Quintuple helix and innovation on performance of SMEs within ability of SMEs as a mediator variable: A comparative study of creative industry in Indonesia and Spain

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C H R O N I C L E	A B S T R A C T
	The purpose of this study is to analyse the effects of (1) quintuple helix on small and medium enterprises (SMEs) performance; (2) ability of SMEs on SMEs performance; (3) quintuple helix on ability of SMEs; (4) innovation on SMEs performance and (5) innovation on ability of SMEs. The analysis uses quantitative analysis, as a descriptive analysis as well as inferential statistics. Respondents are taken from the population of the craft subsector of creative industries, governments, academicians, media-based and culture-based public, in addition to natural environments of society in creative industrial cluster cities in Spain (50 samples) and Indonesia (50 samples). The results of the study identify the significant influence of: (1) quintuple helix on SMEs performance; (2) ability of SMEs on SMEs performance; and (5) innovation on ability of SMEs. On the other hand, they show the non-significant influence of (3) quintuple helix on ability of SMEs and (4) innovation on SMEs performance in craft cluster creative industry in Indonesia. Regarding the craft creative industry in Spain, the results show the significant influence of (2) ability of SMEs on SMEs performance, (3) quintuple helix on ability of SMEs; (4) innovation on SMEs performance and (5) innovation on ability of SMEs, but the non-significant influence of (1) quintuple helix on SMEs performance. The comparative study results show that the relationship of (2) ability of SMEs on SMEs performance, (5) innovation on ability of SMEs, both in Indonesia and Spain, were significant. On the other hand, there are some significant relationship of (3) quintuple helix on ability of SMEs and (4) innovation on SMEs performance in Spain but such relationships do not exist in Indonesia. Moreover, while the effect of (1) quintuple helix on SMEs performance is significant in Indonesia, it is not significant in Spain. Furthermore, the mediation function shows the inverted result on indirect relationship of quintuple helix on SMEs performance through ability of SMEs in Indonesia, but full mediation in Spain, whereas the effect of innovation on SMEs performance through ability of SMEs is observed as full mediation in Indonesia, but partial mediation in Spain.

1. Introduction

The creative industry is one of the most important sectors that support the growth of national economies, firstly initiated by Howkins (2001) as being an economic activity where input and output are ideas. The economic, social and cultural contributions of creative industry are recognized as essential elements of civil society, and most societies in the world are pursuing emotional and spiritual satisfaction, in addition to the physical satisfaction of a product. The Creative Economy in Indonesia

is represented by more than 1.3 million Small Medium Enterprises (SMEs) and cooperatives. Due to its sheer size and contribution to job creation, the sector gets significant government attention (Ministry of Small Medium Enterprises and Cooperatives, 2012). The local government plays a helpful role by giving full support in policy-making, and promoting and providing infrastructures. Intellectual support should come from Universities or Higher Education Institutions conducting implementable research and/or skilled workers and knowledge (Dzisah & Etzkowitz, 2008). Meanwhile Yan (2012) proved that civil society, as a user of goods and services, plays an important role in lifestyle, consumption behaviour, and institutional social participation. The interaction among government, intellectuals, business/industry and civil society is referred to as the Quadruple Helix (Dzisah & Etzkowitz, 2000). A further development of the model is the so-called Quintuple Helix, which contextualizes the Quadruple Helix by further adding the natural environment. Carayannis and Campbell (2010) clearly explained that knowledge and innovation must be contextualized by the natural environment.

Government plays an important role in the transfer of knowledge and assistance to improving creative industries. Universities are recognized as centres for transferring technology, as well as providing human resources and knowledge (Dzisah & Etzkowitz, 2008). Industries facilitate business incubators, science gardens and knowledge commercialization to help companies meet their goals (Ranga & Garzik, 2015). Civil society based on culture and media should contribute formally in bottom-up participation (Yawson, 2009). Finally, the natural environment is recognized for sustainable development, by providing people with natural capital, resources, plants, animals and so on (Carayannis & Campbell, 2010). Simon et al. (2000) proved that the development of innovative products is important for small industries. To satisfy customers, small industries should develop an offer of products with high quality that address the consumer needs and wants. Keh et al. (2007) stated that innovation is very important since the rapid changes in technology, the shorter product life cycles, and the fact that new consumers are more informed and are getting smarter, requires the fulfilment of consumer needs with products of higher quality and added value through a superior value proposition. However, Freel and Robson (2004) claimed that the lack of large-scale data surveys for SMEs, together with the scarce research carried out in this field, make further research in this topic essential (Rosenbusch et al., 2011). Mahmood and Hanafi (2013) and Salim & Sulaiman (2011) also suggested that innovation and creativity can improve organizational performance, and refer to process innovation in small and medium enterprises as having a significantly effect on company performance (Rosli & Sidek, 2013). Previous research mentions that innovation can be a critical success factor in achieving a sustainable competitive advantage. The business environment drives the tight competition between companies in the global market place, especially when the environment changes. Companies are encouraged to have an innovation strategy to be winners in the global market. Consumer-centric innovation is an approach to survive and deal with the global business challenges of the creative industry. The combination of management awareness regarding the importance of innovation, with a consumer-oriented business model drives innovation and corporate growth (Serna et al., 2013; Farida, 2016). The president of the Republic Indonesia, Joko Widodo, stated that the Era of Creative Economy becomes the backbone of the Indonesian Economy (Opus, 2017). However, the creative industry in Indonesia encounters problems such as the of lack of human resources, especially in developing innovation (Hamdan, 2016). Innovation is needed for creative industries to grow, as has been proved by the fashion sub sector which is the highest national contributor in exports (54.5%), and the 3rd contributor (7%) to PDRB of East Java Indonesia in 2011-2016 (Sukarno, 2018). On the other hand, cultural and creative sectors contribute with outstanding comparative intensity to gross domestic product (GDP), to the gross value added, and to employment in Spain (Martínez, 2018). Taking the example of the fashion industry which is performing well, there are 38 fashion companies today in Catalonia that have established a region in Spain to help companies set up manufacturing plants in low cost countries as a means of survival (Generalitat de Catalunya, 2018). The vision of this industry for the future is to remain competitive through higher productivity and through competitive strengths such as innovation. This study is very relevant for Indonesia, and is encouraged by the vision of the President of the Republic, in order to produce a model for the creative industry that represents a fundamental contribution to science: a model of quintuple helix and innovation which can improve SME's performance in creative industries. This study also highlights the role of the quintuple helix and innovation of creative industry in Spain and Indonesia as well as comparing these two countries.

2. Literature review

2.1 Quintuple helix

The Quadruple Helix model is based on the Triple Helix model and adds as fourth helix the 'public', more specifically the 'media-based and culture-based public' and civil society. The Quintuple Helix model is based on the Triple Helix model and Quadruple Helix model and adds as fifth helix the 'natural environment'. The Quintuple Helix is a 'five-helix model', 'where the environment or the natural environments represent the fifth helix' (Carayannis & Campbell, 2010). The five-helix relationship in the case of global warming (Carayannis et al., 2012) illustrates that investing in education on global warming is quite important to create expertise on this area, and to raise awareness on the relationship between economy and the environment. Input from green economies would protect nature and enhance environmental education. Furthermore, input on lifestyle which concerns the environment will affect media, culture and society. It follows that increasing lifestyle and society satisfaction would be an output to emphasize policy makers to support environmental education. Each phase creates innovation, which preserves sustainability (Siswantoro & Rosdiana, 2016). In order to be sustainable, innovation needs support from many aspects such as government, private initiatives, and universities at the centre of the educational system. In general, sustainability is the result of production, knowledge and innovation (Carayannis & Campbell, 2010, 2012), and the increase in innovation is an incentive for the next innovation (Carayannis & Rakhmatullin, 2014; Carayannis et al., 2012). As Fassin

stated (2008) in the stakeholder theory, an organization is also accountable for other aspects, even though if they do not have a direct relationship, but may have an indirect relationship. A smart organization should be able to identify those aspects that may have a relationship with their operations (Fassin, 2009). A quintuple helix may result in continuous knowledge creation. Carayannis et al. (2012) gave an illustration on the five-helix relationship: 1. Investment in education on global warming creates scientific knowledge and expertise. 2. A qualified economy with awareness towards the environment can be build. 3. Green economic inputs will protect nature and increase environmental education. 4. Lifestyle inputs which concerns the environment influence media, culture and society. 5. Lifestyle and society satisfaction increase in overall. The overall output would emphasize politics and policy makers, in order to support education. Each phase creates innovation, which preserves sustainability.
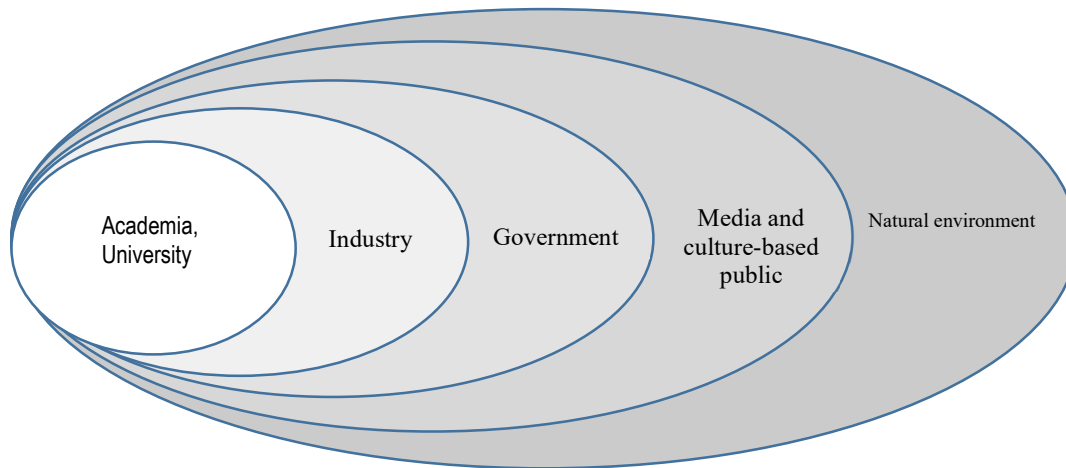
Fig. 1. The subsystems of the Quintuple Helix model.
(Etzkowitz & Leydesdorff, 2000; Carayannis & Campbell, 2012)

The interactive process can support the development of the creative industries in Spain and Indonesia. Each dimension can create knowledge, which comes from input and generates output. This also creates innovation that results in sustainable development for the creative industries in Spain and Indonesia. The Quintuple Helix represents the 5 aspects: government, university, business, culture and media and natural resources (Carayannis & Campbell, 2010), adopted in this research.

2.2 Innovation

Innovation in small firms is realized in the form of product modifications (Verhees & Meulenberg, 2004) and greatly relies on the creativity and innovativeness of employees (Yeung, 1999). Auspiciously, small firms are recognized as having such advantages and ability, as the positive relationship among market orientation, product innovation, and small firm performance has been propped (Verhees & Meulenberg, 2004). Innovation occupies a significant place in the commercial success of goods and on the performance of companies. Innovation and experience of SMEs encourages sustainable growth (Mirza & Ali, 2011). SME performance can be improved by the innovation quality (Lakhal, 2009; Salim & Sulaiman, 2011; Mahmood & Hanafi, 2013; Azadehdel et al., 2013). Similarly, the performance of SMEs can be improved through the capabilities of innovation (Suliyanto & Rahab, 2012). A high innovation power in management will always create differentiating attributes in products, especially in creative industries. Consequently, innovation management is a prominent strategy for the management in surmounting the ever-increasing competition in the industry. Innovation needs to be seriously and carefully explored and reinforced. Focusing on industrial innovation, this research will indicate innovation's indicators as follows: product innovation, process innovation and organizational innovation (Expósito & Sanchis Llopis, 2018).

2.3 Ability of SMEs

Although the SMEs sector is steadily growing, its ability in doing business with large corporations is still constrained. This phenomenon has proved to be a challenge for SMEs in terms of upscaling into larger scale enterprises. Prior research shows that when small companies interact with large corporations, there are gains such as improved organizational structures, management practices, and operations (Hallberg, 2000). These changes enable small companies to upgrade their technologies, access finance, improve their governance, and most importantly, become financially sound. Therefore, revenue streams grow, and are more consistent, making it possible for the small businesses to create more employment. Furthermore, up scaling into a larger enterprise opens doors to easier credit and other business opportunities (Schiffer & Weder 2001). Other gains include spill over of new knowledge, innovation and business models (Smallbone & Welter 2001). The financial soundness is one of the major weaknesses of SMEs - large corporation relationship. SMEs face challenges to access external financial resources, which in turn limit their capacity to develop new products, upgrade existing production, and capture emerging business opportunities. Cooley and Pullen (1979) observe that effective SME management is of great importance for SMEs in doing

business with large corporations and therefore the need for good governance that will efficiently steer the business and avoid strategic failures. Therefore, the authors concluded that the ability of SMEs consists of finance performance, capacity enhancement, access to finance and corporate governance.

2.4 SMEs Performance

Small and Medium Enterprises (SMEs) now represent the strength of every economy and play a key role in increasing the growth and development of the country. Normally the ability of SMEs is evaluated based on their performance. Performance measurement has a significant influence on human behaviour which enables an improvement of the organization. According to Tangen (2005), performance is a term for all concepts that consider the success of a firm and its activities. Financial performance refers to factors such as value of sales, sales growth and gross profit or profitability, while the operational performance can also be referred to as productivity performance. SME performance in this research consist of financial performance and operational performance (Expósito & Sanchis Llopis, 2018).

2.5 Type of SMEs (craft sub sector)

According to the Indonesian Presidential Decree no. 99, medium enterprises are firms with total asset higher than IDR 200 million but not exceeding IDR 10 billion excluding land and buildings. The Centre of Statistic Bureau of Indonesia also defines SMEs based on the number of employees: small enterprise employs 5 to 19 people, and medium enterprises employ 20-99 people. The Indonesian Department of Trade defines the creative economy as a concrete effort for sustainable development through innovation and creativity. Sustainable development with a focus on renewable resources leads to long-term sustainable economic conditions, and higher competitiveness. There are 16 sub-sectors or types namely: application and game development, architecture, interior design, visual communication design, product design, fashion, movies, animation, video, photography, crafts (craft), music, publishing, advertising, performing arts, visual arts, television and radio. This research targets the craft sub sector of creative industry, as it is one of the key economic activities in Indonesia when it comes to value creation, employment generation, and contribution to exports. Whereas, the study of cultural and creative industries (CCI) in Spain indicates that the employment in creative activities in Barcelona has increased by 13% in 2018 (Barcelona activa, 2018). Both scenarios in these two countries prove that the creative industry has an important role in the implantation of cultural and creative activities as well as in contributing to commercial activities.

3. Conceptual Framework

Based on the above framework of thought derived from the literature, several hypotheses are formulated which should be tested (See Fig. 2 and Table 1).
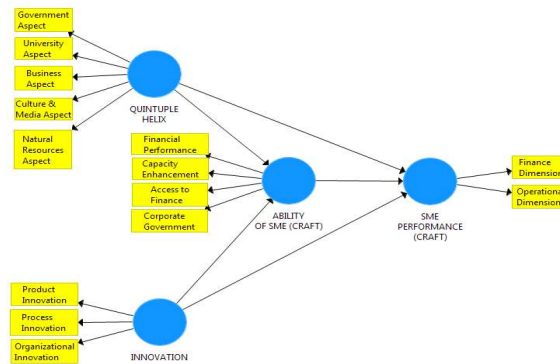

Fig. 2. Conceptual Framework

Table 1

Hypotheses

Hypothesis	Description
H_1	Quintuple helix influences SME Performance.
H_2	Ability of SME influences SME Performance.
H_3	Quintuple Helix influences Ability of SME.
H_4	Innovation influences SME Performance.
H_5	Innovation influences Ability of SME.

Source: Researchers

4. Methods

4.1 Population and sampling techniques

This study applied a quantitative method based on questionnaires and the review of institutions such as government, businesses, universities, society and media. Respondents in this study were selected by cluster sampling. In this case, sample criteria have specific characteristics including experience of at least in 3 years, and business size. Government consist of civil

servants who have a role as decision makers relating to SME empowerment. Researchers and or lecturers represent the university sample. Finally, we collaborate with society and media to support this research as respondents. The raw data both in Spain and Indonesia were obtained either through questionnaires submitted by e-mail to the respondents, or through direct interviews with company managers. Additional information from other sources such as journals, executive summaries, and strategic working reports are used to support or discuss the primary data from respondents. The number of respondents were 10 civil servants, 10 businessmen, 10 lecturers/researchers, 10 represents society and 10 media in Indonesia as well as the same number for each type of respondents in Spain. The questionnaires were designed in English and then translated to Spanish for Spanish respondents and Bahasa Indonesia for the Indonesian respondents.

4.2 Measurement of variables

The structured research questionnaires distributed through emails included questions covering the variables to be analysed: quintuple helix, innovation, ability of SME and SME performance. The measurement of quintuple helix towards innovation was adopted from Carayannis and Campbell (2010), and ability of SME on SME Performance from the study of Bakar et al., (2015). Quintuple Helix on Ability of SME was adopted from Harmon et al. (2009) as the ability of the firm to achieve its objectives and to increase shareholders' value through a concerted effort to integrate economic, environmental, and social activities into its strategy. Innovation towards SME performance was developed from Li and Mitchell (2009) and Rosenbusch et al., (2011), as there has been a significant interest among scholars on the role of innovation capability in driving SME performance. Additionally, Demirguc-Kunt (2007) proved that the improvement of SME ability depends highly on their potential to invest in restructuring and innovation. Ability of SME was used as a mediator variable of relationship between quintuple helix and SME performance, and the relationship between innovation and SME performance. Overall, these instruments amount to 14 indicators of 4 variables.

Table 2
Variable, Indicators, Source and Measurement

Variable	Indicator	Source	Measurement Scale
Quintuple Helix (X_1)	(X1.1) Government (X1.2) University (X1.3) Business (X1.4) Civil based on culture & media (X1.5) Natural resources	Carayannis et al., 2010	Likert
Innovation (X_2)	(X2.1) Product Innovation (X2.2) Process Innovation (X2.3) Organizational Innovation	Exposito & Llopis, 2018	Likert
Ability of SME (M)	(M1.1) Financial Performance (M2.2) Capacity Enhancement (M3.3) Access to Finance (M4.4) Corporate Governance	Wangeci & Mathuva, 2017	Likert
SME Performance (Y)	(Y1) Financial Dimension (Y2) Operational Dimension	Exposito & Llopis, 2018	Likert

Source: Carayannis et al., 2010, Exposito & Llopis, 2018, Wangeci & Mathuva, 2017

4.3 Data analysis

Data were analysed using SmartPLS software version 3. PLS (Partial Least Square) is a variant-based structural equation modelling (SEM) based on variants that test the measurement model as well as structural model simultaneously. The SmartPLS 3 program counted the indirect influence (indirect effect) to analyse the correlation significance of the mediator variable and the other variables. Mediation occurred when a variable influences the relationship between independent variables on dependent variables. The change of the independent variable causes the change of the mediator variable, therefore causing the change of the dependent variable. This study used a modest mediation model, namely the ability of SME as one mediator variable. Zhao et al. (2010) is used as reference to analyse a modest mediation model.
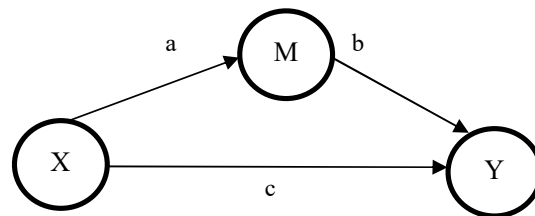
Fig. 3. Mediation analysis (Zhao et al., 2010)

The analysis of mediation influences used values of:

- c is the direct influence (the direct effect),
- Multiplication of a × b is the indirect influence (the indirect effect),
- c + (a × b) represents the total influences (the total effect).

All the values above are counted automatically through SmartPLS 3 program when bootstrapping procedure is processed after hypotheses testing. The result of counting should be fulfilled in the path analysis. Zhao et al. (2010) divided the effect of mediation into 5 groups, as follow,

1) Complementary (partial mediation) if a × b significant, c significant, and a × b × c significant.
2) Competitive (partial mediation): if a × b significant, c significant, but a × b × c non-significant
3) Indirect-only (full mediation): if a × b significant, but c non-significant
4) Direct-only (no mediation) if a × b non-significant, but c significant
5) No effect (no mediation) if a × b non-significant, as well as c non-significant.

When 3 variables (Fig. 3) related simultaneously to the goodness fit model, therefore several indicators of each variable must be eliminated, since Value of Loading Factor is less than 0.5.

4.4 Validity and reliability test

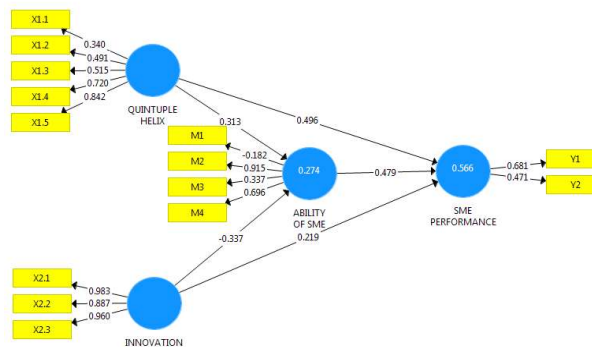#### 4.4.1 Test of validity and reliability of Indonesia craft sub sector

Fig. 4. Initial model Indonesia craft subsector

Table 3

Measurement initial outer model Indonesia craft subsector

Measurement Model	Result	Critical value	Model evaluation
	Outer Model		
Convergent Validity	Variable	*AVE*	
	Quintuple helix	0,367	invalid
	Innovation	0,891	Valid
	Ability of SME	0,370	>0.5	invalid
	SME Performance	0,343		invalid
Discriminant Validity	Indicators	*Cross Loading*	
	x1.1	0,340	invalid
	x1.2	0,491	invalid
	x1.3	0,515	Valid
	x1.4	0,720	Valid
	x1.5	0,842	Valid
	x2.1	0,983	Valid
	x2.2	0,887	Valid
	x2.3	0,960	Valid
	m1	-0,182	>0.5	invalid
	m2	0,915	Valid
	m3	0,337	invalid
	m4	0,696	Valid
	y1	0,681	Valid
	y2	0,471	invalid

Source: Data proceed by researchers

Based on outer model Table 3 for validity testing of indicators relationship to its variables on AVE value at 0.5 critical value showed that the variables quintuple helix, ability of SME and SME performance are invalid. The invalid indicators of each variable are government (x1.1) and university (X1.2) for quintuple helix. Then financial performance (m1) and access to finance (m3) for ability of SME and operational dimension (y2) for SME performance. It turns out that after validation testing is done once more through construct reliability and validity, AVE value must be > 0.5 and value of Cronbach Alpha (CA) must be > 0.7 and composite reliability must be 0.7. Therefore, the valid indicators that must be eliminated are X1.3 (business),

x1.4 (civil based on culture & media) and m4 (corporate governance). We found the model was fit and we conducted bootstrapping analysis to test the hypotheses.
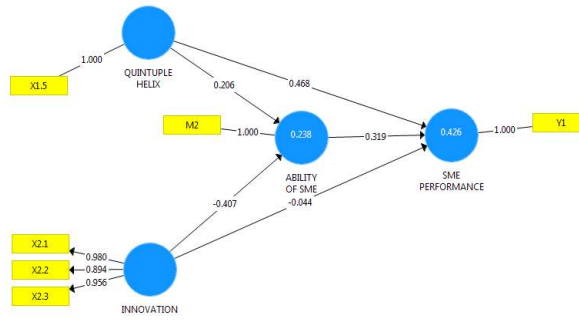

Fig. 5. Fit model Indonesia craft sub sector

Table 4

Reliability and Validity for fit model

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Ability of SME	1.000	1.000	1.000	1.000
Innovation	0.938	0.941	0.961	0.891
Quintuple Helix	1.000	1.000	1.000	1.000
SME Performance	1.000	1.000	1.000	1.000

Source: Data proceed by researchers

Table 5

Measurement fit model Indonesia craft sub sector

Measurement model after eliminating indicators	Result		Critical value	Model evaluation
	Outer Model			
Convergent Validity	Variable	*AVE*		
	Quintuple helix	1,000		Valid
	Innovation	0,891		Valid
	Ability of SME	1,000	>0.5	Valid
	SME Performance	1,000		Valid
Discriminant Validity	Indicator	*Cross Loading*		
	x1.5	0,842	>>0.7	Valid
	x2.1	0,980		Valid
	x2.2	0,894		Valid
	x2.3	0,956		Valid
	m2	1,000		Valid
	y1	1,000		Valid

Source: Data proceed by researchers

Table 6

Result of bootstrapping Indonesia craft sub sector

Relationship	Original sample	Sample mean	Std. Dev.	t-statistics	P-value	Result
Quintuple Helix → SME Performance	0.468	0.466	0.114	4.120	0.000	Accepted
Quintuple Helix → Ability of SME	0.206	0.196	0.148	1.392	0.165	Accepted
Innovation → SME Performance	-0.044	-0.050	0.141	0.314	0.754	Rejected
Innovation → Ability of SME	-0.407	-0.416	0.109	3.726	0.000	Rejected
Ability of SME → SME Performance	0.319	0.311	0.146	2.188	0.029	Accepted

Source: Data proceed by researchers

Considering P-value, if P-value <0.05 the hypotheses will be accepted, but if P-value >0.05 the hypotheses will be rejected. PLS analysis is conducted using SmartPLS 3 bootstrapping feature.

4.4.2 Test of validity and reliability Spain craft sub sector

Based on outer model Table 10 for test validity of indicators relationship to its variables on AVE value at 0.5 critical value showed that variable quintuple helix is invalid. The invalid indicators of this variable are university (X1.2) and civil based on culture & media (x1.4). It turns out that after validation testing is done once more through construct reliability and validity, AVE value must be > 0.5 and value of Cronbach Alpha (CA) must be > 0.7 and composite reliability must be 0.7. Therefore, the valid indicators that must be eliminated are X1.3 (business), y1.1 (Financial dimension). We found the model was fit and we conducted bootstrapping analysis to test hypotheses.
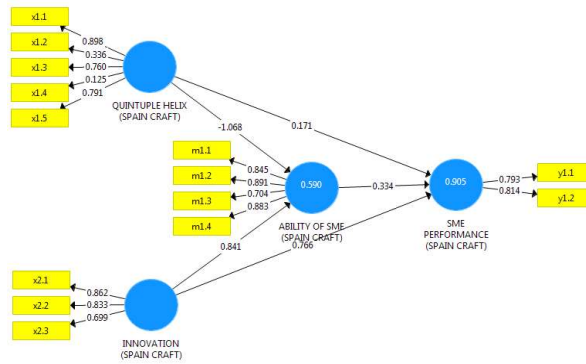
Fig. 6. Initial model Spain craft subsector

Table 7

Measurement initial outer model Spain craft sub sector

Measurement Model	Results		Critical value	Model evaluation
	Outer Model			
Convergent Validity	Variable	*AVE*		
	QH	0.427		Invalid
	Innovation	0.642		Valid
	Ability of SME	0.696	>0.5	Valid
	SME Performance	0.646		Valid
Discriminant Validity	Indicators	*Cross Loading*		
	x1.1	0.898		Valid
	x1.2	0.336		Invalid
	x1.3	0.760		Valid
	x1.4	0.125		Invalid
	x1.5	0.791		Valid
	x2.1	0.862		Valid
	x2.2	0.833		Valid
	x2.3	0.699		Valid
	m 1.1	0.845		Valid
	m 1.2	0.891	>0.5	Valid
	m 1.3	0.704		Valid
	m 1.4	0.883		Valid
	y1.1	0.793		Valid
	y1.2	0.814		Valid

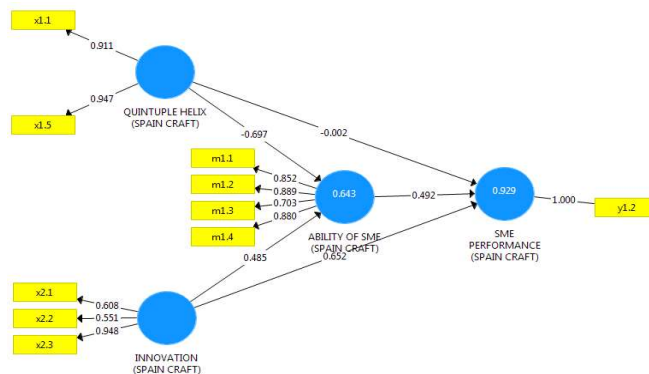Source: Data proceed by researchers

Fig. 7. Fit model Spain craft sub sector

Table 8

Reliability and validity indicators for fit model Spain

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Ability of SME (Spain Craft)	0.854	0.896	0.901	0.969
Innovation (Spain Craft)	0.716	1.069	0.757	0.524
Quintuple Helix (Spain Craft)	0.845	0.883	0.927	0.864
Ability of SME (Spain Craft)	1.000	1.000	1.000	1.000

Source: Data proceed by researchers

Considering P-value, if P-value <0.05 the hypotheses will be accepted, but if P-value >0.05 the hypotheses will be rejected. PLS analysis is conducted using SmartPLS 3 bootstrapping feature.

Table 9

Measurement fit model Spain craft sub sector

Measurement Model	Results		Critical value	Model evaluation
	Outer Model			
Convergent Validity	Variable	*AVE*		
	QH	0.864		Valid
	Innovation	0.524		Valid
	Ability of SME	0.696	>0.5	Valid
	SME Performance	1.000		Valid
Discriminant Validity	Indicators	*Cross Loading*		
	x1.1	0.911		Valid
	x1.5	0.947		Valid
	x2.1	0.608		Valid
	x2.2	0.551	>0.5	Valid
	x2.3	0.948		Valid
	m 1.1	0.852		Valid
	m 1.2	0.889		Valid
	m 1.3	0.703		Valid
	m 1.4	0.880		Valid
	y1.2	1.000		Valid

Source: Data proceed by researchers

Table 10

Result of bootstrapping Spain craft sub sector

Relationship	Original sample	Sample mean	Std. Dev.	t-statistics	P-value	Result
Quintuple Helix → SME Performance	-0.002	0.059	0.255	0.009	0.993	Rejected
Quintuple Helix → Ability of SME	-0.697	-0.604	0.216	3.228	0.001	Accepted
Innovation → SME Performance	0.652	0.641	0.157	4.158	0.000	Accepted
Innovation → Ability of SME	0.485	0.531	0.170	2.853	0.005	Accepted
Ability of SME → SME Performance	0.492	0.520	0.168	2.925	0004	Accepted

Source: Data proceed by researchers

5. Result

Table 11

Direct and indirect impact of variables Indonesia craft sub sector

Notation a × b	Indirect Effect (t-stat a × b)	Direct Effect (c value)	Status of mediation effect
(QH → Ability of SME) (Ability of SME → SME Performance) (1.392) (2.188)	3.0456 (Significant)	(QH → SME P) 4.120 (Significant)	Complementary (partial mediation)
(Innovation→ Ability of SME) (Ability of SME → SME Performance) (3.726) (2.188)	8.1524 (Significant)	(INN → SME P) 0.314 (Non-significant)	Indirect-only (full mediation)

Source: data proceed by researchers

Table 12

Direct and indirect impact of variables Spain craft sub sector

Notation a × b	Indirect Effect (t-stat a × b)	Direct Effect (c value)	Status of mediation effect
(QH → A of SME) (A of SME → SME P) (3.228) (2.925)	9.4419 (Significant)	(QH → SMEP) 0.009 (Non-significant)	Indirect-only (full mediation)
(INN →A of SME) (A of SME → SME P) (2.853) (2.925)	5.778 (Significant)	(INN → SMEP) 4.158 (Significant)	Complementary (partial mediation)

Source: Data proceed by researchers

Table 11 and Table 12 have provided sufficient evidence about the effect of the ability of SME on SME performance and innovation on ability of SME, both in Indonesia and Spain, which are statistically significant. Additionally, there is a significant relationship between quintuple helix on ability of SME and innovation on SME performance in Spain, but this is non-significant in Indonesia. Finally, the relationship of quintuple helix on SME performance was significant in Indonesia but non- significant in Spain. Furthermore, this study has also found some evidence for the ability of SME as mediation variable. The mediation function has shown the inverted result on indirect mediation relationship of quintuple helix on SME performance through the ability of SME as partial mediation in Indonesia, but full mediation in Spain. Moreover, the results show innovation has some impact on SME performance through the ability of SME as full mediation in Indonesia but partial mediation in Spain.

6. Discussion

Government, universities, businesses, civil based on culture & media and natural resources have significant impacts on SME performance. The Government of Indonesia facilitates to SMEs the promotion of their products through free of charge exhi-

bitions. Universities also support SMEs by providing training in technology and management. As stated by Dzisah and Etzkowitz (2008), universities are recognized as a centre for transfer of technology and to provider human resources and knowledge. Crafters develop good relationships with each other, in order to increase their networking and finally increase their sales and performance. Ranga and Garzik (2015) also report that industries facilitate business incubators, science gardens and knowledge commercialization to find out resources that support their goals. The role of crafters when developing new motives based on tradition can inspire and support the local wisdom and local culture, increase networking, and create positive feedback loops when promoting products through local media. Crafters ready to accept new information on how to keep a good balance with nature will also improve their performance by deploying assets with a focus on sustainable development and preservation of the natural resources, which means that quintuple helix has an impact on SME performance (Lee & Sukoco, 2007). Furthermore, the fit model proved that the natural resources is a key issue for the respondents interviewed in the Indonesian cluster. We want to highlight that the waste of the dying process in the creative industry, especially the traditional batik colouring process, uses chemicals that need special monitoring in order to keep the health of the natural environment, and work towards a sustainable growth of SMEs. Carayannis et al. (2010) have stated that quintuple helix supported the creating of win-win solutions among ecologists, science and innovation, creating synergies between economic growth, community development and democracy. Quintuple helix approach including natural resources apart from universities, industry, government, and civil society, determine the sustainable development of companies and provide people with the natural capital such as renewable plant and animal resources. Otherwise, the influence of quintuple helix on ability of SME is non-significant. Although the interviewed crafters assumed that university is a centre of knowledge creation and technology development, that does not necessarily translate into support to effectively increase the financial results of SMEs in the short time. The result is opposite to the studies of Carayannis et al. (2012) and Etzkowitz and Leydesdorff (2000), in which there is a constant connection between universities, enterprises and crafters.

The result has shown that Innovation has maintained non-significant effect on SME performance is not supported by Rosenbusch et al. (2011). In this respect, statements of the interviewed crafters point at their limitation in working capital as a reason why they were not able to execute many of their great ideas to launch new products. The difficulties for SMEs to access banks' loans or other funding mechanisms to launch new products and services are supported by Wangeci and Mathuva (2017) who clearly indicated that inaccessibility of funds, unimproved capacity capabilities and poor corporate governance constrained the small and medium enterprises in doing business with large corporations as well as in conducting innovation. Innovation on products, processes and organizations has a significant influence on ability of the SMEs as stated by Remli et al. (2013), who found that innovation and performance have strong correlations with each other. Mirza and Ali (2011) also proved that innovation in small and medium-sized enterprises encourages sustainable growth. Company performance can be improved by the quality of innovation (Lakhal, 2009; Salim & Sulaiman, 2011; Mahmood & Hanafi, 2013; Azadehdel et al., 2013). Li and Mitchell (2009) and Rosenbusch et al. (2011) described a significant interest among scholars on the role of innovation capability in driving SME performance. Similarly, the performance of small and medium enterprises can be improved through the capabilities of innovation (Suliyanto & Rahab, 2012; Sulistyo, 2016). In Spain, data proved that quintuple helix does not have any effect on SME performance. The result is not supported by Carayannis et al. (2012), Etzkowitz and Leydesdorff (2000), who describe that any relationships among government, business, academicians, civil based media & culture as well as natural resources will have some effects on SME performance. The result of the study was supported by Moya Angeler's interview (2019), who indicated that the innovation ecosystem in the cluster analysed in Spain (Barcelona) has been established for the past 10 years. This means that all activities of business, government, academicians, civil based on media & culture and natural resources have already run automatically. The ability of SME impacted significantly on SME performance as proved by Hallberg (2000), who showed that changes in small companies facilitating upgrades in their technologies, access to financing, or improved governance, result in financial stability and employment creation. As added by Moya Angeler's interview (2019) the evolution of SMEs in the analysed region in Spain is very good, as well as the ecosystem supporting them, thus the performance of SMEs and start-ups increases after the assistance. Government, business, academicians, civil based media & culture and natural resources as ecosystem support finance, management and networking of the start-ups (Moya Angeler's interview, 2019). Rosenbusch et al. (2011) state that innovation has a positive effect on the performance of SMEs. Yet, they also identified a number of factors that impact the innovation–performance relationship: first, fostering an innovation orientation has more positive effects on firm performance than creating innovation process outcomes such as patents or innovative products or services. The impact of innovation on the ability of SME is recognized by the study of Romano (1990), indicating that small firms are recognized as having such advantages and abilities. The positive relationship regarding market orientation, product innovation, and small firm performance was also indicated by Verhees and Meulenberg (2004). Innovation also occupies a significant place in the success of goods and market and on the performance of companies.

7. Conclusions

Crafters in Indonesia and Spain face different challenges, and are stablished in rather different ecosystems. The scale of business in Indonesia and Spain is different: micro scale in Spain included small scale in Indonesia, consequently the number of respondents on these different scales has been analysed to create accurate results. In Indonesia, the quintuple helix *is able to influence* SME performance without going through ability of SME, but in Spain quintuple helix shoved to be *unable to influence* on SME performance without going through ability of SME. Most Indonesian SME respondents report being assisted by governments and universities without any special requirements. On the other hand, Government, accelerators and

CatEnpren in Spain support SMEs and entrepreneurs if they have a prototype, a business plan and other requirements which show their ability to run business. In Indonesia, innovation is *unable to influence* SME performance without going through ability of SME, but in Spain innovation is *able to influence* on SME performance. Featuring Indonesian SMEs, innovation cannot be created without experiments and research, and good access to financing and corporate governance of SMEs. On the other hand, in Spain almost all SMEs performed their innovation regularly and automatically because of the sweet moment of the ecosystem. Future research can be conducted in additional subsectors of the creative industry such as fashion and culinary, as these three sectors are the highest contributors (54.5%) to the Indonesian Economy, and represent the biggest subsectors in terms of exports from Indonesia. The creative industry in Barcelona, Spain, has advanced a lot in the last 10 years and is at a sweet moment, although further research should reveal patterns that could be potentially transferred to the Indonesia.

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