Area III - Financial Level
- Area IV - Corporate Level
- Area V - Socio-Environment Level

In the next part of the survey, an attempt was made to identify common patterns among SMEs from Germany, Lithuania, and Poland in each area (corporate, social, financial, process, etc.). In the survey, practices among companies were measured in the questions included on a seven-point bipolar ordinal scale. Because the number of statements defining each area was different, a measure had to be developed to describe each location synthetically. For this purpose, the results were standardized and converted to a stanine scale. Then, the average stanine value for a given country was taken to represent a given area. This means that scores below five will indicate decreasing importance of a given site, while scores above five will indicate an increasing influence of a given area. Thus, it can be assumed that countries with similar stanine values have identical patterns. Summary results for individual countries about the areas are presented in Table 1.

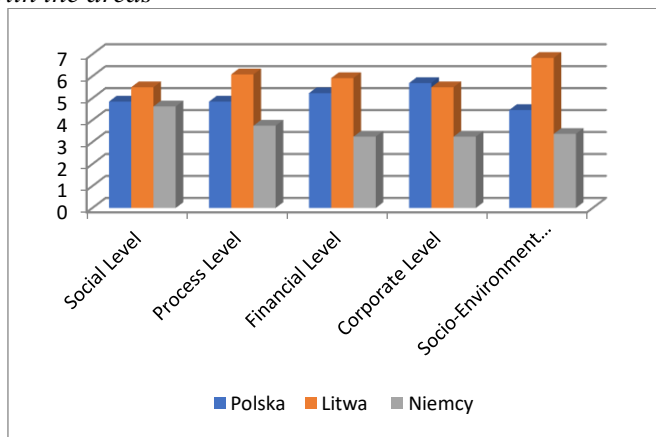
Table 1. Average stanines for SMEs in Poland, Germany, and Lithuania in comparison with the areas

Area	Country		
	Poland	Lithuania	Germany
Social Level	4,846	5,500	4,625
Process Level	4,846	6,083	3,750
Financial Level	5,231	5,917	3,250
Corporate Level	5,692	5,500	3,250
Socio-Environment Level	4,462	6,833	3,375

Source: Own compilation.

For more accessible analysis, a chart of average stanines was also produced. As shown in Figure 1, there are significant differences between the analyzed countries in particular areas. significant differences between the analyzed countries in particular areas.

Figure 1. Average Stanines for SMEs in Poland, Germany, and Lithuania in comparison with the areas



Source: Own compilation.

In this comparison, the best score was achieved by Lithuania, which exceeded the value of 5 in all areas. The worst results get Germany, which did not exceed the standard in any size. The most significant differences can be observed in the Socio-Environmental Level area. In this area, there is no standard pattern. However, a similar way can be observed in the Corporate Level area in Poland and Lithuania. This may be because both countries are post-communist, with similar cultural patterns, which may be reflected in the cooperation models. An equivalent way can also be observed in the case of Poland and Germany in the field of Social Level.

However, the fact that companies from Poland were located primarily in the West Pomeranian Voivodeship, i.e., a sub-area with close and intimate ties with its German neighbors, may prevail. For Polish companies, contacts with German partners result in penetration and adoption of specific operation patterns and behavior.

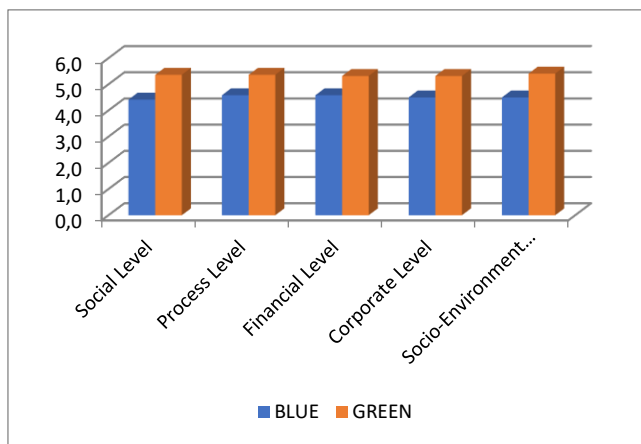
Another research problem analyzed was the attempt to assess whether there are any differences between the blue and green models of SME operation and in which areas of operation we have the most significant potential for co-creation and cooperation. For this purpose, we used the above-described stanine scale approach and applied two tests of differences, which will be described later in this paper.

As shown in Table 2, the blue performance model is below the cut-off value of five in all areas instead of the green model, where the number five is exceeded in all areas. This would indicate that the green model is more effective in the areas discussed. On the other hand, looking for areas of activity where there is the most significant potential for co-creation and cooperation, it should be stated that there are no such areas. This fact can be easily noticed in Figure 2. In principle, for each area, we have the same distribution of average values.

Table 2. Average stanines for blue and green SME performance model vs. areas

area	Poland	
	BLUE	GREEN
Social Level	4,4	5,4
Process Level	4,6	5,4
Financial Level	4,6	5,3
Corporate Level	4,5	5,3
Socio-Environment Level	4,5	5,4

Source: Own compilation.

Figure 2. Average stanines for the blue and green SME performance model against areas

Source: Own compilation.

In addition, an attempt was made to determine if the blue and green model of SME performance significantly differentiated the responses to the statements included in each area. For this purpose, the student's t-test was initially applied. Its use proved impossible due to the lack of convergence of response distributions with the normal distribution and the lack of constancy of variance, which are necessary conditions for its use. Therefore, the Mann-Whitney U test was used, which is not burdened with such limitations.

4. Conclusion

Much of the growth currently generated by CCIs is digital. The portion with the hallmarks of traditional, non-digital growth is generally stagnant or even shrinking (Acker *et al.*, 2015). Current research on to what extent and how digitization has a positive and/or negative impact on economic, social, environmental, and cultural outcomes is still underdeveloped (Betzle and Fluturime, 2019; Oliver and Olbahaum, 2017). Harnessing the potential of CCI with its economic efficiency, social justice, environmental responsibility, and institutional stability, CCI and digitization become critical enablers for sustainable ecosystems.

The cultural and creative sectors are certainly an impetus for innovation in other sectors, facilitated by their nature, unusual approaches to problem-solving, and intangible customer value creation. Corporate Sustainability is still a challenge for managers, but with the current pandemic and VUCA, the focus is on implementing Sustainability. It is important to note that this pressure in companies has emerged in response to precise needs. Needs met by customers and other stakeholders. The authors note that the implementation of Sustainable Development goals can occur through a process of cross-innovation. Thus, it is in this process that cultural and creative industries can play a unique role. CCIs themselves are different and have a positive impact on the development of cross-innovation. They also influence the outcome of cross-innovation by offering their offerings to other sectors.

Such complex research questions require an appropriate methodological approach. In this aspect, the authors would like to state that the methodological concept and research scales have been correctly selected for the studied issue. Therefore, this type of approach is recommended for use in in-depth research on this topic. Innovative research on the impact of CCI on the activities of blue and green companies required the construction of an appropriate tool and the selection of scales for the proper analysis of the phenomenon. Cronbach's alpha, depending on the situation, can take values from 0 to 1. The correct and generally accepted value of a given coefficient is at least 0.6, while in the best case, the value strives for 0.9. As the analysis shows, the chosen scales are internally consistent and provide an adequate level of measurement of the same concept by all test items.

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