

## CREATIVE INDUSTRIES: THE CASE OF CERAMIC TILE

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## ABSTRACT

This document analyses the new paradigm of learning and network collaboration based in creativity for the ceramic industry. Creativity is the stage where companies decide to change their status of comfort for evolution.

This study analyzes the creation of creativity in companies and if Chinese, Italian and Spanish companies deploy creativity inside the ceramic cluster with the established ceramics trends 2014/2016.

This study uses diverse contexts as the development and propose of taxonomy of these practices or model and enterprise for unlimited growth with improvement of every action of the company; variables related to communication, labour interaction, intellectual property, knowledge access and transmission, innovation and integration of employment

### Keywords

Ceramic tile industry, knowledge creativity, trends ceramics, clusters.

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*In the existence of every person, each one has the symbolism of being part of a single and only gear, where his/her natural talent performs single actions that can move not only you are their environment, but a whole complex system of links that influence to the whole world (Own development)*

## **1. INTRODUCTION**

With the growing importance of words entrepreneurship, innovation and start-ups in a new competitive context, creativity has emerged as a key element to provide differential value to products and services generated by businesses. “Creativity has been traditionally associated with the field of culture and arts. However, it is a key element for the development of the competitive advantage of firms” (Porter, 1990)

Although it is not attributed, this is a term that has evolved since the beginning of humankind, and humankind has evolved with it. A simple definition of creativity could be the fact of having an idea for different issues. Over time, humanity has been able to develop this idea during the different periods of the history; for example, philosophy in Greece in the sixth century, the renaissance in Florence of the XIV century, the century of physics in the XVII century,...

Subsequently, it has been limited as a result of more formal and standardized processes, where doing things to make a profit in the enterprise has more value than achieving the common good. In the current twenty-first century, as a result of the intense competition, instability in the markets, little disruptive products... there's a search for new ways of development and, therefore, people have a greater impulse in the creative aspect.

This study has been performed based on this context, it has been developed as a proposal to work the order of degree of the university degree of Business Administration for the current academic year. The main subject is the identity of creativity in the ceramic industry and it is based on research of documents, reviews and interviews.

The ceramic industry has a great influence on the business, social and cultural landscape of Castellón. This is the reason why this industry is taken as preference instead of other industries with more creativity, even being aware that there are limitations on the implementation of creativity. Pottery exists since the Neolithic period, when it evolved from manufacturing containers for food or beverages to become a construction material in the form of bricks or tiles.



This work is focused on the tile industry searching the solution to the current problem that companies have, the great international competition and the excess of product. For this reason, a question arises: 'Do companies use creativity as a business strategy?'

The first section analyses creativity in the theoretical framework "has a lot of different visions about if it is infinite" (Torrance, 1993); "or a working tool" (Guilford, 1951); "a phenomenon polysemy, multidimensional and plural" (Torre, 1991); "or the explanation of creative companies" (Crea Business Idea, 2010); "the analysis in the ceramic industry by seeing the evolution of the industry over time that causes a series of trends in the market where we can see the culmination of the creative process" (Observatorio Cerámico, 2015) and a short explication of the cluster "a cluster is a group of interconnected companies and institutions" (Porter, 1990). The paragraphs information was elaborated with interview of qualified personnel in relation with the university.

Once we known the concepts, we start the study in the global economy with the report *World Economic Situation and Prospects 2016* (ONU, 2016). But before that, the internal and external analysis of the ceramic industry where we will identify the levels of production, consumption, export and evolution together with the pest analysis that show the current situation in relation with politics, employment laws, and economic, sociocultural and technological factors. To conclude, we perform the analysis of porter's fiver forces to identify the potential benefits of long-term viability in the market of the main characteristics, the above points are grouped in the SWOT analysis to describe the strengths, weaknesses, opportunities and threats.

The theoretical framework and the previous hypothesis are moved to the **Chinese industry**, with uncertainties in social, cultural and political aspects (Niu and Sternberg, 2003); with the biggest cluster in the business industry, Foshan (Mei-Hor Lo, 2013); **the Italian industry** has layers or concentric circles in reference to creativity (Bertacchini and Borrione, 2010); involving the cluster of Sassuolo in terms of knowledge, style and influence (Meyer et al, 2001); and at the end of this point, the **Spanish business industry** is not perceived as competitive due to its "PYME" size, but as a cluster network of the most important ones of the international scene (Molina and Martínez, 2013). Finally, we offer discussions and conclusion, pointing out the results of the investigation of the document and the presumption of model business improvement. Limitations and future research line, indicating possible lines for future work on this topic of study.

## 1.1 Objectives

The purpose of this work is to investigate if **creativity is developed in the ceramics organizations**, this is the general goal.

The specific goals are:

- Knowing the notion and application of creativity.
- Trends ceramic.
- The functions of the cluster.
- Analysing the ceramic sector
- Proposal of solutions and improvements.

Every year, millions of companies around the world are in a situation of jam in which leaders do not know how to manage or lead in new paradigms. In order to overcome this situation, they must have enough flexibility to change with the continuous changes of events in time. This is the reason why we show a great interest in the general goals.

## 2. THEORETICAL FRAMEWORK

### 2.1. What is creativity?



Creativity is one of the characteristic of human beings and one of its most common manifestations. This is studied from the artistic, scientific, or business areas, and there is no precise definition, as well as designated the American psychologist and father of modern creativity mention:

*Creativity is almost infinite; committed every sense [...]. Much in it is invisible, non-verbal and unconscious. Therefore, even if we had an accurate conception of creativity, I am sure that we would have difficulty to express it through the words. However, if we are going to study it scientifically we must have some approximate definition (Torrance, 1993).*

The field of psychology is largely responsible for the compression of the phenomenon of creativity. In the magazine Music, Art and process, the researcher Fernández (1997) write as Guilford, American psychologist, at its 1972 conference before the A. P.A.<sup>1</sup>exposes:

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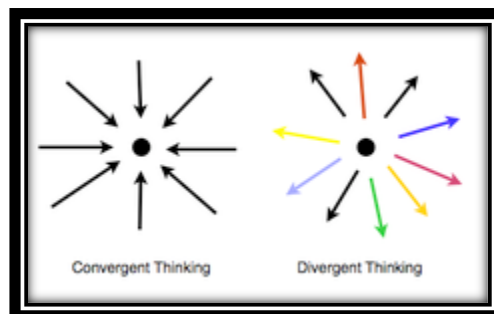
<sup>1</sup> A. P. A (American Psychological Association): Is a scientific and professional organization that represents.' American psychologist in the United States.

*It has to be understood, first of all, as a kind of working tool concept, concept that comes to meet numerous pre-existing concepts and to continuously assimilate new assumptions, because of the uninterrupted increase in experimental research in the field.*

Guilford (1951) set up the starting point for understanding the creative techniques, classifying productive thinking in two classes:

- **Divergent thinking** is when searching options rather than choose default procedures and open minds in all possible directions. So when we see these two types of options: "students" or "workers", the question is: do other types of options coexist? The answer would be Yes, since a student is working in your specific area that would be the learning with books and a worker while carrying out their work, he is studying how to do it, etc.
- **The convergent thinking**, the meaning of the word is "union". It exists when it is concentrated in a limited number of options such as possibilities to a question or for to choose the "correct" answer. An example is seeing people as "students" or "workers" and stay only with those words, the student does not work and a worker does.

**Figure 1. Convergent and divergent thinking.**



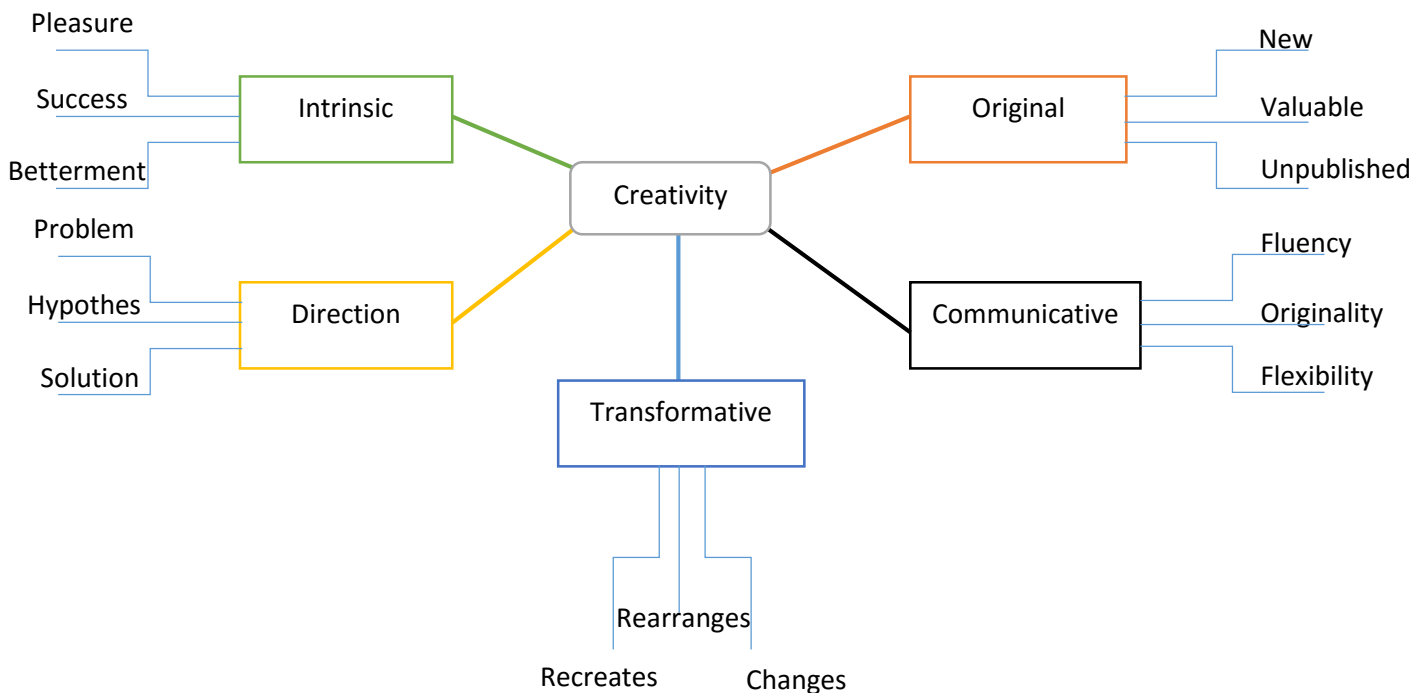
Source: (Toni, 2013)

It is not surprising that few psychologists have dared to define it, precisely because of the difficulty of addressing all the conceptual and connotative content with science; history and society have been applying about what we know with the name of creativity. "Creativity is therefore a polysemic phenomenon, multidimensional and plural meaning" (Torre, 1991).

According to Torre (1991) we can point out some constants thanks to which we can set the conceptual framework that allows us to delimitate what we mean by creativity. Then, creativity can be defined as:

- a) An intrinsically human power: it is defined as capacity, as quality power and current, specific non-human beings.
- b) Intentional, directional: intends to respond to something, to meet internal or from the medium voltage.
- c) Transformer character: the creative person recreates, changes, reorganizes, and redefines the environment through interaction with the dialectic and transformative with itself.
- d) Communicative by nature: it focuses on the other and becomes a message to communicate a certain symbolic system.
- e) A novelty and originality: these have been the attributes most universally shared since the early studies on the subject, becoming it is identifier factor par excellence.

**Figure 2. Central elements of creativity**



Source: Adapted from Torre (1991)

**2.2. Where is the creativity?**



Why are people looking to do things with certainty? And why others are more connected with a more intangible dimension and spiritual (creative)? “The intelligence and creativity of each person is as unique as their fingerprint” (Robinson, 2006)

Our brain is completely separated by two hemispheres, **right and left**. Each of these hemispheres processes information differently; the left one is logical and rational, while the right one is our most creative part. The author Tenedor (2014) describes it as follows:

The left hemisphere is our more "politically correct" side. It is the part of the brain that is guided by rational thought, examining each accomplished fact and deciphering it to provide a structured response. This hemisphere is where we obtain the best results for testing questions with multiple answers; for example: Do you want to go on a trip to Paris? Monday or Sunday?

The right hemisphere is our most creative and emotional side. It deals with the subjective and creative abilities. This hemisphere helps to resolve problems using the forebodings, acting spontaneously and preferring the abstract and uncertain information. For example, the existence of inert matter in our genetic sequence, could be because of some superior being?

**Figure 3. Differences between the two hemispheres**



Source: (Holly, 2013)

### 2.3. As creativity is generated

The changes that originate in the society are becoming increasingly deep and they affect the way in which we understand our environment. Given that these are produced to a high speed and intensity, it is necessary to have a greater flexibility and adaptability as part of all the interpreters of the game.



In this new context, a new factor of competitiveness arises linked to the innovation and knowledge, which constitutes a differential component of the more developed economies: **CREATIVITY**. The manual of Crea Business Idea (2010) details in depth different points about creativity in the company that will be discussed in the next paragraphs.

There are three key elements to compete:

- The level of technological development.
- The ability to generate knowledge.
- **Creativity**.

The three elements interact with each other in such a way that they establish synergistic relationships within their continuous interaction, but it is necessary to have different people profiles for each of the previous areas:

- Ability to use the existing technology -> **Social Capital**
- Responsible for new knowledge, general, basic and applied -> **Intellectual Capital**
- Skills to generate new creative ideas -> **Creative Capital**

#### **2.3.1. The objective of creativity in the company**

On the previous page we have described the characteristics that creativity can generate, but the companies need more indications to believe in it and therefore agree to its implementation. The benefits of creativity in the company can be classified in the successive large groups:

➤ *Development of the business.*

The creativity contributes to the generation of **new business models**. This is thanks to the implementation of new methodologies of business that involves more participants in entire organization.

➤ *Relations with the customer.*

In the application to the productive process, this synergy generates a series of products and services that are more appropriate to the new and potential clients by encouraging the discovery of new market niches, i.e. it will earn the loyalty to customers, attract the competition customer and create new customers.

➤ *New opportunities.*

In line with the previous point, creativity allows for the discovery of new markets or ways to become well known.

➤ *Improving the competitiveness.*

The introduction of creative approaches in management means higher yields through a more efficient use of the technology or the improvement of monitoring mechanisms of the market and technology.

2.7.1.1. The creative transpose

At the core of companies large changes occur that affect all the internal processes and departments of the company. In this regard, actions and procedures are deployed to relax and overcome management approaches, rigid structures and procedures increase, **the worker is the protagonist of the change**, select workers with profiles that provide experience and knowledge can contribute to a greater diversity in the analysis of the day to day running of the company and the continuous training of workers in both areas of knowledge related to the activity of the company as in other unrelated can serve to nurture the company.

**Table 1. Areas of application of creativity in the company**

Department	Creativity
<b>Management/Address</b>	Strategy and mission in the company. New products, services or work ways. Collaborative in projects. Participation in consortium projects.
<b>Production</b>	Management of projects. Certification of quality and environmental. New products, services and processes. Pilot projects. Protection (patents, licenses, etc. )



<b>Administration</b>	Search for external funding sources. Management Systems - ERP.
<b>RR.HH./ Recruitment</b>	Identification of professional profiles. Organizational Structure. Time Flexibility / Teleworking. Continuous Training. Retribution Evaluation of the performance
<b>Commercial</b>	Marketing Strategy. Prospective market. Use of ICT tools for advertising purposes and distribution.

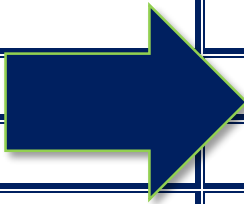
Source: Adapted from Crea Business Idea (2010).

2.7.1.2. Awakening of the creative company

The creative company achieves a balance between the conception of scientific management and artistic management, i.e. between exploration and exploitation of results. This balance in the company requires a change in the culture which must have a series of behaviours and characteristics very similar to those which are listed in the table below.

**Table 2. Differences between types of companies**

<b>Company not Creative</b>	<b>Creative Company</b>
Limited monitoring of the market	Market orientation
Rigidity	Flexibility
Decision-making from above	Participative Leadership
Fear to unknown	Continuous adaptation
Reduce corporative culture	Knowledge Network
Criminalization of fault	Tolerance to failure and incentive system
Centralization of knowledge	Open Communication
Hierarchy	Flat Structure



Source: Adapted from Crea Business Idea (2010).



It also requires that the company continue in the time with the implementation of a series of proposals outlined them below.

**Table 3. Path of proposal for creative organizations.**

<i>What not to do</i>	<b>What to do</b>
<i>Keep what works</i>	<b>Investigate how main goal</b>
<i>Define in detail the procedures of the work</i>	<b>Open Management</b>
<i>Decision-making from the high direction toward the departments.</i>	<b>Create spaces and times</b>
<i>Exploit the same markets</i>	<b>Constant search in new markets</b>
<i>Anchor in methodologies and knowledge</i>	<b>Expand knowledge with other entities</b>
<i>Maintain hierarchical structures and vertical</i>	<b>Create horizontal and open structures</b>
<i>Use rigid procedures for decision-making</i>	<b>Use flexible procedures for decision-making</b>

Source: Adopted from Crea Business Idea (2010).

The above three points have been developed and expanded thanks to the interviews described in the methodology [53] and it can be seen in the annex [83]. The conclusion is that the current teaching methods are not optimal to facilitate the generation of creativity because parameters are fixed by the teaching guide, the professor in this scene has the ability to perform different actions to promote the change in the people. These actions will affect the companies in the incorporation of staff that will be limited to monotonous and repetitive tasks, without proactivity to perform exploratory tasks that may define improvements in their job.

Once we have identified the theoretical framework of creativity, we are going to immerse ourselves in the trends ceramics of the ceramic industry.

## 2.4. Trends ceramics 2014/16

Ceramic tile is the most classic decoration material. Along with the development in time, its trends change and emerge as new human needs break with the traditional scheme. There are certain creative trends being developed in ceramics for the future, but what are these trends? The document made by the Ceramic Observatory (2014; 2015) defines the following trends:

### 2.4.1. True tile

You can appreciate the ceramic tile as a natural material which tends to approach the user in a simple way. From a point of view that looks at the past, but at the same time it shows a new face of technical and esthetic barriers, providing added value through the unique properties that characterize each product.

**Figure 4. Trends ceramics 2014/15**



Source: *Observatorio cerámico (2014)*

### 2.4.2. Computer made

The development of new technologies for manufacturing has led to a revolution in the way in which we understand the product. These new tools at the service of the industry put in evidence the creative spirit that not only reflects the experimentation in relation to materials, but also in the production processes. This is the image in the personalization systems through software and web platforms that allow access to editing tools and even to carry out simulations by consumers.

Figure 5. Trends ceramics 2014/15



Source: *Observatorio cerámico* (2014)

### 2.4.3. Mix & Match

This trend is hydrated by the mash-up phenomenon (remix of two prior works to generate a third). That creative spirit which exalts the mixture above all has moved into the world of design and, in particular, in ceramics can be observed through various mixtures: materials, textures, colors, formats, graphic pattern... The goal is to find unprecedented solutions at the intersection of possibilities that could not have happened before.

This trend then forces the ceramics industry to stand by what happens in their close environment, but also in the peripheries of the habitat, looking for new proposals capable of generating creativity.

Figure 6. Trends ceramics 2014/15



Source: *Observatorio cerámico* (2014)

#### 2.4.4. Patchwork surfaces

This are objects that evoke the past, but should not necessarily mean they belong to the past, they just use the aesthetics of time trying to appeal to the nostalgics. Through these trend surfaces in homes or public spaces they have become blank canvases that the companies reflected proposals to retrieve in design references and art with ability to generate links to the memory of the consumer.

*Figure 7. Trends ceramics 2014/15*



*Source: Observatorio cerámico (2014)*

#### 2.4.5. Keep an eye

This trend encompasses all those collection proposals and projects whose focus is put on a visual perception. Thus, the ceramic acts as a visual hook that invites the user to rethink what it is being perceived. We talk about optical and physiological effects that have to do with the excessive stimulation of the eye or the brain, for example through the brightness, colour and textures or cognitive, etc.

Figure 8. Trends ceramics 2014/15



Source: *Observatorio cerámico* (2014)

#### 2.4.6. Neutral luxury

In the last few years, the taste for cutting products in a more classic, sophisticated and simple way has returned. They are products which are refined and simple textures, with earthy tones and clear and stones of imperfections but also of recharged decorations. All the superfluous are removed and the reasons are subtle austere within the game with the resources of noble materials such as marble or alabaster. In a sense they are proposals that seek the purity of the lines and the simplicity.

Figure 9. Trends ceramics 2015/16



Source: *Observatorio cerámico* (2015)



### 2.4.7. Cartoon graphics

Figure 10. Trend ceramics 2015/16



Source: *Observatorio cerámico* (2015)

They mean an evolution of the trend of decoration of wood and marble, offering a vision of caricature inspiration and inspiration in pop. The marbling of marble and alabaster or aesthetic means of the brick are a take up to transform them into an hyperbole of themselves.

### 2.4.8. Beyond the wall

Apparition of functional coatings which integrate vegetation, illustrations with photoluminescent inks, parts with enamelled areas and not others that create games of shiny and matte. Ceramics present reliefs in the surface that cause an optical effect of movement while games are made with lights and shadows. Through the dimensionality they create subtle effects that are intended to impact the look and create a dynamic surface.

Figure 11. Trend ceramics 2015/16



Source: *Observatorio cerámico* (2015)

### 2.5. Cluster

A cluster is a group of interconnected companies and institutions related (training centers, research units and/or other public or private agents) belonging to a sector or market segment, which are close geographically and that are linked through common and complementary elements, which join to perform joint projects and be more competitive (Porter, 1990).

The changing nature of the markets demand companies to deploy new forms of organization. While large corporations incorporate new learning mechanisms, continuous improvement, reengineering, strategic alliances, etc., there are a number of reasons why a cluster arises in a certain place. One of them is the presence of certain raw materials, factors of production or concurrence of trade routes in a specific place which promote the geographical concentration of enterprises. It was also created by the presence of institutions, whether companies or universities, concentrated in a particular place. Among the many benefits that a cluster generates, it is worth to high light the following: an increase in the capacity to compete, improvement in innovation, collaboration and cooperation between the actors of the cluster, whether businesses, universities, research centers or other external partners. In addition, the development of a cluster initiative results in the creation of new businesses.

This short introduction about clusters helps us to have an approach and therefore to know if the connections generated in them are creators and generators of creativity.

## 3. METHODOLOGY

The design of this project aims to identify the application of creativity in the ceramic tile industry in different environments and to discover global competitive advantages for companies, for this purpose, we have established the above targets of investigation.

This is a **work of exploratory research**, it is not intended to give an explanation about the problem, but only to collect and identify general background, numbers and quantifications, questions and topics related to the studied problem, suggestions of aspects that should be considered in depth in future research, as it tries to describe some homogeneous characteristics using systematic criteria that allow us to obtain basic characteristics of the reality.

*The key in exploratory field work is an idea of whether the way in which we have planned the field work relates effectively with the objectives of the investigation, as we have raised (Vargas Cetina, 2009)*

*The methods used here are qualitative techniques*, they are methods that do not involve measurement or statistics, by focusing on the exhaustive search for information about creativity: how we define it, where it is located and how it is generated; observation of creative trends; analysis of the market and the cluster of ceramics in China, Italy and Spain. *The study is longitudinal*, since it follows-up the data for a period of two years not focusing on the comparative aspect as the document has a great amount of information and it would be extremely difficult to achieve concreteness.

*Detailed descriptions of situations, events, people, interactions and behaviours that are observable. It incorporates facts such as experiences, attitudes, beliefs and thoughts to name a few. It is everything that is related to qualities (Tyrone, 2010)*

As primary sources, they provide first-hand testimony or direct evidence concerning a topic under investigation, literature search was conducted through the analysis of documents extracted from on-line and offline resources, as the Ceramic World (2015) magazine, which offers contents related to the ceramic industry in relation to the production, consumption and exports. Different websites have been consulted to obtain details about the factors of the pest analysis as in the 5 forces of Porter; it's in these two points where they reveal the factors in the environment that are going to affect companies and possible strategies to I/PL to deploy by companies.

The document Ceramic Observatory (2014;2015) sets trends ceramics that are perceived in the evolution of the environment, which we use in this paper to proceed to creative analysis of the ceramic tile industry in China, Italy and Spain. Inside the industry, the analysis is focused in two companies because they are clear examples of the application of creativity. Once selected, the companies are exposed to two parameters of study: commercial design (it identifies those features that make a web page different compared to other websites in the same field) and technical design (products are compared with the trends ceramics) to determine the quality of the creative application.

In order to do the corresponding analysis in each country, we have consulted literature in local language, as translations may make them become inaccurate. We have also consulted documents in English, as 'Exploring the Competitive Strategies of China Ceramic Tile Industrial Cluster in Global Economy' (Mei-Hor Lo, 2013), which explains the cluster Foshan, 'The ceramic cluster of Sassuolo (Italy)' (Bertini, 1998) with the extension of the cluster concentrated in Emilia Romagna or 'Structure patterns in cluster knowledge networks: the case of the Spanish ceramic tile cluster' (Molina and Martínez, 2013) which describes the networks of the cluster of Castellón. The use of these documents related to the topic of the cluster has not been a mere chance, the cluster



serves as a key instrument to capture the information concerning creativity through the interrelationship and business collaboration in a same industry.

Unstructured interviews, interviewees are given space to extend their answers and write about their experiences and feelings. It is used because it is an extremely useful method to develop an understanding of a still not fully understood or appreciated culture, experience, or setting. The questions are targeted to the skilled personnel in the field as professors in the area of business administration, psychology, advertising and communication in relation with the University Jaume I. It is created in the interviews cover the contents *authors that define creativity, possibilities for stimulus it, three parameters: the process, the person, organization, the creativity in the company and how to implement it and tools to enhance creativity.*

“In qualitative interviewing, the interviewee experience has diverse qualities and meanings and the interview can explore these and their social organisation” (Gumbrium and Holstein, 2002). It is a valuable research method to explore "data on understandings, opinions, what people remember doing, attitudes, feelings and likes that people have in common” (Arksey and Knight, 1999)

The interviewee answered to a series of 20 questions with a total duration of approximately 50 minutes. They were allowed to search for general and specific information with their computers in order to provide strong responses on the issue. These data are used in this work to define the concept of creativity through the knowledge of the different authors who describe it, its application and study in the company as well as in the field of ceramic tiles and its implementation in the different moments. The relevant documents are available at the end of the work in the Addendum.

The secondary sources are documents written after an event has occurred, providing second hand views of that event, person or topic. They are structured with the information of the situation in the different countries, we have used them to build the image of the current ceramic industry, both internal and external, and its evolution.

*Likewise, some primary sources are unobtainable (such as if they are out of print or impossible to find) or written in a language we cannot understand, so the secondary source is what you should quote (Lee, 2013)*

## 4. RESULTS

Once that the [theoretical framework](#) was defined, we proceed to study the ceramic industry. It starts with the current situation for that we have a picture and can see how the numeric parameters move. Analisis pestel and five forcer of porter are used as marketing tools, it is factor and strategys to l/p. All it is shown in the SWOT analysis, continuing with the point 4.5 start the study of the creativity in the ceramic industry.

### 4.1. Current situation of the sector

With the beginning of the financial crisis in 2008 and after seven years, the global economy has suffered continued to oscillations during the year 2015. In the report *World Economic Situation and Prospects 2016* (ONU, 2016), the average rate of growth in the developed countries has decreased by more than 54 per cent since the beginning of the crisis. It is estimated that near 44 million people are unemployed in the developed countries, approximately 12 million more than in 2007 while inflation has reached its lowest level in this period.

The great concern comes from the rates of growth in the advanced countries, as it has become more volatile. The main economies with accounts fully open capital have not benefited from the free movement of capital and of the international distribution of risk and therefore they have little macroeconomic volatility<sup>2</sup>. In addition, unemployment benefits have not allowed households to stabilize their levels of consumption. The policies implemented during the post-crisis period as the fiscal adjustment and the quantitative flexibility have not given the necessary stimulus in household consumption, investment and growth on the contrary have made things worse.

## CHINA

It is the second largest economic power in the world, the first exporter and has big exchange reserves. The global recession of 2009 has interrupted the pace of constant growth by the country, and have demonstrated the limits of a growth focused on exports. Chinese growth decelerated to 6,9 per cent in 2015 (before 7.4 per cent) by the result of the global economic slowdown and a fall in exchanges it brought to China a low level in 25 years ago. It is due to the defaulting of the real estate market and the construction sector, it defined in the report the real estate bubble in Spain *The real estate bubble in Spain: A comparison: with the real estate market of China*. (Campo & Zhang, 2013)

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<sup>2</sup> Macroeconomic volatility: It is a concept that helps us to measure the uncertainty of a market or specific value in a defined time

There are still huge disparities between the levels of living of the city and the countryside. These inequalities are of concern to investors. Although poverty has decreased considerably still it affects nearly 10 per cent of the population (i.e., more than 120 million people) living on less than 1 dollar per day. (Banco Santander, 2016)

### Foshan

In 2015, Foshan's GDP increased by 16.0 per cent up to 152 thousand million EUR, it is occupying the third place among the cities of the province of Guangdong. Foshan has developed the manufacturing of equipment, metallurgy, chemical and petrochemical products, plastic products, the manufacture, ceramics and electronics as its main industries. Exports remained stable (30.2 per cent) and imports fell (6.7 per cent) compared to the previous year. The main characteristics of Foshan is a city "SME" because three quarters of employment are in this form of society. (Meagher, 2015)

### ITALY

The recession of the Italian economy began at the end of 2010 continuing into 2014 (-0.4 per cent) and growing moderately in 2015 (0.8 per cent) it due in particular to the on going process of reduction in the debt. This last year they were adopted reforms each month focused on the institutions, the working area, the administration, justice, taxation and the surge in consumption through lower taxes. Despite making a spending about 10 thousand million EUR, consumption remained stagnant, investment continued to fall, the cases of insolvency of companies increased for the seventh consecutive year and the indicators of confidence were ascending from summer. Inflation has fallen sharply, however, the public debt remains very high (more than 2.1 billion EUR) (Banco Santander, 2016)

### Emilia-Romagna

The recession of the previous years stopped in 2014, this consequence did that exports grew substantially in conjunction with the expansion of world trade but investment spending has marked a new fall. For 2016 is expected to lead to a recovery of private demand as a component of investment. The larger companies in the region are the mechanical, the car or the ceramic retook the path of economic boost thanks to the export. The export behaved in an extraordinary way with an increase of 13.8 per cent and imports with a 13.02 per cent compared to the previous year. The vast majority of enterprises are small or medium-sized but the larger size is the cooperative company. Currently It has a total number 909.783 companies. (Banco Santander, 2016)

## SPAIN

The Spanish economy began a gradual improvement over 2013 with modest advances of GDP. This change of trajectory has continued in 2014 by the relief of the financial tensions and the labor market perception improvement. It is in 2015 where it has seen a growth of 3.2 per cent year being the country most grows of the European Union. The Business investment continuous improvement consequence to goods component supported by exports, the reduction of the uncertainty, the alleviation of financing and, finally the financial position of the non-financial corporations. (Banco Santander, 2016)

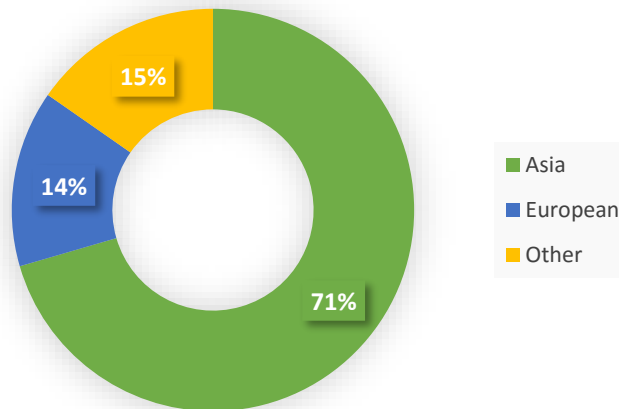
### Community Valenciana

The recent evolution of the Valencia economy and the media that have been supporting their recovery forecast that GDP growth will stabilize during the next two years around 2.7 per cent, five tenths above its historic average (1981-2014). The activity data of the closure of 2015 and the beginning of 2016 shows that the creation of employment and the growth of domestic demand and maintain its dynamism. However, mention should be made of the behavior of the external sector, and mainly the exports and expeditions, which registered an increase of 11.4 per cent recovering the second position as the exporting community. Valencian imports recorded an increase of 12.2 per cent compared to the year 2014. Respect to the typology of the business fabric, it should be noted that the majority of enterprises are small and medium-sized enterprises with a total number of 339.533 companies. (BBVA research , 2016)

#### 4.1.1. The global production

In 2014 the global production of tile reached the figure of 12.409 million square meters, which represents a growth of 3.6 per cent compared to the previous year, with 82.7 per cent of the global production concentrated in 10 countries. By continent, Asia is positioned as the largest producer with China getting a figure of 87.86 per cent. Europe experienced a slight growth at around 0.6 percent, with a total of 9.6 per cent of the global production thanks to the increase in Spain and Italy (90.3 per cent). (Ceramic world Review, 2015)

Graphic 1. Global production for continent



Source: Adapted from Ceramic World Review

Table 4. Top production countries

	2013 (Sq.mt Mill.)	2014 (Sq.mt Mill.)	% on 2014 national consumption	% var. 14/13
<b>CHINA</b>	5,700	6,000	40.4	5.3
<b>SPAIN</b>	420	425	3.4	1.2
<b>ITALY</b>	363	382	3.1	5.2

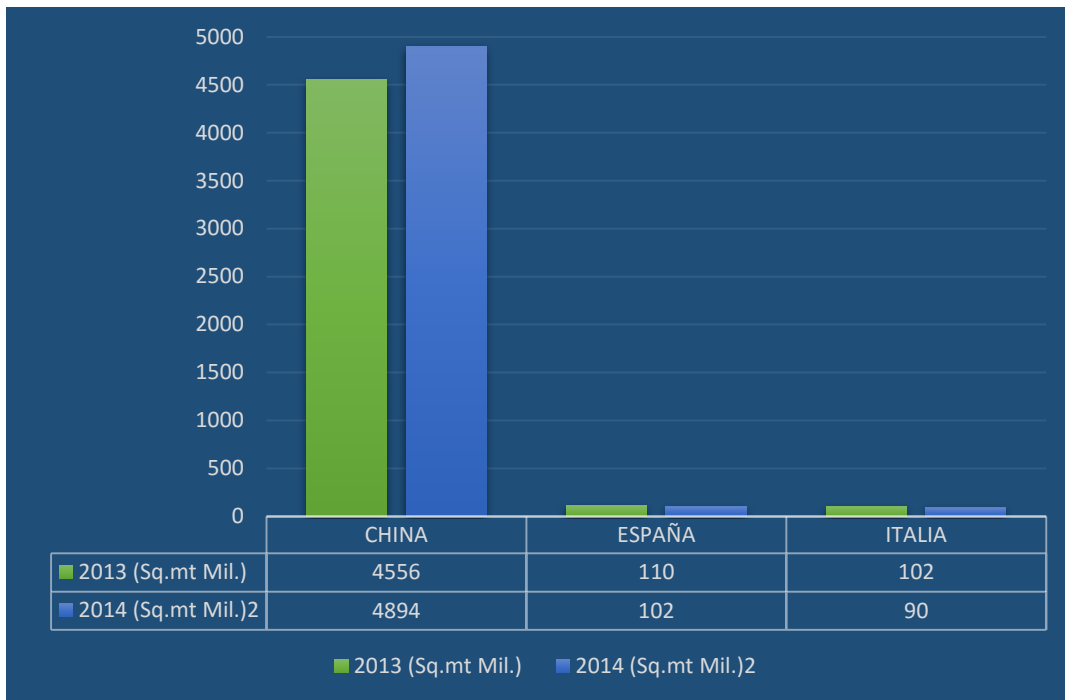
Source: Adapted from Ceramic World Review (2015)

#### 4.1.2. The global consumption

The global consumption of tile experienced a similar growth in the production, and reached 12,095 million sq. up 4.2 per cent on the 11,604 million sq.m of 2013. Asia's shares of global demand reached 67.5 per cent. Rising from 7,696 to 8,166 million sq.m [up 6.1 per cent on 2013, greater than the growth in production). China domestic consumption is estimated at 4,894 million sq.m, 40.4 per cent of the global consumption.

We found relevant data in the case of the European Union, where the consumption has decreased from 855 million to 848 million square meters. Almost every country was guilty in that downturn with the French and German markets shrinking by roughly five per cent, from 123 million to 116 million square meters in the former, and 116 million to 110 million square meters respectively. Italy demand has lowered by 3.2 per cent to 90 million square meters and Spanish demand plummeted by 6.4 per cent to 102 million square meters having never truly recovered from the shock inflicted upon the construction sector during the Global Recession. (Ceramic world Review, 2015)

Graphic 2. Top consumption countries



Source: Adapted from Ceramic World Review (2015)

#### 4.1.3. The global export

Global exports increased by just 1.05 per cent from 2.655 million to 2,683 million sq.m, a much slower rate of growth than in the previous 4 years. The biggest increase in both percentage and absolute terms was in the European Union, which exported 819 million sq.m (up to 3.9 per cent from 788 million sq.m in 2013) thanks to the continued recovery of Spain (339 sq.m of 2014) and Italy (314 sq.m of 2014).

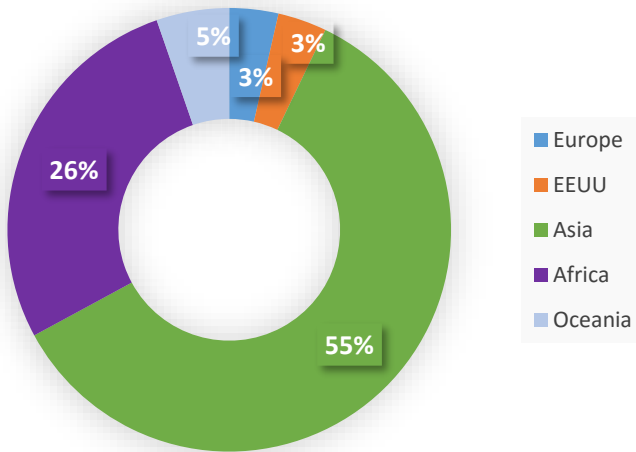
Asia experienced the first real slowdown in exports, which remained virtually stable at 1,488 million sq.m (+0.6 per cent), 55.4 per cent of the global total. China exports experienced the first real downturn, dropping from 1.148 to 1,110 million sq.m (down 3.3 per cent on 2013) equivalent to 41.4 per cent of global exports. (Ceramic world Review, 2015)

Table 5. Top exporting countries

	2013 (Sq.mt Mill.)	2014 (Sq.mt Mill.)	% on 2014 national production	% on 2014 global exports	% var. 14/13	Average export Price (€/sq.m)	Value 2014 (million €)
<b>CHINA</b>	1,148	1,100	18.5	41.4	-3.3	5.0	5,530
<b>SPAIN</b>	318	339	82.7	12.6	6.6	6.9	2,328
<b>ITALY</b>	303	314	82.25	11.7	11.7	13.1	4,109

Source: Adapted from Ceramis World Review (2015)

Graphic 3. China's export

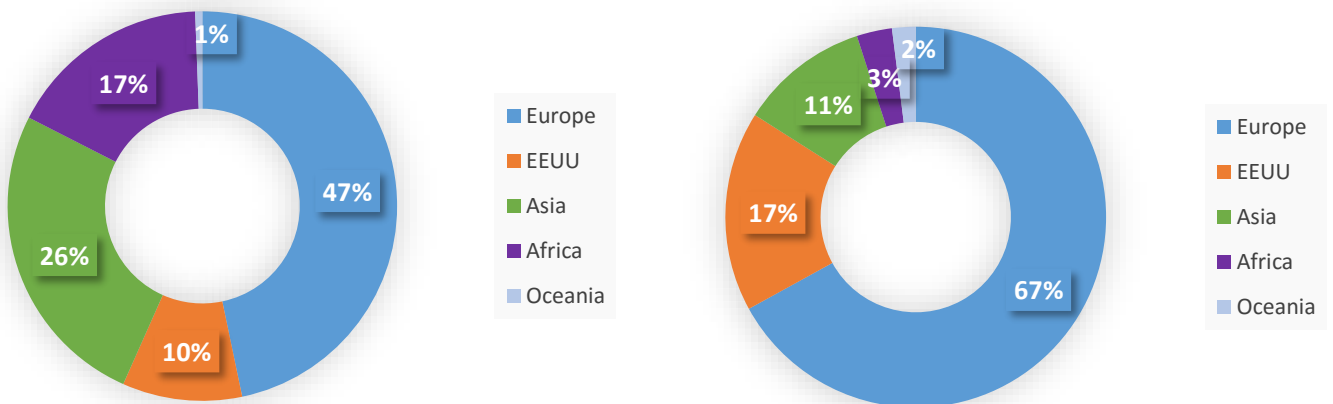


The principal market supposes more of 55 per cent in China and Italy

Spain is the unique market that it does not exist (47 per cent)

Source: Own development

Graphic 4. Spain's and Italy's export



Source: Own development

#### 4.1.4. Evolution of the sector

With the data presented above, we could release a first conclusion stating that there is a small recovery upwards in the ceramic industry in countries such as Spain and Italy and a continuous evolution in China.

Nevertheless, the ceramic industry faces its future in a still very difficult scenario. Access to credit has led ceramic tile companies to deleverage and in some cases, to difficult situations because of a lack of liquidity. However, it seems that financing will be more accessible to companies in the industry thanks to the creation of several programs: *Horizon 2020* in Europe (European Commission, 2016), which is an important instrument of funding to fight the crisis, investing in the future and employment creation; and the *Cooperation Fund RMB* in China, an instrument of industrial financial cooperation with other countries. (ISIS, 2015)

The political instability in certain markets has affected exports, mainly in the markets of Russia and the Middle East. Furthermore, the industry will have to face some important difficulties due to the need of obtaining risk coverage<sup>3</sup>.



The Spanish tile industry continues to make considerable efforts of management and organization to be more competitive in the international arena.

The Italian domestic market presented a fall of 6.9 per cent according to data, and sealed the growth of the sector in Italy.



The Chinese market volumes in the exports fell 3.3 per cent being the figure of 1,100 million meters. (Ceramic world Review, 2015)

<sup>3</sup> Risk Coverage: operation that seeks to reduce the uncertainty in the prices of some asset.



#### 4.1.5. Competitive advantages

China is the best production, consumption and export because it has the best system of production for the low cost.

Italy is the third competitor. It is a good player in this sector because it obtain the best price and recognition.

Spain is the second competitor. The product are good distribution for the rest of the world and it has an appreciation for his quality.

## 4.2. PEST Analysis

### 4.2.1. Political factors

Fiscal policy can be defined as the use of public spending and tax collection in order to have an impact on the economy. Changes in the level and composition of taxes and public spending can influence the following variables in the economy:

- Growth of demand and the level of economic activity.
- The pattern of allocation of resources.
- The distribution of income.

The three possible positions of a fiscal policy are: *expansive*, *contractive* and *neutral*: *The expansionary fiscal policy* implies a net increase in public expenditure through increases in public spending or a lower tax collection, or a combination of both. This will result in a higher budget deficit or in a lower surplus. *Contractionary fiscal policy* occurs when the net expenditure of the government decrease either through increased tax revenues or by reducing public expenditure, or a combination of both. This would lead to a lower fiscal deficit or a surplus, or a checked surplus if the government had a balanced budget. *The neutral fiscal policy* implies a balanced budget.

The application of one or the set of fiscal policies by the different governments will influence the functioning of the purchases and sales of the companies and, on the other hand, in the clients themselves.

It then analyses the various political data to learn in each country the fiscal policy that is applied.

### China Policy

In China's policy, the economic doctrine par excellence is Communism. This means that Central Party has different requirements in compliance with the rules in the society, which leads to particular situations where human rights are not respected. (Tsang, 2000)

The public expenditure was 25,109,714 million EUR in 2015, a 99 per cent more than the US (2,573,427 million EUR), of which a 12.36 per cent was allocated in education and with investment plans during the year 2016 in I+D+i of 240 million EUR. Among the different policies carried out by China, is interesting to know the renewal in the monetary instruments in order to bolster the GDP per capita to 10,700 EUR, thus increasing the wealth of the population.

The region of Foshan has deployed a modernization of policies in all the industrial sectors and in particular in the ceramics sector, with an investment of 52 million EUR. (Banco Santander, 2016)

Therefore, fiscal policy carried out in China is expansive thanks to the data described above.

### Italy Policy

In Italy the political system is characterized by instability having a total of 63 governments in the past 70 years, there is also pressure from Brussels to control the deficit as it is a country where the risk premium rose to high levels, which generated uncertainty, and the administrative deficit reached 20 billion EUR. However, Italy currently has a good economic health. (European Commission, 2016)

The public expenditure was 78,081 million EUR, a 14.9 per cent of the total expenditure of the EU (523 billion EUR), of which a 7.6 per cent was allocated in education, being this macroeconomic data the lower of the EU, which is a 10.3 per cent. The investment in R&D for 2016 is set at 25 million EUR.

The Emilia-Romagna region has been allocated an investment in I+D+i of 12 million EUR for the connection of railway lines and roads alternatives that improve the communication of its industrial fabric by facilitating the exchange of goods. (Banco Santander, 2016)

Consequently, fiscal policy conducted in Italy is contractionary.

### Spain Policy

The political situation of Spain is unstable, as there is not a central government since 20th December and due to the possibility of new elections, it is worth highlighting that the ideological differences presented by some parties of the left make the investors untrustful. Another problem is the Catalan juncture and their willingness to be a separate State from Spain. (LM, 2016)

The public expenditure was 51,847 million EUR, a 9.9 per cent of the total expenditure of the EU (523 billion EUR), a 9.1 per cent was allocated in education, being this macroeconomic data close to the EU average, a 10.3 per cent. The investment in R&D for 2016 is set at 30 million EUR, one of the highest.

The Valencian Community has been allocated an investment in I+D+i of 11,79 per cent of the general budget for 2016. The province of Castellon has increased the public investment in 2015 aimed at 52 EUR million with the intention to raise the industrial competitiveness. (Banco Santander, 2016)

Therefore, the fiscal policy of Spain is contractionary.

#### 4.2.2. Employment laws

The employment policy is government intervention in the labour market with two objectives: the creation of employment and the protection of the unemployed.

The measures to achieve these objectives are diverse, among which are:

- Proceedings on labour supply: it does not create employment, they are the changes that occur between the age of retirement and the legal age to work.
- Action on the demand for labour: if it creates jobs, which aims to enhance the business.
- Training of workers: it develops employment, facilitates and enhances the training of professionals.
- Unemployment protection: benefits and allowances for those who lose their jobs.

#### China Employment Laws

The labour rate in China is of 71.1 per cent, being the workers in rural areas (country) a 67.2 per cent. Working hours have been relaxed, but that does not mean that they have been reduced, since the remuneration for labour remains one of the lowest in the world, having signs of change on the part of the workers to the current Government. (Baker & McKenzie, 2013)

The income per capita is fixed at 3,414 EUR, being the highest in its history.

#### Italy Employment Laws

In 2015 the 'new labour reform' was applied. This reform lowers the compensation per worked year and offers new AID FOR SMES. It is also offers rebates to the indefinite contracts, is action increase by 24.1 per cent in the last quarter of 2015 this type of contract.

The percentage of unemployment is a 11.8 per cent, being the rate of youth unemployed 44 per cent. As a curious fact, the tile sector in Italy has created 26,000 jobs in 2015, being one of the few sectors that has had a push in recruitment. (Ministero del Lavoro, 2015)

## Spain Employment Laws

The labour reform carried out in 2012 helped to expedite the cost of restructuring the Spanish economy, favouring the flexibility and temporality in the labour contract. Current jobs are poorly paid and there is no prospect of change, even it was agreed that the wage increase would be below 1 per cent and there is little possibility of increase of the SMI.

The occupied population has a figure of almost 15 million, with the unemployment rate of 21.6 per cent. With such a high rate, young people see the labour panorama complicated and they often decide to migrate, being the percentage of 6.1 per cent. (Munera, 2015)

### 4.2.3. Economic factors

The growth or decline sets the pace of growth in the production of goods and services in an economy, and therefore your income. To measure this factor, we use the GDP, which is the value of market prices of final goods and services produced in the same country. This economic factor is very important because it is a necessary condition to know the living standards of the population and thus enough employment can be created. The tile market is experiencing an increase as a result of the confidence in the consumption of the customers. The drawback is the excess of production that is not covered by the demand. Interest rates: The families are conditioned by the interest rate that are forced to endure, either by a mortgage or by bank loans they have. If the rate is lower, they will be able to use their incomes to consume more goods. If, on the other hand, the rate is higher, its consumption will be reduced.

- Fluctuations of the stock market: The stock market has many benefits when it opens up to new ways to be financed, which may give gains or losses for the company.
- Changes in fuel price: fuel has always been considered a powerful indicator of the economic situation, since it is a necessary and a very precious good. Since August 2015 there is a downward trend in oil prices.

### China Economic factors

China is the second largest economy in the world, with a GDP of 8,580 billion EUR, only surpassed by US.

It is currently suffering a decline of a 7 per cent as a result of the decrease of exports of their products. However, China remains the first exporter in the world, with a 5.7 per

cent. this is due to the lower power of purchase of the countries in crisis situation, etc. (BBC Mundo, 2016)

Even being the number one in the ranking of manufacturing products with 5,700 sq. mt., China is considering a change in its model, with a greater role of the services sector. Today, the importance of the industrial sector is very high when you produce the 47.8 per cent of the planet.

### Italy Economic factors

Italy is the eighth of the world economies. The downside is that this country is currently being hit hard by the economic crisis.

The GDP is situated in 2,152 billion EUR with a growth of 0.9 per cent (slight signs of exit from the crisis). (Trading Economics , 2015)

Its economy is based on the services sector, even so, it is the 2nd world exporter of the ceramic sector. Ceramic sector is so important that an 80 per cent of the companies in ten municipalities are dedicated to this activity.

### Spain Economic factors

The thirteenth world position is for Spain. We also find an economy punished by the economic crisis and that has been hit harder than Italy. The GDP is situated in 1,421 billion EUR with a growth of a 1.7 per cent, the world economy with the greatest growth. (Trading Economics, 2015)

Its most important sector is the services sector, even so, it is the first European producer of ceramics and the third exporter in the world with a turnover of 2,797 million EUR. In Castellón de la Plana 94 per cent of the companies are involved in this sector.

#### 4.2.4. Sociocultural

It is the study of the human being as a member of a social group and as part of a culture, where shared items and differences are very important, with a holistic strategy, which is focused on the globalist and economic theories.

### China sociocultural context

China has a collectivist society which prioritize the union of the group over the individual, characterized by the consumption of their own products (made in China) with some tendency to consumption of foreign products.

The society distributes income mainly in education, luxury products and consumer goods. With an increase in consumption of households in a 7.5 per cent, and the consumption in the ceramic tile sector is situated in a 39.4 per cent.

The dispute is that 120 million people live on less than 1 EUR per day. The distribution of the society is a 57.9 per cent that are between 25 to 69 years. (Banco Santander, 2016)

### Italy sociocultural context

It is a society where consumption prevails over savings, with preference to the use of domestic products "Made in Italy". At the moment of selecting the shopping habits, Italian people choose quality and after-sales service as key factors.

Society distributes income mainly in education, luxury goods and services, giving priority to those products with clear information. With an increase of household consumption from a 0.3 per cent, and the consumption in the ceramic tile sector is situated in the 17 per cent. The distribution of the society has a 60.8 per cent of people between 25 to 69 years. (Banco Santander, 2016)

### Spain sociocultural context

Spanish society is characterized by a high demand in all purchases, where adult people is more conservative and young people try different things, therefore, the latter tend not to be faithful to the marks. Among the different key factors to establish preferences, we find the ease of payment and the after-sales service. In the last months there has been an increase of a 2.4 per cent in the consumption of households, being the acquisition of domestic tile ceramics products a 20 per cent. The distribution of the population is a 62 per cent between 25 to 69 years, with a low birth rate. (Banco Santander, 2016)

#### 4.2.5. Technological context

- Automation: The use of new technological tools is essential for greater business evolution and to be able to properly meet the demand. The company offers a product made manually when it wants to show consciousness about quality and detail, but you should keep in mind the different products in the production in order to reach a greater share of consumers.
- ICT: The introduction of ICTs in the current business landscape is necessary to take that step in the development, learning and interacting closer with the environment. The changes in the company must be at the forefront of innovation and implementation technology for a better development of their products.



- Development of forms of sales: Sales through online channels and through trade is a system that has allowed the expansion.

### China technological context

China is the second country in importance regarding technology and the first world producer. The total volume of its exports was 526 million EUR.

The plan of industrial reconversion and promotion of innovation called "Made in China 2025" was expected to make China switch from producer to creator of technology, contributing to this increased public and private investment in R&D. (Fontdeglòria, 2015)

Note that in the ceramic sector, technology is imported from Spain and Italy.

### Italy technological context

Italy is the second country in Europe with the greatest volume of business, whose production is of 64,234 million EUR. The export of technology has been reduced since 2003 with a percentage of 3.29 per cent to 1.75 per cent in 2014.

Even so, it is a manufacturer country of machinery and equipment for the ceramic sector. Among its novelties, we find collection and transformation of energy, photovoltaic properties and end up, resistant to graphite and to wear; it also includes new formats of measure as they are the 40x120 pioneers in the sector. (Trading Economics , 2015)

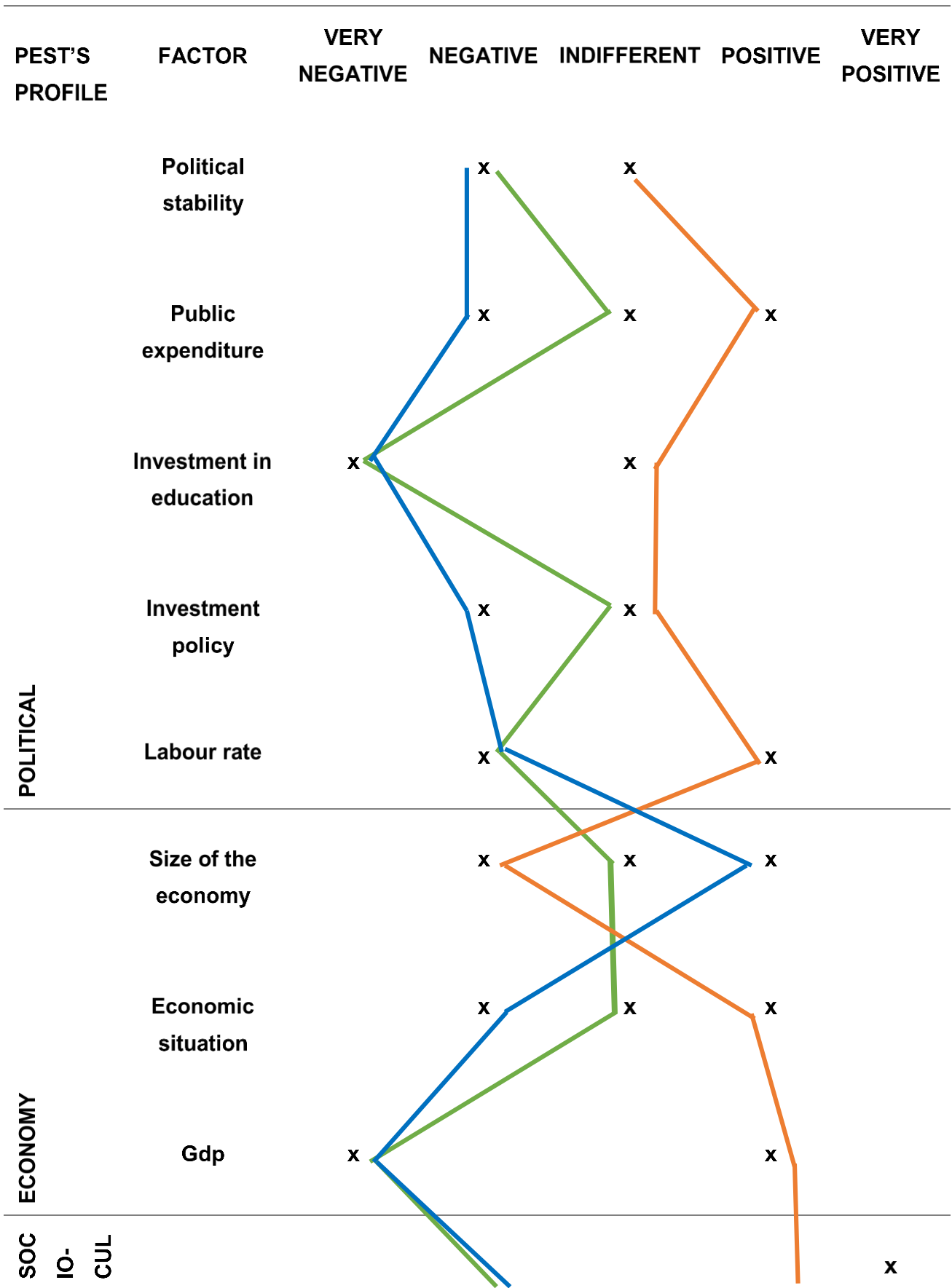
### Spain technological context

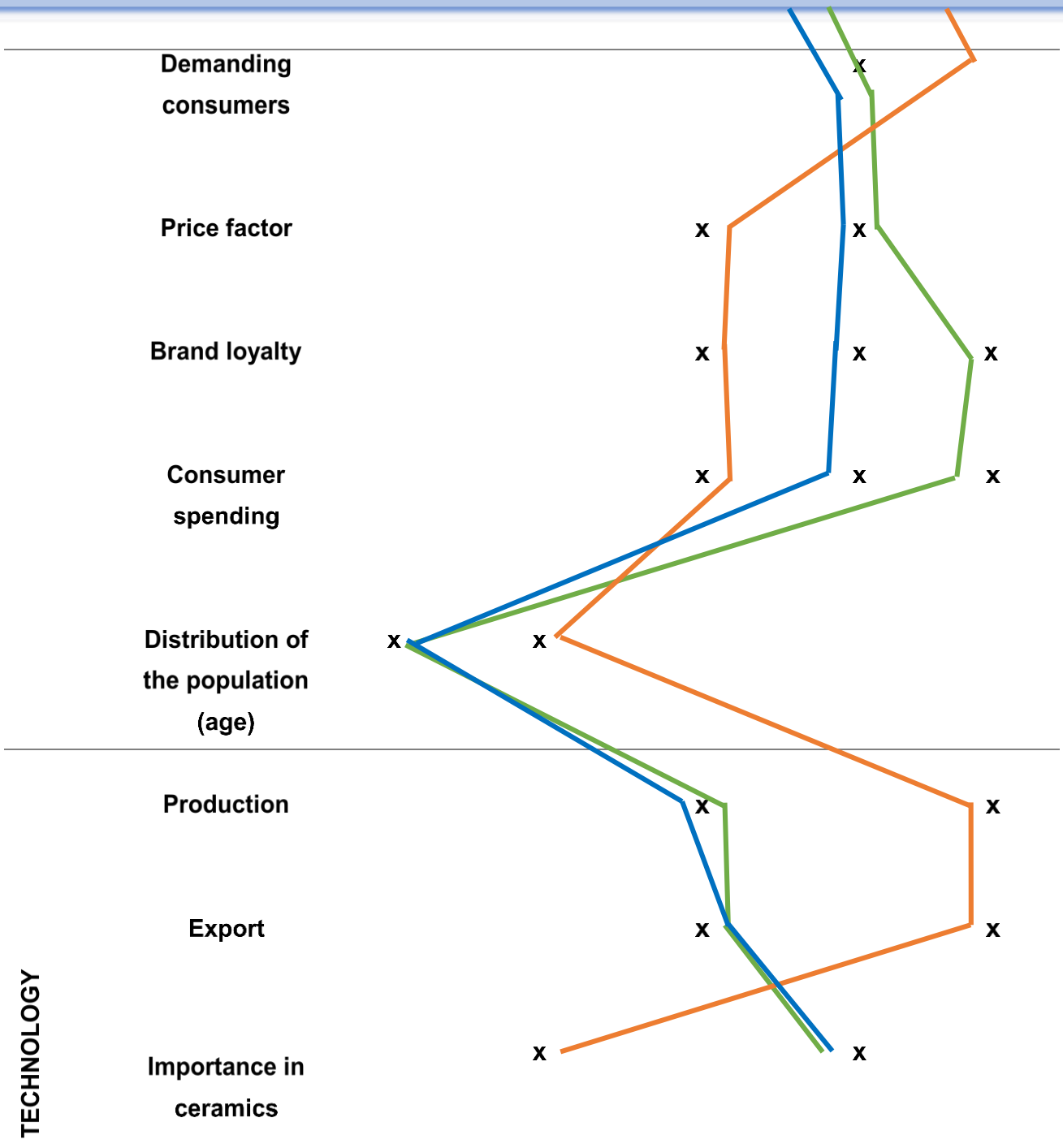
The fifth largest producer of technology is Spain with a production of 3,891,953 EUR, the reduction as a consequence of the crisis has been -0.4 per cent from 2003 to 2014. Like Italy, Spain has a strong sector focused on the production of ceramic machinery and equipment, like in these examples: Sintering by spark, photovoltaic and digital printing. (Trading Economics, 2015)





4.2.6. Pest's profile





SPAIN    ITALY    CHINA  
■    ■    ■

### 4.3. Porter's five forces analysis

#### 4.3.1. Buyer power

It is the capacity to negotiate with clients of the tile sector. For example, the smaller number of clients, the greater will be their bargaining power to press the demand and lower prices.

This threat depends on factors such as:

- Concentration of number of clients versus number of companies.
- Possibility of negotiation.
- High volume of purchase.
- Costs or facilities so that clients can change of company.
- Availability of information for the buyer.

The current situation has been that the number of clients in the consumer Ceramic tile sector has decreased drastically, i.e. the reduction of purchases of flats by customers has caused a low production of buildings by construction companies, giving different situations such as the closing of a large number of business and in other cases a drastic decline in the shopping cart. This represents a fall in sales of tiles by shortening the complex business and increasing the bargaining power of customers. (KPMG, 2015)

China has the largest number of clients and companies (286 companies), it includes the best positioning in price (5.0€/sq. mt.) obtaining as a result **a less bargaining power by customers**. The power of volume of purchase by customers is high.

Italy is the second market in number of customers and companies (144 companies), it has the highest price (13.1€/sq. mt) thanks to the brand prestige achieved, which represents **a low bargaining power by customers**. Customers purchase a large amount of volume (17 per cent), being exports more important.

Spain is the third market in customers and is situated behind Italy in companies (116 companies), it has a price of intermediate product (6.9€/sq. mt.) with the disadvantage **that the bargaining power of customers is high**. The domestic market is 20 per cent of the sales, so customers purchase a considerable amount of volume.

The **choice of company** will be determined by the price, the aesthetic characteristics (design), the quality and the information provided, there is currently a large supply in the market. Thanks to media and current transport there is a **constant information of the market** having the option to choose the product that best suits the customer.

#### 4.3.2. Supplier Power

It is the capacity to negotiate with the suppliers of a sector. It may be more comfortable or less depending on the concentration of enterprises, the number of suppliers...

This threat depends on factors such as:

- Concentration of number of suppliers versus the number of companies.
- The volume of purchase.
- The amount of raw materials substitutes.
- Costs of raw materials that would change.
- Number of substitute products available on the market.

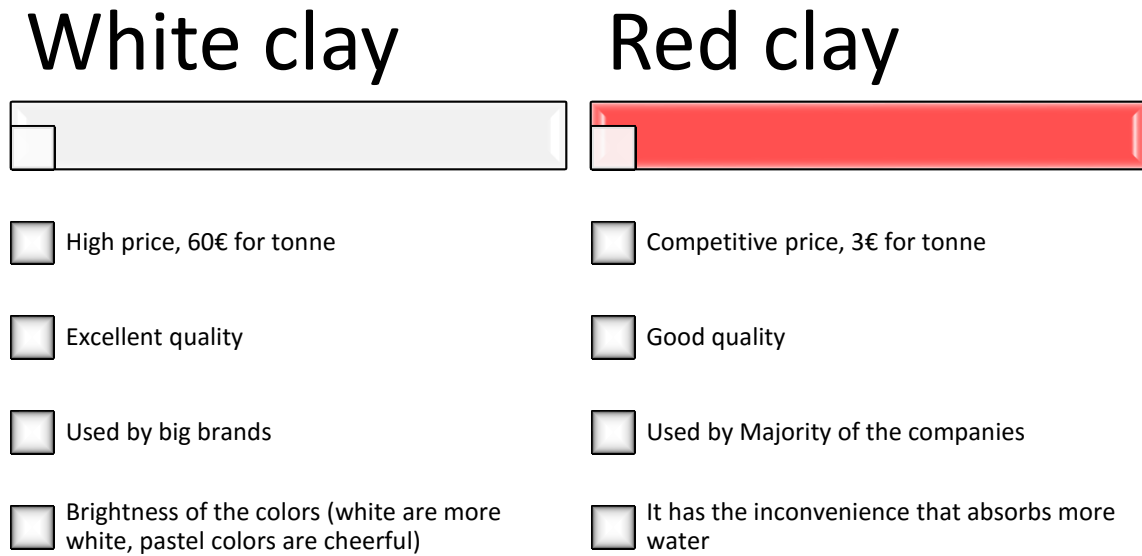
**Providers** that can be found are of manufacture of frits, enamels and ceramic colors; extractive industries and atomizers; construction of machinery.

The factories of chips, enamels and ceramic colors make up a small group of large companies, with an international presence and a position of global leadership. They bring to the ceramic production an important part of the activity of I+D+i and they represent the differential element in terms of design and quality end of the tiles. The extractive industries and atomizers provide the raw material used by the industry; it is clay either in the form of mineral or subjected to the treatment of atomization, on which after the Ceramic enamel is applied. And finally, the construction of machinery is the weakest part of the ceramic industry and where it is shown a greater degree of dependence on companies outside the district. In particular, the construction of machinery ceramics in China is reduced and most of the same is imported from Italy and Spain, which have the largest market. Spain has the major technological developments in reference to the impression ceramics (Kerajet). (Budí, 2008)

**The purchase volume** is determined by the ability of the company to acquire raw materials, at this point, the small size of Spanish companies hurts the Spanish ceramic sector and reinforces the Italian and Chinese ceramic sector.

## The quantity and cost of raw materials

Figure 12. Differences of white and red clay



Source: Own development

The best feature of the white clay is the brightness of its colors, whites gain purity, the vivid colors are much more intense and the pastel colors are cheerful and not off. The great advance of the white clay has been more aesthetic than technical. As a raw material it is more expensive and only the big brands have opted to manufacture in white clay. The arrival of the white clay has not led to the abandonment of the red clay; many other manufacturers maintain the lines of red clay. Today, both options coexist in the market, and it is the consumer who makes the choice between them. (Soluciones cerámicas para el hogar, 2008)

**Substitute products available** in the market are: natural stone, wood, steel, paint, paper, vinyl, polished concrete, glass, etc. As you can see, there is a large number of products fighting in direct competition with the tile, and each one has its own advantages like price, resistance, lightness, etc. which we will see in detail in the section [Threat of substitution \[42\]](#).

### 4.3.3. Threat of new entrants

This is the potential entry of companies that sell products as substitutes or alternatives to those of the sector or market.

This threat depends on factors such as:

- Economy of scale.
- Product Differences related to property.
- The value of the brand.
- The capital requirements.
- Access to distribution.

Large enterprises tend to be more profitable than small and medium-sized enterprises mainly due to their economies of scale. A great company buys a lot and can adjust prices with suppliers. This way, they obtain a better price from the raw material. If a company can **'scale'** effectively its business and reduce costs, this will give it a greater flexibility to lower the prices and, in turn, get more benefits. This would be a problem for the Spanish ceramic tissue, where the vast majority of companies are SMEs; and a great benefit for the companies Italian and Chinese ceramics.

To identify product differences in regard to property, we show some differences between **ceramics and porcelanato**. The two used the clay as the essence of their manufacture, but the differences occur the materials for the mix and the ways of work makes them hard to say if one is better than the other, instead we need to determine where are they most useful. Italy has specialized in the manufacture of porcelanato while Spain and China have done so with ceramics.

**Table 6. Comparative of porcelanato and ceramics**

<b>Design</b>	<b>Size</b>
<i>In regard to texture both in Ceramics and Porcelanate are mates, bright (more polishes the second), glossy, rustic enamelled or semi-matt, but by the manufacturing process, in ceramics you can observe more colors and shapes, although the porcelanato plays the desing of natural materials such as stone marble, in this case send the taste.</i>	If the idea is to look for a material that has tile from small dimensions (10x10 centimeters) in ceramics can be found, thereafter the two offer different sizes that it can reach up to a meter of length in one of its sides

<b>Resistance</b>	<b>Absorption</b>	<b>Clean</b>
<i>The porcelanato is stronger. It is special in places with high flow of people or when it is going to have high transit of products.</i>	The porcelanato is of low water absorption (0.2 to 0.5 per cent), unlike the ceramics that can increase this percentage up to a ten per cent.	In porcelain and ceramics has been achieved a high brightness or their surfaces transmits image of hygiene, the cleanliness is more easily., therefore its cleanliness is more easily.

Source: Own development

**The value of a brand** is the added value that it provides to the product, as it is perceived by the consumer.

Figure 13. Comparison of the brand value



Source: Own development

**The capital requirements.**

Table 7. Different requirements of capital

<b>CHINA</b>	S.A.: 4.425.527€ S.L.: 900.000€
<b>ITALY</b>	S.A.: 120.000€ S.L.: 10.000€
<b>SPAIN</b>	S.A.: 60.000€ S.L.: 3.000€

Source: Own development

The form of **distribution is selective**, that means it selects only some points of sale determined by the style of the business. This type of marketing has some distribution costs. When choosing the points of sale, there is a smaller number, being able to delete those establishments which involve a higher cost without profitability. The downside is that with this strategy we renounce many points of sale and a part of the sales. In theory, we will have lower income to cope with our costs of lower sales but in many cases, the strategy that works is to focus on where we are stronger and waive part of the market. Currently, many business strategies seek to guide the company toward a very specific market, to be stronger in one part, instead of weak in all. (Requena, 2011)

The distribution channel they possess is short and there are few intermediaries between the product and the consumer, the tile is marketed in specialized shops. In addition, the strategy of drag and push the manufacturer directly impacts the intermediary in a special way and through incentives to achieve so that it shows a clear preference for your brand. The resellers offer the consumer the brand that most benefit offered, but should always look for the good of the client.

#### 4.3.4. Threat of substitution

The possible substitutes for the products offered in the sector or market, which may be relevant to the consumer.

This threat depends on factors such as:

- Propensity of the buyer to replace goods.
- Relative prices of substitute products.
- Cost or ease of replacement for the buyer.
- The perceived level of differentiation of product or service.
- Availability of close substitutes.

**In the propensity of the purchaser to replace**, as well has defined on the point [Sociocultural \[27\]](#) where we explain the differences between the different societies, each one is governed by its specific characteristics. Therefore, in China the mentality is changing and they acquire both domestic and international products, consumers have high propensity to change. Italy for its part has a great root by domestic products, consumers will have little propensity to change. Spanish people have two forms of fidelity, young people are more likely to change unlike adults.



The price of **alternative products**:

- ❖ Natural stone to 12.95 €/sq. mt.
- ❖ Wooden pallet to 8.95 €/sq. mt.
- ❖ Technical Floor of steel to 110 €/sq. mt.
- ❖ Paint to 8.5 €/sq. mt.
- ❖ Role of vinyl 6.28 €/sq. mt.
- ❖ Concrete to 58.75 €/sq. mt.
- ❖ Glass to 0.5 €/sq. mt.

As well as indicating the text, the price of substitute products is not more economic than the tile, therefore **the consumer has difficult to change**. The majority of consumers do not identify or not know how to appreciate the different qualities in ceramics and they are more prone to allow oneself to be advised by the qualified person in the establishment.

However, another percentage of consumers use ICTS (Information and Communications Technologies) to identify which is the product that best adapted their needs. Then, **the perceived level of differentiation is low having a higher percentage of consumers who do not know how to differentiate the product and need advice**.

Currently, with the means of logistics and distribution centers available (shops, department stores, etc.) there would be **no barriers of unavailability of the substitute products**.

#### 4.3.5. Competitive rivalry

Companies that compete directly in the same industry or sector, offering the same type of product/service.

The degree of rivalry between competitors will increase based on the greatest number of existing companies.

This threat depends on factors such as:

- Power of competitors.
- Power of suppliers.
- Industrial growth.
- Industrial overcapacity.
- Diversity of competitors.

In the ceramic industry there is a **high rivalry of competitors** as a result of an excess which has been adjusted over time, a lower demand for products has made businesses that have not been able to adapt to this circumstance disappear.

As well indicated in paragraph [supplier power \[37\]](#) the number of suppliers is limited and therefore will have a **high power of negotiation**, this is the reason why ceramic tile companies have little choice to change.

In paragraph [the global production \[16\]](#) we analyze in detail the growth of the sector, taking an increase of 3.6 percent. Since 2002, the ceramic industry has created an excessive **overcapacity** as a result of the demand in the golden age of the construction. After to 2007 it gives a priority to limit this overcapacity and produce as a result of what you it is going to be sold.

There is a **great diversity of competitors** in every area, with China with 286 companies, Italy with 144 enterprises and Spain with 166 companies.

**Table 8. Porter’s five forces analysis**

	Degree			Profitability		
	<i>China</i>	<i>Italy</i>	<i>Spain</i>	<i>China</i>	<i>Italy</i>	<i>Spain</i>
<a href="#"><u>Buyer power</u></a>	Medium	Low	High	Low	High	Medium
<a href="#"><u>Supplier power</u></a>	High - Medium	High - Medium	High – Medium	Medium	High	High
<a href="#"><u>Threat of new entrants</u></a>	Low	Low	Medium	Low	Low	Medium
<a href="#"><u>Threat of substitution</u></a>	Low - Medium	Low - Medium	Low - Medium	Low	Low	Low
<a href="#"><u>Competitive Rivalry</u></a>	High	High	High	Low	Medium	Low

Source: Own development

#### 4.4. SWOT analysis

##### 4.4.1. Strengths

###### **CHINA**

- Second world economy.
- First global economy in ceramic exports.
- Public spending increased by 25,109,714 million EUR more than in US.
- Labor rate of 71.1%.
- First producer and second in importance in technology.
- Main global ceramic producer with 6000 mill. Sq. mt.
- Ceramic domestic consumption is 40.4% of world.
- Main global ceramic export with 41.4% in 2014

###### **ITALY**

- Eighth world economy.
- Economic growth of 0.8% in 2015 (previous -0.4%).
- Public spending increased in 78.081 million.
- Second producer in technology of EU.
- Third global ceramic producer with 382 mill. Sq. mt.
- Ceramic export up 11.7%.
- Ceramic sector created 26000 labor work.

###### **SPAIN**

- Thirteenth world economy
- Economic growth of 3.2% in 2015.
- Public spending increased in 51.847 million.
- Fifth producer in technology of EU.
- Second ceramic global export with 12.6% in 2014.
- Second global ceramic producer with 425 mill. Sq. mt.
- Ceramic export up 6.6%.

#### 4.4.2. Weaknesses

##### **CHINA**

- Economic slowdown from 7.4% to 6.9%.
- Economic doctrine: Communism.
- Questionable working conditions (low labor remuneration, long working hours, few labor rights, etc.).
- Income distribution is poor.
- Ceramic exports decreased a 3.3%

##### **ITALY**

- Political instability caused by the continuous change in the government (63 governments in 70 years).
- Unemployment rate of 11.8% (44% are young).
- Technology exports has been reduced a 1.75% in 2014 (3.29% in 2003).
- Ceramic domestic consumption plummeted by 3.2%

##### **SPAIN**

- Political instability (central government in functions and diverging political ideologies).
- Debatable working conditions (low pay and long working hours).
- Unemployment rate of 21.6% (6.1% of young people left the country).
- Ceramic domestic consumption plummeted by 6.4%.



4.4.3. Opportunities

<i>CHINA</i>	<i>ITALY</i>	<i>SPAIN</i>
<ul style="list-style-type: none"> <li>- The world ceramic production is growing (3.6% previous year).</li> <li>- World exports increased by just 1.05%.</li> <li>- Low capital requirements for Spain enterprise model SA: 60.000€ and SL: 3.000€.</li> <li>- Manufacture of porcelanato.</li> </ul>	<ul style="list-style-type: none"> <li>- The world ceramic production is growing (3.6% previous year).</li> <li>- Chinese products decreased a 7% in the world acquisition.</li> <li>- Horizon 2020, instrument of funding.</li> <li>- Low capital requirements for Spain enterprise model SA: 60.000€ and SL: 3.000€.</li> </ul>	<ul style="list-style-type: none"> <li>- The world ceramic production is growing (3.6% previous year).</li> <li>- Chinese products decreased a 7% in the world acquisition.</li> <li>- Horizon 2020, instrument of funding</li> <li>- Large room for improvement in the value of brand</li> </ul>

4.4.4. Threats

<i>CHINA</i>	<ul style="list-style-type: none"> <li>• The number of developed countries is decreasing to a 54%.</li> <li>• Markets are unstable.</li> <li>• Valencian Community exports increased by 11.4%.</li> <li>• Italy is the first producer of the ceramic machinery</li> <li>• Spain has the most important Patents.</li> <li>• The Italian tile has greater brand value</li> </ul>
<i>ITALY</i>	<ul style="list-style-type: none"> <li>• The number of developed countries is decreasing to a 54%.</li> <li>• Markets are unstable.</li> <li>• Difficulties to access to bank credit</li> <li>• Valencian Community exports increased by 11.4%.</li> <li>• Spain has the most important Patents</li> </ul>
<i>SPAIN</i>	<ul style="list-style-type: none"> <li>- The number of developed countries is decreasing to a 54%.</li> <li>- Markets are unstable.</li> <li>- Difficulties to access to bank credit.</li> <li>- Italy is the first producer of the ceramic machinery</li> <li>- The Italian tile has greater brand value</li> </ul>

The following paragraphs, special emphasis is put on the specific goal proposed in the study, creativity is developed in the ceramics organizations. That is why once defined the theoretical framework and the first points of the result, we catch all this knowledge to be exposed it in the ceramic industry of the different countries and be able to define conclusions in the last pages of this study.

#### 4.5. Discovering the creativity in the Chinese ceramic tile industry

##### 4.5.1. Foshan central star co. ltd.

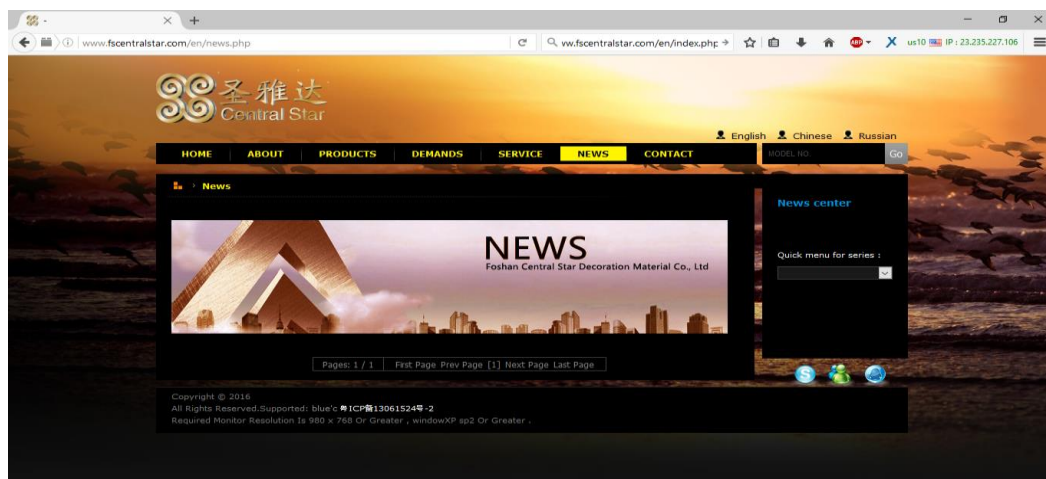
Foshan is located in the ceramic industry in the centre of the city of Foshan, China. It is a professional supplier of quality material such as bathrooms, ceramic tile and sanitary ware. They not only sell in the domestic market in China, but it also exports to Hong Kong, Japan, Arab countries, South Africa, Russia, Europe, United States, Canada, Mexico, Peru, Venezuela, Brazil, Argentina and Australia.

Foshan aims to be honest and cooperate together with the quality, low price and good service to the client in the world. (Foshan central star decoration material co., 2015). Once we have described the Foshan Central Star information, we can make an analysis of its technical and commercial design.

About the **commercial design**, Foshan possesses a web where the corporate and the commercial are interlaced, this would be a mistake because it does not perform a differentiation of audiences, i.e., targeting the same audience without differentiating between customers (people who look for the product of the company) and investors (profitability and financing). They cannot highlight any detail of creativity, the website does not dazzle by its illustration, with dark and off tones.



Figure 14. Foshan central star website



Source: Foshan central star (2015)



It is **technical design** stands out for its variety in products with its quality/price ratio and in the categories Micro crystal tile and Crystal tile.

- *Micro crystal tile* is also called "crystallized Porcelain Mosaic composed". It has a layer of glass and porcelain made by shots fired at high temperature. **It has not a similitude with some ceramic trend.**

**Figure 15. Vitrified tile with micro crystal surface**



Source: Foshan Central Star (2015)

- *Crystal tile* is a form of glass in the form of tile. Although this technique is already consolidated, there are not many ceramic companies that have it in its portfolio products. This product owns the appreciation of the trend [Patchwork surfaces](#) [20], where the design is dark and somber, remembering the neoclassic style of the 18th century.

**Figure 16. Gilded embossed**



Source: Foshan Central Star (2015)

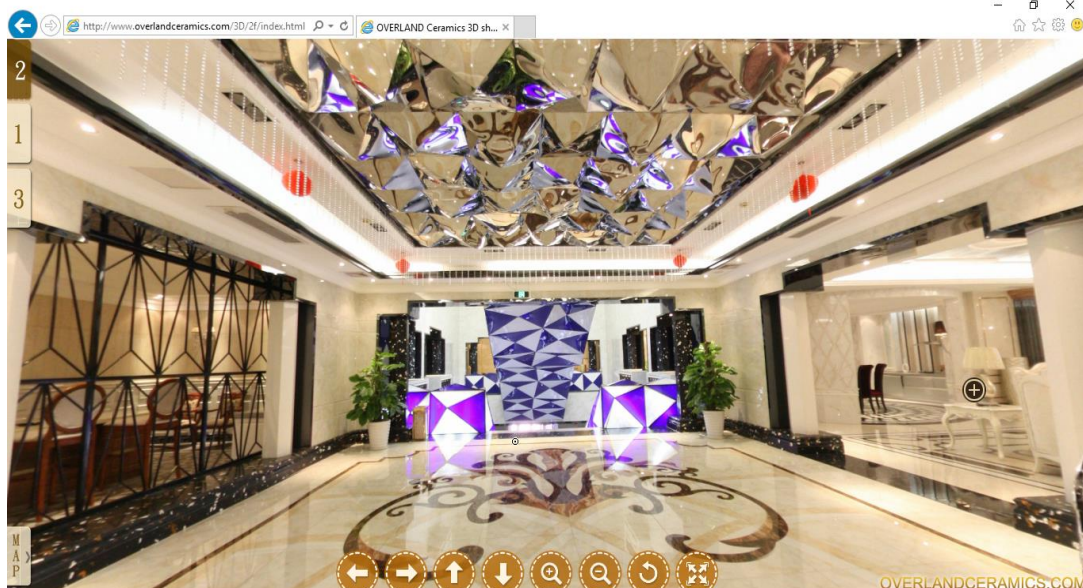
#### 4.5.2. Overland ceramics co. ltd.

Overland is one of the manufacturers of tiles located in Foshan, South of China. Since 1999, with ten years development, Overland has been striving for innovation and has been insisting in the principle "Quality First". With a 20,000 square meter's factory region and 1,200 professional workers, Overland has its own competitive power standing in the modern building ceramics field stably until now. In order to keep up with the trends, Overland's R&D team travels to Europe every year to learn technology, researching the market, purchasing the design and materials. (Overland Ceramics , 2016)



**In the commercial design**, we identify those features that make a web page different if we compare it with another set of websites in the same field. Overland surprised to be one of the few Chinese companies of the tile industry that has a careful aesthetic in its web page. The single differentiator point is the ability to view their facilities in 3D, which are incredible. Overland also has a website where the corporate and commercial interven, with the same mistake as it does not have a differentiation of the audience at all, i.e., customer and investors. The web page has interactive details, but everything else is simple.

Figure 17. Overland 3D website



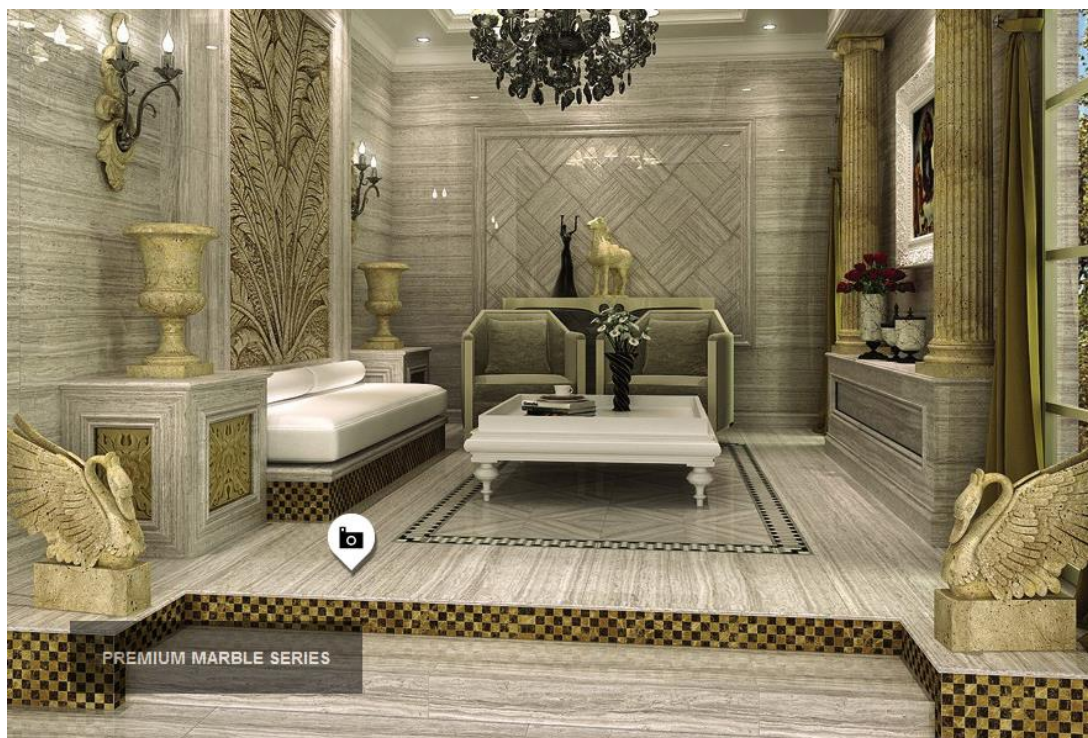
Source: Overland ceramics (2016)



In the technical design the Overland company stands out for its variety in products with its quality/price ratio. In their product portfolios they include Porcelain Tile and Rustic Tiles.

- *Porcelain Tile*, is very careful with classical details and it is simple, offering the feeling of being in a unique and prestigious place. Classic themed characterized by the serenity, the balance and the harmony of the characteristic forms of Greco-Roman tradition. It shows the trend [Neutral luxury \[21\]](#).

Figure 18. Premium Marble series



Source: Overland Ceramics (2016)

- *Rustic tile*, this model is the result of the application of the most advanced printing technologies '3D inkjet printing tile'. With an industrial printer with a large scale, they make different printable designs directly in tile, thus eliminating the processes that are necessary to get on the tile the design that we want to (glazes, colors, etc.), taking a reduction in costs and time of production. Assimilation with the trend [Computer made \[18\]](#), where the customer can choose how he/she wants the tile with a single image.

Figure 19 Soho Wood series



Source: Overland Ceramics (2016)

#### 4.5.3. Brief notes

In the analysis of the economic figures, China is unbeatable, still the first in the world ranking of manufacturers with 6,000 million sq. mt. out of their ovens (+ 5.3 per cent), i.e., a 40.4 per cent production of the world. Also, it is the first exporter with 1,100 million sq. mt. of tiles issued.

The leading manufacturers in China are concentrated in two main areas: Foshan and China Eastern (clusters). This study is focused in Foshan territory which is world-renowned as the "ceramics capital of China". The big advantage is the population ability to absorb the technological with the city development to become one of the main districts of ceramic tile production in China.

As it shows D.H. Mei-Hol, (2013) the local learning through the communities of ceramic generates the experience which could be conducive to creativity as an example of Sassuolo (Italy). However, this "imitation" leads to a homogeneous product giving as a result a glut that induces the prices to fall. In order to avoid this Foshan Corporation had adopted measures to export to the world market.

The previous consequences, more overproduction caused serious issues in the environment in those districts that the Government had solved with a series of policies on the modernization of the industry; the first of these is to reduce carbon emissions in 2009. This policy dismantled 269 furnaces and 155 powder silos. The challenge is that the same products and industrial structure through the interrelationships between the different markets for raw materials, components, equipment and final consumer goods it having a high recognition that lead to a price increase by its good quality and advanced technology. In order to overcome the challenges of the future world, the core of the

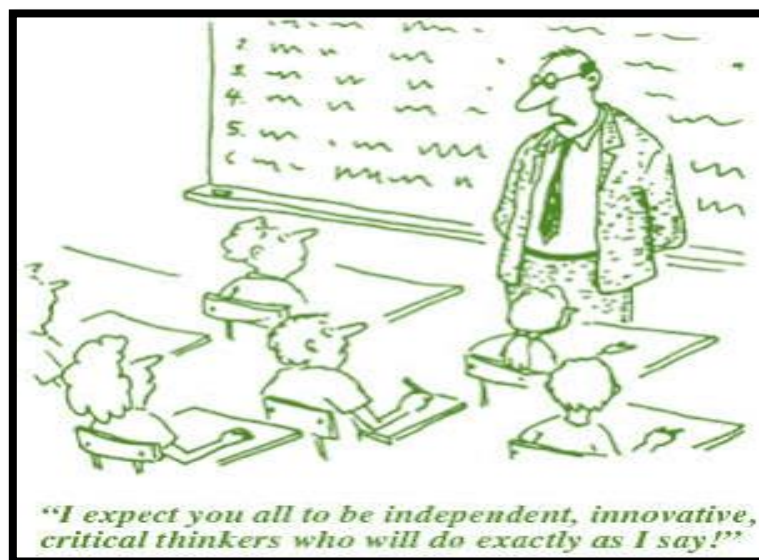
Foshan ceramic industry should consolidate all the advantages that it has, its strong current market and low cost of production.

It should be noted that not everything is as neat as it seems. In the first place, when analyzing whether they comply with the expected trends in 2014/2016 there is to presuppose that the two companies selected from a total number of 286 do **not develop the creative area** because they do not make a great use of these trends.

Chinese economic model needs to overcome various challenges that begin to rise in the current climate, these are: *economic difficulties in major markets where China exports its products, small profit margin as a result of the sale price, the increased salaries demands made by Chinese workers, business competition from less developed countries (Africa, India,), etc.* All this means that China cannot rely on its low-cost business as manufacturing model.

**China's goal is to change its current economic model** (Shaohui, 2015) if it wants to continue to be the world's first manufacturer where creativity and innovation are the essential keys to compete and differentiate itself from the rest

**Figure 20. The intellectual independence of the students**



Source: Juan Pérez (2012)

China has no competitor as a replicator or manufacturer of products and introducing the latest manufacturing processes and technology, however, and despite the fact that China has been investing over several years in creativity and innovation programs to educate their students offering: technology parks, workshops, creative classrooms etc., it is still very far from the Western countries regarding this field, but what are the reasons? (Pérez, 2012)



1. There is no model of creativity and innovation focused on the client and in Western countries **they are the enterprises themselves who perform it according to the needs.**
2. **Corporate structures are very hierarchical**, to which is added a parallel structure of the Communist Party. All of this makes it very difficult to bring creativity.
3. **Slowness in reforms** for the establishment of a legal system that protects intellectual property.
4. Limitations of the sale of products from other countries in its territory, what leads to **little exchange of ideas, knowledge, products, etc.** (open innovation model) that could enrich the creativity in China.
5. The most **creative ideas** are a consequence of thinking differently, breaking with established mental patterns, approaching the problems from different angles and perspectives. The citizens of China are taught to respect the rules.
6. **Fear of failure**, we are faced with a society where the collective is more important than the individual. Failure is a great taboo and that is why they do not take new initiatives, somehow, there is not a second chance.
7. **The concept of work is independent to the meaning of life**, i.e., dedication to the tasks of work with no influence beyond its obligation, being very few those who have the sensation of enjoyment for doing things well. This somehow proves that the Chinese are so good producing and they only have a very few creative and innovative skills.
8. **Education is a system** focused on passing only the entrance test to the university without enhancing other capabilities.

The research of Niu, W. and Sternberg, R. J. (2003) reinforces the previous points establishing the main causes of social, cultural and political type. It emphasizes that Chinese children get better results, in comparison with other countries, in various areas of teaching without possess differences with regard to education, learning, activities, etc, but the high academic performance does not make them be skillfull in external situations, such as creativity.

Ultimately, China needs to develop its economic model of global manufacturer to one characterized where creativity and innovation are present in such a way that it can compete in an increasingly globalized, changing and competitive world. China is waking up and it is starting to be aware of this, as the new policies and efforts focus on the above issues. In comparison with other countries in the world **China could follow the wake which Japan had in the past.**

## 4.6. Illustrating the creativity in the Italian ceramic industry

### 4.6.1. Marazzi

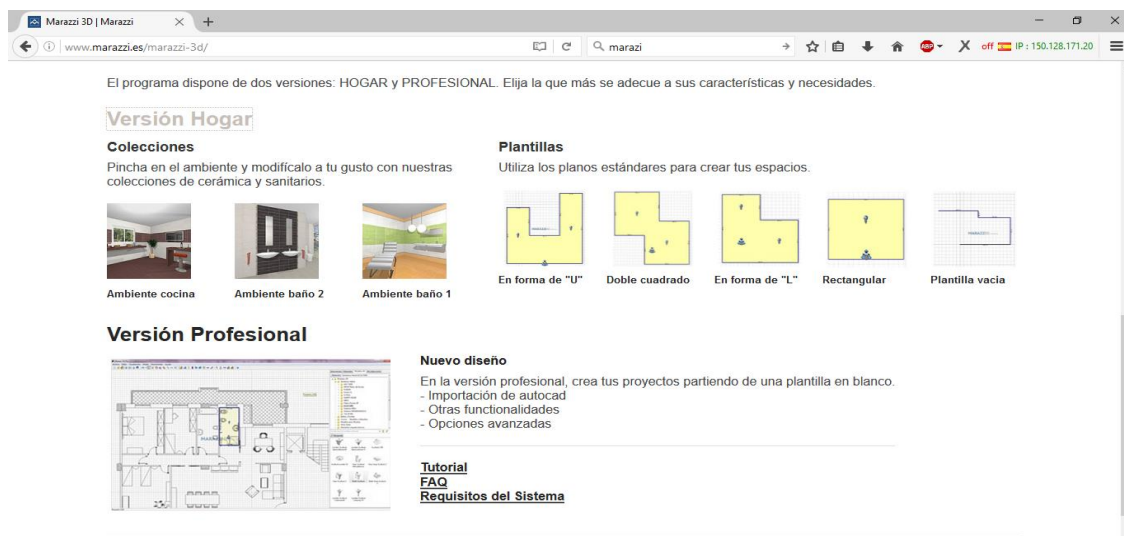
It is an international leader in the ceramics field. The experience and capacity of innovation, creativity and design, tradition and culture, love for ceramics, the attention to the environment, all together are the strengths of Marazzi ceramic that shape the living spaces in life, since 1935, combining aesthetic and high quality materials. Marazzi Group is part of Mohawk Industries, Inc. the largest manufacturer in the world in the field of soils, multinational company that listed on the New York Stock Exchange. (Marazzi, 2015)

In the commercial design Marazzi has differentiated the corporate and the commercial website, also described in the previous paragraphs. It is a subsidiary of the company Mohawk industries, Inc. When the visitor opens its website, the first flash of creativeness is that he/she can see a set of images which move from right to left with designs of the company, it also has effects on the images that are being produced as we scroll across the page and click directly on each one of them. The page has a structured order in boxes (in form of a tile) with a drop-down menu providing access in each part of the web site.



It has applications in 3D to have any kind of design that anyone wants and a blog where different interviews are discussed, events, news, etc. This advantage is one of the trends [Computer made \[18\]](#).

Figure 21. Marazzi website



Source: Marazzi (2015)

In the technical design, Marazzi Company stands out for a wide variety of products in design and quality. Its portfolio product includes the ceramic and porcelain stoneware.

- *Ceramic*, shows a combination of ceramic products in various parts of the home offering the trend is [Mix & Match and Patchwork surfaces \[19\]](#).

Figure 22. Square project



Source: Marazzi (2015)

Figure 23. Triennale project



Source: Marazzi (2015)

- *Porcelain stoneware*, is able to offer the highest delicacy from the traditional to the modernist. The trend is [Neutral luxury \[21\]](#).

**Figure 24. Vitrified porcelain tiles**



Source: Marazzi (2015)

#### 4.6.2. Atlas concorde

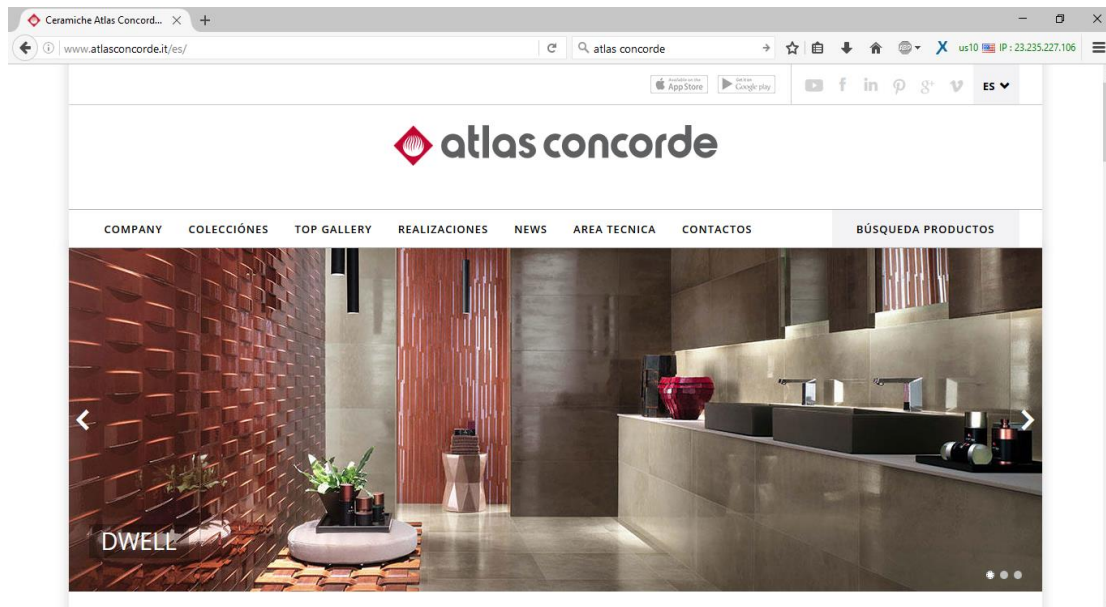
It is in the ceramic industry and one of the most important and consolidated realities at global level. Its mission is to offer ceramic solutions to the most demanding consumers, interior designers and architects, solutions designed for any intended use, that guarantee an aesthetic refinement always in tune with the needs of the market, combined with excellent technical performance.

In the commercial design, Atlas Concorde has some constraints differentiators. The corporate and commercial website of the organization are different, being subsidiary company of the **GRUPPO CONCORDE**. Its website stands out, at a first glance, with the large amount of information that can be found in it, being visually attractive and harmonious. Among its most attractive features we find the presentation that it makes in form of company video and the range of products along with the examples exposing of works that has developed with its product, they have an “app” that simplifies the web page.





Figure 25. Atlas concorde website



Source: Atlas Concorde (2015)

**In the technical design** the company Atlas Concorde stands out for having products with high technical properties, strength and security, without forgetting its fine design. In its product portfolio just the coating and the decoration projects just stand out.

- *Lastra 20MM*, has been designed for those looking for the perfect balance between technical functionality and aesthetic appeal with nature. This reminds the trend [True tile \[18\]](#) to combine the functionality of the ceramics with nature.

Figure 26. Lastra 20MM.



Source: Atlas Concorde (2015)



- *Décor Projects*, one of these projects is the "Travelling Hub" presented in Premiere in the spaces of Cersaie 2014,
- . The trend of [Keep An Eye \[20\]](#), images with optical effects that give sensation of overlap.

Figure 27. Travlling hub.



Source: *Atlas Concorde* (2015)

#### 4.6.3. Brief notes

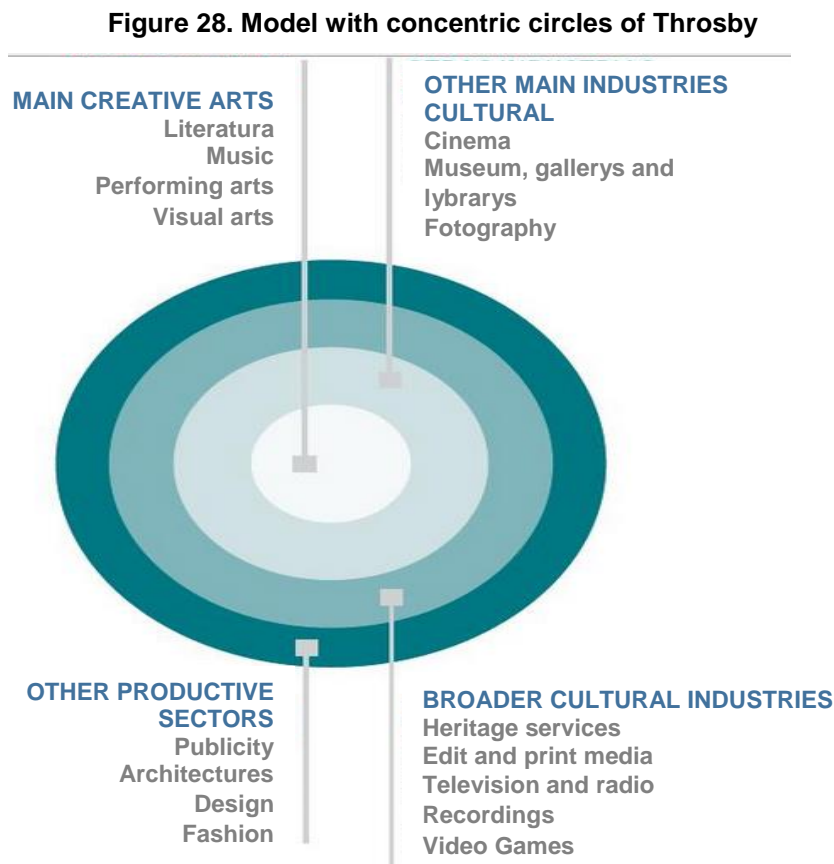
"Made in Italy" is represented for the ceramic tiles industry with 26.000 employees and a turnover equal to 5,5 million EUR, a product that is exported to with a large percentage (82.25 per cent) and that it increased in one year by 11.7 per cent. In 2014, the individual investments in the industry increased by 250 million EUR with a growth of 10 per cent. It is the leading European exporter and 2nd exporter worldwide, only surpassed by China.

Italy has a deep-rooted culture of beauty. This cultural sensitivity is expressed as a gift for the development of products and is an innate ability to recognize and use its beauty, creating new aesthetic tendencies in the world. This natural creativity has driven the experience of trademark in the Italian ceramic production, from ancient craft workshops to modern factories. It is this passion for aesthetics and craftsmanship that has been the force the success of its industry. (Vietata, 2013).

The work done by Bertacchini, E. and Borrione, P. (2010) points out that the economic Italian model is inspired in the "concentric circles" proposed by Throsby (2001) Its main feature is that cultural property and creative ideas originate in the core of the creative arts and in the cultural activities, since these ideas have given it an outward look through a series of layers or concentric circles, with a decreasing percentage when one moves out from the centre of the circle.

At the core we find the artistic productions, art and culture activities. The second layer is represented by the traditional cultural industries, cinema, Pub, TV and Radio, that transform cultural content products in marketable services. The third layer contains the creative industries as architecture, advertising and design based.

This group includes the activities of services and manufacturing oriented to create products for functional purposes, but however it is more based on the property and they continue the strong aesthetic of the Intellectual content. Finally, the fourth layer refers to related industries with the support for the production of different chains of the creative economy, including the ceramic industry.



Source: Adapted from issuu Inc. (2015)

The geographical organizations of different creative sectors are attracted to the major metropolitan areas. In these areas you have to improve the specialization and this is the start of the cluster. The research conducted by Silvano Bertini (1998) reveals that the extension of the cluster is concentrated in the Emilia Romagna region with an 80 per cent of businesses around 10 municipalities close to Sassuolo in the province of Modena, which produces 90 per cent of Italian ceramics.

The cluster is the consequence of initiating a reduction of organizations, as for example acquisitions; small companies disappear and large companies are formed to be competitive and global. In the cluster of Sassuolo defined in the study of J. Meyer-Stamer et al. (2001), he identifies the advantages of a tacit knowledge that it can be identified in a style differentiated product thanks to the influence of other sectors, which makes it highly valued in the international markets.

At the same time, traditional agglomerates of handicraft production in small municipalities can be considered as a distinctive feature of the Italian creative economy (Porter, 1990; Scott, 2006). This phenomenon connects with the growing attention in the debate of the cultural production and cluster of creative non-metropolitan small cities, important areas for the development of creativity ceramics have an intrinsic knowledge of the matter developed ideas and applications it is hard to find in large companies.

In conclusion, Italy has the largest network of connections between ceramic companies in the world whose competitive advantage is clearly defined in the preceding paragraphs, but **it loses a large network of creativity by failing to establish connections with the production of small and metropolitan cities.**

## 4.7. Creativity burst in the Spanish ceramic industry

### 4.7.1. Porcelanosa

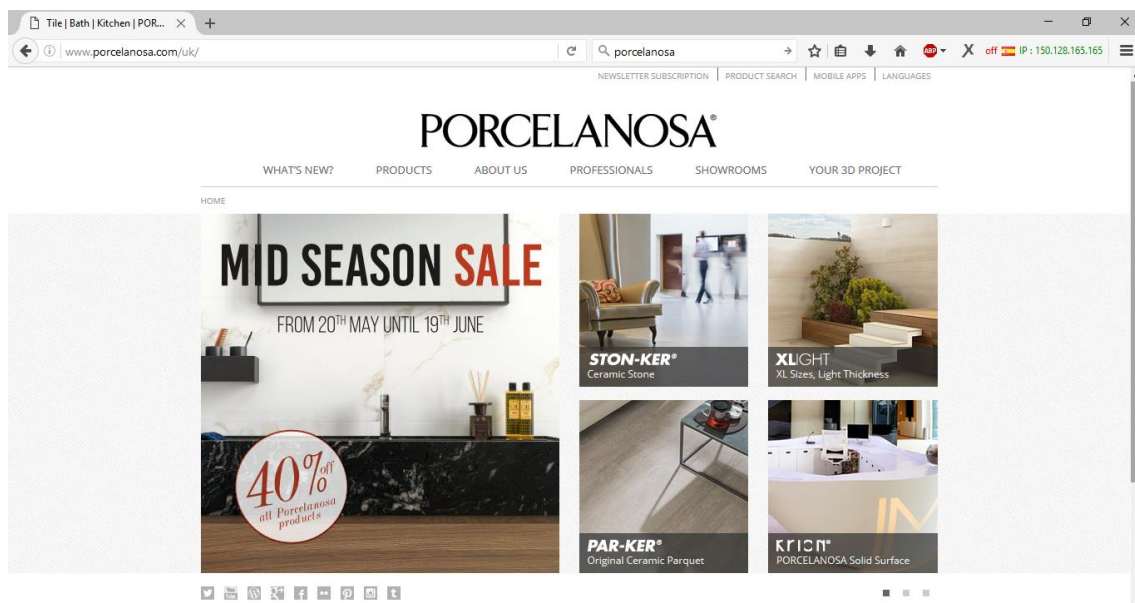
The reference company in the national and international market it is based on cultural values in innovation and the quality, but above all it is based on the trust placed in its extensive staff consisting of nearly 5,000 people and in the attention to their social environment. The company was founded in the town of Villarreal in 1973 and now is present in nearly 100 countries around the world thanks to a business model that supports a strong business strategy. (Porcelanosa, 2015)

In the commercial design, the website is analysed with the aim of identifying creative ideas. One of these ideas is the incorporation of a points program for professionals who acquire their products that can be redeemable for travels, consoles, watches, etc. It also offers a Newsletter through which you can be informed of the news from the company as the projects that have been made, also, it has a blog with information on the current scene and the incorporation of “apps” that simplify the products offered.

The controversy from a company like Porcelanosa is that the website is not as polished as others as it offers a simplistic design with few creative details. The website includes the commercial and the corporate aspects, causing disadvantages when trying to target an audience in particular.

# PORCELANOSA

Figure 29. Pocelanosa website



Source: Porcelanosa (2015)

In the **technical design** the company is a world reference in terms of design, elegance, technical progress, quality, etc., it is difficult to choose among the great variety of products offered, but among them we could highlight the range of XLIGHT and KRION.

- *Xlight*, offers great possibilities of adaptation of the decoration to the natural environment, offering a unique union of these two elements and breaking barriers. We can see how by leaving a small sunlight space it will affect different sites of the house according to the position of the Sun, it delivers privacy with touches of irradiation light. To cause effects and feeling of movement with the light, it offers a place with amazing lighting being the trend [Beyond the wall \[22\]](#).

**Figure 30. Xlight**



Source: Porcelanosa (2015)

- *Krion*, in this picture we can see a project that has used this material resulting in geometric shapes that have a great visual power. This kind of design where the geometry is interlaced recalls some resemblance to the blocks of ice that are formed at the Poles, giving much greater contact with nature and feeling of being in a unique and unimaginable place, we would be talking about the trend to [Keep An Eye \[20\]](#).



Figure 31. Krion



Source: Porcelanosa (2015)

#### 4.7.2. Pamesa

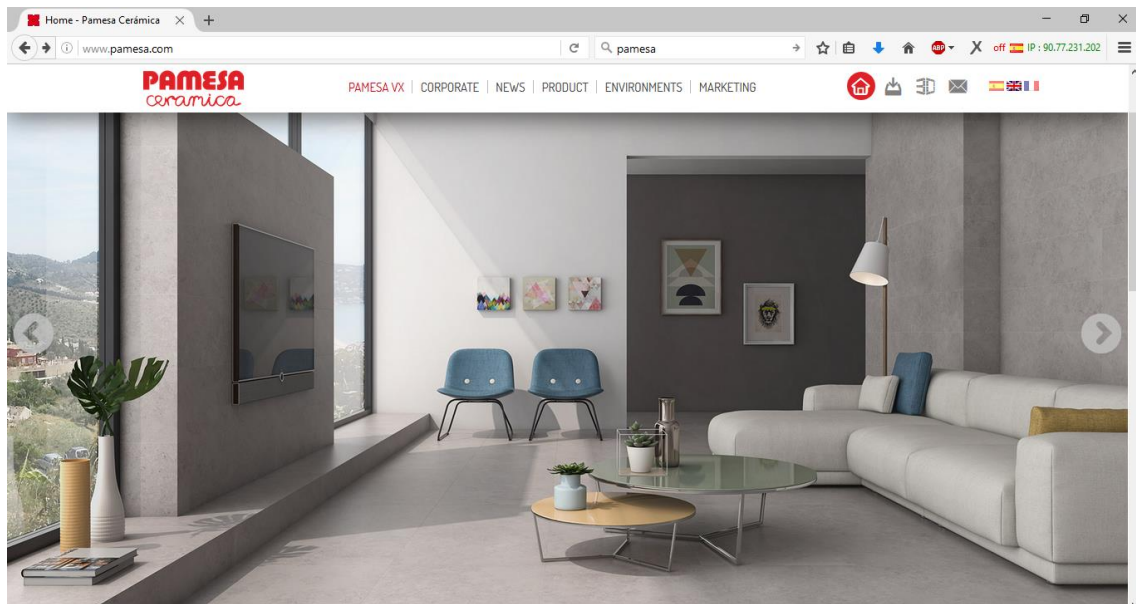
Pamesa Cerámica is the parent company of the Pamesa Group, which aims to be a leading benchmark in the design, manufacture and marketing of ceramic products that satisfy its customers' needs and guarantee excellent quality, design and value for money.

With over 40 years of experience, the Group covers a surface area of more than 700,000 m<sup>2</sup> and has an annual turnover of 415,000,000 EUR. Its production capacity exceeds 61,000,000 m<sup>2</sup> per year, and its three intelligent warehouses have a total capacity of up to 16,500 pallet-size locations. (Pamesa, 2015)

**PAMESA**  
cerámica

**In commercial design**, the home page of its site shows us the range of products totally static. We can find different tabs with information card, news, product range, etc. but as some of the companies formerly compared, they mix the corporate site with the commercial services, and this is a mistake. It is particularly simple, but it contains an app and the 3D tool to design your own environments, the trend ceramic [Computer made \[18\]](#).

Figure 32. Pamesa website



Source: Pamesa (2015)

**In the technical design**, the union between art and design differentiates its products. It uses different characteristic in the product to achieve an unique quality, Among the variety of products, we can highlight the range of ARTE and AGATHA

- **ARTE**, This environment simulates a place of work adding tranquility and serenity with the combination of colors that better fits to furniture. It has simple textures and light tones that offer a feeling of being in a unique and prestigious place. Its trend is the [Neutral luxury \[21\]](#) that gives rise to a totally new work where two works have been combined.

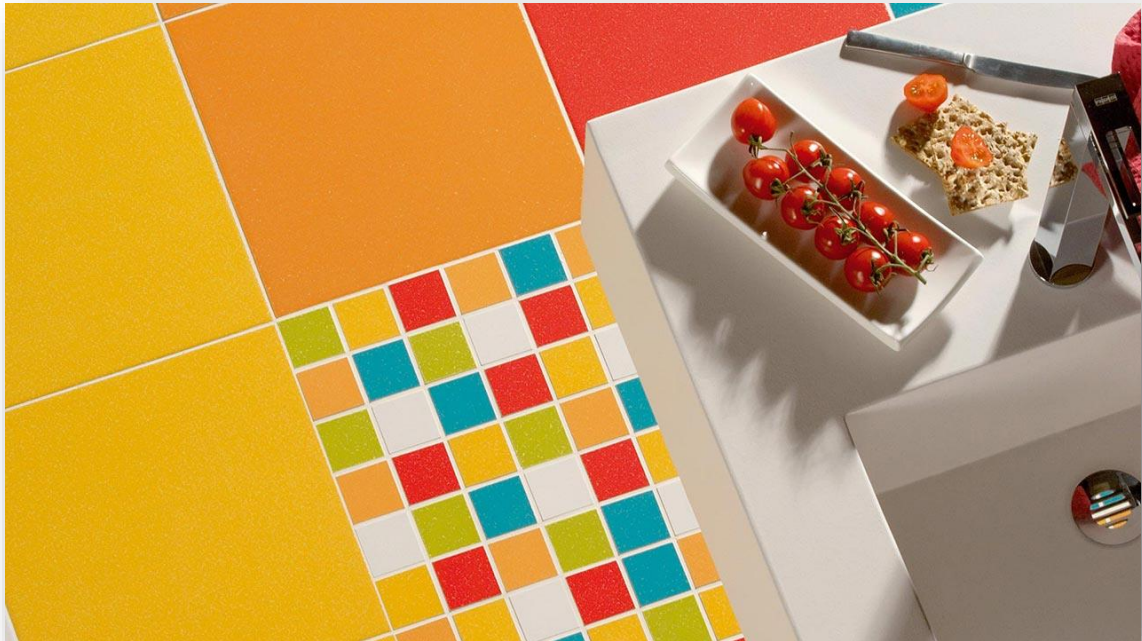
Figure 33. Arte



Source: Pamesa (2015)

- *Agatha*, this type of tile is characterized by including light and colorful tones which mix with no relation at all, this series has the advantage of being “risky”, so it manages to get the attention and admiration of the customers. [Carton graphics \[22\]](#) is the trend ceramics that it is identified, as well indicated is a pop style.

Figure 34. *Agatha*



Source: Pamesa (2015)

#### 4.7.3. Brief notes

Spain is the first European producer with 425 million sq. mt., the second European exporter and the third world exporter only surpassed by Italy and China. The turnover in this industry reached the 2,328 million EUR, less than the Italian who reached 4,109 million EUR because of the price per sq. mt., being twice this last. The number of employees is of 15.000 jobs. One of the main features of the Spanish ceramics sector is the high geographic concentration of industry in the province of Castellón, in particular in the area delineated to the North by Alcora and Borriol, to the West by Onda, Nules South and East by Castellón de la Plana. In this region it is originated approximately 94 per cent of the national production and a 81 percent of the companies in the sector according to latest data from IVACE and DIRCE (2015)

It has a culture that emerged from the effort and good work. This has resulted in a large number of creators, artists, filmmakers, gastronomic, designers, etc. it has been used to reproduce art, Spanish blood and to reproduce the unique aesthetic tendencies in the world recognized by countries such as USA, United Arab Emirates, Germany,



France, etc. crisis caused several problems, as de diminishing of confidence in the Spanish ceramic tile market with considerable loss of benefits, but this problem served to induce industry into the creativity and to structural changes.

The work of Molina-Morales, F. X.; Martínez-Cháfer, L (2013) describes the cluster network in the ceramic sector that it is located in Castellón with a 90 per cent of the companies of the ceramic tile industry, but whose business size does not exceed the nomenclature of PYME. The proximity of different companies favors the access to knowledge and represents a competitive advantage. *These skills are concentrated in a number of companies that have opened to the exterior, have power or intermediation and specialized product, so it is discernible that knowledge is not distributed evenly.*

The study of Meyer-Stamer, J. M. et al (2001) highlights **the importance that institutions** have, an important action in the panorama of the cluster in Castellón. ASCER is the Association of manufacturers of tiles, and it is the main support in terms of change and strategic initiative.

The competitive advantages offered by the cluster located in Castellón is the availability of red clay that makes it possible not to import white clay. There is a strong group of scientific and technological competence together with the institutional support oriented to the business. In short, Spanish ceramic tile have certain doubts as **the size of the companies is small (Pyme) and the lack of the Spain brand positioning.**

## **5. DISCUSSION AND CONCLUSIONS**

In this document we have carried out a study on the application of creativity in the various companies of the ceramic industry with reference to Chinese, Italian and Spanish markets, special cases of the evolution of the ceramic industry, generated by the development of the industrial clusters.

The strategies currently used are not adequate to achieve the necessary changes, it is necessary to replace terms such as: "automate to free"; "set by open;" keep by creating"; "close to expand"; "repeat to investigate"; "stay for risk"; etc. All these terms define the changing landscape where the organizations will have to adapt to different environments.

Spain is located in an intermediate place in terms of quality/price segment. The most notable features of the Spanish ceramics industry are its great capacity of production being the first European producer country, the second European exporter and the third largest exporter in the world, as a result of the efforts in the development of its products. However, the current price of ceramic products is lower than in the past, this translates

into an advantage in reference to attract foreign investment funds, but it also has the disadvantage of getting a lower price for the product and a greater power of negotiation by the consumer. Therefore, the changes to be performed as a whole of business agglomerations are good.

The big problem is that the organizations are small and they are anchored to its past history, many do not assimilate the information transmitted by the economic crisis since 2007. While the industry has adapted to the situation of the market "more global and competitive", it has maintained the same organizational structures, forms of work and has only optimized the costs of sales and the operating costs that increase turnover and improve productivity. To do this, it is necessary to continue producing changes, because if the consumer will focus on a segment of the market, for example of low price or high price the Spain's ceramic industry will not be able to compete with countries like China and Italy.

On the other hand, Italy is the ceramic industry which is located in the first position in the segment of quality/price. It has the recognition of being the first country to obtain a greater global income in reference to sales of tiles, the second European producer, the first European exporter and the second largest exporter in the world, thanks to the sensibility that gives shape to its products. The increase in the average price of sale 5 per cent in 2014 confirmed this affirmation thanks to the added value and a company policy that will support the implementation of creativity and innovation in organizations and at its products, it should be noted that restructuring plans must be carried to continue being competent. These plans can be a better control of inventory (around 21 per cent when Spain is 18 per cent) as well as a continuous observation of the market, since if the consumer perceives the change (the price offered is not appropriated for the quality) it could alter the current scene and Italian companies would have to endure the consequences of production costs needed to complete the restructuring internally.

China has a low value in the price segment, but it should be noted that it is the leader in the production, export, manufacture and consumption. The big problem that arises is the low added value which ceramic tiles have and as a result they get a low price, it is the consequence to the imitation and the use of low-cost materials as business strategies. The lack of creativity and innovation as a business model is also a feature integrated in the Asian country. Its main advantage is its labor market with long working hours and low wages, this allows businesses to obtain greater profitability in the cost of sales and the operations. But today, workers are demanding higher wages and labor improvements that could destabilize the current economic model. Will China be able to

keep this production model in mass? Current policies claim that it wants to reorient the entire industry to a model that implants creativity and innovation in their companies. A cultural change in China is needed to improve all these weaknesses.

In conclusion, Spain account with the most amazing ceramic tiles of the trends ceramics [68] [70] by what it would get the first position in the development of creativity in the ceramic industry. Italy applies the trends ceramics that in other countries are not always developed offering to the consumer a very creative product, this is the reason why it gets the second position [60] [63]. And the last place is for China, where few trends ceramics are applied by the large industry [54] [56]. This consequence is explained also by the target market to which the final product is targeted, China gets a higher number of sales on the Asian and African continent, whose customers currently do not require large specifications in the product.

In reference to the clusters, it can be found different literature that describes them as clear propellers of creativity; Albers and Oliver (2009) defined them as:

*Clusters are a right environment for innovations, even the most revolutionary, due to the presence of users leading, sharing paradigms and common understandings, social bonds that held together the different components (technology centres, associations, schools, industries, etc.)*

Is true this statement? It is undeniable that the cluster creates knowledge, but it does not do so at all stages of its life, this happens because the dominant company keeps the technology to their benefit by taking a new role of leader and the introduction of knowledge disturbing is peculiar of the new enterprises (spin-off). Entrepreneurial companies transform the internal knowledge of the cluster "mature transition" at the renewal and on other occasions it creates disruptive technology, a clear example is the company Kerajet and his technique of ink which I innovated in the industry in the year 2000.

The work contributes to the identification of the creativity in the ceramic tile industry and it highlights the atmosphere of the cluster in the creation of innovations. The document has important implications for the scholars who must delve into the issue of how it develops, implements and executes the model of creativity in the organisation (creative process) and the advantages of cluster inter-enterprise, such as the changes that occur at macro and micro-economic levels. Knowing these variables can help to generate corporate strategies that allow a better adaptation to the environment, and the exponential evolution in knowledge generation.

The key lies in these last words to reach a model 'was knowledge'; creation and transmission of any idea among different totally free and unlimited companies. Many companies are benefiting from these new networking options, there are clear examples such as the community of Mozilla (Mozilla Firefox), Linux (General Public License), Wikipedia (the free encyclopedia), Spaitec (scientific, technological and business park of Castellón),...

We must not forget that the important literature has been obtained from surveys conducted to different teachers of the Jaume I University, it is conclusive in the assertion that creativity is not applied enough in the classroom as the teachers are not provided with the necessary tools for the development of creativity and sufficient freedom to apply actions and go more yonder to the established in the teaching guide and it not that the development of the person who must discover which are those actions that him motivate and be documented for development the creativity.

## **6. LIMITATIONS AND FUTURE RESEARCH LINE**

This study offers important and novel contributions to the organization companies literature in reference to the creativity, but it has a number of limitations which could be the starting point for future lines of research. The first limitation refers to the type of study realized, since it is based in a longitudinal study, based on information obtained in different moments in time, it would be useful to make a comparison in the data with the purpose of analysing the relationship and identifying different business solutions in future research. The second limitation concerns the fact that there is currently little literature that show the application of creativity in the company, for this reason, it is necessary to extrapolate the study to the environment and generate creative case studies. The third limitation is the transmission of information in the cluster, it would be useful to know if it really occurs and what are its benefits. Finally, it would be necessary to include a greater number of companies in the analysis in order to delimit the conclusions. Thus, in future works the researcher could consider, for example, the characteristics of the real business creativity, the enterprise's relationships in the cluster, or the creative trends in ceramic products and new theory business.

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## 8. ANNEX

### 8.1. Interview to professor of university



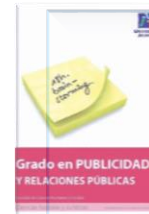
#### Interview with Mr. Miguel Ángel Gimeno Navarro

Professor Doctor Type II.  
Department of Business Administration and marketing - Business Organization.  
Coordinator.  
Member of the Faculty.



#### Interview with Mr. Miguel Angel Lopez Navarro

Seminary Pro holder of the Universitat Jaume I.  
Department of Business Administration and marketing - Business Organization.  
Representative ILC.  
Coordinator/of actions for the deployment of the strategic plan.  
Director/department.



#### Interview with Mr. Carlos Fanjul Peyró

Professor Doctor.  
Department of advertising and communication.  
Course Coordinator.  
Representative ILC.  
Coordinator of work order of degree.



#### Interview with Mrs. María de las Mercedes Segarra Ciprés

Professor hired Dr.  
Dept. of Business Administration and marketing - Business Organization  
Vocal  
Representative CIT



#### Interview with Mrs. María Consuelo Balado Albiol

Professor Labor  
Dept. of Advertising and Communication  
Guardian/exchange



#### Interview with Mrs. María Ripollés Melía

Professor Labor  
Dept. of Business Administration and marketing - Business Organization  
Sub-director of Cátedra INCREA

The interviews are available at: <https://drive.google.com/a/uji.es/folderview?id=0B--G9kjN3TKGY25MQzF4aGpza0k&usp=sharing>

# Example of interview

What is creativity?

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What is the author that best defines creativity?

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Where does our body is the creativity?

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Is the creativity inherited or is it generated?

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What opportunities are there to stimulate or encourage the SARA (Ascending Reticular Activating System)?

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How do you generate the creativity? Do you agree that there are four parameters: the person, the product, the process and the environment?

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The Person; Who are more creative: children, young people or adults? What age range is where you can find "outbreak" of creativity?

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The Product; Do you think that the more knowledge a person has and the more he/she knows about one topic, more creative he/she is? What would you say to someone who wants to create a new product?

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The Environment; What is the atmosphere or what context is the most suitable for creativity? What are these four: family, society, education (school), the work?

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The Family      How can parents empower with the creative environment?

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The Society      Is it good the influence of society on the creative person?

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The Education      How would it be a model for teaching for motivating people to be creative?

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The Job      Is the job creative?  
 How can you generate a creative environment in the workplace?  
 What has to be taken into account to decide whether a company can be considered creative?

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What worker profile would you hire to create a creative environment?

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What do you need a CEO to be creative? What about the methods to segregate it from?

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What techniques and tools are appropriate to develop the creativity?

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