

Evaluating culture-led growth strategies in Asian economies: A multi-regional input-output analysis

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Abstract

Culture-led development strategies have been widely adopted across Asian economies to stimulate territorial growth through diverse policies and initiatives aimed at promoting cultural and creative industries (CCIs). This paper attempts to evaluate the economic impact of cultural and creative industries in the Asian region using a Global Multi-Regional Input-Output (GMRIO) model. Results show that, according to the GMRIO multipliers, an additional \$1 million of final demand in CCIs corresponds to \$1.59 million in value-added, \$0.70 million in income, and 80 jobs. However, the effects vary regionally and depend on development paths: Eastern Asia shows strong value-added and income multipliers but weaker employment effects, while Southern and South-Eastern Asia display the opposite trend. Mainland China stands out with high multipliers across all dimensions, reflecting the combination of large market and structural characteristics of its economy. These findings highlight how the observed structural differences in multiplier effects suggest potential trade-offs: more developed economies show higher value-added and income multipliers, while lower-income economies tend to have higher employment multipliers. These patterns can inform discussions and strategic planning on how CCIs may be leveraged according to regional characteristics.

Introduction

Over the past few decades, there has been a growing consensus among scholars, cultural practitioners, and policy-makers on culture and creativity as a strategic resource for regional development. It is assumed that the level of development of cultural and creative industries (CCIs) is structurally associated to a region's economic growth and prosperity (Boix-Domènech, De-Miguel-Molina, & Rausell-Köster, 2022; Hong, Yu, Guo, & Zhao, 2014), human capital accumulation (Berti Mecocci, Maghssudipour, & Bellandi, 2022; Sacco & Segre, 2009), innovation capabilities (Gerlitz & Prause, 2021; Rausell-Köster et al., 2012), and social wellbeing (Karageorgiou, Michalakakis, Konstantakis, Alexandridis, & Caridakis, 2021; Sanjuán-Belda, Boix-Domènech, & Rausell-Köster, 2022). Based on this, not only have scholars discussed the potential of culture by transforming the regional growth model to achieve culture-driven innovation and economic progress (Rausell-Köster, 2017), but also, international policy coordination and advisory organisations, such as UNCTAD, UNESCO, OECD, EU and ASEAN, have emphasised the importance of the cultural and creative economy and promoted the culture-led local growth strategy in national public agendas for sustainability.

It is notable that almost all European countries have developed certain specific policies and strategies for their creative industries either at a national or regional level (BEDA, 2018; Li & Rausell-Köster, 2020) and that the major

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Asian economies, like China, Japan, Singapore, and Thailand, have pursued policy initiatives to support the creative economy, reflecting the strategic importance of CCIs in different territorial contexts (Sonobe et al., 2022). This trend is underpinned by macroeconomic estimates suggesting that creative economies contribute between 2–6% of global GDP and around 7% of total employment (Deloitte, 2021; UNCTAD, 2022).

Can CCIs act as an engine of economic development? So far, there is no clear answer due to data limitations and issues with industrial classification (Homsombat, Wrasai, & Benjabutr, 2025). Theoretically, while arts and culture are increasingly considered to be a part of a broad innovation system with a strong attraction for the creative class (Florida, 2014) and a particular impetus for innovation and entrepreneurship (Rausell-Köster et al., 2012), mainstream economists still view the arts and cultural sector as one with little or no growth in labour productivity while its wages keep pace with those in sectors with higher productivity growth. Therefore, cultural organisations often suffer from “cost disease” since rising wages cannot be offset by productivity growth and are finally transferred to the operational cost of an organisation (Baumol & Bowen, 1965). Empirically, many studies have highlighted the potential contribution of CCIs to growth and employment by estimating their growing size in the macroeconomy (Boix-Domènech & Rausell-Köster, 2018; Deloitte, 2021; UNCTAD, 2008). However, this is challenged by Throsby (2008), who states that many sectors make a similar contribution to the economy and as a result, CCIs’ place in the macroeconomy is not sufficient evidence for the special treatment of the cultural sector. Similarly, some researchers have discovered a significantly positive impact of the spatial concentration of CCIs on regional innovation and then on labour productivity in Austria and the UK (Chapain, Cooke, Propriis, MacNeill, & Mateos-Garcia, 2010; Müller, Rammer, & Trübby, 2009). In contrast, others have pointed out that the spatial agglomeration of creative manufacturing generates little, or even negative, impact on regional changes in productivity in China, Indonesia, and the European Union (Boix-Domènech, Peiró-Palomino, & Rausell-Köster, 2021; Hong et al., 2014; Prasetyo & Dzaki, 2020).

All of this suggests that the economic impact of CCIs cannot be generalised and may vary across countries and regions. However, most of the existing literature is country and region-specific and focuses on major or developed economies (e.g., Boix-Domènech et al., 2022; T. Li & Fang, 2019; Morrone & Valiati, 2020; Tian, 2023; Zuhdi, Prasetyo, & Sianipar, 2013), while developing regions and economies are largely overlooked. Moreover, cross-country/region analyses of the economic impact of CCIs remain under-explored, primarily due to the lack of a standardised definition and delimitation of CCIs, as well as limited access to official and harmonised statistics. As a result, there is still a shortage of solid empirical evidence on the extent to which CCIs contribute to economic growth and job creation in each economy on a global scale. This issue has major policy implications since it provides a particular perspective to assess whether the culture-led development model is the golden rule for all economies or whether it depends on a territorial comparative advantage in terms of cultural and creative resources.

To fill these gaps, this study makes use of the Inter-Country Input-Output (ICIO) database recently made available by the OECD to compare the economic impacts of culture-centred CCIs in 66 countries/regions around the world in terms of their gross value-added, income and employment multipliers in 2018. The year 2018 was chosen because it is the most recent year available in the database, thereby representing the status quo in the field. The analysis focuses on the Asian region to explore the structural patterns of CCIs’ contributions and discuss potential implications for culture-led development strategies. To some extent, the policy implications derived from this analysis are primarily relevant to culture-based CCIs in the narrow sense, rather than to the creative economy as a whole. This focus lies in two reasons: First, the region is the most populous in the world, encompassing nearly 60% of the global population, and has emerged as the planet’s primary economic engine, growing at a rate more than twice that of advanced economies (World Bank, 2025). Second, the region is undergoing a significant transformation in its economic model, shifting from traditional activities to creativity, technology, and services, with CCIs representing one of the most rapidly expanding sectors. Despite this growth, the impact and dynamics of CCIs remain far less understood compared to those in more developed counterparts.

The ICIO is the database that currently allows the largest number of countries to be compared with complete data, far ahead of the OECD Structural Business Statistics or UNESCO UIS database. To our knowledge, this study is the first to apply the inter-country/regional multiplier effects methodology to analyse the economic impact of CCIs systematically on a global and regional scale. By leveraging the comprehensive OECD-ICIO database, our research

offers a novel and robust framework to estimate value-added, income, and employment multipliers specific to CCIs. This methodological innovation not only bridges the gap between existing theoretical models and empirical evidence but also advances the literature by offering policymakers a clear, quantifiable measure of the economic multipliers of CCIs.

By so doing, this study makes two significant contributions: First, it develops a methodology using multi-country (region) input-output tables to compare the economic impacts of CCIs across territories, improving our understanding of their role in economic growth and informing discussions about trade-offs and potential strategies. Second, it applies this methodology to analyse CCIs' impacts in Asia, offering insights into their significance in one of the world's most dynamic regions.

The paper is organised as follows. After the introduction, the next section provides a brief review of the literature on creativity and culture-led growth strategies, and also reviews the methods for the measurement of the economic impacts of CCIs. In the third section, the methodology and data are explained. The fourth section explains the findings. Finally, the fifth section discusses the results, introduces conclusions, and highlights implications for future research.

Cultural and creative industries and culture-led growth strategy

The definition and scope of cultural and creative industries

In recent decades, “cultural and creative industries” has become a popular conceptual term, representing the industrial component of an economy in which culture and creativity are an input while content and intellectual property are an output (Potts & Cunningham, 2008). However, there is not a single economic sector that encompasses its goods or services, either in terms of production or dissemination, but rather there are economic activities that cut across traditional classification. Accordingly, different definitions of CCIs have led to the construction of different models of the cultural production sector of the economy, and thus to the range of specific industries that the sector encompasses (Throsby, 2008). The definition and delimitation of CCIs have therefore become a complex and controversial issue, influenced by several factors that need to be considered as follows:

- (a) Cultural conditioning factors. Culture encompasses various social practices currently recognised as cultural within a specific group and these social conventions are evolutionary (Deroin, 2011). The delimitation of culture is itself a cultural factor, subject to changing and evolving ideas and values over time and in different regions.
- (b) Creative content. Culture is usually measured in terms of the concepts of creativity, intellectual property, and use value, which constitute intrinsic or symbolic value generated by cultural activities, and conversely, cultural activities focus on producing what we call symbolic value or meanings (ESSnet Culture, 2012).
- (c) Technological context. Digitalisation has brought about changes in innovation and industrial processes in cultural sectors and transformed cultural practices and participation (Tomka, 2013). However, it is still difficult to capture the economic dimension of digital cultural consumption since the connection between consumption and the provision and financing of a cultural service is not direct. Thus, the economic importance and the use of such services by the different economic agents fail to be reflected in national accounts.
- (d) Ideological orientation. Cultural statistics often reflect or are used to influence policies aimed at transforming cultural and creative reality (O'Connor, 2016). Therefore, the different ideological models of public policies and their objectives create a bias in the definition of culture and creativity itself.
- (e) The technical limitation of economic classifications. Finally, the existing classification system of economic activities also conditions the statistical analysis of cultural and creative activities. Such basic aspects as the listing of NACE codes, ISCO codes, or other economic functional classifications restrict or extend the possibilities of analysis of phenomena related to culture and creativity, because certain activities could be (i) misclassified into NACE families not necessarily related to CCIs, or (ii) end up being classified within broader classes or groups, not allowing more granular components to be disentangled.

As a result, there is no standardised classification of CCIs worldwide, and different national authorities (e.g., DCMS, 2009; NBS, 2018), international organisations (e.g., European Parliament, 2016; UNCTAD, 2008; WIPO, 2015), and influential policy advisors (e.g., KEA European Affairs, 2006; Nathan et al. (NESTA), 2015) have developed different but overlapping classification criteria based on their own policy considerations. For instance, UNESCO (2009) has been working on the development of a global framework for cultural statistics, comprising six cultural core domains and two related domains (i.e., tourism and sports) covered by three cross-cutting themes and distributed over five stages of the value chain; European cultural statistics is basically a reduced version of the UNESCO framework, involving ten cultural basic domains and six functional dimensions (ESSnet Culture, 2012); and China's CCIs generally falls into two categories: the cultural core areas that represent cultural production, dissemination, management and services, and the culture-related areas that deal with intermediary services and cultural equipment manufacturing (NBS, 2018). Despite the differences in classifications, our definition of CCIs is based on the basic consensus around core elements, largely including publishing, film, music, performing arts, photography, radio and television, and video games, heritage, and other visual arts. In contrast, other activities that do not feature in all models, such as advertising, architecture, crafts, design, or software, are not considered.

Culture-led development strategy and policies

Triggering culture and creativity as a driver of innovation and growth through the development of CCIs is an important element of the culture-led development model. This policy practice can be traced back to 1994 when the Australian government launched its "Creative Nation" cultural policy, aimed at helping Australia seize the new opportunities of Information Technologies (IT) and the rising tide of global culture enabled by digital media. Although Creative Nation was presented as a cultural policy, it was also essentially an economic policy. The concept of creative industries was explicitly developed in the UK after New Labour came to power in 1997. At the time, there was active thinking about the development of information and communication technologies (ICT) and the idea that creative industries and the economy were being built up in parallel as a result of ICT developments. Initially, the term creative industries seemed to completely replace the term cultural industries, a change that had an impact on arts and media policy. This has been particularly manifested in the words and discourses subsequently utilised by international governmental organisations.

For example, UNESCO (1998) started talking about creativity in 1998, naming the World Culture Report 1998 "Culture, Creativity and Markets", clearly stating the importance of creativity in generating market value. UNCTAD (2008, 2010) brought the concept of the creative economy into the mainstream economic development agenda through the publication of the Creative Economy Reports, stressing creative industries and the creative economy as a new approach to addressing the diversification of trade in general, and of export from developing countries and regions in particular, in relation to the UN agenda for development. In 2013, UNESCO took over the publication of the Creative Economy Report and published a special issue proposing a new perspective on the creative economy that goes beyond the economic dimension (UNESCO & UNDP, 2013), thus linking it to its long tradition of dealing with culture and development (Vlassis & De Beukelaer, 2019). In addition, other international organisations, such as the Organisation for Economic Co-operation and Development (OECD) and the Inter-American Development Bank (IDB) are actively involved in this policy debate, proposing a new policy agenda that places culture and CCIs at the heart of territorial development and social well-being (Buitrago Restrepo & Duque Márquez, 2013; OECD, 2005). More recently, the Asian Development Bank (ADB) has released a series of reports highlighting the creative economy as a critical component for a robust, inclusive, and sustainable recovery from the COVID-19 crisis (Sonobe et al., 2022), emphasising that digital creative industries should serve as a key driver for job creation and socio-economic development across Asia and the Pacific regions (ADB, 2024).

In Asia, inspired by creative industry policies in the UK and particularly driven by the manifesto-style report of UNCTAD, the promotion of creative industries quickly became a highly sought-after policy option for both

developed and emerging industrialised regions within the area, leading many economies to significantly transform the view of the cultural and creative field in large-scale development.

In Eastern Asia, for example, China launched the Cultural Industries Promotion in 2009 to support a wide range of cultural sectors as a strategic component of the national economy by integrating cultural industries with finance, IT, and iron ore sectors (Shan, 2014) and one year later, the cultural industries were officially recognised as a key economic sector of China in its 12th Five-Year Plan (2011–2015) (Yang, 2011). In South Korea, the consensus on culture as an economic domain was pervasively consolidated with the rise of the Korean wave and increasing overseas demand for Korean pop cultural products throughout the 2000s. This was accompanied by the enactment of the Cultural Industries Promotion Basic Law (1999), which defined the state's responsibility for promoting cultural industries and ensuring their economic contribution to the national economy (H.-K. Lee, 2016). In Japan, the *Cool Japan* strategy of the 2000s expanded its traditional cultural policy, focusing on cultural rights, civic engagement, social inclusion, and non-commercial arts and organisations to emerging economic and industrial domains, aiming to strengthen cultural exports and creativity-driven growth by promoting its culture and cultural industries (Iwabuchi, 2020; Kawashima, 2018).

In South-Eastern Asia, Singapore first developed the Creative Economy Cultural Development Strategy in 2002, triggering the nation's shift in value and wealth creation from an information-based economy to one driven by knowledge and creativity (Yue, 2006). More recently, Singapore's creative industry policy has placed greater emphasis on fostering an inclusive multicultural society, protecting the intellectual property of ideas, and promoting creative business and entrepreneurship (Sirivunnabood & Alegre, 2021). In Indonesia, creative economy support policies have been proactively implemented at both national and local levels, exemplified by the Presidential Instruction 6/2009 on the development of the creative economy during Yudhoyono's presidency, the establishment of the Ministry of Tourism and Creative Economy in 2011, and the integration of the creative economy into local urban plans (Fahmi, McCann, & Koster, 2017). The Philippines established the Creative Industries Council under the Creative Industries Development Act in 2017, aiming to drive a development plan focused on post-crisis recovery and the long-term growth of the national economy through copyright-based sectors such as software and IT services, animation, videogames, digital marketing, and design services (Sirivunnabood & Alegre, 2021). Similarly, Thailand established the Creative Economy Agency (CEA), a targeted public organisation responsible for supporting the development of Thai creative industries, with the policy priority on value creation from intellectual property (Parivudhiphongs, 2018).

In Southern Asia, despite limited political interest in developed and coordinated CCI policy, cultural and creative activities and dynamics in India have been indirectly activated through a series of policy actions leading to large-scale commodification and industrialisation of culture under the national strategy towards ICT and digitalisation—India's major area of economic specialisation in global competition (Bouquillion & Ithurbide, 2023).

In sum, as one of the fastest-developing regions globally, Asia has experienced a significant ongoing transition in its development model, shifting from traditional resource and manufacturing-based industries to a knowledge and creativity-driven economy, similar to trends observed on other continents (Li, 2024). It is evident that both developed countries like Japan and Singapore and emerging industrialised economies like China, Malaysia, Thailand, and the Philippines have developed diverse CCI-related strategies and policies tailored to their unique strengths. However, due to the lack of essential statistical data, CCI policy assessment standards, and comprehensive documentation on other peripheral developing economies within the region, there remains limited solid evidence of the impact of CCIs on national and global economies (Vlassis & De Beukelaer, 2019).

The different economic impacts of CCIs

The literature examining the causal mechanisms linking CCIs to economic dynamics has identified that CCIs can accelerate the productivity of the economy through two supply-side mechanisms: direct and indirect (Boix-Domènech & Rausell-Köster, 2018). Direct impacts are the most immediate and visible and are measured by the output, value added, or employment directly produced or consumed by CCIs, while indirect impacts are invisible effects they have

on or through other parts of the economic system (Boix-Domènech & Soler-Marco, 2017). The sum of both direct and indirect effects comprises the total impact, which can be negative, neutral, or positive (Boix-Domènech & Rausell-Köster, 2018; Potts & Cunningham, 2008).

A negative impact can result from a low growth rate of total factor productivity in CCIs (Baumol & Bowen, 1965), or from the underutilisation of CCIs when resources are invested in other activities at a certain stage of development processes (Boix-Domènech, Lazzeretti, & Sánchez-Serra, 2018), or from the precariousness of the model of labour relations that accompanies the CCIs (Hesmondhalgh, 2010). Neutral impacts essentially involve any direct impact of CCIs, proportional to CCI's share of the economy. Positive impacts may be due to growth effects and evolutionary changes (Potts & Cunningham, 2008).

The growth effects arise from the role played by CCIs as a growth driver, activating demand or supply-side expansion. Demand-side effects result directly from CCIs spending and indirectly from backward-linking industries that supply goods and services to CCIs and from income-induced effects. These types of effects on value added, income, and employment can be measured directly using input-output tables, which is the framework developed in this study (Section 3).

Supply-side growth effects result directly from CCIs' own production and indirectly from other mechanisms, including:

- (a) Multiplier effects generated by the industry life cycle, where industry spillovers are dispersed to other sectors through supply chain linkages (Bakhshi & McVittie, 2009; Tian, 2023; UNCTAD, 2010).
- (b) Knowledge spillovers, through the export of new ideas to other parts of the economy, or by facilitating the adoption, retention and absorption of new ideas and technologies (Bakhshi & McVittie, 2009; Potts & Cunningham, 2008; Yu, Hong, Zhu, Marinova, & Guo, 2014).
- (c) The impact of amenity is attracting skilled and educated people and qualified firms to the area (Dai, Zhou, Keane, & Huang, 2012; Florida, Mellander, & Stolarick, 2008).

The second type of positive effects is evolutionary change. CCIs are part of the evolutionary process of the economy and their role is to provide evolutionary services to the innovation system, facilitating changes in the entire economy and leading to evolutionary change. In this case, all effects are indirect (Potts & Cunningham, 2008).

The measurements of the economic impact of CCIs

UNESCO (2012) identifies five frameworks for measuring the economic impacts of CCIs, which can be reduced to two main approaches. The first approach is through their contribution to direct impact on GDP, employment or other variables. Findings on the direct contribution of CCIs to global GDP and income range from 2-6%, and to total employment around 7% (Deloitte, 2021; UNCTAD, 2022). CCIs' direct contribution to the GDP varies depending on the location (CEBR, 2017) and the definition of CCIs used (see UNCTAD, 2010). Definitions that emphasise copyright-related activities (see Howkins, 2002; WIPO, 2015) tend to report greater contributions, whereas those that focus on cultural activities (see EY, 2015) report smaller contributions. However, this approach is challenged by Throsby (2008) since many industries may make similar contributions to the macroeconomy and therefore do not justify the strategic role of CCIs as a growth driver in a country or region.

The second approach focuses on the measurement of the total impact of CCIs on the economy through input-output analysis, satellite accounts, econometric modelling of production and demand functions, and disequilibrium models. Input-output analysis (and related satellite accounts) is a well-known method in which an increase in spending in CCIs produces short-run multiplier effects on the economy (output, value added, employment, taxes) due to their interdependencies with other activities and to induced income processes. Input-output analysis has been used to evaluate the impacts of CCIs in some countries and regions (CEBR, 2017; CRD, 2018; Ngo, Tran, Tran, Nguyen, & Hoang, 2019; Zuhdi et al., 2013), obtaining value-added multipliers that usually oscillate between 2 and 3. This method also has a number of limitations (see UNESCO, 2012), notably the difficulty of conducting comparative studies due to the unavailability of input-output tables with territorial and sectoral details.

Econometric modelling has fewer restrictions on finding comparable data, which makes it more suitable for wide-range comparative studies, and it can also integrate disequilibrium models. A first wave of empirical studies quantified elasticities of around 0.39–0.45% on GDP per capita for European regions (Boix-Domènech et al., 2013; De-Miguel-Molina et al., 2012; Marco-Serrano et al., 2014; Rausell-Köster et al., 2011). However, these high elasticities can be attributed to poor model specification, reflecting the need for more robust theoretical frameworks (Boix-Domènech & Soler-Marco, 2017). Other econometric studies focus on different variables that are closely related to GDP per capita, such as labour productivity, employment, wages, or sales, etc. Results show that CCIs' impact on total factor productivity, job growth, wages, and sales of CCI firms is mostly moderate or positive in China (Hong et al., 2014), the UK (Gutiérrez-Posada, Kitsos, Nathan, & Nuccio, 2022; N. Lee, 2014), and the US (Yum, 2016). Boix-Domènech & Soler-Marco (2017) and Boix-Domènech et al. (2022) point out that the elasticities of the impact of CCIs' service on labour productivity and GDP per capita vary widely within regions and countries, and they appear to be related to the levels and conditions of development.

Methodology

Data selection

The data utilised in this study is obtained from the updated version of the Inter-Country Input-Output (ICIO) database (OECD, 2021a). Input-Output Tables (IOTs) represent a systematisation of the inter-industrial relations of an economy, helping to estimate and analyse the impact of an increase in CCIs expenditure on production, value-added, employment, and tax revenues etc. The OECD-ICIO is a Global Multi-Regional Input-Output (GMRIO) database at national level, covering 66 countries and regions for monetary units (and 51 for employment)¹, 45 economic sectors and a time period from 1995–2018. For our analysis, we utilise the year 2018 as the most recent available year to represent the status quo in the context under study. Employment data are extracted from the OECD-ICIO extension, Trade in Employment database (OECD, 2021b). The data are presented in millions of current US dollars for monetary variables (value added and income) and in number of persons engaged in production activity, including both employees and self-employed workers, for employment. In statistical terms, the database covers 93% of world GDP and 71.3% of the population (OECD, 2021). The OECD-ICIO was first released in 2015 and was updated in 2016, 2018, and most recently in 2021, improving sectoral disaggregation and the time scope.

The GMRIO Tables have been increasingly used thanks to their capacity to measure the complex interrelationships between sectors and countries/regions in a globalised economy (Hu, Zou, Wu, & Meng, 2024; Liu et al., 2024; Llop, 2024). Despite the availability of several GMRIO tables, such as the EXIOBASE 3 (Stadler et al., 2018), the EU FIGARO (Remond-Tiedrez & Rueda-Cantuche, 2019) and the WIOD (Tukker & Dietzenbacher, 2013), this study chooses the OECD-ICIO for two main reasons: (i) a better definition of CCIs, and (ii) a wider coverage of developing economies, whether Asian or Latin American. Furthermore, in comparison to other datasets used in the literature, the OECD-ICIO gives us the possibility to use homogeneous and comparable data that are constantly updated and improved.

The regional and sub-regional comparisons presented in this study are conditional on data availability in the OECD-ICIO database. The 21 Asian economies (9 for employment) are classified according to the United Nations geoscheme (UNSD, 2024), including the OECD-ICIO data for the following areas and countries in Asia: Eastern Asia (Mainland China, Japan, South Korea, Hong Kong S.A.R. (China), Taiwan (China), Western Asia (Israel, Cyprus, Türkiye, Saudi Arabia), South-Eastern Asia (Cambodia, Singapore, Myanmar, Viet Nam, Lao PDR, Indonesia, Thailand, Malaysia, Philippines, Brunei), Central Asia (Kazakhstan), and Southern Asia (India). Accordingly, all multipliers, regional averages and comparative statistics are computed exclusively on the subset of countries for each variable on which information exists, with no imputation or extrapolation applied. While coverage is uneven across sub-regions—particularly in Central and Southern Asia, where the number of observations is limited—the sample includes the largest and most economically significant economies in the region, accounting for approximately 88% of

Asia's total GDP and around 75% of total employment in 2018. Results should therefore be interpreted as representative of the observed sample rather than as exhaustive regional averages, and conclusions for sub-regions with limited coverage should be read with appropriate caution.

Using the OECD-ICIO 45 sectors implies a loss of sector-specific detail. However, this is an acceptable trade-off since it enables consistent cross-country comparisons. Within the OECD-ICIO framework, CCIs are defined as a combination of a range of ISIC/NACE-registered industries, including *publishing, audio-visual and broadcasting activities (58-60)*, as well as *arts, entertainment, and recreation (90-93)*. This study deliberately adopts a narrow, culture-based approach to measuring CCIs, in order to be consistent with theoretical claims that conceptualise CCIs as the motor of culture-led development rather than technology-led growth. For this reason, while broader creative economy frameworks sometimes incorporate some computer programming and consulting services, these activities are excluded from our analysis. This reflects both the data aggregation limitations and theoretical considerations. Specifically, *IT and other information services (ISIC/NACE 62-63)* go beyond creative production and are not generally considered to be core elements of a culture-led growth model. Moreover, incorporating such activities would generate structural bias, particularly in countries with a strong IT services industry, such as India, where observed impact could primarily reflect digital and technological dynamics rather than cultural and creative activities themselves. Other activities not consistently included across models, such as advertising, architecture, crafts, and design, are therefore excluded. Although this delimitation results in a loss of granularity in the analysis, it ensures close alignment between the empirical scope of the analysis and the theoretical definition of CCIs set out in section 2.

Global Multi-Regional Input-Output (GMRIO) model

Using data from the OECD-ICIO database, a Global Multi-Regional Input–Output (GMRIO) model is applied to quantify the economic impacts of CCIs in Asian economies. Input–Output analysis captures intersectoral interdependencies through a system of linear equations describing the allocation of sectoral output across industries and countries.

The model relies on standard IO assumptions: fixed input coefficients (constant returns to scale and no technological change), perfectly elastic supply, and the absence of inventory accumulation. Despite these limitations, IO models are widely used to assess the economic effects of culture-related events (e.g., Bracalente et al., 2011; Herrero, Sanz, Devesa, Bedate, & Del Barrio, 2006), sub-sectors (e.g., Llop & Arauzo-Carod, 2012; Rickman & Wang, 2022), and the industry as a whole (e.g., Bryan, Hill, Munday, & Roberts, 2000; Ngo et al., 2019; Tian, 2023; Zuhdi et al., 2013).

Building on this literature, we apply a closed GMRIO model in this study. Conceptually, while a standard open input-output model captures only direct and indirect inter-industry effects within a single economy, a global multi-regional model extends this framework across countries by explicitly modelling international production and trade linkages. Closing the GMRIO model further endogenises household income and consumption, allowing the analysis to also capture induced effects generated by labour income. Closed models provide a better approximation of the links between industries and regional development, while global multi-regional models internalise intersectoral trade across interconnected economies, leading to more realistic results than basic models (Miller & Blair, 2009). They capture detailed sectoral trade patterns and regional dependencies, although trade relations are treated as fixed, with no endogenous adjustment to price or input availability changes.²

The closed GMRIO model is specified following the notation of Miller and Blair (2009). It consists of p countries and is based on a multi-regional inter-industry transaction matrix, whose main diagonal contains intra-national inter-industry transfer matrices ($\mathbf{Z}^{rr}$, $\mathbf{Z}^{ss}$, ..., $\mathbf{Z}^{pp}$), while the off-diagonal blocks capture international inter-industry

transfers ($\mathbf{Z}^{rs}, \mathbf{Z}^{sr}, \mathbf{Z}^{rp} \dots$).

$$\mathbf{Z} = \begin{bmatrix} \mathbf{Z}^{rr} & \mathbf{Z}^{rs} & \dots & \mathbf{Z}^{rp} \\ \mathbf{Z}^{sr} & \mathbf{Z}^{ss} & \dots & \mathbf{Z}^{sp} \\ \vdots & \vdots & \ddots & \vdots \\ \mathbf{Z}^{pr} & \mathbf{Z}^{ps} & \dots & \mathbf{Z}^{pp} \end{bmatrix} \quad (1)$$

Each of these matrices is composed of a z_{ij} element, as in the basic model, which incorporates a superscript indicating the country of origin and destination of the inter-industry transaction. For example, z_{ij}^{rs} represents the output of sector i in country r that goes to sector j in country s .

Following the same logic, both vectors of total output $\mathbf{x}$ and final demand $\mathbf{f}$ are presented below.

$$\mathbf{x} = \begin{bmatrix} x^r \\ x^s \\ \vdots \\ x^p \end{bmatrix} \quad (2)$$

$$\mathbf{f} = \begin{bmatrix} f^r \\ f^s \\ \vdots \\ f^p \end{bmatrix} \quad (3)$$

The distribution of the output of country r , whether in intermediate consumption internal to the nation, intermediate exports to other countries, or final consumption, is determined by the following equation:

$$x^r = \mathbf{Z}^{rr} + \mathbf{Z}^{rs} + \dots + \mathbf{Z}^{rp} + f^r \quad (4)$$

In its compact form, it adopts the following form:

$$\mathbf{x} = \mathbf{Z}\mathbf{i} + \mathbf{f} \quad (5)$$

On the other hand, the matrix of international technical coefficients is compactly defined as $\mathbf{A} = \mathbf{Z}\hat{\mathbf{x}}^{-1}$ and shares the same block structure as $\mathbf{Z}$. Each element represents an international technical coefficient; for instance, a_{ij}^{rs} indicates the proportion of inputs from sector i of country r required to produce a unit of output in sector j in country s .

$$a_{ij}^{rs} = \frac{z_{ij}^{rs}}{x_j^s} \quad (6)$$

Therefore, from the above equations it is also possible to obtain in compact form

$$\mathbf{x} = \mathbf{A}\mathbf{x} + \mathbf{f} \quad (7)$$

And the solution can be derived for output:

$$\mathbf{x} = (\mathbf{I} - \mathbf{A})^{-1}\mathbf{f} = \mathbf{L}\mathbf{f} \quad (8)$$

In this way, with the expression $L = (I - A)^{-1}$ we obtain the Leontief matrix of the global model. This matrix is composed of a main diagonal with the intra-national Leontief matrices ($L^{rr}, L^{ss}, \dots, L^{pp}$) and the international Leontief matrices on the sides of the diagonal ($L^{rs}, L^{rp}, L^{sr}, L^{pr}, L^{rs}, L^{ps} \dots$).

$$L = \begin{bmatrix} L^{rr} & L^{rs} & \dots & L^{rp} \\ L^{sr} & L^{ss} & \dots & L^{sp} \\ \vdots & \vdots & \ddots & \vdots \\ L^{pr} & L^{ps} & \dots & L^{pp} \end{bmatrix} \quad (9)$$

Within these matrices, the l_{ij} elements are output multipliers. Specifically, l_{ij}^{rs} measures the increase in output of sector i of country r resulting from a one monetary unit external increase in final demand in sector j of country s .

So far, we have referred to an open model, which accounts for direct and indirect effects. However, Input-Output Analysis also enables the inclusion of induced effects, arising from household spending of wages generated by externally stimulated economic activity, through a model closed to households.

Closing a GMRIO model requires detailed information on wages and consumption flows across countries and sectors, which makes its implementation challenging. A practical alternative is a basic closure, adding a single row and column representing household global income and consumption. This approach assumes that wages are spent in the country where they are earned, restricting consumption to domestically produced goods. While this may lead to an underestimation of induced effects, particularly in small economies, it represents a feasible and appropriate approximation for large economies, where reliance on imports is relatively lower.

In matrix form, the closed GMRIO model solution is as follows:

$$\begin{bmatrix} x \\ x_{n+1} \end{bmatrix} = \begin{bmatrix} I - A & -h_C \\ -h_R & (1 - h) \end{bmatrix}^{-1} \begin{bmatrix} f \\ f_{n+1} \end{bmatrix} \quad (10)$$

Where x_{n+1} is the total output of the household sector, $-h_R$ is the vector of technical labour coefficients, $-h_C$ is the vector of household consumption coefficients, h represents the total labour purchases per unit of household consumption, and f_{n+1} is the total final demand of the household sector.

In compact form, we obtain

$$\bar{x} = (I - \bar{A})^{-1} \bar{f} = \bar{L} \bar{f} \quad (11)$$

Multiplier Analysis

Multiplier Analysis builds on the concept of output multipliers derived from the Leontief matrix. These multipliers summarise the matrix elements and capture the difference between the initial exogenous shock and its economy-wide effects (Miller & Blair, 2009). Depending on the effects included, two types are distinguished: simple multipliers, which account for direct and indirect effects and are obtained from open models, and total multipliers, which also include induced effects and are derived from models closed to households. Total multipliers are therefore larger by construction, since they incorporate an additional $n + 1$ household sector.

The total output multiplier $m(o)$ reflects the total output impact of an additional dollar of final demand on CCIs and are obtained as

$$m(o) = i' \bar{L} \quad (12)$$

Where i' is a row vector formed by ones.

From the quotient between different economic magnitudes and the total production of each sector, these production multipliers are transformed to obtain the multipliers for value added, income, and employment. They can be

Table 1 Descriptive statistics of VA, income, and employment multipliers in terms of region and major economies in 2018.

	VA multiplier					Income multiplier					Employment multiplier								
	Valid	n.	Max.	Min.	Mean	Median	Std. Var	Max.	Min.	Mean	Median	Std. Var	Valid	n.	Max.	Min.	Mean	Median	Std. Var
Global	66		1.9785	1.2590	1.6576	1.6835	0.1549	1.0719	0.3091	0.7722	0.8022	0.1650	51		311	23	54	39	46.2668
Africa	3		1.8216	1.2591	1.5586	1.6852	0.2934	0.9413	0.3091	0.6872	0.8112	0.3338	1				57		
Latin America and the Caribbean	7		1.7465	1.4027	1.5821	1.5966	0.1061	0.8767	0.4717	0.6824	0.6803	0.1280	6		188	45	97	88	54.1873
Northern America	2		1.9178	1.7869	1.8523	1.8523	0.0925	1.0340	0.8592	0.9466	0.9466	0.1236	2		43	30	36	36	8.5429
Asia	21		1.9785	1.3592	1.5926	1.5850	0.1602	1.0719	0.4178	0.6968	0.7090	0.1692	9		311	26	80	44	89.3700
Central (Kazakhstan)	1				1.6185					0.7217			0				n/a		
Eastern	5		1.8752	1.6096	1.7227	1.6813	0.1035	0.9723	0.7292	0.8289	0.7836	0.0978	3		76	33	49	39	23.0591
South-Eastern	10		1.7348	1.3592	1.5314	1.5234	0.1150	0.8903	0.3091	0.6413	0.6422	0.1376	1				95		
Southern (India)	1				1.3726					0.4775			1				311		
Western	4		1.9785	1.4250	1.6248	1.4579	0.2447	1.0819	0.4847	0.7192	0.6601	0.2553	4		60	26	42	42	14.1245
Europe	31		1.8900	1.3730	1.7048	1.7134	0.1246	1.0272	0.5004	0.8340	0.8471	0.1226	31		73	23	40	36	10.8281
Oceania	2		1.8560	1.7061	1.7810	1.7810	0.1060	0.9487	0.7986	0.8737	0.8737	0.1061	2		36	33	35	35	0.9159
ASEAN	10		1.7348	1.3592	1.5341	1.5234	0.1150	1.0340	0.3091	0.7796	0.8291	0.2118	1				95		



Fig. 1 Multiplier effects of CCIs in different regions and major economies in 2018.

expressed generically as

$$m(u) = u' \bar{L} \text{ with } u' = v', w' \text{ or } e' \quad (13)$$

where v' , w' , and e' represent value added, wage income, or employment per unit of output, respectively. Multiplying by the Leontief inverse $\bar{L}$ converts an additional dollar of final demand on CCIs into value added, income, or employment throughout the economy.

Specifically, employment multipliers are expressed in terms of persons employed per \$1 million of final demand. The OECD-ICIO database provides harmonised monetary values in US dollars to ensure structural comparability across countries aligned with national accounts standards. However, this valuation does not adjust for differences in price levels or wage rates across countries. As a result, differences in multipliers (e.g., higher employment multipliers in lower-wage economies) could partly reflect the higher or lower average cost of labour in US dollar terms rather than a strictly stronger employment generation capacity per se.

In the input-output literature, two main strategies are commonly discussed to address this issue (Miller & Blair, 2009, Chapters 2 and 13): converting monetary values into Purchasing Power Parity (PPP), or comparing employment intensities internally within each economy, rather than across countries, by analysing the relative position of sectors within national production structures. Since PPP adjustments can disrupt the internal consistency of input-output tables, this study follows standard practice by maintaining nominal values and interpreting multipliers as indicators of labour intensity within national production structures.

To support cross-sectoral and policy-oriented comparisons, Section 4.3 applies an internal normalisation of sectoral multipliers relative to CCIs: $z = (m^{sector} - m^{CCI})/m^{CCI}$. This allows comparison of employment intensities across sectors while mitigating the influence of cross-country wage differences.

The aggregate CCI multiplier is constructed following established literature. The GMRIO model is estimated at the most detailed level and then aggregated ex post (Lenzen, 2011) as weighted averages of subsector-level multipliers

Table 2 VA, income, and employment multipliers of CCIs in Asia for 2018.

Country / region	VA multiplier	Income multiplier	Employment multiplier
Asia	1.5926	0.6968	80
Eastern Asia	1.7227	0.8289	49
Taiwan (China)	1.8752	0.9723	n/a
Mainland China	1.7734	0.8831	76
Japan	1.6813	0.7836	33
South Korea	1.6737	0.7761	39
Hong Kong S.A.R. (China)	1.6096	0.7293	n/a
Western Asia	1.6248	0.7192	42
Israel	1.9785	1.0719	44
Cyprus	1.5850	0.7276	39
Türkiye	1.5108	0.5926	60
Saudi Arabia	1.4250	0.4847	26
South-Eastern Asia	1.5341	0.6413	95
Cambodia	1.7348	0.8903	n/a
Singapore	1.6687	0.7666	n/a
Myanmar	1.6173	0.7074	n/a
Viet Nam	1.5349	0.7090	n/a
Laos	1.5297	0.6730	n/a
Indonesia	1.5171	0.5807	95
Thailand	1.4919	0.6115	n/a
Malaysia	1.4915	0.5636	n/a
Philippines	1.3954	0.4927	n/a
Brunei	1.3592	0.4178	n/a
Central Asia			
Kazakhstan	1.6185	0.7217	n/a
Southern Asia			
India	1.3726	0.4775	311

(publishing; audiovisual and broadcasting; and arts, entertainment and recreation). Weights reflect each subsector's share in total CCI value added, income, or employment, depending on the multiplier type. This approach preserves the economic interpretation of each multiplier and ensures consistency with established input-output methodology (Miller & Blair, 2009). Subsector-level multipliers are reported in Appendix 1.

Findings

Comparing Asia with the rest of the world: a global glance at the multiplier effects of CCIs

Results of the closed GMRIO model are reported in Table 1. From a global perspective (the 66 economies), the VA multiplier of CCIs ranges between 1.9785 and 1.2591, with a mean of 1.6576 and a median of 1.6835. The income multiplier ranges from 1.0719 to 0.3091, with a mean of 0.772 and a median of 0.8023. The employment multiplier ranges from 311 to 23 employees per \$1 million, with a mean of 54 and a median of 39. These figures indicate the magnitude of inter-industry linkages associated with CCIs, for example, one dollar of final demand in CCIs corresponds to \$1.66 of value-added, \$0.77 of income, and 54 jobs per \$1 million of demand.

Both VA and income multipliers show a negatively skewed distribution, exhibiting a lower mean than the median. This indicates that there are few economies with relatively low VA and income multipliers, representing outliers at the lower end of the scale, notably Morocco (VA multiplier = 1.2591, income multiplier = 0.3091) and Brunei (1.3592, 0.4178).

In contrast, the employment multiplier is positively skewed, with the mean above the median, indicating a small group of countries with relatively large employment multipliers, corresponding to outliers at the higher end of the scale, including India (311), Colombia (188), Brazil (127) and Chile (101).

Overall, in terms of multiplier values, Asia is in the middle of the distribution compared to other regions, with VA and income multipliers below the global average and employment multipliers above the global average. As shown in Fig. 1, the average VA (1.5926) and income multipliers (0.6968) in Asia are lower than those in North America (1.8523, 0.9466, respectively), Oceania (1.7810, 0.8737), and Europe (1.7048, 0.8340), but higher than those in Africa (1.5586, 0.6872) as well as Latin America and the Caribbean (1.5821, 0.6824). Conversely, the average employment multiplier in Asia (80) exceeds those in Oceania (35), Europe (35), North America (36), and Africa (57), and is second only to Latin America and the Caribbean (97).

Intra-regional analysis of Asia

Asia is a highly heterogeneous region in terms of historical, cultural, and socio-economic characteristics. Accordingly, substantial cross-country and sub-regional differences are observed in the VA, income, and employment multipliers associated with CCIs. As shown in Table 2, Eastern Asia exhibits the highest VA and income multipliers in Asia (1.7227 and 0.8289, respectively), followed by Western Asia (1.6248 and 0.7192) and South-Eastern Asia (1.5341 and 0.6413). VA and income multipliers in Eastern and Western Asia are above the Asian average, while those in South-Eastern Asia are below it.

In contrast, employment multipliers display a different pattern.³ Eastern Asia (49) and Western Asia (42) exhibit relatively low employment multipliers, both around half of the Asian average (80), whereas economies in South-Eastern and Southern Asia typically show above-average employment multipliers, such as Indonesia (95) and India (311).

Compared to other world regions, Eastern Asia exhibits higher VA and income multipliers and lower employment multipliers, with values broadly comparable to those observed in Europe. By contrast, Central, South-Eastern, and Southern Asia display VA and income multipliers below the global average, with South and South-Eastern Asia showing the lowest values. Conversely, these Asian regions present relatively high employment multipliers well above the global average (54): 311 in Southern Asia and 95 in South-Eastern Asia. Within Eastern Asia, Mainland China and Taiwan (China) display the highest VA and income multipliers, followed by Japan and South Korea, while Hong Kong S.A.R. (China) shows comparatively lower values. Nevertheless, all East Asian economies exhibit VA and income multipliers above the Asian average.

Mainland China is the only economy exceeding the global average across all three multipliers. It records the highest income multiplier, the second-highest VA multiplier after the United States, and an employment multiplier below UNASUR, ASEAN, and India, but above those of the United States and the EU. Japan and South Korea display multiplier values broadly comparable to the EU, with VA and income multipliers above the global average and employment multipliers below it. ASEAN economies exhibit employment multipliers above the global average but below those of UNASUR, while income multipliers are close to the global average and VA multipliers remain below those observed in other major economies. India displays the highest employment multiplier (311), approximately 5.7 times the global average, alongside comparatively low VA and income multipliers.

In Western Asia, Israel stands alone as the best-performing country both in Asia and the world in terms of wealth effects; Saudi Arabia and Türkiye are both below the regional average in terms of VA (1.4250 and 1.5108, respectively) and income multipliers (0.4847, 0.5926). In South-Eastern Asia, Cambodia, Singapore, Myanmar, and Viet Nam exhibit relatively higher VA and income multipliers at both the Asian and sub-regional levels compared to neighbouring economies such as Brunei, the Philippines, Malaysia, Thailand, and Indonesia, which display comparatively lower values. Central and Southern Asia are represented by a limited number of observations. Among these, Kazakhstan exhibits VA and income multipliers higher than those observed in South-Eastern Asia, lower than those in Eastern Asia, and comparable to those in Western Asia, while India displays the lowest VA and income multipliers in Asia, exceeding only those of Brunei. In terms of employment multipliers, Mainland China, Türkiye,

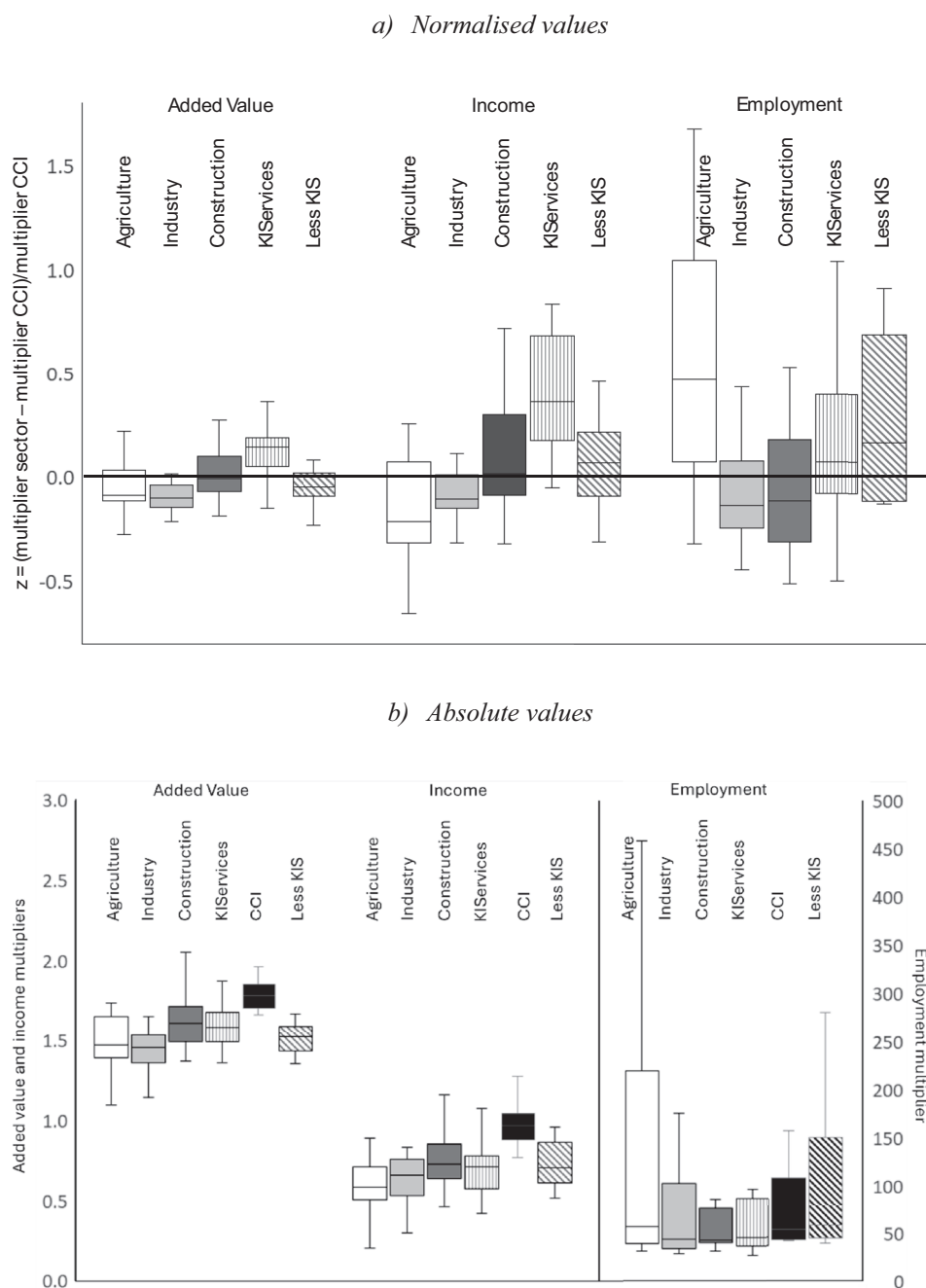


Fig. 2 Multiplier effects of other sectors compared to CCIs in Asian economies in 2018. In (a), values above zero indicate higher multipliers for the rest of the sectors and vice versa.

and Israel exhibit above-average values within their respective sub-regional groupings, whereas Japan, South Korea, and Saudi Arabia display values below their regional averages.

Overall, the results reveal systematic differences in CCI multiplier structures across Asian countries/regions and sub-regions, which appear to co-vary with broad levels of economic development. Economies in Eastern Asia exhibit relatively high VA and income multipliers (e.g. China, Japan, and South Korea), while several less developed economies in South-Eastern Asia (e.g. India and Indonesia) display comparatively high employment multipliers. These descriptive patterns are consistent with previous evidence reported by Boix-Domènech et al. (2022) using econometric analysis.

Comparison with other sectors

The following discussion interprets sectoral multiplier comparisons as descriptive, accounting-based information that may inform policy discussions under fixed-coefficient assumptions, rather than as evidence of causal policy effectiveness. Figure 2 compares CCI multipliers with those of other sectors in normalised and absolute terms: agriculture, industry, construction, and services, disaggregated into knowledge-intensive services –KIS– (e.g., ICT, finance, professional services) and less knowledge-intensive services –LKIS– (remaining services), following the OECD classification (Sorbe, Gal, & Millot, 2018).

To facilitate comparison between VA and income multipliers (expressed in monetary units) and employment multipliers (expressed in persons employed), sectoral multipliers m are normalised relative to CCIs using: $z = (m^{sector} - m^{CCI})/m^{CCI}$. Positive values indicate that a sector's multiplier exceeds that of CCIs, and negative values indicate the opposite. This normalisation enables a relative, accounting-based comparison of multiplier magnitudes across sectors which, subject to the usual caveats of input-output analysis, is informative for policy-oriented discussions by helping to identify trade-offs across economic objectives, compare productive structures, illustrate the potential implications of hypothetical demand shocks, and support exploratory policy analysis (Miller and Blair, 2009; OECD, 2005; Tucker and Dietzenbacher, 2013).

The comparison highlights systematic differences in the magnitude of sectoral multipliers. In terms of value-added multipliers, CCIs display relatively high values compared to most other sectors, with only KIS exhibiting higher multipliers on average. By contrast, income and employment multipliers are relatively higher in other sectors, such as construction and services for income, and agriculture and services for employment. These patterns are highly heterogeneous across countries. For example, in Mainland China, CCIs exhibit higher value-added and employment multipliers than KIS and comparatively high-income multipliers relative to other sectors. In contrast, in Indonesia and Japan, CCI multipliers are generally lower than those observed in other sectors. In other economies, sectoral rankings are mixed, reflecting differences in national production structures.

Conclusions and discussion

This study aims to explore and assess the applicability of culture-led development strategies in a global context through a cross-country/region comparative analysis of the economic impact of narrowly defined culture-centred CCIs in Asia. In this way, we explore the potential economic role of CCIs in Asian economies, providing evidence of how their structural multiplier effects compare across countries and regions.

To achieve this, a closed Global Multi-Regional Input-Output model for 2018 is used to calculate the value-added, income, and employment multipliers of CCIs (a combination of publishing, audio-visual, and broadcasting activities [ISIC/NACE 58-60] and arts, entertainment, and recreation [ISIC/NACE 90-93]) based on the recently published OECD-ICIO database (2021a).

Based on the above findings, two key features can be highlighted in relation to the economic impact of CCIs. On the one hand, the performance of the value-added and income effects of CCIs is strongly synchronised, while the employment effect usually performs in the opposite direction. Evidently, economies with strong value-added multipliers, both globally and in Asia, also perform well in terms of income multipliers, but at the same time suffer from poor performance in terms of employment multipliers, and vice versa. The synchronicity between value-added and income effects is well understood, as value-added is measured as the difference between the value of goods and the cost of materials or suppliers used in production, incorporating the remuneration to the capital and labour production factors, gross operating surplus, and wages (Russo & Chies, 2017). Regarding CCIs, cultural production is usually considered a labour-intensive process with low productivity growth but growing wages, so income usually constitutes the lion's share of value-added. The reverse correlation between value-added/income and employment effects can be explained by Maroto-Sánchez and Cuadrado-Roura's (2009) empirical finding, which uncovers that in some service industries, the expansion in production is usually not accompanied by the massive inflow of labour, which in turn

occurs in sectors with low productivity growth. In other words, high productivity in CCIs can lead to better value added and income multipliers in the sector, but high employment multipliers mainly benefit from low productivity in CCIs and labour mobility spill-overs from sectors with higher productivity growth. The OECD (Sorbe et al., 2018) describes this phenomenon as a variation of the Baumol effect. However, unlike other services, CCIs in many Asian economies do not suffer from cost-disease but instead exhibit a productivity effect. This is evidenced by their higher multiplier effects on value added compared to employment, both in absolute terms and relative to other sectors. This finding aligns with emerging literature that challenges the universality of Baumol and Bowen's (1965) conclusion, suggesting that the dynamics of culture and creativity diverge from traditional service-sector patterns.

On the other hand, the economic effects of CCIs depend largely on the development level of areas. Clearly, in high-income areas, like North America, Oceania, and Europe, the value-added and income multipliers are generally higher than the global/regional average level. On the contrary, low- and middle-income areas, such as Africa and Latin America and the Caribbean, normally have above-average employment multipliers but below-average value-added and income multipliers. Such a correlation between CCIs' economic impact and development level is also demonstrated in Boix-Domènech et al. (2022), where CCIs have a greater economic contribution in more developed places and therefore exacerbate inequalities between rich and poor areas. According to Van der Pol (2007), this is mainly because household entertainment and culture expenditures as a percentage of GDP are higher in high-income countries, so their value-added and income effects are significantly higher than in low- and middle-income countries.

These features are quite evident in Asia. On a global level, Asia, along with Africa and Latin America and the Caribbean, is part of the Global South, and its overall economic development is not as high as that of the Global North, which includes Northern America, Europe, and Oceania (Australia and New Zealand). As a result, CCIs in Asia generally have higher employment effects and lower value-added and income effects than the Global North, and are comparable to the rest of the Global South. At the same time, at the regional level, Eastern Asia's decade-long growth has led to a level of development that stands out both in Asia and globally. Accordingly, the major economies in the region, including Japan, South Korea, Hong Kong S.A.R. (China), and Taiwan (China), have CCI economic effects that are broadly equivalent to the European level, characterised by outperforming value-added and income contributions and underperforming employment contribution against the average level. It is also worth noting that Mainland China is the only economy with high values in all three multipliers. This may reflect the combination of a large domestic market and structural characteristics that allow CCIs to realise higher scale economies and productivity, alongside relatively strong employment multipliers typical of middle-income economies (Hong et al., 2014). In contrast, Saudi Arabia performs poorly in all three multipliers, probably because it is a particular economy, with an extreme dependence on activities linked to the oil sector.⁴

In many places where CCIs are in the policy agendas aimed at industrial competitiveness, economic growth, and employment generation within existing production structures, the multiplier analysis provides a structural view of the potential economic contributions of CCIs. Our study shows that CCIs have significant economic impacts overall, evidenced by the fact that every \$1 million of additional final demand on CCIs globally and in Asia can generate \$1.66 and \$1.59 million of additional value-added, \$0.77 and \$0.70 million of income, and 54 and 80 jobs in 2018, respectively. However, these impacts vary considerably depending on the multiplier and region; specifically, CCIs usually have higher value-added and income multipliers and lower employment multipliers in territories with higher levels of economic development than in those with lower levels of development.

The empirical results underscore a nuanced answer to the central research questions regarding the economic role of CCIs. Specifically, the analysis confirms that while CCIs consistently contribute to value-added and income generation, their impact on employment differs markedly across regions and developmental contexts. This supports our hypothesis that the economic benefits of CCIs are not uniform—advanced economies tend to capture higher productivity and income gains, whereas lower-income regions may derive more substantial employment benefits. These findings enrich the broader debate on CCIs by demonstrating that culture-led growth is a multifaceted phenomenon: it acts as a powerful engine for wealth creation in developed regions, yet its capacity to stimulate job creation is particularly vital for developing economies. Consequently, our study highlights how the variation in multiplier effects across territories can inform the design of context-sensitive policy discussions and strategic planning for leveraging CCIs in sustainable economic development (Miller and Blair, 2009; OECD, 2005; Tucker and Dietzenbacher, 2013).

Specifically for Asia, most countries/regions are low- and middle-income economies, so CCIs can potentially contribute more to employment creation, while other sectors may offer relatively higher potential for value-added and income generation, according to the structural multipliers observed. On the contrary, relatively high-income economies like Japan, South Korea, Hong Kong S.A.R. (China), and Taiwan (China), can take advantage of CCIs to improve economic growth rather than job creation.

This study has three main limitations related to the chosen method and the availability of data. Firstly, it focuses on a specific set of CCIs, including publishing, audio-visual and broadcasting activities, arts, entertainment, and recreation. However, it excludes advertising, architecture, crafts, design, and software, which are often considered part of a broader creative economy. In practice, the scope of CCIs extends beyond these sectors. Consequently, the restricted sectoral coverage may lead to the underestimation of the overall economic impact of CCIs. Secondly, employment multipliers could not be calculated for several Asian economies due to missing employment data, which limits cross-country comparability. Thirdly, this study does not capture the positive spillover effects generated by CCIs, such as knowledge diffusion, product and network externalities, skills development, and artistic expression, which constitute an important dimension of their broader socioeconomic impact.

All these limitations require further studies on this topic in the future. Further research could extend the analysis to broader definitions of the creative economy, explore methods for disaggregating input-output tables in multi-regional contexts, assess the sensitivity of the results to alternative sectoral delimitation and to better align with prevailing policy narratives regarding CCIs. Furthermore, future studies can also focus on detailing the temporal evolution of the impacts and trajectories, taking advantage of the detailed temporal disaggregation of the database (1995-2018).

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Author contributions FAT and CL conceptualised the study. RBD and PKR supervised the work and facilitated resources. All authors wrote Section 2 (“Cultural and creative industries and culture-led growth strategy”). FAT wrote Section 3 (“Methodology”) and conducted the estimations. Regarding results, CL wrote Sections 4.1 and 4.2 and prepared Tables 1 and 2. RBD wrote Section 4.3 and created Figures 1 and 2. PRK and FAT contributed to the interpretation of results. All authors wrote the Introduction and Conclusions sections and reviewed the manuscript.

Declarations

Competing interests The authors declare no competing interests.

Ethical approval This article does not contain any studies with human participants performed by any of the authors.

Informed consent This article does not contain any studies with human participants performed by any of the authors.

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References

- ADB (2024) A Review of Digital Creative Industries in Asia: Opportunities and Policies to Foster Growth and Create High-Quality Jobs. Asian Development Bank. Retrieved from <https://www.adb.org/publications/review-digital-creative-industries-asia>
- Bakhshi H, McVittie E (2009) Creative supply-chain linkages and innovation: Do the creative industries stimulate business innovation in the wider economy?. *Innovation* 11(2):169–189
- Baumol WJ, Bowen WG (1965) On the Performing Arts: The Anatomy of Their Economic Problems. *Am Econ Rev* 55(1/2):495–502
- BEDA (2018) European Design Report 2.0. Retrieved from www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1543245130.pdf
- Berti Mecocci, F, Maghssudipour, A, & Bellandi, M (2022) The effect of cultural and creative production on human capital: Evidence from European regions. *Pap Reg Scie*
- Boix-Domènech R, De-Miguel-Molina B, Rausell-Köster P (2022) The impact of cultural and creative industries on the wealth of countries, regions and municipalities. *Eur Plan Stud* 30(9):1777–1797. <https://doi.org/10.1080/09654313.2021.1909540>
- Boix-Domènech R, De-Miguel-Molina B, Hervás-Oliver JL (2013) Creative service business and regional performance: Evidence for the European regions. *Serv Bus* 7(3):381–398. <https://doi.org/10.1007/S11628-012-0165-7/TABLES/4>
- Boix-Domènech R, Lazzeretti L, Sánchez-Serra DS (2018) Entrepreneurship and creative industries in developing and developed countries. In L Lazzeretti & M Vecco (Eds), *Creative Industries and Entrepreneurship* (pp. 35–57). Edward Elgar Publishing
- Boix-Domènech R, Peiró-Palomino J, Rausell-Köster P (2021) Creative industries and productivity in the European regions. Is there a Mediterranean Eff?. *Reg Sci Policy Pract* 13(5):1546–1564
- Boix-Domènech R, Rausell-Köster P (2018) The Economic Impact of the Creative Industry in the European Union. In V. Santamarina-Campos & M Segarra-Oña (Eds), *Drones and the Creative Industry: Innovative Strategies for European SMEs* (pp. 19–36). Springer International Publishing. https://doi.org/10.1007/978-3-319-95261-1_2
- Boix-Domènech R, Soler-Marco V (2017) Creative service industries and regional productivity. *Pap Reg Sci* 96(2):261–279. <https://doi.org/10.1111/PIRS.12187>
- Bouquillion P, Ithurbide C (2023) Policy for cultural and creative industries in India: The issue of regulation through digital policy. *Contemp South Asia* 31(2):326–340. <https://doi.org/10.1080/09584935.2023.2203902>
- Bracalente B, Chirieleison C, Cossignani M, Ferrucci L, Gigliotti M, Ranalli MG (2011) The economic impact of cultural events: The Umbria Jazz music festival. *Tour Econ* 17(6):1235–1255
- Bryan J, Hill S, Munday M, Roberts A (2000) Assessing the role of the arts and cultural industries in a local economy. *Environ Plan A* 32(8):1391–1408
- Buitrago Restrepo PF, Duque Márquez I (2013) The Orange Economy: An Infinite Opportunity. Retrieved from <https://publications.iadb.org/publications/english/document/The-Orange-Economy-An-Infinite-Opportunity.pdf>
- CEBR (2017) Contribution of the Arts and Culture Industry to the UK Economy
- Chapain C, Cooke P, Propriis LD, MacNeill S, Mateos-García J (2010) Creative clusters and innovation (p. 56). London: NESTA. Retrieved from NESTA website: http://designophy.com/uploadedfiles/pdf/2010/1291972436-6007_nesta_creative_clusters_report.pdf
- CRD (2018) Ohio's creative economy: The economic impact of the arts and creative industries 2018. Bowling Green: Center for Regional Development Bowling Green State University. Retrieved from Bowling Green: Center for Regional Development Bowling Green State University website: <https://www.gcac.org/wp-content/uploads/2013/01/OCAEconomicImpactStudy.pdf>
- Dai J, Zhou S, Keane M, Huang Q (2012) Mobility of the creative class and city attractiveness: a case study of Chinese Animation Workers. *Eurasia Geogr Econ* 53(5):649–670. <https://doi.org/10.2747/1539-7216.53.5.649>
- DCMS (2009) Creative Industries Economic Estimates 2009 (p. 16). Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/77647/Creative_Industries_Economic_Estimates_Jan_09.pdf
- Deloitte (2021) The Future of the Creative Economy. Retrieved from <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/technology-media-telecommunications/deloitte-uk-future-creative-economy-report-final.pdf>
- De-Miguel-Molina, B, Hervás-Oliver, J-L, Boix-Domènech, R, & De-Miguel-Molina, M (2012) The Importance of Creative Industry Agglomerations in Explaining the Wealth of European Regions. 20(8), 1263–1280. <https://doi.org/10.1080/09654313.2012.680579>
- Deroin V (2011) Conceptualisation statistique du champ de la culture. *Cult Méthodes* 3(3):1–12. <https://doi.org/10.3917/culm.113.0001>
- ESSnet Culture (2012) European Statistical System Network on Culture. Retrieved from https://ec.europa.eu/assets/eac/culture/library/reports/ess-net-report_en.pdf
- European Parliament (2016) Report on a coherent EU policy for cultural and creative industries (No. 2016/2072(INI)). Retrieved from [https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2016/2072\(INI\)](https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2016/2072(INI))
- EY (2015) Cultural times. The first global map of cultural and creative industries. UNESCO. Retrieved from UNESCO website: <https://en.unesco.org/creativity/files/culturaltimethefirstglobalmapofculturalandcreativeindustriespdf>
- Fahmi FZ, McCann P, Koster S (2017) Creative economy policy in developing countries: The case of Indonesia. *Urban Stud* 54(6):1367–1384. <https://doi.org/10.1177/0042098015620529>

- Florida R (2014) The creative class and economic development. *Econ Dev Q* 28(3):196–205
- Florida R, Mellander C, Stolarick K (2008) Inside the black box of regional development—Human capital, the creative class and tolerance. *J Econ Geogr* 8(5):615–649
- General Authority for Statistics of Saudi Arabia (2022) Annual National Accounts Publication 2022
- Gerlitz L, Prause GK (2021) Cultural and creative industries as innovation and sustainable transition brokers in the Baltic Sea region: a strong tribute to sustainable macro-regional development. *Sustainability* 13(17):9742
- Gutiérrez-Posada D, Kitsos T, Nathan M, Nuccio M (2022) Creative clusters and creative multipliers: Evidence from UK cities. *Econ Geogr* 1–24
- Herrero LC, Sanz JÁ, Devesa M, Bedate A, Del Barrio MJ (2006) The economic impact of cultural events: A case-study of Salamanca 2002, European Capital of Culture. *Eur Urban Reg Stud* 13(1):41–57
- Hesmondhalgh D (2010) User-generated content, free labour and the cultural industries. *Ephemera* 10(3/4):267–284
- Homsombat W, Wrasai P, Benjabutr N (2025) Measuring the impact of creative city attributes on regional economic development in Thailand. *Asia-Pac J Reg Sci* 9(2):357–385. <https://doi.org/10.1007/s41685-025-00374-w>
- Hong J, Yu W, Guo X, Zhao D (2014) Creative industries agglomeration, regional innovation and productivity growth in China. *Chin Geogr Sci* 24(2):258–268
- Howkins J (2002) *The creative economy: How people make money from ideas*. Penguin UK
- Hu Y, Zou Z, Wu J, Meng Z (2024) Double-edged sword: China's free trade agreements reinforces embodied greenhouse gas transfers in agricultural products. *Hum Soc Sci Commun* 11(1):293. <https://doi.org/10.1057/s41599-024-02792-1>
- Iwabuchi K (2020) Cool Japan, Creative Industries, and Diversity. In X. Gu, MK Lim, & J O'Connor (Eds), *Re-Imagining Creative Cities in Twenty-First Century Asia* (pp. 187–199). Springer International Publishing. https://doi.org/10.1007/978-3-030-46291-8_13
- Karageorgiou Z, Michalakakis K, Konstantakis M, Alexandridis G, Caridakis G (2021) Smart escape rooms for cultural heritage: A systematic review. 2021-September, 404–411. Scopus. <https://doi.org/10.34190/GBL.21.104>
- Kawashima N (2018) 'Cool Japan' and Creative Industries: An Evaluation of Economic Policies for Popular Culture Industries in Japan. In N. Kawashima & H-K Lee (Eds), *Asian Cultural Flows: Cultural Policies, Creative Industries, and Media Consumers* (pp. 19–36). Springer. https://doi.org/10.1007/978-981-10-0147-5_2
- KEA European Affairs (2006) *The economy of culture in Europe*. Study prepared for the European Commission. Retrieved from https://ec.europa.eu/assets/eac/culture/library/studies/cultural-economy_en.pdf
- Lee H-K (2016) Politics of the 'creative industries' discourse and its variants. *Int J Cult Policy* 22(3):438–455. <https://doi.org/10.1080/10286632.2014.991783>
- Lee N (2014) The creative industries and urban economic growth in the UK. *Environ Plan A* 46(2):455–470
- Lenzen M (2011) Aggregation versus disaggregation in input–output analysis of the environment. *Econ Syst Res* 23(1):73–89
- L, C (2024) *Collaborating for museum innovation: technological, cultural, and organisational innovation in Spanish Museums*. London: Routledge. <https://doi.org/10.4324/9781003173281>
- Li C, Rausell-Köster P (2020) Exploring the Opportunities and Challenges of European Design Policy to Enable Innovation. The Case of Designscapes Project. *Sustainability* 12(12):5132. <https://doi.org/10.3390/su12125132>
- Li T, Fang G (2019) Research on the Development of Chinese Cultural and Creative Industries Based on Input-Output Analysis. 2019 International Conference on Economic Management and Model Engineering (ICEMME), 106–111. <https://doi.org/10.1109/ICEMME49371.2019.00029>
- Liu Z, Wang Y, Huang X, Zhang Z, Lai Q, Li M (2024) Assessment of national economic repercussions from Shanghai's COVID-19 lockdown. *Hum Soc Sci Commun* 11(1):1579. <https://doi.org/10.1057/s41599-024-04100-3>
- Llop M (2024) Beyond trade statistics: How much do exports actually contribute to domestic value added? *Hum Soc Sci Commun* 11(1):405. <https://doi.org/10.1057/s41599-024-02731-0>
- Llop M, Arauzo-Carod J-M (2012) Identifying the economic impact behind a cultural asset: An input–output subsystems analysis. *Ann Reg Sci* 49(3):861–877
- Marco-Serrano F, Rausell-Koster P, Abeledo-Sanchis R (2014) Economic development and the creative industries: A tale of causality. *Creat Ind J* 7(2):81–91. <https://doi.org/10.1080/17510694.2014.958383>
- Maroto-Sánchez A, Cuadrado-Roura JR (2009) Is growth of services an obstacle to productivity growth? A comparative analysis. *Struct Change Econ Dyn* 20(4):254–265. <https://doi.org/10.1016/j.strueco.2009.09.002>
- Miller RE, Blair PD (2009) *Input-output analysis: Foundations and extensions*. Cambridge University Press
- Morrone H, Valiati L (2020) The cultural sector's productive chain in Brazil: Estimation and structural change from 2011 to 2015. *Nova Economi* 29:1171–1194. <https://doi.org/10.1590/0103-6351/5769>
- Müller K, Rammer C, Trübby J (2009) The role of creative industries in industrial innovation. *Innovation* 11(2):148–168. <https://doi.org/10.5172/impp.11.2.148>
- Nathan M, Pratt A, Rincon A (2015) Creative economy employment in the EU and the UK (p. 44). Retrieved from https://media.nesta.org.uk/documents/creative_economy_employment_in_the_uk_and_the_eu_v8.pdf
- NBS (2018) Classification of culture and related industries 2018. Retrieved 16 November 2022, from <http://www.stats.gov.cn/tjsj/pcsj/jjpc/4jp/zk/html/zb0103.htm>
- Ngo T, Tran T, Tran M, Nguyen Q, Hoang V (2019) A study on relationship between cultural industry and economic growth in Vietnam. *Manag Sci Lett* 9(6):787–794
- O'Connor J (2016) After the creative industries: Cultural policy in crisis. *Law, Justice Glob Dev* 1:1–18

- OECD (2005) Culture and Local Development. Paris: Organisation for Economic Co-operation and Development. Retrieved from https://www.oecd-ilibrary.org/urban-rural-and-regional-development/culture-and-local-development_9789264009912-en
- OECD (2021a) OECD Inter-Country Input-Output Database. Retrieved from <http://oe.cd/icio>
- OECD (2021b) Trade in Employment (TiM) Database
- Parivudhiphongs A (2018) Creative industries policy in Thailand: A story of rise and demise. In Routledge Handbook of Cultural and Creative Industries in Asia. Routledge
- Potts J, Cunningham S (2008) Four models of the creative industries. *Int J Cult Policy* 14(3):233–247. <https://doi.org/10.1080/10286630802281780>
- Prasetyo PE, Dzaki FZ (2020) Efficiency performance and productivity of creative industries. *Int J Adv Sci Technol* 9(6):122–132
- Rausell-Köster P (2017) Culture, creativity and economic progress. In B. Mickov & J Doyle (Eds), *Culture, innovation and the economy* (pp. 3–6). Routledge
- Rausell-Köster P, Marco-Serrano F, Abeledo-Sanchís R (2011) Sector cultural y creativo y riqueza de las regiones: En busca de causalidades. *Ekonimiz* 78(3):66–89
- Rausell-Köster P, Abeledo R, Boix-Domènech R, De-Miguel-Molina B, Hervás-Oliver J, Marcos, F, ... Vila L (2012) Culture as a factor of economic and social innovation. *SOSTENUTO Final Report*
- Remond-Tiedrez I, Rueda-Cantuche JM (2019) EU Inter-country Supply, Use and Input-output Tables: Full International and Global Accounts for Research in Input-output Analysis (FIGARO). Publications Office of the European Union
- Rickman D, Wang H (2022) Industry Aggregation and Assessment of State Economic Development from Motion Picture and Television Production Incentives. *J Regional Anal Policy* 52(1):82–104
- Russo G, Chies L (2017) Input–output tables and the interconnectedness of the service industries. *Handbook of Input–Output Analysis*, 245–276
- Sacco PL, Segre G (2009) Creativity, cultural investment and local development: A new theoretical framework for endogenous growth. In *Growth and innovation of competitive regions* (pp. 281–294). Springer
- Sanjuán-Belda J, Boix-Domènech R, Rausell-Köster P (2022) Industrias culturales y creativas y bienestar regional: Una evaluación de sus efectos mediante el aprendizaje automático causal. Presented at the XLVII International Conference On Regional Science, Granada. Granada. Retrieved from <https://reunionesdeestudiosregionales.org/granada2022/descargar-actas/774/>
- Shan S (2014) Chinese cultural policy and the cultural industries. *City, Cult Soc* 5(3):115–121. <https://doi.org/10.1016/j.ccs.2014.07.004>
- Sirivunnabood P, Alegre HG (2021) Supporting the creative economy for sustainable development in Southeast Asia. Retrieved 6 March 2025, from Asia Pathways website: <https://www.asiapathways-adbi.org/2021/09/supporting-creative-economy-sustainable-development-southeast-asia/>
- Sonobe T, Buchoud NJA, Tiong JTG, Baek S, Hendriyetty NS, Sioson EP (Eds) (2022) *Creative Economy 2030: Imagining and Delivering a Robust, Creative, Inclusive, and Sustainable Recovery*. Asian Development Bank. Retrieved from <https://www.adb.org/publications/creative-economy-2030-imagining-and-delivering-a-robust-creative-inclusive-and-sustainable-recovery>
- Sorbe S, Gal P, Millot V (2018) Can productivity still grow in service-based economies? Literature overview and preliminary evidence from OECD countries (OECD Economics Department Working Papers No. 1531). <https://doi.org/10.1787/4458ec7b-en>
- Stadler K, Wood R, Bulavskaya T, Södersten C, Simas M, Schmidt S, Bruckner M (2018) EXIOBASE 3: Developing a time series of detailed environmentally extended multi-regional input-output tables. *J Ind Ecol* 22(3):502–515
- Throsby D (2008) Modelling the cultural industries. *Int J Cult Policy* 14(3):217–232. <https://doi.org/10.1080/10286630802281772>
- Tian Y (2023) Industrial Linkages And Digital Synergy: The Input-output Analysis of Chinese cultural industries. *J Arts Manage Law Soc*0), 1–25. <https://doi.org/10.1080/10632921.2023.2273443>
- Tomka G (2013) Reconceptualizing cultural participation in Europe: Grey literature review. *Cult Trends* 22(3–4):259–264
- Tukker A, Dietzenbacher E (2013) Global multiregional input–output frameworks: An introduction and outlook. *Econ Syst Res* 25(1):1–19
- UNCTAD (2008) Creative economy report 2008. New York: United Nations. Retrieved from United Nations website: https://unctad.org/system/files/official-document/ditc20082cer_en.pdf
- UNCTAD (2010) Creative Economy Report 2010 (p. 422). Retrieved from https://unctad.org/system/files/official-document/ditctab20103_en.pdf
- UNCTAD (2022) Creative Economy Outlook 2022
- UNESCO (1998) World Culture Report, 1998: Culture, creativity and markets. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000112074?posInSet=1&queryId=1c533a20-b197-4140-b807-04173023cc31>
- UNESCO (2009) The 2009 UNESCO framework for cultural statistics. Retrieved from http://uis.unesco.org/sites/default/files/documents/unesco-framework-for-cultural-statistics-2009-en_0.pdf
- UNESCO (2012) Measuring the economic contribution of cultural industries: A review and assessment of current methodological approaches. UNESCO Institute for Statistics

- UNESCO & UNDP (2013) Creative Economy Report 2013 Special Edition: Widening local development pathways (pp. 189–193). Retrieved from <https://www.tandfonline.com/doi/full/10.1080/09548963.2015.1031487>
- UNSD (2024) Standard Country or Area Codes for Statistical Use. Retrieved 4 July 2024, from <https://unstats.un.org/unsd/methodology/m49/>
- Van der Pol H (2007) Key role of cultural and creative industries in the economy. UNESCO Institute for Statistics
- Vlassis A, De Beukelaer C (2019) The creative economy as a versatile policy script: Exploring the role of competing inter-governmental organizations. *Media, Cult Soc* 41(4):502–519. <https://doi.org/10.1177/0163443718810913>
- WIPO (2015) Guide on surveying the economic contribution of the copyright-based industries. World Intellectual Property Organization
- World Bank (2025) Global Economic Prospects, January 2025. World Bank
- Yang J (2011) The Chinese understanding of cultural industries. *Santalka: Filosofija, Komunikacija* 19(2):90–97. <https://doi.org/10.3846/coactivity.2011.18>
- Yu W, Hong J, Zhu Y, Marinova D, Guo X (2014) Creative industry clusters, regional innovation and economic growth in China. *Reg Sci Policy Pract* 6(4):329–347
- Yue A (2006) Cultural governance and creative industries in Singapore. *Int J Cult Policy* 12(1):17–33. <https://doi.org/10.1080/10286630600613176>
- Yum S (2016) The economic growth of creative industries in the Miami metropolitan area. *Creat Ind J* 9(2):130–145
- Zuhdi U, Prasetyo AD, Sianipar CPM (2013) Analyzing the Dynamics of Total Output of Japanese Creative Industry Sectors: An Input – Output Approach. *Procedia Econ Financ* 5:827–835. [https://doi.org/10.1016/S2212-5671\(13\)00095-6](https://doi.org/10.1016/S2212-5671(13)00095-6)

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