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Consumption of Chinese goods in southwestern Europe: a multi-relational database and the vicarious consumption theory as alternative model to the industrious revolution (eighteenth century)

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ABSTRACT

This article discusses the application of new technologies, software coding and computer analysis in the social sciences and humanities, mainly in the field of economic history. In the last two decades, the use of new computer technologies among historians to develop theories and solve questions has fostered a vibrant historiographical debate. However, these new digital tools have largely been used as an end in themselves, rather than as a means to develop hypotheses and answer questions. This has prevented researchers from fully exploiting such technologies in their field. In this article, I discuss how I designed a new multi-relational database using the “Access” package and SQL language to test the “industrious revolution” hypothesis and present the “vicarious consumption” theory as an alternative model for analyzing the eighteenth-century circulation of Chinese goods in the Western Mediterranean region. It presents the cross-referencing method I used to analyze the historical information I collected, mainly from probate inventories and trade records. This method makes it possible to navigate through the data in a way that goes beyond the traditional use of “excel” tables.

KEYWORDS

multi-relational database; vicarious consumption; new technologies; probate inventories; industrious revolution; China–Europe

Introduction

This article aims to show how new technologies can be used to exploit primary sources, such as probate inventories and trade records, to analyze changes in consumer behavior and the circulation of overseas products. The Western Mediterranean trade networks connecting the port cities of Cartagena (in south-eastern Spain) and Marseille (in southern France), which were mainly comprised by the social groups associated with the Roux-Frères house of Marseille, were fundamental for the introduction of Chinese commodities in Western European markets. The development of a database to cross-reference sources to analyze such economic circuits is therefore essential to understand how trade networks changed consumer behavior, how Chinese commodities penetrated diverse socio-economic groups and how this correlates with economic growth.

Since the boom and development of new computer technologies and software, historians have been

experimenting with the design of databases for historical sources, with the goal of coding information to obtain a comprehensive database that answers multiple enquiries and contributes to developing hypothesis and solving major historical questions. The problem lies in the fact that the development of new databases has in some cases blurred the historian’s perspective. Historians should not fall into the trap of using new technology as an end in itself (Palfreman and Swade 1991), instead new technology should be seen as a tool to solve concrete problems and to obtain relevant information from the historical sources. The process historians use to design databases is often a problem if the focus is on the end product, the database itself, rather than on how to input and exploit the information one might need from the historical sources. Instead, the problem/question that they seek to address and the kind of information that might be found in the historical sources should dictate the design of the entries and fields one wishes to

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create in the database. Without taking these aspects into account, a database risks being little more than a vast and rigid repository of information that is irrelevant for the research objectives.

In this article, I describe how I conceived and designed a specific database using “Microsoft Access” to register relevant information from probate-inventories, as well as trade records. The purpose of my database is to test the “industrious revolution” theory, which suggests that artisans/peasants were the social groups that changed consumer behavior, or to see if instead the “vicarious consumption”¹ theory is plausible, which suggests that merchants were the social actors driving such changes in consumption. The case study looks at the distribution and sale of Chinese goods in Mediterranean Spain and France, namely the trade axis connecting the Kingdom of Murcia, and its port of Cartagena, with Marseille, for the eighteenth and early nineteenth centuries. The main goal is to question the “industrious revolution” theory and to see if the “vicarious consumption” theory better describes the social circulation of overseas commodities that introduced symptoms of economic change in both rural and urban areas of Mediterranean Spain.

To observe changes in consumer behavior and lifestyles, probate inventories are used (McCants 2006) to analyze the circulation within social groups of commodities such as household objects (tea and chocolate pots, chinaware) and textiles from far-flung markets, such as silk from China or calicoes from India. Such demand-side indicators might show if there were any signs of an “industrious revolution” since one of the factors that explains this theory is the increase of the working-hours by economic agents such as artisan and peasant families who transformed consumer habits (de Vries 1993, 1994, 2008). At the same time, the analysis can reveal whether there was an emulation of patterns of consumption, as McKendrick (1982, 9–33) established by arguing that the aristocracy was the leading class whose consumption of new and exotic commodities “trickled down” through society.

However, the “vicarious consumption” theory highlights the significance of the middle social groups, the merchants in this case study, as agents who changed consumer behavior. Therefore, the emulation process is more complex than a simple top-to-bottom circulation in the social hierarchy. Changes in the demand side as well as the intensification of labor by the working-class was linked with the sale, distribution, and commercialization of goods in the market. Wholesalers, retailers, and peddlers created solid networks enabling the entry and distribution of new commodities that created new

needs and fashions. This might be considered as an early step of market integration in Europe, Asia, and the Americas. To address these questions, a specific database has been designed in “Microsoft Access.”

The main goal of this database is to analyze patterns of consumption in different social groups through a sample of probate inventories. An external link to this database has been created with the software “Heredis” and “Genopro,” which is a software used to build family groups over genealogies (see at the appendix, illustration 3). As can be seen in illustration 3, this link makes it possible to construct the social network of wholesalers, retailers, and peddlers, as well as the structure of genealogies. Such a trade social network can be constructed by cross-referencing the social actors registered in the “Microsoft Access” database with those of the software “Heredis” (i.e., Jaime Bort Milia, a master artisan of the city of Murcia, as shown in the appendix, illustration 3). This is crucial for the methodology presented in this article as such groups stimulated the distribution of goods in local economies, connecting global and regional trade routes and, consequently, fostering market integration.

This regional and global connectivity seems relevant to test the “industrious revolution” and “vicarious consumption” theories as the growth in the consumption of overseas goods in Mediterranean Spain might be explained by the action of traders, not by artisans or peasants. The areas of Murcia and Cartagena (in the Kingdom of Murcia) are chosen as the case study. Goods from distant markets were mainly introduced by French merchants, who settled in the region and established family business and trade connections with the south of France, in Marseille. This was the key *entrepôt* from which commodities were reexported.

Consequently, this database enables us to analyze the consumption of new commodities and their distribution through the mediation of traders and the networks they created. For this purpose, another entity was also created in this “Microsoft Access” database providing information from the supply-side. Illustration 4 (in the appendix) shows how trade records from the Chamber of Commerce of Marseille can be cross-referenced with probate inventories from the Kingdom of Murcia (i.e., porcelains from China that were reexported from Marseille to the port of Cartagena). The data from the archive of the Chamber of Commerce of Marseille provides very detailed information on goods reexported from Marseille to the Kingdom of Murcia. The origin of goods is from far-flung markets such as China, India, and the Americas.

Marseille was a very strategic European port city that controlled most of the Mediterranean trade with the Near East as a channel of redistribution for goods that came from the Orient, mainly India and China. Hence, this database allows us to analyze changes in patterns of consumption, the social circulation of commodities, as well as trade routes and socio-economic networks that enabled different social groups to access new products. The subsequent questions that emerge in this study are:

- how was the Mediterranean European economy integrated with Asian (mainly Indian and Chinese regions) markets and what was the impact for the global economy?
- which Asian durable and semi-durable goods were consumed by the European socio-professional categories that fostered changes in consumer behavior?
- how did new goods stimulate new tastes and fashions within the social groups?
- what was the role played by French merchants of the southwestern Mediterranean region in stimulating changes in consumption and did this process transform local cultures and identities?

In the following pages more details will be given about the methodology used to answer these questions through the creation of this “Microsoft Access” database jointly with the application of the software “Heredis.” Unravelling the technical process that has been used to create the fields of this database shows how it is possible to analyze changes in consumer behavior and to test the “industrious revolution” theory and develop the “vicarious consumption” theory. Doing so will not only enrich the debate among economic historians on how patterns of consumption were changing in Europe but will also shed light on how to design a specific database to solve a concrete historical problem.

Some precedents of databases in historical studies

The use and application of new technologies in recent decades has helped to redefine the role of the modern historian, mainly through the design and development of modern computer devices with the aim of systemizing, compiling, and storing the diverse information held in historical sources. How to organize the data and information of diverse origin that is stored in the archives has always been a major concern for historians. The process of excavating the data in the archives

has passed through different stages: from the old-fashioned procedure of creating hand-written registers to the computer databases and software. The objective and outcome of either process is likely similar, i.e., to select and compile information (Middleton and Wardley 1990) to test the researcher’s hypothesis.

The systematization of data requires that choices are made when the information is first registered. In other words, it means selecting the information from the sources that appears to be relevant to the historical question being researched. This is a crucial process, because it means that some information from the historical sources is dismissed or rejected. In addition, to accommodate the historical language of the sources to the computer language and system of coding it is necessary to reduce the number of words (one or two should be typed at most in the fields created in a database). This leads to some dilemmas for historians using databases and software, as they might find new relevant information in the archives and then need to decide what information should be selected as primary or secondary. The historian often wishes to input all information and data.

Nevertheless, when using such databases, choices in registering and rejecting data will arise. Thus, if making appropriate choices according to the concrete question the historian wishes to answer, the potential value of new technologies multiplies as information could be cross-referenced through annual series of data, correlations, multiple queries, clusters of information, etc. In doing so connections and insights might arise that may not have been visible at first glance. The dialog in recent years between social sciences and humanities and new technologies will be outlined in the following lines, as well as some examples of databases designed by historians. Then, I will introduce the database that I have designed to analyze consumer behavior for the early modern period showing how this database was conceived to answer concrete questions.

The link between the historian and new technologies has certainly modified the way scholars identify their questions and sources, and how they collect the vast and very diverse information that appears in historical documents. The fast diffusion of new software certainly has both benefits and downsides. The rapid systematization of registers and their codification in a database enables instant access to the information through short queries. However, one of the chief problems with this system is that the language of historical documents in many cases might not be compatible with the computer code and when registering

the information in a database the historian must cut or abbreviate long sentences and extensive documentation down to single words. While this is a necessary exercise, in some cases, it can mean that valuable information is deleted or dismissed as unimportant. Thus, the application of new technologies to historical studies should be understood as a tool to further analyze some specific fields such as those related to economic, social, political, or cultural history, among others.

This methodology should be addressed to specific case studies, which allows scholars to make regional and international comparisons over time, by bearing in mind the specificities and particularities of a wide range of sources and data. The chief challenge has been whether to treat the help that new technology offers as the key goal as such or as a means to shed light on the topic that the historian needs to clarify. Among the pioneering works of the sixties and seventies, we find the database used by the group of researchers at the Baltimore School led by Robert Fogel and Engerman (1974) to study the development of railroads and American slavery. These works were followed by the outstanding work of the Cambridge Group, headed by Peter Laslett, for the history of population, family size and changes in social structure and demography (Laslett and Wall 1972; Laslett 1987).

The approaches to using databases and new technologies of Fogel and Engerman, and Laslett, opened up a new arena for economic history and quantitative analysis. Fogel was one of the first historians to apply such methods to cliometric studies to analyze the industrialization of American society, connectivity between different cities, the transport system, production and consumption of wheat and other crops, price volatility, and other economic indicators to study economic growth in American society.²

Laslett's database concentrated more on the analysis and evolution of population for the European society during the first industrial revolution. He focused on the household unit making clusters of social groups to analyze birth rates, fertility, mortality, age at marriage, size of family, etc. Mainly using parish and protocol sources, Laslett's group created cohorts of population for the British and European society. The purpose was similar to Fogel's which was to apply a new quantitative method and systematization of sources to observe the evolution of population at the dawn of the industrial revolution and to look at how that evolution correlated with economic growth.

Laslett's studies made an impact on scholarship and later studies on population using databases emerged, such as those by Johansen (1983, 1999) for Danish communities or Lee, Campbell, and Guofu (1992), Campbell and Lee (1996) and Lee and Campbell (1997) for the areas of northeast China, including the Beijing area, from the eighteenth to twentieth centuries. Since the early 1980s, Lee and Campbell (2016) have created multigenerational panel datasets to study the evolution of population and family size. Their study had a similar aim and method to the pioneering studies of Peter Laslett analyzing family size, social reproduction, alliances among groups, clans and lineages, social mobility and changes over generations. Lee and Campbell's multi-generational datasets output is created in "excel" and "pdf" files from which we can observe macro aggregate data on population growth for the areas of north China on which they concentrate (Dong et al. 2015). They provide a good picture of long-run changes in population.

It would also be interesting to get a micro perspective of how specific groups and families behaved and made their socio-economic strategies through marriages based on endogamy, vicinity, social status, etc. By focusing on a cluster of families over generations one might extrapolate more general conclusions. The database should be linked with other software that creates genealogies showing changes over generations. The "Genopro" and "Heredis" software, among others, are extremely useful for this purpose. In a previous database that I designed to study family changes and social reproduction in elite groups of eighteenth-century Spain (Perez Garcia 2011), I linked a "Filemaker" database with "Genopro" software to observe such changes over time. In addition, it would be interesting to know more about the logic behind the design of Campbell and Lee's database: the way the entries were created, the process of inputting the data, the codification and accommodation of the historical language of sources to the computer language, and whether it is possible to cross-reference information from the entities or if they are simply static "excel" tables.

These issues appear in many databases found in the field of economic history as the ultimate output is rigid "excel" tables with large data on population, GDP, export-import data, price, services, industry production, etc. The datasets of Stephen Broadberry and Alexander Klein on aggregate and per capita GDP in Europe (1870–2000), as well as the one by Broadberry et al. (2015), follow this macro-economic pattern, using "excel" tables and providing little detail on the

inner dynamics of business, trade and consumption flows from a micro-economic perspective. Moreover, little attention is given to households and family members as significant economic agents.

The same is true for the extensive range of databases that look at wide clusters of the population to study the life course of Dutch city families, such as those by Kok (2007) Kok and Mandemakers (2016), the “Soundtoll” database to register the toll and custom system in the Baltic market, and Van Dyke’s (2016) datasets to study the Dutch and British commerce in Guangzhou and Macao during the eighteenth century. Following a similar line of research, Silvia Marzagalli designed the “Novigocorpus” database, which registers data on the itineraries of merchant ships from the seventeenth to nineteenth centuries (Dedieu et al. 2011, 241-262).

The main fields of social sciences in which new technologies have been used to carry out research using aggregate data on population and trade are demographic history, social network analysis, and socio-economic and political history. Among the existing software, “Microsoft Access,” G.I.S. (Geographical Information Systems), and genealogical programs such as “Heredis” or “Genopro” and “Ucinet” for social network analysis (Perez Garcia 2011) have been the most popular. These programs have been applied to analyze societies of late modern Europe by Johansen (1983, 1999), who constructed a database for the analysis of the Danish community of Odense in the eighteenth century, by King (1996, 62–77), who made comparative studies on the population of late modern England, and by Pelteret (2001, 117–125), who designed a database for a prosopographical study of England in the eighteenth century.

In the same fashion as Pelteret’s model, Dedieu (2005, 99–112) created a database called “Fichoz” which was designed “to store all kinds of social history data” (Dedieu et al. 2011, 241–262) and reconstruct social networks of the Ancien Régime. Among those scholars that have applied the “Ucinet” program to build up social networks analysis, Gribaudo (2000) stands out for his study of French parishes, as do Carvalho and Campos (2007, 175–193) for the Portuguese case.

These are the most relevant databases that we might find in the field of social and economic history. However, the output of data is mainly obtained from “excel” tables, and there is a lack of modeling and connecting tables, or entities, which could potentially be used to cross-reference historical sources. “Microsoft Office Access Database,” among other

software packages (“Filemaker,” MySQL, SQL, Oracle, etc. can be used in the same fashion), has the potential to build multi-relational databases.

Consumption database

A database to analyse changes in consumer behaviour

New scholarly works in global (economic) history are currently reviewing different models of economic growth for China and Europe (Perez Garcia and de Sousa 2018). This line of research makes use of new technologies and databases to analyze how exotic goods from Asia and China entered European communities and in doing so changed consumer behavior. Owens (2007) has fully applied the G.I.S.³ and social network analysis (SNA) using relational database management systems (RDBMS) to model, represent and exploit the historical data to analyze the complexity of the world systems of the early modern period (Codd 1970). In his database, Owens uses intentionally linked entities (ILE), which shows the complexities (Chen 2002) and dynamics of the early modern period.

Limiting arity in the databases presented above is one of the main issues that needs to be addressed when designing and conceptualizing a database. Owens implements his database with ILE providing an unlimited number of roles played by entities in a relationship. This is precisely the objective of the database presented in this article: it does not only connects social actors (merchants) to model the SNA, but also commodities from far-away markets entering southwestern Mediterranean regions. Owens affirms that “good relational design requires that the database be ‘normalized’ so that redundancies in the entries are minimized” (Kantabutra et al. (2014, 61). Thus, the entities, relational “keys” which connect information, and requests for information, could be conducted more efficiently. As discussed earlier, this is the core problem historians face when dealing with data of diverse nature in the historical archives. Not all the information can be processed within the computer language, and choices should be made when prioritizing information, and such priorities should be guided by the researcher’s question.

Information from such heterogenous sources should be normalized to avoid errors and redundancy in the data. Such errors in the data are defined as “noise.” Some economic historians have applied filters such as “white noise” to make consistent annual series of data (Cendejas et al. 2017). “Noise” might be

avoided if the input of data is normalized as far as possible. The case of probate inventories is a good example of such data normalization, as the information found in this source could be systemized and simplified into the computer language. The debates on the relevance of probate inventories for analyzing the evolution of consumer societies is still very present in the historiography. Nevertheless, there is no doubt that this source is very valuable for studying consumer behavior.

The aim of this article is not to engage in the ongoing debate about the importance of probate inventories. However, it is worth mentioning Clark's (2010) belief that "the consumer and industrious revolutions of 1600–1750 are artifacts created by misinterpreting the major source on consumption in these years, probate inventories," de Vries's (1993) remarks about the difficulty of converting a stock variable into a flow variable, and Yun Casalilla (1999) points that probate inventories do not show all of the assets of the household. Accordingly, the way the data from probate inventories is classified and stored is paramount to enable comparative history and to connect spaces (McCants 2006; Ramos Palencia 2011; Perez Garcia 2013).

The use of an "Access" database, as it is presented in this article, constitutes the main technological tool for this objective: creating connections between places (rural–urban and overseas) in South China and Western Mediterranean Europe and analyzing consumer behavior through the circulation of goods. The feasibility and plasticity of "Access" as a software, which enables the language of historical sources to be combined with the computer coding system, has allowed me to compile an extensive sample of probate inventories (273) and dowries (66). This sample has been arranged by making clusters according to chronology, socio-professional categories of individuals, incomes (cross-referenced with sources on tax collection such as "Ensenada Cadastre") and diverse types of items (cross-referencing with trade records, see illustration 4 in the appendix) considering their value, characteristics, quantity, etc. These products entered households with different levels of incomes, provoking changes in lifestyles and consumer behavior. This process contributed to the creation of a new middle-social class—as the first step towards the modern welfare state.

The specific use of this "Access" database makes it possible to use and extract concrete information from historical sources, mainly probate inventories and dowries, to shed light on the main questions this

article asks, as well as developing the working hypotheses, which are (1) the case study of a locality in the Western Mediterranean region will support the "vicarious consumption" theory, which suggests the role played by merchants as mediators in changing consumer behavior is more relevant than the "trickle down" theory regarding emulation in patterns of consumption; (2) the levels of consumption of overseas commodities by social groups with different levels of income will show that in this region there were some symptoms of an "industrious revolution," but not a consumer revolution. Consumption is the main indicator of economic growth and prosperity that sheds light on the real economic development within a micro-level focus in a pre-industrial society, putting aside the big aggregates such as GDP, which does not give much information about the real distribution of wealth and economic prosperity. In addition, this database allows the historian to solve problems inherent to probate inventories, as by making clusters of goods and social groups it is possible to compare the patterns of consumption of families with diverse levels of income, wealth, and social status.

This database is an essential tool to organize the varied information found in probate inventories, which are a major source used to analyze consumer behavior for the early modern period. The first step is to create a sample of probate inventories, arranged in chronological order (from 1730 to 1769 and from 1770 to 1808), as well as by social group. In the sample of probate inventories (273) and dowries (66) of my case study, there are a total of 10,518 entries of goods listed in probate inventories and 2,767 entries listed in dowries. These cover the Kingdom of Murcia, both its urban and rural areas, as well as the port city of Cartagena, which was connected to the port of Marseille through French trade families, as one of the main entry points for overseas goods in the Western Mediterranean.

The reason I chose "Access" from among other software solutions such as "Filemaker" is that it allows us to deal with a large amount of diverse data and to cross-reference the selected information of the sources. Because "Filemaker" does not use standard industry language, making it difficult to combine with other industrial software, the rigidity problem caused by "Filemaker" can be solved by using "Access," which uses a standard SQL language definition. This is very important for the database I have designed as the goal is to create links with other software such as "Heredis" and "Genopro" to cross-reference historical sources of a diverse nature. To tackle the problem of

ordering such data, this database presents a new way to accurately order and analyze data gathered from the archives. Thus, traditional challenges such as capture, storage, analysis, data curation, search, sharing, transfer, visualization, querying, updating and information privacy are tackled and solved.

In this case, the main sources used to analyze changes in consumer behavior are probate inventories and dowries, which can reveal the types of goods that were consumed by individuals of different socio-economic status and the possible changes in patterns of consumption over time. Within this methodology, it is possible to observe the circulation and consumption of Chinese goods such as tea, silk or porcelain in families with different levels of income and wealth. The output and the data analysis operate according to our main question and hypothesis which is to examine whether the “industrious revolution” took place in a Western Mediterranean region and to demonstrate the “vicarious consumption” theory by which changes in consumer behavior were fostered by foreign merchants acting as main mediators. The “vicarious consumption” theory might give further insights into societies that take on a new economic model, which might correlate with economic growth, as certain social groups increase the consumption of not only goods that are deemed to be necessities but also those associated with improved lifestyles, luxury and new fashions. Therefore, an economic model based on the “vicarious consumption” theory contributed to the formation of a new middle class.

Ordering historical data: the logic behind the data fields

The entries of this database follow the logic of the main questions and hypothesis on consumption and circulation of goods. The Intentionally Linked Entities (ILE) of this database are also connected to other software such as Geographical Information Systems (GIS), “Gephi” (for social network analysis), “Heredis” (genealogy software), and “Genopro” (genealogy software). Thus, the key entry is “name” which states the social actor that the “event” (probate inventory, will or dowry) refers to (see illustrations 1 and 2 in the appendix). In this field, all personal data are registered, such as name, date of birth, marriage, and death dates, the place where the events took place, marital status (married, unmarried, widowed, and in the case of marriages whether it a first or second marriage), and social status—referring to the annual income and the socio-professional category. It also

registers the place of residence (parish and neighborhood), number of family members and whether in the place of residence there are also slaves or servants, if the breadwinner is given the title of “don” (a symbolic social title), and finally the type of house in which the family lives. The information of this entry corresponds to the individual’s information specified in the document.

The sub-fields related to this entry are “marriage” (information related to an individual’s civil status), and “relationships” (here all the individual’s relationships are linked with the aim of constructing a social network and life cycle, and this entry is connected to the genealogy software “Heredis” and “Genopro” to visualize a social network of 2,366 persons. See illustration 3 in the appendix). This enables us to build the social network of individuals with different socio-economic status, as well as analyzing their social circles.

Other sub-fields related to “name,” or social actor’s information, are “income” (referring to annual income collected mainly from the source of Ensenada Cadastre) and “employment” (related to an individual’s socio-professional category). The field “income” collects information about the annual income of the individual regarding his or her work, work sector, as well as the number of family members who work or are of working age. This field provides information about the individual’s socio-professional category, as well as the number of family members who contribute to increase the family income. The use of labor of family members might or might not correspond to the same professional category of the breadwinner. However, due to such labor the annual income of the household might increase and enable a better lifestyle for the household. This can be tested by analyzing possible changes over time to consumer behavior. If individuals perform one or more than one job at the same time, this might indicate if an “industrious revolution” occurs. The ratio of consumption/income or socio-professional category is of high importance to show whether an “industrious revolution” or “vicarious consumption” model occurs for the region under analysis.

Sub-fields related to the social actor’s information which are also included in the database are “inheritance distribution” (information related to the will such as date and place where the will was made, as well as legacies, property bequeathed, its value, etc.) and “immovable assets” (acquisition of debts and payments and immovable property of the head of the family such as agricultural land and houses, with a full description of their location, price, size, etc.). The

fields of “inheritance distribution” and “immovable assets” are not used in this article since the main question is about changes in consumer behavior rather than land distribution and management. However, these fields might provide some clues about how the main economic resources and land are managed by local elites.

Similarly, the field “items” is a key one in this database (see illustrations 1 and 2 in the appendix). In this field, all data related to the goods listed in the probate inventory are collected. These data are material, size, place of origin, value of the item, measurements, the room in the home in which the object is located, color, units, and state (whether the object is old, new, or used). Thus, the entries “name” and “items” are the most relevant as when making queries and cross-referencing data the ratio consumption/socio-professional category might be estimated. Therefore, the “industrious revolution” theory could be tested and the “vicarious consumption” theory might be shown to account for changes in patterns of consumption, cultural habits and the introduction of new fashions.

The field “source reference” aims to register the catalog number of the historical document which is connected to the social actor. The aim of this entry is to avoid duplications when inputting the information related to social actors. This field records all information regarding the procedure of cataloging the document such as the name of the person that issues the document, catalog reference of the source, type of document (notary document, trade record, population register, etc.), type of action that is signaled in the document (whether it is a will, dowry, probate inventory, etc.). It also registers the number of pages of the document, where it was issued, the name of the notary and the archive in which the source is located.

Shedding light on some big questions: testing the industrious revolution theory and demonstrating the vicarious consumption theory

In recent decades, scholars have been very confident about using macro aggregate data such as GDP, population size, or state tax revenues for the analysis of the economic performance of European and Asian states, as well as their comparison (Grupo 75 1977; Álvarez-Nogal and Prados de la Escosura 2007; Yun Casalilla 1994; Yun Casalilla and O’Brien 2015; van Zanden et al. 2014; Maddison 2007). However, using the database mentioned above and paying more attention to

Table 1. Household expenditure (in “reales”) “per capita” according to level of wealth (1730–1808).

Wealth groups	Textile items	Luxury items	Beverage items
0 > 10,000	1.34	0.45	0.36
10,000 > 50,000	1.28	0.44	0.45
50,000 > 100,000	2.04	1.25	1.93
>100,000	3.54	7.92	5.70
Total	2.05	2.52	2.11

Source: Protocols of the Archivo Historico Provincial de Murcia, Spain (A.H.P.M.).

Table 2. Household consumption (in units) “per capita” according to level of wealth (1730–1808).

Wealth groups	Textile items	Luxury items	Beverage items
0 > 10,000	59.15	52.42	25.33
10,000 > 50,000	163.83	133.16	38.35
50,000 > 100,000	88.88	44.84	15.63
>100,000	240.54	595.93	233.21
Total	138.10	206.59	90.63

Source: Protocols of the A.H.P.M.

the specificities of local economies about trade and consumption, it is possible to observe how patterns of consumption have changed over time and whether such changes were correlated with economic growth.

To observe such a correlation for the case of Castile (Spain), we find the well-known Ensenada Cadastre which was made in 1756 by the Marquis of Ensenada during the reign of Ferdinand VI to reform the tax regime of the Crown of Castile (Niccolini and Ramos Palencia 2015, 5–6). I have used 273 observations in the Ensenada Cadastre tracing the same individuals I observed in the sample of probate inventories. Cross-referencing both sources allows me to correlate wealth with levels of consumption (see Tables 1 and 2). Such correlation might minimize the bias of the sample and show the new tendencies in consumption of groups with different levels of wealth.

The Cadastre provides specific details on the size of population of different Spanish regions (Niccolini and Ramos Palencia 2015; Gomez de Enterría 2010; Ramos Palencia 2010), as well as families’ annual incomes and family members in age of work (see illustration 5 in the appendix). Even though this source does not allow us to reconstruct annual series of families’ incomes (Figure 1), it provides a snapshot of how eighteenth century social groups (mainly retailers, artisans, and peasants) were acquiring better lifestyles and how such changes were correlated with consumption mainly through the acquisition of overseas commodities such as those from China.

Illustration 5 (in the appendix) corresponds with the section *Respuestas Particulares* (Private Answers) with information on the occupations of the head of the household and other members of working age and annual income. All households were subject to a

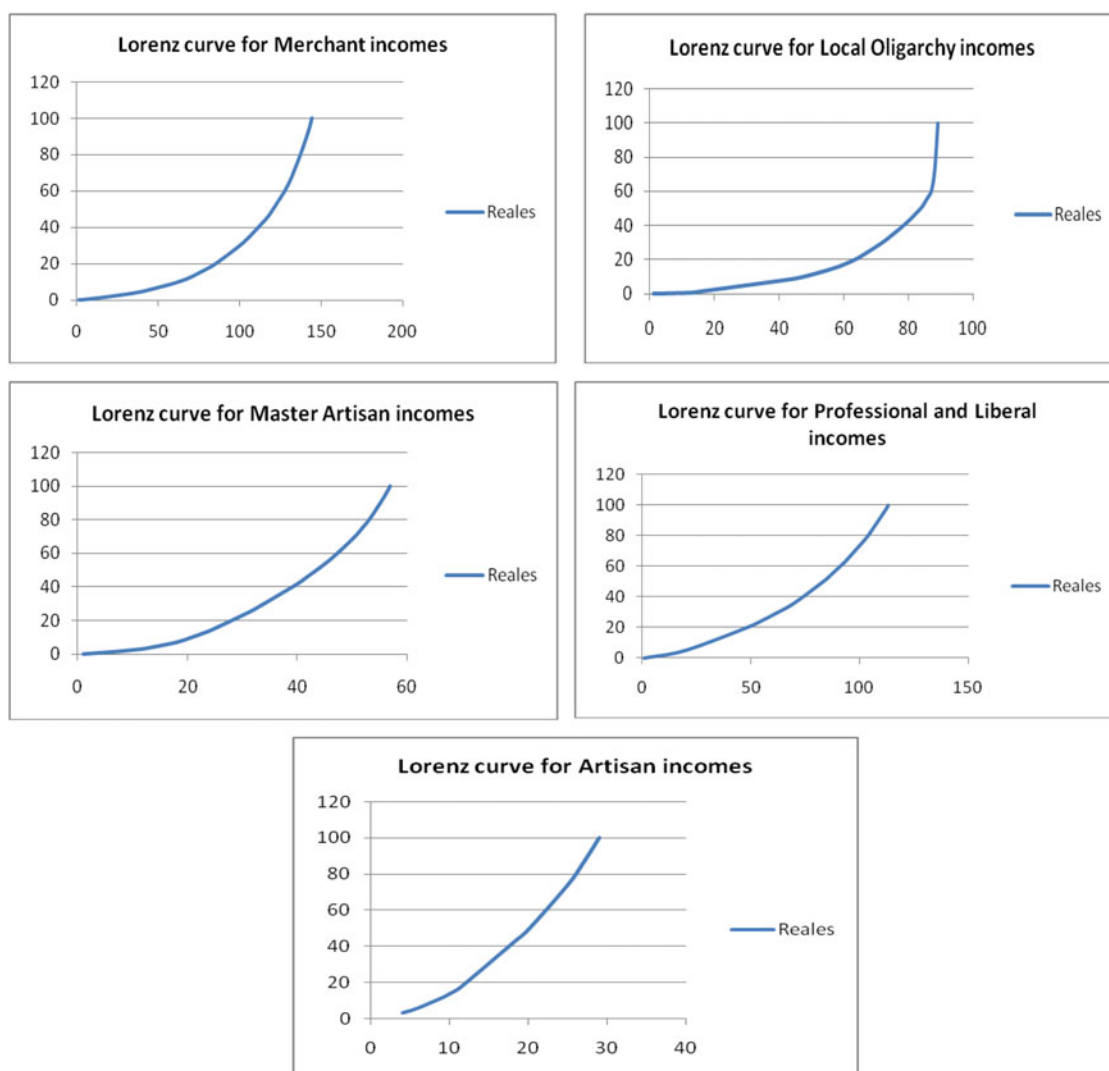


Figure 1. Distribution of income in social groups of South-Eastern Spain (1756). Source: Protocols of the A.H.P.M., Perez Garcia (2013).

“single tax” (*única contribución*) and the rate depended on their income (Niccolini and Ramos Palencia 2015, 6). I have used this source to estimate the income inequality in the Kingdom of Murcia during the mid-eighteenth century, distributed by different socio-professional categories (Figure 1). I have calculated the Gini index which shows such inequalities in a Lorenz curve (Figure 1).

As it is shown in Figure 1, inequalities are higher in local oligarchs (individuals with noble titles or with a position as *regidor* or *jurado* in the *concejo* of the city and rich merchants) than in middle groups such as ordinary merchants and master artisans, artisans or liberal professions (here the occupations included lawyers, scribes, or doctors). This is an indicator of the progressive development of a middle class with better levels of income and wealth which allowed them to expand the range of goods consumed and, therefore, to acquire a better lifestyle.

As Niccolini and Ramos Palencia (2015, 1–26) have demonstrated for other areas of Castile, in the Kingdom of Murcia we can observe in Figure 1 that income inequalities were pronounced and that “the relationship between inequality and per capita income is less clear-cut” (Niccolini and Ramos Palencia 2015, 1–2), which for the case of Murcia can be explained by the development of maritime trade in the second half of the eighteenth century and the mediation of traders in introducing higher volumes of overseas goods. The land rents and its management were still in the hands of the ruling elites (Álvarez-Nogal and Prados de la Escosura 2007, 319–669; Ringrose 1983) which prevented the development of new systems of production and innovation. The proximity of urban and rural areas in the cities of Murcia and Cartagena (Perez Garcia 2013) might explain the paradox that during this period some economic development, urbanization and capital accumulation, which allowed

the purchasing of new goods, was also correlated with an increase in inequality (Van Zanden 1995, 643–664). The labor earning dispersion in the cities of Murcia and Cartagena, an effect of the blurred boundaries of rural and urban areas (Alfani 2014, 62–71) in the early modern period, as well as the dense network of entrepreneurial activities fostered by the port of Cartagena, explains the paradox of income inequality and rise of consumption in households with middle levels of wealth. This can be seen in Table 2, which shows that middle levels of wealth, from 10,000 to 50,000 *reales*, had a higher consumption of goods from distant markets than groups with higher levels of wealth, from 50,000 to 100,000 *reales*.

To measure this correlation, I have followed the strategy of making clusters of household expenditure and household consumption by groups of wealth (see Tables 1 and 2). Here, we can clearly observe the progressive formation of a middle social class (Table 2) due to the increased consumption of goods leading to a better standard of living, such as new textile items (household textiles and clothing made of silks, cotton, and calicoes from China and India), luxury items (furniture, household adornments, and porcelains) and beverage items (utensils to prepare and serve drinking chocolate, coffee, and tea). In Tables 1 and 2, the intention of grouping goods in categories, such as textile items, luxury items, and beverage items, is to observe changes in consuming nonessential goods to cover basic necessities and the introduction of luxury goods in households of a middle level of wealth. These goods were shifting household demand and changing tastes and fashions. Households became, therefore, more market-dependent as consumers but not as producers (Perez Garcia 2013).

Household expenditure per capita was higher in wealthy social groups, which means that a conspicuous consumption was more evident among the oligarchy as their aim was to publicly display their wealth (Table 1). The demand for the goods mentioned grew (Table 2) within local oligarchies. It is important to recall that the sample differentiates clearly between individuals who held a noble title or a position in the *concejo* and those from the group of merchants. This process was mainly due to upward social mobility that took place in families who thrived through business activities and had a higher level of wealth, from 50,000 *reales* to more than 100,000 *reales* (Table 1), spending their wealth in goods which have a symbolic and social meaning showing power and economic status.

Table 1 shows the expenditure per capita among groups with different levels of wealth (these data are collected from probate inventories) and Table 2 shows household consumption (in units) in which luxury items are highly consumed by these groups. The margin of per capita expenditure and units of goods consumed was growing among social groups whose wealth was higher. These groups, whose family origins were rooted in trade, assimilated to old oligarchies by following the same lifestyles. Thus, the demand for the goods mentioned above rose during the second half of the eighteenth century.

One might assume that an emulation process was taking place from top to bottom in the social hierarchy. The so-called trickle-down theory (McKendrick 1982) claims that upper social classes (ruling elites, local oligarchies, and the aristocracy) were the main social actors in changing patterns of consumption. However, the wide range of merchants, from peddlers to retailers and wholesalers were fostering a new type of consumption and changing socio-cultural practices through the introduction of commodities from overseas. Surprisingly, the household consumption per capita, in both urban and rural areas of Murcia and its port Cartagena, grew in social groups with middle levels of wealth (from 10,000 to 50,000 *reales*) (Table 2).

The progressive rise in the consumption of nonessential and even luxury goods in groups with middle levels of wealth is an indication of: (1) the progressive emergence of middle social groups. Scholars in the last two decades have been searching for the birth and origins of modern consumer societies. This might not be a consumer revolution, as we know for the case of Spain that the industrial revolution took place much late—in the latter half of the nineteenth century, but such changes in consumption might be symptoms of the so-called industrious revolution prompted by capital accumulation and trade activities. (2) As mentioned, this might be a symptom of an “industrious revolution,” but not a profound change in the labor force (artisan and peasant activities), which was the earlier stage of technological and institutional changes leading to an industrial revolution (de Vries 1994). Instead as corroborated through the paradox of income inequalities and rising of levels of consumption, such symptoms of an “industrious revolution” are explained through the dense commercial network that existed in Murcia and Cartagena and their hinterlands, in which merchants, artisans and peasants were performing different activities, mainly related to the textile sector, land, and trade (Perez Garcia 2013; Martinez-Carrion 2012).

Within this case study, it can be observed that the share of colonial goods increased the total volume of trade prompting a rise in consumption (see Figure 2). Data on trade in Figure 2 (the blue line) are collected from the archive of the Chamber of Commerce of Marseille, in which the Roux-Freres, the main trading house of Marseille, was one of the main families who controlled the Mediterranean trade introducing goods from Asia. The main business families of Marseille established at the Chamber of Commerce the price list and volume of goods from the Americas and Asia in the stock market at a fixed rate (Perez Garcia 2013). The volume and price list of goods reexported from Marseille to other European countries is listed in the trade statistics that I use in this research.

In Figure 2, for southeastern Spain, the blue line represents the supply and the red line the demand for Chinese porcelains. Data from trade records (Archive of the Chamber of Commerce of Marseille) have been cross-referenced with probate inventories (Archive of Protocols of Murcia in southeastern Spain). A rise in consumption can be observed for the years in which bans and prohibitions on the introduction of foreign goods (mainly from Asia) existed. Given the official figures we have from trade and the constant demand for Chinese porcelains (as seen in probate inventories) it can be deduced from these historical sources that smuggling activities were widespread.

This indicates that households were more eager to consume goods from the market which increased the work hours per year, even though real wages or labor productivity was stagnant or declining during the eighteenth century (Voth 1998; Allen 2001; Uebele 2013). This new trend for consuming larger volumes of new goods was an indicator of the “industrious revolution,”⁴ which entailed three key elements: (1) an increase in the working hours of economic agents (mainly peasant and artisan families); (2) a growth in sales, trade and distribution (as an early stage of market integration); and (3) a rise in the consumption of new goods, mainly those from overseas.

The economic agents that fueled such changes were peasant and artisan groups (de Vries 1993, 1994, 2008), but what about trade groups that stimulated local economies and had a profound market orientation? Such merchant families shaped dense business networks (see the genealogical tree in the appendix), performing different activities as traders—but also as artisans or peasants—and introducing new goods. This might nuance the “industrious revolution” as the boundaries between being a merchant, artisan, or peasant for European pre-industrial societies are

somewhat blurred. And due to the lack of technological and institutional incentives in the economy of pre-industrial Spain (Ringrose 1983), artisan and peasant families were not able to create an “industrious revolution” as an earlier step to the industrial revolution.

Thus, I provide new empirical evidence in this article (Tables 1–4 and Figures 1 and 2) to present the “vicarious consumption” theory as an alternative model to the “industrious revolution” theory, mainly for Mediterranean societies in which we find a lack of technological and institutional incentives for modern economic growth, and thus a greater dependence on foreign trade. The cluster of data in Tables 3 and 4 is arranged comparing the share of consumption of non-essential and luxury goods (such as porcelains, chinaware, and silk) between craftsmen and “other social groups” (local oligarchy, merchants, landowners, professionals, and yeomen), included in the sample of data, and between yeomen and “other social groups.” The possession of porcelains or chinaware such as tea pots, chocolate pots, and *salvillas* (trays to serve tea, chocolate, or coffee), or garments made of silk to wear or for interior decoration of the house, indicates an acceleration of global demand for such goods shown in individual consumer choices—as the sample of data of this case study shows.

According to the “industrious revolution” theory, craftsmen and yeomen were the social groups driving changes in consumption. However, this is not supported by the data used in this study. Table 4 shows that consumption of such goods is higher among merchants (wholesalers, peddlers, and retailers) than the “other social groups.” This indicates that merchants were the economic agents prompting changes in consumption. They might be defined as “vicarious” agents creating a new demand for colonial goods among other social groups.

The “vicarious consumption” theory puts the focus on family groups that performed different activities at the same time as peddlers, retailers, wholesalers, and artisans or peasants working and supplying goods for the market and self-consumption. In addition, the main feature of these groups, who might be from the local communities/villages or from other regions or countries, is that they fostered new consumption habits through the new commodities they introduced.⁵ This created a process of emulation which did not follow an upward–downward circulation in the social hierarchy—i.e., with the aristocracy/ruling elites being the social groups leading changes of consumption as McKendrick (1982) argued.

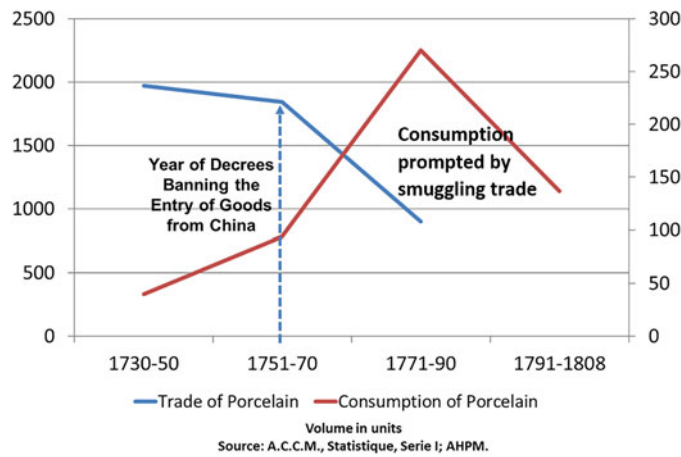
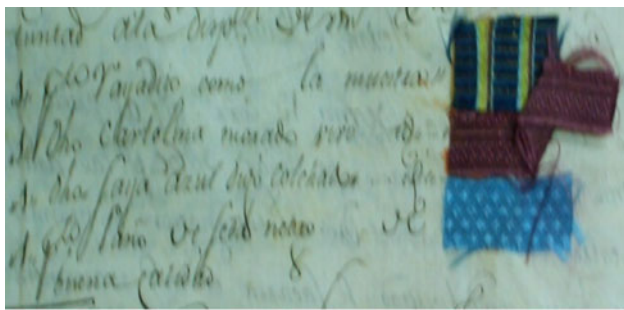


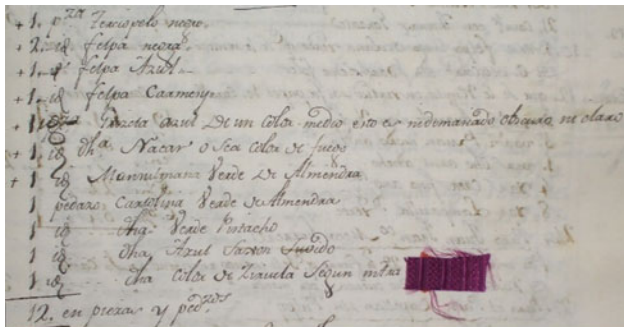
Figure 2. Annual trade and consumption of Chinese porcelains in South-Eastern Spain (1730–1808).



Source: Archivo Municipal de Lorca, Spain (A.M.L.)

Illustration 6: Sample of *Sayas* (silk from Fujian) in South-Eastern Spain.

Source: Archivo Municipal de Lorca, Spain (A.M.L.)



Source: A.M.L.

Illustration 7: Sample of Silk in South-Eastern Spain.

Source: A.M.L.

A steady rise in consumption is shown through the trade records of Marseille and probate inventories of households in both urban and rural areas of Murcia and its port Cartagena, in Mediterranean Spain. This was a consequence of the progressive growth of the share of colonial goods in the total volume of trade. But, when making clusters of artisan and peasant groups to observe whether these groups were leading changes on consumption in a nonindustrialized area

of southern Europe, we might find only symptoms of an “industrious revolution,” but not an actual “industrious revolution” (see Table 3). However, by cross-referencing the aggregate import–export volumes of Chinese goods (porcelain, chinaware, tea, silks, and household furniture) of a specific locality of Europe, such as the case of Marseille (see Figure 2), a port with strong links with Mediterranean Spain, mainly the area of the Kingdom of Murcia, what we might detect is social groups performing activities, such as artisans and merchants at the same time, that ultimately lead to changes in consumer behavior (see Table 4). These groups are those uniquely identified as “vicarious consumers,” who transformed the supply and demand side at the same time by introducing new commodities and creating new aspirations and desires in consumers’ mindsets. They were, therefore, acting as mediators in changing tastes and preferences toward consumption (see Table 4). Such groups were quite dynamic, even in the period when the new Bourbon dynasty in Spain decreed that the introduction of foreign goods, such as those from China, was prohibited. This was in line with the mercantilist policies of the eighteenth century which aimed to foster national productivity and consumption. The decree issued by Philip V details those banned goods:

[... Por decreto de seis de abril de este año, expedido al Consejo, revalide otros de 25 de Octubre de 1717; veinte de junio de 1728, en que se prohibio la introducción en estos Reynos del Azucar, Cacao y Dulces de Marañon del Reyno de Portugal, y las Sedas, Telas, y Textidos de la China, y demas partes del Asia, como también de Algodon, y Lienzos pintados, ya fuesen fabricados en el Asia, ò en el Africa, o imitados, ò contrahechos en Europa, consiendiendo solo la Entrada en estos Reynos del Algodon no labrado, fruto propio de la Isla de Malta ...]⁶

Table 3. Testing the “Industrious Revolution” theory through the consumption of goods from China in the probate inventories of South-Eastern Spain (1730–1808).

Sample (= *135)	1730–1769		
	Porcelains (%)	Items from China (%)	Chinaware (%)
Craftsmen (=37)	8.57	0.00	0.00
Other Social Groups (=98)	5.15	4.12	2.06
Total	6.06	11.76	5.88
Sample (= *138)	1770–1808		
	Porcelains (%)	Items from China (%)	Chinaware (%)
Craftsmen (=37)	2.85	5.71	5.71
Other Social Groups (=101)	4.00	11.00	8.00
Total	3.70	9.62	7.40
Sample (= *135)	1730–1769		
	Porcelains (%)	Items from China (%)	Chinaware (%)
Yeomen (=38)	2.63	0.00	0.00
Other social groups (=97)	7.44	4.25	2.12
Total	6.06	11.76	5.88
Sample (= *138)	1770–1808		
	Porcelains (%)	Items from China (%)	Chinaware (%)
Yeomen (=40)	5.12	0.00	0.00
Other social groups (=98)	3.12	13.54	10.41
Total	3.70	9.62	7.40

Source: Protocols of the A.H.P.M.

Table 4. Testing the “Vicarious Consumption” Theory through Chinese goods in the probate inventories of South-Eastern Spain (1730–1808).

Sample (= *135)	1730–1769			
	Porcelains (%)	Items from China (%)	Chinaware (%)	
Merchants (=16)	20.00	0.00	0.00	
Other Social Groups (=119)	4.27	3.41	1.70	
Total	6.06	11.76	5.88	
Sample (= *138)	1770–1808			
	Porcelains (%)	Items from China (%)	Chinaware (%)	
Merchants (=17)	0.00	5.55	0.00	
Other Social Groups (=121)	4.27	10.25	8.54	
Total	3.70	9.62	7.40	
Sample (= *135)	1730–1769			
	Tea pots (%)	Chocolate pots (%)	Salvillas [trays] (%)	Cups (%)
Merchants (=16)	0.00	53.33	20.00	13.33
Other Social Groups (=119)	0.00	28.20	21.36	5.98
Total	0.00	31.06	21.21	6.81
Sample (= *138)	1770–1808			
	Tea pots (%)	Chocolate pots (%)	Salvillas [trays] (%)	Cups (%)
Merchants (=17)	0.00	72.22	33.33	11.11
Other Social Groups (=121)	1.70	57.26	23.93	7.69
Total	1.48	59.25	25.18	8.14

Source: Protocols of the A.H.P.M.

French families, who settled down in Mediterranean Spain after the Bourbon arrival to the Spanish throne (see the genealogical tree in the appendix), maintained business links with the Roux-Freres during the second half of the eighteenth century. Southwestern Mediterranean Europe, the main case study presented in this article, shows the high dependency of foreign trade to supply local economies with goods from Asia (Figure n. 2). Mercantilist policies were introduced by the Spanish kings to ban the entry of foreign goods to stimulate the national

industries of Spain. The demand for these goods did not decline, probably due to the activity of smugglers.

The sample of data is representative enough to show the consistency of the database and verify the use of this methodology to analyze levels of consumption of individuals that belong to different social strata. The high number of registers (10,518) makes the sample reliable, as there is a balanced number of probate inventories for the different socio-professional groups for the period from 1730 to 1808.⁷ Therefore, new tendencies and changes in patterns of consumption

according to different social groups might be detected. The use of the records, probate inventories and dowries, which appear in the database, allows us to further analyze the patterns of consumption particularly those products associated with new fashions and with exotic origins such as China, India, or the Americas.

Thus, making queries through the “Access” database, by cross-referencing data and information that we find in the sources, is a useful way of understanding what types of objects were consumed by different social groups and households of different income levels. There are some significant examples of objects that were consumed by certain socio-professional categories, such as the case of the wholesaler of silk and spices, Nicolas Estoup Fadeville (a major social actor in the genealogical tree presented in the appendix), who was from the Italian city of Salbaterra. His income was around 10,640 *reales* per year, which allowed him to enjoy a comfortable lifestyle and to increase his levels of consumption over time. His probate inventory allows us to observe his consumption of luxury goods, which were distributed throughout the rooms of his household, such as porcelains, religious statues, and silver objects. Objects from China such as tea cups, tea pots, chocolate pots, trays, *jicaras* (bowls made of porcelain for drinking chocolate), or chinaware in general could also be found in his inventory. This clearly shows he embodied the function of a “vicarious agent” through his trade activities by introducing overseas commodities.

These imported items are related to luxury and comfort, and were mostly consumed by the group of foreign merchants, settled in south-eastern Spain, whose origins were Italian, Maltese, and French (see the genealogical tree in the appendix). They acted as “vicarious consumers” of these new goods, which reflected the changes in tastes and food habits.⁸

Regarding the consumption of textiles, searching for certain goods and the materials they were made of can show when different materials were introduced, especially from the Levant, India and China (see Tables 1 and 2 and illustrations 6 and 7), as well as showing the changes in habits of consumption that were taking place in European households. Such consumption was increasing in social groups with a middle level of wealth. This can be seen through the sample of probate inventories and dowries, especially those belonging to foreign merchants, where women played an important role in the introduction of new fashions, mainly in the use of new textiles, either for their own clothing or for textiles for the household such as curtains, carpets, napkins, tablecloths, sheets, and towels.

Likewise, in the sample of protocols, it is possible to find French fabrics emulating Chinese silks such as *cambrai*, *chalu*, *chamelotte*, *monfort* or *ruan*, as well as Asian textiles such as silk, muslins or calicoes from India and China. Such goods are found in the inventory of the Béarnaise merchant Juan Bicaix,⁹ showing that they were intended for trade. This reaffirms the theory that these foreign traders played an important role as mediators in introducing new products and materials in the Mediterranean area.

Moreover, other textiles from the Levant, India, or China such as damask, calico, or silk are found not only in the probate inventories of the upper social groups but also in middle ones. The consumption of these types of cloth (Riello 2013; Mola 2015) is a very clear indicator that tastes and patterns of consumption in Europe were changing through the mediation of traders and the introduction of exotic goods from Asia. The consumption of these goods demonstrates that the purchasing power of middle social classes was growing and people with a modest level of wealth were changing their lifestyles.

During the eighteenth century, the expansion of global commerce (Marichal 2018) allowed a wide introduction of silk from China to Mediterranean ports such as Livorno, Milan, Geneva, Marseille, and Cartagena. Thus, it is not surprising that in the sample of probate inventories and dowries presented for this case study, there is a wide variety of silks including *flaiz*, *porrines*, *caramillo*, and *sayas*. For the case of *sayas*, it was a type of silk introduced to Spain via the Philippines (Nakajima 2018; Hamashita 2008; Li 2007) through the mediation of the *sangleys*, Chinese merchants in Manila of Fujianese origin (see illustration 6 and 7).

Conclusions

The methodology that has been developed through the design of a “consumption database” not only allows us to observe changes in consumer behavior and global trade exchanges through simple descriptions of the goods commercialized or acquired by families with diverse levels of income and wealth. It also enables an accurate analysis of changes in cultural habits in society, as well as the transformation of fashions related to the socio-cultural transfers prompted by the circulation of certain commodities, mainly those of Chinese origin. The embracing or rejection of these new fashions, the social backlash provoked by the acquisition of fancy objects, as well as the introduction of new patterns of consumption were all linked to the economic

development and modernity of the emerging nation states of nineteenth-century Europe.

The lack of a proper political and economic institutional system, as well as new technologies, prevented an “industrious revolution” from taking place prior to the industrial revolution in Western Mediterranean regions, such as in south-eastern Spain. According to the case study presented in this article, the “vicarious consumption” model can be explained by the following factors: (1) high dependency on foreign trade; (2) expansion of trade networks and entrepreneurial activities in local markets; (3) families performed traditional-orientated artisanal and peasant labor combined with retail activities and forming family alliances with wholesalers. Such factors might suggest that changes in consumer behavior, and the rise of consumption per capita of nonessential goods in social groups with middle-income levels and wealth, were provoked by the dense network of local and foreign traders who acted as “vicarious consumers” creating a new market and changing cultural habits through the introduction of new goods.

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Notes

1. Thorstein Veblen (1934, 102–103), the Norwegian-American economist and sociologist, was the first to use the term ‘conspicuous consumption’ when referring to the wealth and status of upper social classes in his well-known work *The Theory of the Leisure Class*. He mentioned that ‘vicarious agents’ are those belonging to the upper classes or rich merchants who popularized the acquisition of new goods. That conspicuous pattern of consumption is the same that Neil McKendrick (1982) later discussed in his ‘trickle-down’ theory marking an explicit social pattern from top to bottom, from wealthy groups to those with modest incomes. However, I took the ‘vicarious’ term to apply it explicitly to economic history analysis for changes in consumer behavior, putting the accent on traders (peddlers, retailers and wholesalers) with different levels of income to demonstrate that the process of emulation in the social hierarchy also went from bottom to top, with the new middle social groups being the ones to really promote new changes in consumption. Merchants played the role of mediators in changing consumer habits in a pre-industrial society of southwestern Europe. In this region households became more market-dependent as consumers, but they did not become more market-orientated as producers. As opposed to northwestern Europe, in which households were both market-dependent as consumers and market-orientated as producers (de Vries 1993, 1994, 2008) therefore demonstrating the ‘industrious revolution’, this did not happen in southwestern Europe. Thus, the ‘vicarious consumption’ model is more suitable as this region depended more on foreign trade (Perez Garcia 2013) and merchants were the social agents that introduced overseas goods.
2. This opened a new venue for studies on quantitative methods, the analysis of economic growth and industrialization of modern societies (Broadberry 1993; North 1981; O’Brien 1977; Williamson and O’Rourke 1999; Pamuk 1987; Federico 1997).
3. There is an extensive literature on the new use of G.I.S. by historians and it is not my purpose to

explore it in detail in this paper. However, some relevant works are worth mentioning: Kantabutra et al. (2014, 57–78), Owens (2007, 2014–2040), Kantabutra et al. (2010, 39–58), Mostern (2011).

4. This term was first coined by Hayami (1976, 2015) in his study of the modernization of Japan's economy; it was later applied by de Vries (1993, 1994, 2008) to analyze changes in consumer behavior in Dutch pre-industrial households.
5. See in the appendix the genealogical tree of the family Estoup Fadeville, which is a clear example of such coalitions between local families of the Kingdom of Murcia and those from other Mediterranean regions such as France, Italy, or Malta. Family alliances through marriages, endogamy practices and conational partnerships were the key element for trust in such entrepreneurial activities. The families Cairon, Bouyon, Dachary, Vidal, Bocalandra, Ducunti, Andrade, and Maseras whose origins were in France, Malta, and Italy were the main social actors promoting such family-orientated business practices from the late-seventeenth to early-nineteenth centuries.
6. Archivo Museo Textil de Tarrasa (Spain), ref. CA 128, *Real Decreto Prohibiendo la Entrada de Seda y Tejidos de China*, Madrid, 1734.
7. The sample is made of 275 probate-inventories distributed equally among the following social groups from upper to lower tiers of the social pyramid: local oligarchy, merchants, landowners, master artisans, professionals, artisans, yeomen. The social categories of the sample are arranged according to decisions and strategies that the historian should follow mainly for a complex society such as that one of the *Ancien Regime*. I have followed the model by Kriedte, Medick, and Schlumbohm (1996) who asserted that due to the stratification of pre-industrial European societies historians should use instruments to classify social groups in different typologies. Thus, changes in consumer behaviour and its correlation with economic growth might be better explained.
8. Among this group of foreign merchants, the sample registers the records of Juan Bicaix, French trader from Bearn, Nicolás Estoup Fadeville, wholesaler of silk and spices from Salbattera (Italy), Antonio Donate, from Italy, whose family was devoted to the craft of silver and gold.
9. A.H.P.M., Sig. 2694, sin foliar, 13/08/1764, escr. Antonio Costa Irlas.

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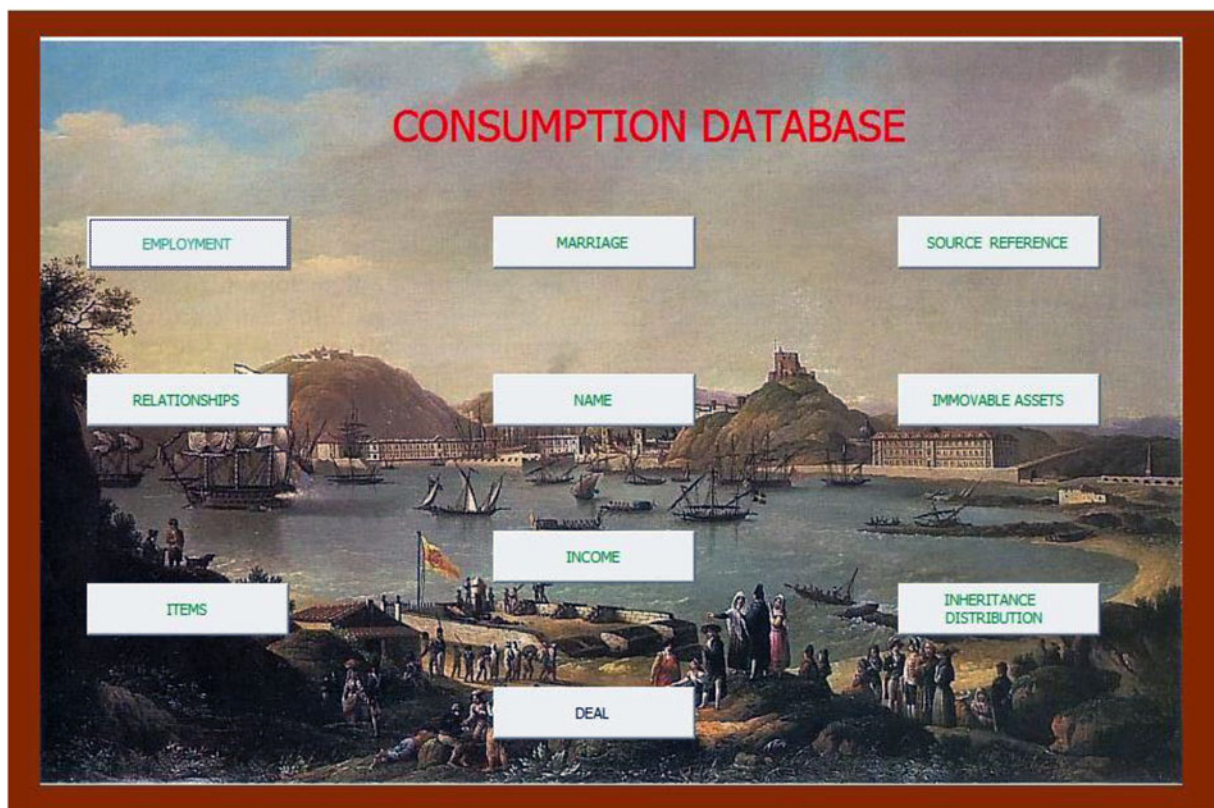


Illustration 2. Consumption Database Interface with the Main Entries. Source: author's own elaboration.

ID_NAME	EVENT:	PERSONAGE_NAME:	SEX	RESIDENT:	PARISH:
	1	BORT MILIA, JAIME	VARON	MURCIA	BARRIO_D_PESCADORES
AGE	BIRTH_DATE	MARRIAGE_DATE	DEATH_DATE	SOCIAL_STATUS:	BORN_IN:
0			02/02/1754	MEDIO	
CIVIL_STATUS	LOCATION	EMPLOYMENT	POST:		
CASADO	MURCIA	ARQUITECTO-ESCUPTOR (MAESTRO DE OBRAS)			
DON/DOÑA		HOUSE/FARM	SERVANCE/SLAVES	FOUNDERS_ENTAILED_STATE	
MARRIAGE	SIZE_FAMILY	KIND_OF_FAMILY	IMMOVABLE_ASSETS_(HOUSE/FARM)		
<input checked="" type="checkbox"/>	4		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
INCOME		INHERITANCE_DISTRIBUTION		RELATIONSHIPS	
0		REALIZADA		<input checked="" type="checkbox"/>	
SOURCE_REFERENCE		COMMENT			
2786					
WEALTH:					
60820					

SOCIAL NETWORK

Illustration 3. Linkage with the Software 'Heredis' for the Social Network Analysis. Source: author's own elaboration.

ID_MERCHANDISES	EVENT_IDENTITY	NOM_MERCHANDISES	MATERIEL:
3488		4 PORCELAINE	
QUANTITE_MERCHANDISE	MESURE:	ANNEE	
900	LIVRES	1775	
PRIX_MERCHANDISE	PRIX_UNITE:		
4500	5		
MERCHANDISE_COMESTIBLE:	QUANTITE_MC:	MESURE_MC:	PRIX_MC:
	0		0
			PRIX_UNITE_MC:

ID_ITEMS	EVENT:	PERSONAGE NAME:	ITEMS	REGION/COUNTRY:	SIZE:
10446	345	MIER_Y_TERAN.D.JUAN_FERNANDO	JICARAS	CHINA	
LOCATION	MATERIAL	CHARACTERISTICS	INVENTORY NUMBER:		
			0		
COLOUR	STATE	UNITS:	UNITS MESURE:	MEASURE:	W UNITS:
		2	0		0
					WEIGHT:
					PRICE
					P_MESURE
					10

WITNESSES: _____ EXECUTORS: _____ PRESENT: _____

WITNESSES_RESIDENT: _____ EXECUTORS_RESIDENT: _____

EXPERT_WITNESS: _____ COMMENT: _____

EXPERT_WITNESS_RESIDENT: _____

Illustration 4. Entry of Trade and Consumption of Porcelain from Marseille to Spain. Source: author's own elaboration.

	<i>Medico</i>	137
NAME →	<i>D. Antonio Rosendo Cruz</i>	
	<i>de Medicina y cirugía: Distinguido</i>	
	<i>por su facultad Decano de la</i>	
	<i>2. catedra R.º de P.º de la ...</i>	2200
	<i>D. Alfonso de ...</i>	
	<i>deo de ... de ...</i>	
	<i>3. facultad, mil y cien R.º de ...</i>	300
	<i>D. Antonio ...</i>	
	<i>Su ...</i>	
FAMILY MEMBERS	<i>4.</i>	
IMAGE OF WORK	<i>de ...</i>	
	<i>5.</i>	300
	<i>D. Antonio ...</i>	
	<i>de ...</i>	
	<i>6.</i>	300

Illustration 5. The Marquis of Ensenada Cadastre: Data on Population and Occupation. Source: Protocols of the A.H.P.M.