DOES TOLERANCE MATTER? THE SPATIAL DISTRIBUTION OF CREATIVE INDUSTRIES ACROSS CITIES IN INDONESIA

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Abstract: The creative sector is one of the most rapidly growing sectors of the global economy. This sector can also play an important role in providing economic benefits for developing countries. Promoting the creative economy needs a better understanding of the underlying factors that account for its spatial distribution. One of the most important factors that may influence the development of creative industries is tolerance. This paper focuses on the spatial distribution of the creative economy across cities in Indonesia and examines its relationship with tolerance. The main data sources of this paper are the unique data produced by the Central Bureau of Statistics (*Badan Pusat Statistik* or BPS) and the Indonesian Agency for Creative Economy (*Badan Ekonomi Kreatif* or BEKRAF), in addition to the City Tolerance Index provided by the SETARA Institute. The study finds that the creative economy in Indonesia does not tend to have a high spatial concentration, indicating that cities in Indonesia have an opportunity to develop the creative economy. The analysis confirms that tolerance matters for the creation of the creative economy in Indonesia. Three components of the City Tolerance Index that influence the creative economy are the Mid-Term Regional Development Plan, discriminatory regional rules and incidents of abuses against the freedom of religion or belief. The size of the population, the Human Development Index, and the status of a city as the provincial capital play a significant role in explaining the distribution of creative economies across the cities in Indonesia.

Keywords: spatial distribution, creative economy, tolerance, Indonesia

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Introduction

One of the most rapidly growing sectors of the global economy is the creative sector. This is also known as an emerging 'new economy', the cornerstone of which is creativity (Kourtit, Nijkamp 2012). This sector shows consistent performance during a financial crisis (United Nations Conference on Trade and Development [UNCTAD] 2018). Pratt and Hutton (2013) also note that based on normative expectations, some industries in the creative economy that rely directly on consumer spending seem to do better than most during fiscal crises, since these industries operate in a countercyclical fashion. Moreover, considering its nature, the creative economy can also support sustainable development (Lestariningsih et al. 2018; Štreimikienė, Kačerauskas 2020).

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It is also recognised as a prospective sector and it makes meaningful contributions to national economies. The creative economy can also be expected to facilitate innovation and knowledge transfer across sectors of the economy that are important to economic development. Promoting the creative economy across places also needs a better understanding of the underlying factors that account for its spatial distribution (see also Kourtit, Nijkamp 2012; Tomczak, Stachowiak 2015). It is an important issue since creative industries in many regions, such as in Europe, tend to be not distributed homogeneously across the territory but are concentrated in space, especially in cities (Lazzeretti et al. 2009; Boix et al. 2016).

One of the important factors that may influence the development of the creative economy is tolerance. It is mainly based on an influential work by Florida (2002) for US cities and regions, which indicates that the creative class—as an agent of economic growth—is attracted by technology, talent, tolerance and high quality of place or urban amenities (Haisch, Klöpper 2015). Florida (2002) states that some places are poles of attraction for the creative class, and the ability of a city to attract and retain creative individuals is the driving force behind its development. A study covering 13 city-regions across Europe focuses on what the conditions and adequate policies for creating or stimulating 'creative knowledge regions' are, arguing that the challenges in developing European creative knowledge cities are related to the differences in many aspects of the cities (Musterd, Kovács 2013a, b). One of the important issues that have been identified is the role of places and place branding, suggesting that the focus of place-making of a creative city should be not only on constructing attractive environments for the 'creative class', such as promoting tolerance and diversity, but also on many interventions that respect the local conditions (Kovács, Musterd 2013).

Tolerance is a crucial soft factor since it describes the sociocultural environments of specific places (Ságvári, Dessewffy 2006; Musterd et al. 2007; Musterd, Murie 2010). That is why studies on the location choice of the creative economy also examine the role of tolerance using different indicators since this variable is difficult to measure. As mentioned by Ságvári and Dessewffy (2006), the level of tolerance of a given country or nation can be measured in many ways. Lazzeretti et al. (2012) interpreted tolerance as the percentage of foreign workers to the total number of local jobs (the Foreign-Born Index) in Italy and Spain and finds that its effect on the differentials in the concentration of creative industries is positive and significant. Petrikova et al. (2013) stated that tolerance had a strong impact on the concentration level of the creative economy in various regions in the Slovak Republic. They created a Tolerance Index based on the number of art-oriented populations and the number of immigrants at regional level. Haisch and Klöpper (2015) use two dimensions of tolerance, namely the immigration and integration of foreigners and same-sex partnerships. They find that the more tolerant a municipality is and the more bohemians live there, the higher is the share of the creative workforce in Swiss municipalities. Tolerance concerning immigration and integration, rather than the tolerance of same-sex partnerships, has a stronger relationship with the concentration of the creative workforce. Meanwhile, in their study in Europe and Hungary, Ságvári and Dessewffy (2006) use four components of the Tolerance Index, namely the secular value, self-expression dimensions of the social-value preference, tolerance towards immigrants and an indicator of the general life satisfaction.

Montalto et al. (2019) also indicate that areas that have urban characteristics tend to offer favourable conditions for the development of the creative economy in Switzerland, in which tolerance is one of the important typical features. In their study, tolerance is measured by an index of tolerance of foreigners. A similar approach is also used by Chaloupková et al. (2018), who analyse the development of conditions for the development of a creative economy in the Czech Republic regions. In their study, there are two indicators of tolerance. The first is the Gay Index, which is the share of registered same-sex partnerships in the region per its total population and the second is the Immigration Index, which is the share of foreign migrants in the region per its total population. Sánchez Serra (2016) finds a high concentration of creative industries around capital cities in Spain, in which the presence of foreign-born people has also influenced the location of creative industries.

For developing countries, the creative sector can also play an important role in providing economic benefits (Barrowclough, Kozul-Wright 2008; Simatupang et al. 2012). Therefore, many governments in the developing world have also tried to develop creative industries, which also needs enabling policies since these industries are largely dominated by the informal economy. In Indonesia, a developing country in Asia, the government started to formally promote the creative sector in 2007 by releasing a policy on the Indonesia Design Power, which was then followed by the Instruction of the President of the Republic of Indonesia No. 6 of 2009 regarding the Development of Creative Economy. In 2011, the government established the Ministry of Tourism and Creative Economy, which focuses on tourism development and the creative economy in Indonesia (Simatupang et al. 2012). The creative economy, mainly the culinary, fashion and craft sub-sectors, contributed 7.38% to the gross domestic product (GDP) in 2015. While the agriculture sector has historically played a role as a pillar of the economy, the creative economy is projected to become the newest economic pillar of the Indonesian economy, especially in urban areas. The contribution of the creative sector to the national output and workforce also shows a positive rising trend. UNCTAD (2018) indicates that Indonesia tends to have a positive trade balance of creative industries.

This paper then focuses on the spatial distribution of the creative economy across cities in Indonesia and its relationship with tolerance. Previous studies on the spatial pattern of the creative economy in Indonesia have not included the tolerance aspect, for instance, Fahmi et al. (2016) used city- or district-level industrial data issued by the Central Bureau of Statistics (*Badan Pusat Statistik* or BPS) in 2006. However, creative industries in Indonesia are more likely to be an indicator, rather than a driver, of regional economic development, especially in major cities in Java (Fahmi, Koster 2017). Therefore, our study also aims to contribute to this research gap by examining the relationship between the City Tolerance Index (CTI) and the number of enterprises in the creative economy at city level in Indonesia. This is also important since Indonesia is still facing intolerance issues among different groups (Sukmatoyo 2018; Oley, Wahyu 2019; Sebastian, Arifianto 2020). Specifically, this paper answers two main questions: (1) How is the creative economy spatially distributed across cities in Indonesia? (2) Does tolerance have a strong relationship with the creative economy? In this study, we also look at these questions at the sub-sector level of the creative economy and at the component level of the CTI. We expect this approach to provide an additional contribution to the literature on whether different sub-sectors of the creative economy have different relationships with the different components of the Tolerance Index, especially in developing countries.

The size of the creative sector is measured by the number of enterprises, which is taken from the BPS and BEKRAF data (2017). As already indicated in previous studies (Ságvári, Dessewffy 2006; Haisch, Klöpper 2015), tolerance is a difficult concept to measure. Therefore, examining the link between tolerance and the location of the creative economy is also dependent on the availability of the data, which also indicates that tolerance is a dynamic concept that is very local in character (Haisch, Klöpper 2015). However, we have no chance to measure tolerance in Indonesia by using the Immigration Index or the Gay Index because of some specific reasons. First, the number of migrants entering Indonesia is very limited. According to the BPS (2018), international in-migration to Indonesia is <0.1%. Internal migration is more dominant in Indonesia (Auwalin 2020; Pardede et al. 2020). Therefore, it is not possible to implement a tolerance index based on the share of foreign migrants. Secondly, reliable statistics on lesbian, gay, bisexual, and transgender (LGBT) in Indonesia are difficult to find. Badgett et al. (2017) also note that estimates of the number of LGBT people in Indonesia are very limited and do not come from random population samples intended to make nationwide demographic assessments. For the purpose of this study, we then utilise the CTI as our indicator of tolerance. This index is provided by the SETARA Institute (2017), covering all cities in Indonesia. So far, the SETARA Institute is the only institution in Indonesia that has annually released the Tolerance Index at city level since 2015.

Additionally, the size of the population, the Human Development Index and a dummy variable of the provincial capital cities are also included in our examination, representing hard factors that

may also influence the location of creative economies. For instance, Escalona-Orcao et al. (2018) find that the number of people with a secondary education level and graduate-equivalent education determines the formation of creative industries in Spain. In Ireland, Murphy et al. (2015) state that companies engaged in the creative economy sector would prefer locations in Dublin, with adequate availability of skilled labour. Meanwhile, the dummy variable of the capital cities can represent the influence of urbanisation on the creative economy (Rantisi et al. 2006; Saha, Sen 2016; Boal-San Miguel, Herrero-Prieto 2020).

The article is organised as follows. The next section provides the research methods used for the present study focused on data, the index of the spatial distribution and the empirical model. It is then followed by the section presenting the results and discussion. The last section concludes the study.

Research method

In order to investigate the influence of tolerance on the spatial distribution of creative industries in the case of Indonesia, we use the available secondary data at city level taken from official resources. To provide an overview of the distribution of creative industries across cities, we use an index, namely the Herfindahl–Hirschman Index (HHI). It is then followed by regression analysis, in which we also add other control variables.

Data

The creative economy in Indonesia is officially measured by the National Statistics Office of Indonesia, and this has been conducted since 2016 (Lestariningsih et al. 2018). For this study, we use a dataset in the *Profile of Businesses/Companies of the 16 Subsectors of the Creative Economy Based on Economic Census 2016 (SE2016)* produced by BPS and BEKRAF (2017). This source provides city-level data that covers 99 cities. The creative economy indicator for this study is the number of companies. Following the structure of data, we also use the number of establishments of 16 sub-sectors of the creative economy. To simplify, the total number of creative companies at city level (abbreviated as CCOM) within the 16 sub-sectors are coded as follows: AR (architecture), ID (interior design), VCD (visual communication design), PD (product design), FAV (film, animation and video), PHO (photography), CRA (crafts), CUL (culinary), MUS (music), FAS (fashion), AGD (applications and game developers), PUB (publishing), ADV (advertising), TR (television and radio), PA (performing arts) and FA (fine arts).

Meanwhile, the CTI data—as the variable of interest in our study—are obtained from *the City Tolerance Index 2017* published by the SETARA Institute (2017). This publication covers 94 cities in Indonesia; all five cities in the Jakarta Province have been merged in this index since these cities have no authority to make their own regulations. The Institute has provided the index since 2015; however, there is no index for 2016. Therefore, we have decided to use the 2017 data since the raw data for this year's index also cover 2016. For instance, the data on the incidents related to the freedom of religion or belief cover the period between November 2016 and October 2017. The city government regulations and policies also cover discriminatory policies from 2012 until 2016. It is based on data collected from November 2016 to October 2017.

The measurement tool used by the SETARA Institute is a modification of the tools composed by Grim and Finke (2006). The SETARA Institute made the modification by adding the population composition based on religion. It is argued that this composition influences the effort of the city government; therefore, it is one of the parameters of tolerance indicator in governance at city level. The index consists of a variety of metrics including Mid-Term Regional Development Plan (annotated as CTI1), discriminatory regional rules (CTI2), official statements on intolerance events (CTI3), official responses to intolerance events (CTI4), the incidents of freedom of religion or belief abuses (CTI5) and population composition based on religion (CTI6). Each component has different weights, which are 10%, 25%, 12%, 18%, 25% and 10%, respectively. The second and the fifth components have large weights, indicating that they play important roles in representing the Tolerance Index in Indonesia. The index then explains the tolerance levels at city level in Indonesia using a Likert scale, with a range of values from '1 (most intolerant)' to '7 (most tolerant)'.

For this study, we choose to impute the CTI for the six administrative regions in the Jakarta

Province with the index at provincial level. We include the Kepulauan Seribu region of the Jakarta Province. The BPS and BEKRAF (2017) data also cover this administrative region. Therefore, we keep the total observations used in this study to 99 cities.

We also include population (POP), Human Development Index (HDI) and a dummy variable of whether a city also serves as the capital of the province (DC). POP at city level is taken from the Ministry of Home Affairs in 2015, while HDI data in 2016 is provided by the BPS. Although HDI cannot measure all dimensions of development, it can measure the basic dimensions of human development.

HHI analysis

When concentration is addressed and analysed, its identification is often based on geographical concentration and industrial specialisation indices. Spatial industrial concentration can be defined as the extent to which employment or other indicators in a particular industry are concentrated in a small number of localities or regions. There are various indices of spatial concentration of economic diversity. One of the most commonly used is the HHI (van Egeraat et al. 2018). The simplicity of the calculation necessary for its determination and the small amount of data required for the calculation are the main advantages of this index. The same index has also been applied in studies on creative industries, such as those by Slach and Ženka (2017) on creative industries in the Republic of Czech, Zhang et al. (2016) on the spatial agglomeration of museums in London and Domenech et al. (2010) on the geography of creative industries in Europe.

To measure the concentration level of the spatial distribution of the creative economy, this study uses the HHI. The formula for the HHI is as follows:

$$\mathrm{HHI} = \sum_{i=1}^{N} s_i^2 \qquad (1)$$

where HHI is the level of spatial concentration and is the share of the number of enterprises in the creative economy at city level. The value of this index increases with the degree of concentration, reaching 1.0 when all economic activity is concentrated in one region. If the HHI value is in the range of <0.01 to <0.1, it can be said that the level is not concentrated; if the HHI value is between 0.1 and 0.18, it can be said that the level of concentration is moderate; and if the value of HHI is >0.18, it is said that the level of concentration is high (Hegyi-keri 2013). This formula is also applied to the sub-sectors of the creative economy to examine whether different sub-sectors have diverse levels of spatial concentration.

Empirical model

We use multiple regression analysis to examine the relationship between the Tolerance Index and the creative economy at city level. The basic linear regression equation is as follows:

$$\log CE_i = \alpha_0 1 + \alpha_1 \log CTI_i + \alpha_2 \log POP_i + \alpha_3 \log HDI_i + \alpha_4 DC + \varepsilon_i \qquad (2)$$

where *CE* is the number of establishments of the creative economy, CTI is the City Tolerance Index, POP is the population, HDI is the Human Development Index, DC is the dummy variable for the capital cities taking the value of 1.0 if the city is the capital of the province (zero, otherwise), α_0, α_1, α_2, α_3 and α_4 are regression coefficients and ε is an error term. All these variables are in a logarithmic form. This basic equation is also applied to all sub-sectors of the creative economy in Indonesia. In addition, we re-estimate this equation in which the CTI will be decomposed into its six components. Decomposing the index is important to provide the results comparable to those in previous studies, which use different indices of tolerance, and to find out what the components that have a strong relationship with the creative economy are.

Results and discussion

This section consists of three parts. We start by presenting the results of the spatial distribution of the creative industries in Indonesia, in which we use the number of companies representing the size of creative industries at city level. The next two parts contain the regression results for (i) the model that uses a composite index of tolerance and (ii) the second model that uses the six components of the CTI.

The spatial distribution

Looking at the BPS and BEKRAF data, the percentage of enterprises in the creative economy sector in Java and Bali is 66.09% (Fig. 1). These two islands have 69 cities, which is almost 70% of cities in Indonesia. The figure is in line with the results of Fahmi et al. (2016), who state that the creative economy is concentrated in Java and Bali, with the contribution of these two islands being 73.30%. It then can be concluded that there has been a spread of firms in the creative economy sector, but most of them are still concentrated in Java and Bali.

Figure 2 shows the number of cities for each sub-sector of the creative economy. This figure clearly shows that not all cities have sub-sectors of the creative sector. For instance, visual communication design and interior design activities are only found in 52 and 60 cities, respectively, while the culinary sub-sector could be found in all cities. However, it still can be argued that cities in Indonesia have an opportunity to develop the creative economy.

We also use the HHI as an indicator of the spatial distribution of the number of firms in the creative sector across cities in Indonesia. Looking at the HHI in Figure 3, we have found that the index for all establishments is 0.0269. We also

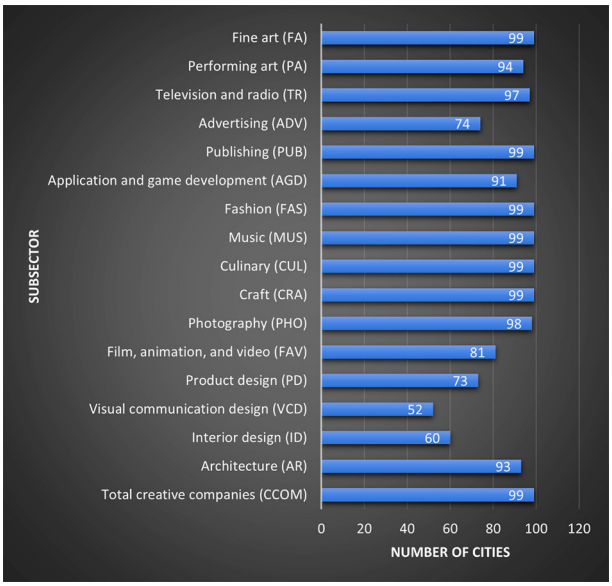

Fig. 2. Number of cities for each sub-sector of the creative economy.
BEKRAF – Indonesian Agency for Creative Economy; BPS – Central Bureau of Statistics; CCOM – total number of creative companies at city level
Source: BPS and BEKRAF (2017), processed.

see that the spatial concentration indicators at sub-sector level are relatively small, indicating that the creative economy in all sub-sectors has quite a competitive market. The only sub-sector that has a moderate level of concentration is advertising. The HHI of this sub-sector is 0.1159,

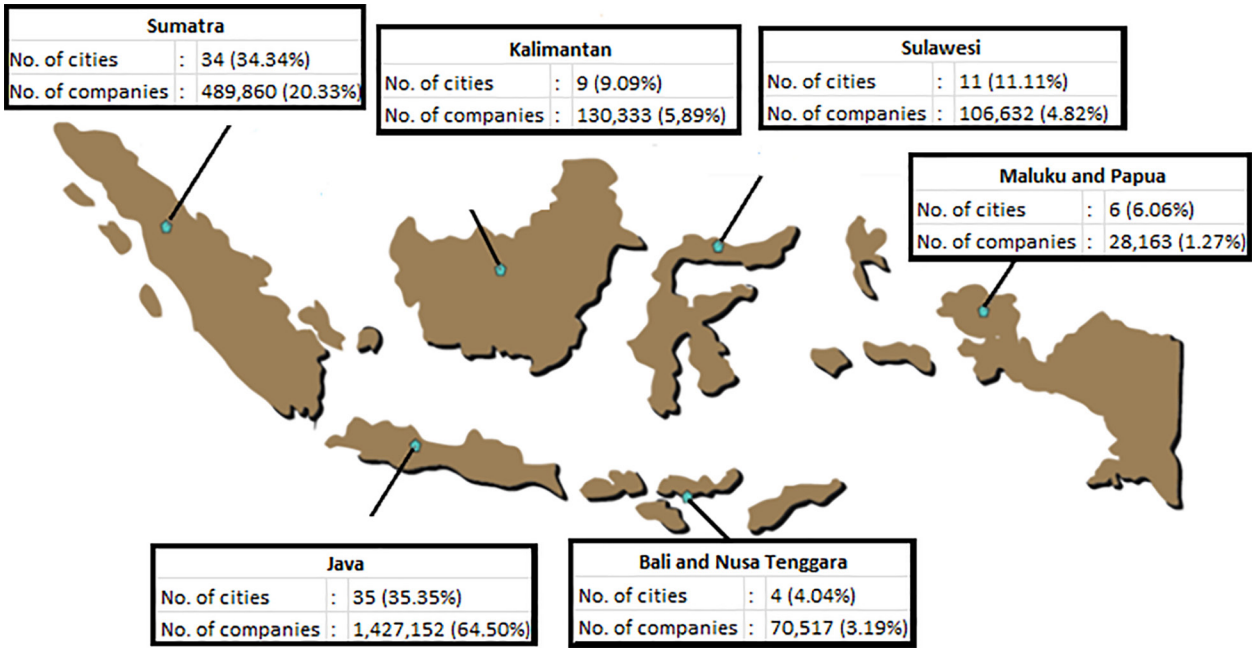

Fig. 1. Spatial distribution of the cities and establishments of the creative economy at the island level.
BEKRAF – Indonesian Agency for Creative Economy; BPS – Central Bureau of Statistics
Source: BPS and BEKRAF (2017), processed.

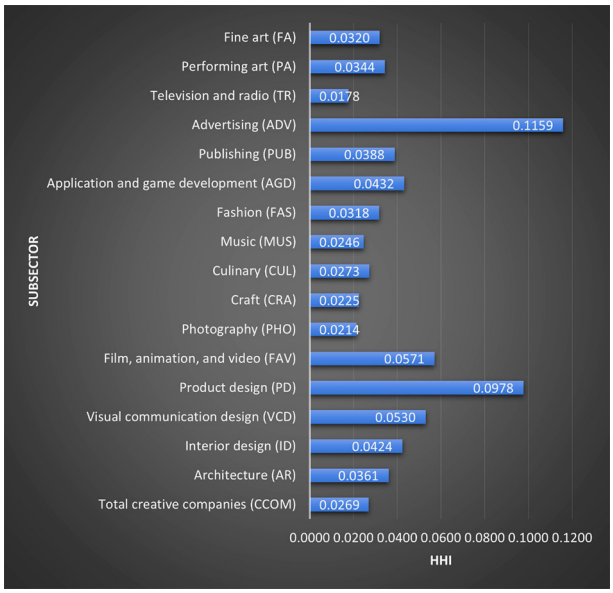

Fig. 3. HHI of the creative economy (based on the number of companies).
BEKRAF – Indonesian Agency for Creative Economy; BPS – Central Bureau of Statistics; CCOM – total number of creative companies at city level; HHI – Herfindahl–Hirschman Index
Source: BPS and BEKRAF (2017), processed.

indicating that its concentration level is moderate. Meanwhile, the television-and-radio sector shows the lowest spatial concentration level, especially because each city tends to have radio stations.

Looking at the indices across the sub-sectors, it seems that the creative economy component that uses modern technology, such as visual communication design, tends to have a relatively higher concentration level, indicating that some cities have better access to this technology. Based on the results, it can be said that the creative economy in Indonesia is evenly distributed across cities. However, it should be mentioned that not all cities have all sub-sectors of the creative economy.

The regression results: The CTI

Summary statistics of the variables used in the regressions are presented in Table 1.

Table 2 provides the regression results using the tolerance at city level as a single index. The CTI has a negative and statistically significant relationship with the total number of establishments of the creative economy (Column 1). The same results are also found for all sub-sectors of the creative economy although they are statistically significant only for eight sub-sectors. These eight sub-sectors are architecture (Column 2), film, animation and video (Column 6), culinary (Column 9), fashion (Column 10), publishing (Column 13), advertising (Column 14), performing arts (Column 16) and fine arts (Column 17). Among these eight sub-sectors, the relationship between tolerance and the number of establishments is relatively strong for advertising, performing arts and fashion.

The results indicate that the Tolerance Index used in the estimations tends to have a negative relationship with the creative economy. This means that cities with high tolerance have a smaller number of creative economy establishments. The findings contrast with the results of other studies, which show the positive influence of the Tolerance Index. Looking at the CTI data, large cities such as Jakarta, Yogyakarta, Bandung (in Java), Makassar (in Sulawesi), Padang (in Sumatra) and Mataram (in Nusa Tenggara) are categorised in the fourth cluster of the index (with the value being ≤4.50) (SETARA Institute 2017).

This result seems to be in contrast with those in other studies conducted in Europe, for instance, the studies by Petrikova et al. (2013) on the creative economy in the Slovak Republic, Lazzeretti et al. (2012) on Italy and Spain and Haisch and Klöpper (2015) on Switzerland, which use different indicators of tolerance. For instance, Petrikova et al. (2013) use a Tolerance Index based on the number of art-oriented populations and the number of immigrants at regional level, while Haisch and Klöpper (2015) use the immigration and integration of foreigners and same-sex partnerships. The regressions in Table 3 indicate that differences in measuring tolerance may give different results, and the measurement of tolerance could also depend on the specific characteristics of the location of the study.

It should be noted that in our study the tolerance indicator does not solely measure the level of tolerance in terms of freedom of religion. This also uses other common tolerance indices, such as those based on foreign migrants. As already explained in the previous section (The regression results for the CTI), the incidents of violations of freedom of religion or belief are only one of the six components of the index. Further estimations with a decomposed Tolerance Index

Table 1. Summary statistics.

Variable	Mean	Standard deviation
Total number of creative companies (*CCOM*) (log)	4.08	0.48
Architecture (*AR*) (log)	2.76	1.42
Interior design (*ID*) (log)	1.38	1.13
Visual communication design (*VCD*) (log)	1.08	1.11
Product design (*PD*) (log)	0.84	0.65
Film, animation and video (*FAV*) (log)	0.71	0.51
Photography (*PHO*) (log)	1.81	0.44
Craft (*CRA*) (log)	2.97	0.48
Culinary (*CUL*) (log)	3.93	0.48
Music (*MUS*) (log)	1.76	0.51
Fashion (*FAS*) (log)	3.29	0.49
Application and game development (*AGD*) (log)	1.23	0.79
Publishing *(PUB*) (log)	2.20	0.62
Advertising (*ADV*) (log)	0.91	0.68
Television and radio (*TR*) (log)	0.96	0.43
Performing arts (*PA*) (log)	1.35	0.65
Fine arts (*FA*) (log)	1.37	0.60
City Tolerance Index (*CTI*) (log)	1.55	0.24
Mid-Term Regional Development Plan (*CTI1*) (log)	−0.34	0.25
Discriminatory regional rules (*CTI2*) (log)	0.08	0.11
Official statements on event (CTI3) (log)	−0.48	0.45
Official responses on event (*CTI4*) (log)	−0.29	0.40
Incidents of freedom of religion/belief abuses (*CTI5*) (log)	0.11	0.39
Population composition based on religions (*CTI6*) (log)	−0.39	0.16
Population (*POP*) (log)	12.42	1.38
Human Development Index (*HDI*) (log)	4.32	0.06
Provincial capital (*DC*) (dummy)	0.31	0.47

CCOM – total number of creative companies at city level.
Source: own study.

in the next subsection (The regression results: Components of the CTI) would provide additional interpretations.

Meanwhile, as expected, all control variables show a positive relationship with the number of establishments of the creative economy in all estimations. A positive and statistically significant coefficient of the population indicates that cities with a large population provide an opportunity for the development of the creative economy. This finding confirms the role of the population as consumers and as producers in the creative economy. A positive coefficient indicates that an increase in the population leads to an increase in the number of companies or businesses in the creative economy. This also shows that the level of demand for creative industry products and the level of supply by the creative industries give benefits to consumers and producers.

The regression coefficients of the HDI have a positive sign and are statistically significant, confirming that the availability of educated workers supports the formation of the creative economy. This provides a further explanation of the influence of the population on the creative economy. The increase in the population is balanced with human development in the fields of education and health. The results confirm the findings of previous studies, such as those by Escalona-Orcao et al. (2018) in Spain and Murphy et al. (2015) in Ireland.

In line with other studies, such as those by Rantisi et al. (2006) and Boal-San Miguel and Herrero-Prieto (2020) in Spain, estimations in Table 2 show that the dummy variable of capital cities tends to have positive coefficients, except for the sub-sector of visual communication design (Column 4) and product design (Column 5). However, the positive coefficients are statistically significant for architecture, photography, publishing and the television-and-radio sector. The findings indicate that there are differences in

Table 2. Regression results: City Tolerance Index (composite).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	logCCOM	logAR	logID	logVCD	logPD	logFAV	logPHO	logCRA	logCUL
logCTI	−0.40**	−1.13**	−0.99	−0.60	−0.28	−0.50*	−0.14	−0.14	−0.41**
	(−3.06)	(−3.41)	(−1.91)	(−1.70)	(−1.14)	(−2.12)	(−0.81)	(−0.71)	(−3.20)
logPOP	0.19***	0.25*	0.33**	0.25**	0.23***	0.16***	0.14***	0.18***	0.19***
	(4.37)	(2.67)	(2.84)	(2.87)	(3.84)	(3.92)	(4.09)	(3.80)	(4.27)
logHDI	2.27***	9.06***	6.20**	9.57***	4.15***	2.55*	2.66***	2.11*	2.31***
	(4.23)	(5.17)	(3.18)	(4.20)	(4.02)	(2.37)	(4.12)	(2.65)	(4.19)
DC	0.08	1.06***	0.15	−0.62*	−0.25*	−0.05	0.18*	0.14	0.08
	(1.15)	(5.30)	(0.58)	(−2.62)	(−2.17)	(−0.54)	(2.45)	(1.68)	(1.10)
_Cons	−7.53**	−38.18***	−28.49**	−42.64***	−19.54***	−11.58*	−11.22***	−8.18*	−7.86**
	(−3.21)	(−5.03)	(−3.17)	(−4.60)	(−4.61)	(−2.52)	(−3.79)	(−2.09)	(−3.45)
N	99	93	60	52	73	81	98	99	99
adj. R^2	0.699	0.670	0.477	0.419	0.479	0.517	0.589	0.546	0.697
F	94.82	66.97	19.66	42.81	30.98	15.29	45.77	47.26	82.67
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
	logFAS	logMUS	logAGD	logPUB	logADV	logTR	logPA	logFA	
logCTI	−0.38**	−0.17	−0.49	−0.48**	−0.65*	−0.20	−0.65**	−0.47*	
	(−2.90)	(−1.31)	(−1.82)	(−3.17)	(−2.34)	(−1.61)	(−3.01)	(−2.52)	
logPOP	0.20***	0.18***	0.31**	0.21***	0.24***	0.08**	0.20**	0.18***	
	(4.64)	(4.36)	(3.54)	(4.04)	(4.80)	(3.21)	(3.36)	(4.11)	
logHDI	2.48***	3.03***	3.32**	3.66***	4.20**	1.77***	2.82**	3.44***	
	(4.37)	(5.13)	(3.18)	(4.98)	(3.09)	(4.12)	(2.82)	(4.65)	
DC	0.05	0.10	0.04	0.17*	0.07	0.40***	0.11	0.13	
	(0.86)	(1.32)	(0.30)	(2.07)	(0.75)	(7.31)	(1.06)	(1.26)	
_Cons	−9.35***	−13.37***	−16.24***	−15.47***	−19.37**	−7.55***	−12.36**	−15.13***	
	(−3.72)	(−5.03)	(−4.06)	(−4.87)	(−3.29)	(−3.69)	(−3.28)	(−4.82)	
N	99	99	91	99	74	97	94	99	
Adjusted R^2	0.688	0.601	0.544	0.662	0.625	0.565	0.509	0.586	
F	149.93	46.27	38.36	60.18	21.27	37.40	47.39	54.56	

Notes: The *t*-statistics are provided in parentheses.
* $p<0.05$, ** $p<0.01$, *** $p<0.001$
Robust standard error (clustered by province).
ADV – advertising; AGD – applications and game development; AR – architecture; CCOM – total number of creative companies at city level; CRA – crafts; CTI – City Tolerance Index; CUL – culinary; DC – capital of the province; FA – fine arts; FAV – film, animation and video; HDI – Human Development Index; ID – interior design; MUS – music; PA – performing arts; PD – product design; PHO – photography; POP – population; PUB – publishing; TR – television and radio; VCD – visual communication design.

the size of the creative economy between cities that also serve as the provincial capital and the remaining cities.

The regression results: Components of the CTI

When considering the differences in measuring the tolerance, *The regression results: The CTI* subsection provides regression results that are in contrast to previous studies in various countries, including Europe. Further investigation is needed to clarify this issue, in which we conduct estimations by using the components of the CTI.

As mentioned in the section of data, the index basically consists of six components. The results are presented in Table 3. From this table, we can identify that the Mid-Term Regional Development Plan (Row 1) has positive and statistically significant coefficients, indicating that the creative economy prefers cities that have a good development plan. The role of this component is sufficiently strong for interior design (Column 3), visual communication design (Column 4) and application and games development (Column 12).

Meanwhile, discriminatory regional rules (Row 2), as the second component of the CTI, consistently show negative coefficients in all

Table 3. Regression results: City Tolerance Index (decomposed).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	logCCOM	logAR	logID	logVCD	logPD	logFAV	logPHO	logCRA	logCUL
logCTI1	1.18**	2.02	3.86***	5.06**	0.81	1.29*	1.10*	1.08**	1.26**
	(3.55)	(1.73)	(4.15)	(3.68)	(0.97)	(2.48)	(2.42)	(3.33)	(3.57)
logCTI2	−1.84***	−4.29**	−4.28*	−5.18***	−1.06	−1.58*	−1.33*	−1.38**	−1.95***
	(−4.18)	(−3.00)	(−2.32)	(−4.82)	(−1.49)	(−2.75)	(−2.63)	(−2.90)	(−4.20)
logCTI3	−0.29	−1.06	0.44	2.82**	0.37	0.60	0.06	−0.20	−0.37
	(−0.50)	(−1.43)	(0.33)	(3.13)	(0.70)	(1.82)	(0.16)	(−0.29)	(−0.61)
logCTI4	0.11	1.15	−0.85	−3.38*	−0.11	−0.80	0.03	0.24	0.13
	(0.17)	(1.33)	(−0.60)	(−2.41)	(−0.15)	(−1.73)	(0.06)	(0.32)	(0.19)
logCTI5	−0.37*	−1.11*	−2.21***	−2.48***	−0.83*	−0.93***	−0.51*	−0.39*	−0.34*
	(−2.65)	(−2.29)	(−4.13)	(−5.58)	(−2.45)	(−4.62)	(−2.28)	(−2.66)	(−2.27)
logCTI6	0.13	0.48	1.18	0.39	−0.13	0.66*	−0.21	−0.23	0.22
	(0.59)	(0.57)	(1.54)	(0.33)	(−0.30)	(2.07)	(−0.69)	(−1.00)	(0.96)
logPOP	0.19***	0.23*	0.25*	0.17*	0.21***	0.13***	0.14***	0.18***	0.19***
	(4.76)	(2.49)	(2.52)	(2.30)	(3.93)	(3.87)	(4.24)	(4.17)	(4.68)
logHDI	2.10**	8.48***	4.10*	7.88**	3.97**	1.55	2.70**	2.19*	2.08**
	(3.46)	(4.35)	(2.20)	(2.94)	(3.47)	(1.60)	(3.61)	(2.55)	(3.24)
DC	0.09	1.09***	0.19	−0.43	−0.21	0.00	0.18*	0.14	0.08
	(1.24)	(5.43)	(0.72)	(−1.87)	(−1.68)	(0.03)	(2.30)	(1.75)	(1.16)
_Cons	−6.82*	−35.95***	−17.46	−32.31*	−18.44**	−6.60	−11.11**	−8.37*	−6.86*
	(−2.46)	(−4.09)	(−2.03)	(−2.73)	(−3.64)	(−1.57)	(−3.22)	(−2.05)	(−2.40)
N	99	93	60	52	73	81	98	99	99
Adjusted R^2	0.709	0.675	0.570	0.509	0.469	0.602	0.601	0.551	0.711
F	74.38	73.81	71.88	97.37	40.26	50.04	27.51	24.62	76.66
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
	logFAS	logMUS	logAGD	logPUB	logADV	logTR	logPA	logFA	
logCTI1	0.84*	1.17**	3.50***	1.60**	1.43*	0.64	2.43**	2.02***	
	(2.61)	(3.01)	(3.92)	(3.51)	(2.66)	(1.20)	(3.60)	(3.70)	
logCTI2	−1.53**	−1.77**	−4.61***	−2.14***	−1.44	−1.22**	−3.49***	−2.40***	
	(−3.60)	(−3.47)	(−5.53)	(−4.18)	(−2.01)	(−2.91)	(−5.91)	(−4.07)	
logCTI3	−0.05	−0.38	−0.17	0.04	0.67	−0.14	0.06	−0.09	
	(−0.10)	(−0.87)	(−0.12)	(0.07)	(1.18)	(−0.40)	(0.08)	(−0.15)	
logCTI4	0.03	0.19	−0.56	−0.23	−0.99	−0.06	−0.44	−0.11	
	(0.05)	(0.38)	(−0.38)	(−0.33)	(−1.49)	(−0.14)	(−0.61)	(−0.17)	
logCTI5	−0.37**	−0.29	−0.76	−0.66***	−1.06***	−0.06	−0.81*	−0.85**	
	(−2.97)	(−1.53)	(−1.99)	(−3.80)	(−4.97)	(−0.30)	(−2.64)	(−3.53)	
logCTI6	−0.05	0.49	0.52	0.11	0.68*	0.24	0.20	0.16	
	(−0.26)	(1.84)	(1.05)	(0.35)	(2.15)	(0.91)	(0.44)	(0.58)	
logPOP	0.20***	0.17***	0.29***	0.20***	0.19***	0.08**	0.18***	0.18***	
	(4.87)	(4.35)	(4.07)	(4.41)	(4.55)	(3.29)	(4.12)	(4.74)	
logHDI	2.46***	2.65***	2.70*	3.42***	3.33**	1.59**	2.42	3.12***	
	(4.12)	(3.74)	(2.28)	(4.20)	(3.10)	(2.91)	(1.98)	(4.03)	
DC	0.06	0.09	0.04	0.19*	0.13	0.40***	0.13	0.14	
	(1.00)	(1.16)	(0.33)	(2.19)	(1.52)	(7.15)	(1.13)	(1.41)	
_Cons	−9.41**	−11.22**	−12.44*	−14.31***	−15.02**	−6.67*	−10.27	−13.37***	
	(−3.41)	(−3.33)	(−2.52)	(−3.84)	(−3.16)	(−2.53)	(−2.00)	(−3.97)	
N	99	99	91	99	74	97	94	99	
Adjusted R^2	0.689	0.620	0.609	0.668	0.696	0.558	0.542	0.608	
F	102.73	41.88	26.01	45.07	118.73	36.94	35.29	67.48	

Notes: The *t*-statistics are provided in parentheses.
* $p<0.05$, ** $p<0.01$, *** $p<0.001$
Robust standard error (clustered by province).
ADV – advertising; AGD – applications and game development; AR – architecture; CCOM – total number of creative companies at city level; CRA – crafts; CTI – City Tolerance Index; CTI1 – Mid-Term Regional Development Plan; CTI2 – discriminatory regional rules; CTI3 – official statements on intolerance events; CTI4 – official responses to intolerance events; CTI5 – incidents of freedom of religion or belief abuses; CTI6 – population composition based on religion; CUL – culinary; DC – capital of the province; FA – fine arts; FAS – fashion; FAV – film, animation and video; HDI – Human Development Index; ID – interior design; MUS – music; PA – performing arts; PD – product design; PHO – photography; POP – population; PUB – publishing; TR – television and radio; VCD – visual communication design.

estimations. The results confirm that discriminatory regulations discourage the development of the creative economy, especially for interior design, visual communication design, application-and-games development and performing arts. This negative influence has a strong magnitude since the component contributes 25% to the CTI, implying that failure to correct discriminatory rules can limit the progress of the creative economy.

The results for the incidents of freedom of religion or belief abuses (*CTI5*) in the fifth row also show negative coefficients, and they are statistically significant in almost all regressions. This clearly indicates that intolerance in the context of religion or belief practices provides a disincentive to the creation of the creative economy. This result is consistent with the nature of intolerance in Indonesia, which tends to relate to religious or belief issues (Sukmatoyo 2018; Oley, Wahyu 2019; Sebastian, Arifianto 2020). Combining with the insignificant influences on the population composition based on religion, we can interpret that the development of the creative economy across cities in Indonesia is discouraged by intolerance practices related to religion and belief, instead of the structure of the population based on religion. The findings provide a strong implication that it is important to deal with this type of intolerance in developing a city, in particular, its creative economy sector.

The results of the discriminatory regional rules and the incidents of freedom of religion or belief abuses confirm that intolerance practices reduce the number of companies in creative industries. Therefore, the findings of this study are in line with previous studies that show a positive influence of tolerance on creative industries (i.e., Lazzeretti et al. 2012; Petrikova et al. 2013; Haisch, Klöpper 2015).

The remaining components, the official statements on event (CTI3) and the official responses on event (CTI4), do not show a statistically significant coefficient in almost all the sub-sectors of the creative economy. They have a statistically significant relationship only with the number of establishments in the sub-sector of video communication design. In addition, it can be also interpreted that the city government has a limited reaction in terms of both statements and responses to religion and belief practices.

The results of the decomposing approach in Table 3 then basically confirm the findings of the relationship between tolerance and the creative economy in the existing literature, such as Lazzeretti et al. (2012), Petrikova et al. (2013), and Haisch and Klöpper (2015). This also means that the local context should be also considered while choosing the relevant indicator of tolerance to examine the influence of tolerance on the creative economy. In short, tolerance matters in explaining the spatial distribution of creative industries as widely existing in many countries.

Lastly, other control variables in Table 3 show consistent influences on the number of creative economy establishments in all sub-sectors. This implies that the model is relatively stable although we replace a single index of the city tolerance by its six components.

Conclusions

This paper answers two main questions. The first one, how the creative economy is spatially distributed across cities in Indonesia, has been resolved by using the Herfindahl–Hirschman Index. To answer the second question, we sought to examine the relationship between tolerance and the creative economy by using regression analysis. These two questions have been also examined at the sub-sector level of the creative economy and at the component level of the CTI.

With the application of the Herfindahl–Hirschman Index, the study has found that the creative economy in Indonesia does not tend to have a high spatial concentration, indicating that cities in Indonesia have an opportunity to develop the creative economy. This finding also applies to the creative economy at sub-sector level although not all cities have a creative economy in all sub-sectors. Based on a range of regression analyses, this study has found that the composite version of the CTI has a negative relationship with the creative economy.

Further analysis by using the components of the CTI has confirmed that tolerance matters for the creation of the creative economy in Indonesia. The three components of the index that have statistically significant influences on the number of establishments in the creative economy are the Mid-Term Regional Development Plan, which

has a positive impact, and discriminatory regional rules and the incidents of freedom of religion or belief abuses, which have negative relationships. This implies that it is important for a city to have a development plan that supports the development of the creative economy. A city must also deal with the regional rules that contain discriminatory elements and reduce the abuses that are related to religion or belief. This study then supports the notion of the role of tolerance in explaining the spatial distribution of creative industries as found in many countries.

The population size and the Human Development Index play significant roles in explaining the distribution of creative economies across the cities in Indonesia. The positive role of the population indicates that the level of demand for creative industry products and the level of supply by the creative industries give benefits to both consumers and producers. A better Human Development Index increases the availability of educated workers to support the formation of the creative economy. The study has also confirmed that cities that also serve as the provincial capitals tend to have a larger creative economy, as mentioned in previous studies. This suggests the advantage of a city as a provincial capital in supporting the development of the creative economy.

In addition, this study suggests that the local context should be also considered while choosing the relevant indicator of tolerance to examine the influence of tolerance on the creative economy. It is important for studies on creative industries in developing countries, especially when there is no availability of a tolerance indicator as normally used in studies in developed countries.

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