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Sommario

INNOVAZIONE E RESPONSABILITA' SOCIALE PER UNO SVILUPPO SOSTENIBILE 12

CLOUD MANUFACTURING: INNOVATION IN PRODUCTION.....	13
A.GHI, F.ROSSETTI	
MANAGEMENT SYSTEM AND AREA PERFORMANCE. THE CASE OF FREIGHT VILLAGES	22
FRANCESCA GRIFFA, ENRICA VESCE, RICCARDO BELTRAMO	
A COMPARATIVE ANALYSIS OF OPEN SOURCE SYSTEMS FOR BUSINESS INTELLIGENCE SOLUTIONS IN SMES	30
CARLO AMENDOLA, MARCO SAVASTANO	
STAKEHOLDER ENGAGEMENT IN CSR STRATEGY: A THEORETICAL REVIEW.	39
MARTINA TONI, ILARIA MASSA, ROBERTA GUGLIELMETTI MUGION, GABRIELLA ARCESE, LAURA DI PIETRO, PASQUALE VETTA	
LABELLING AND HYGIENIC-SANITARY SAFETY IN CHINA: RESULTS OF A PRELIMINARY SURVEY BASED ON A SAMPLING OF CHINESE CONSUMERS	44
ERICA VARESE, MARIA CHIARA CESARANI	
THE ITALIAN DIGITAL AGENDA.....	51
ANGELA CARELLI,PATRIZIA PAPETTI	
THE ROLE OF SOCIAL MEDIA IN TOURIST EXPERIENCE.....	60
MARTINA TONI, LAURA DI PIETRO, ROBERTA GUGLIELMETTI MUGION, MARIA FRANCESCA RENZI	
NEEDS AND COMPLIANCE OF PRODUCTION PROCESSES BY CHINESE COMPANIES IN PRATO INDUSTRIAL DISTRICT: AN INNOVATIVE ASSESSMENT MODEL.....	64
LEONARDO BORSACCHI, MARIO BIGGERI , ANDREA FERRANNINI	
THE QUALITY MANAGEMENT SYSTEM ADOPTED BY SCM ZANUSSI	71
VERONICA NOVELLI, PAOLA GEATTI, LUCIANO CECCON, LUCA MARCANTUONI	
COMPANIES AS TOURISM DESTINATIONS. A MANAGEMENT MODEL FOR SOCIALLY SUSTAINABLE EXPERIENCES.....	77
RICCARDO BELTRAMO, MARIA BEATRICE PAIROTTI	
MANUFACTURING AND SERVICES COMPANIES IN ITALY: A COMPARISON OF ISO 9001:2008 CERTIFICATION	84
MURMURA FEDERICA , CASOLANI NICOLA , LIBERATORE LOLITA , VICENTINI ASSIA	
CERTIFICATION SCHEMES TO GUARANTEE ETHICAL COSMETICS.....	91
GAVINA MANCA	
THE IMPACT OF ICT-BASED TECHNOLOGIES ON THE DIFFUSION OF A TECHNO-ECONOMICAL MODEL: THE CASE OF SHARING ECONOMY	97
GABRIELLA ARCESE, GIUSEPPE CAMPAGNA, SERENA FLAMMINI, OLIMPIA MARTUCCI	

TECHNICAL AND MANAGEMENT INNOVATION IN THE PROCESS OF TREATMENT OF SPECIAL AND HAZARDOUS WASTE IN A PERSPECTIVE OF CIRCULAR ECONOMY	103
MAURIZIO MASI, FABRIZIO ROSSI, PAVEL MALYZHENKOV	
INNOVATION POLICIES, START-UP COMPANIES AND SUPPORT ENTITIES. PRELIMINARY REGIONAL ANALYSIS OF THE INNOVATIVE COMPANIES' DEVELOPMENT IN ITALY	108
GAVINO BALATA, GIOVANNI MANDRAS, ALESSIO TOLA	
A POSSIBLE WAY TO BRIDGE THE GAP BETWEEN TRANSFER PRICING AND TRANSACTION VALUE	115
SERGIO SPARACIA	
IS THE "MADE IN ITALY" A KEY TO SUCCESS? - AN EMPIRICAL INVESTIGATION	123
L.CAPPELLI,F.D'ASCENZO,L. NATALE,F. ROSSETTI,R. RUGGIERI,D.VISTOCCO	
3D TECHNOLOGIES IN THE MEDICAL INDUSTRY: RECENT APPLICATIONS AND FUTURE PERSPECTIVES	130
ROBERTO RUGGIERI, MARCO SAVASTANO	
TOWARD THE BUILDING OF A COMPETENCIES CERTIFICATION SYSTEM: A CRITICAL ANALYSIS.....	138
ORNELLA MALANDRINO, STEFANIA SUPINO, DANIELA SICA, MARIA ROSARIA SESSA	
BARRIERS AND BENEFITS IN IMPLEMENTING A PERFORMANCE MANAGEMENT SYSTEM: THE CASE STUDY OF A HIGHER EDUCATION INSTITUTION	144
ELSA SERPICO, ALESSANDRO RUGGIERI	
FOSTERING SUSTAINABILITY THROUGH QUALITY BUILT CO-CREATION PROCESSES: TOWARDS THE INITIAL IDENTIFICATION OF RELEVANT CRITICAL SUCCESS FACTORS	151
AQUILANI BARBARA, SILVESTRI CECILIA, RUGGIERI ALESSANDRO	
METODI DI ANALISI E VALUTAZIONE DELLA QUALITA' AGROALIMENTARE	162
FROM REGULATORY REQUIREMENTS TO VOLUNTARY CERTIFICATIONS IN THE AGRICULTURAL AND FOOD INDUSTRY: THE CASE OF DA RE.....	163
PAOLA GEATTI, VERONICA NOVELLI, LUCIANO CECCON, JULIE BORTOLOTTO	
CHARACTERIZATION AND POLYPHENOLIC ANTIOXIDANTS CONTENT OF SUNFLOWER SEEDS AND OILS FROM CONVENTIONAL AND ORGANIC FARMING	170
PATRIZIA PINELLI, STEFANO ALESSANDRI, FRANCESCA IERI, CONCETTA VAZZANA, ANNALISA ROMANI	
COMPARISON OF EUROPEAN OLIVES PRODUCTION SYSTEMS.....	175
CARLO RUSSO, GIULIO MARIO CAPPELLETTI, GIUSEPPE MARTINO NICOLETTI, ALFREDO ERNESTO DI NOIA	

VALORISATION OF BIODIVERSITY IN THE AGRICULTURAL SECTOR:182 THE “ANCIENT APPLES PROJECT” MAURIZIO BOCCACCI MARIANI, VANESSA GIANNETTI, PAOLA MANNINO	
CHEMICAL CHARACTERIZATION OF SICILIAN SAFFRON189 FABRIZIO CINCOTTA, CONCETTA CONDURSO, GIANLUCA TRIPODI, MARIA MARCELLA TRIPODO, ANTONELLA VERZERA, FRANCESCO LANUZZA.	
THE ECONOMY OF TASTE, PUBLIC PROMOTION AND INFORMATION MODELS APPLIED BY ITALIAN REGIONS.....195 GIOVANNI PEIRA, ALESSANDRO BONADONNA, MORENO SOSTER	
EXTRA VIRGIN OLIVE OIL ORIGIN BY CHEMOMETRIC TECHNIQUES APPLIED ON STANDARD QUALITY PARAMETERS202 RAFFAELLA PRETI, ROBERTA BERNACCHIA, SIMONE VIERI	
A NEW APPROACH IN THE FOOD INDUSTRY AND ITS IMPLICATIONS. ENVIRONMENTAL ECONOMY210 RITA JIRILLO, GIANLUCA SERRA	
AN EASY, CHEAP AND SCALABLE METHOD TO CHECK FOR RADIOACTIVITY IN INPUT COMMODITIES AND RAW MATERIAL218 STEFANO ALESSANDRI, PATRIZIA PINELLI, ANNALISA ROMANI	
BIOGENIC AMINES AS QUALITY MARKER IN ORGANIC AND FAIR-TRADE COCOA-BASED PRODUCTS224 DONATELLA RESTUCCIA, U. GIANFRANCO SPIZZIRRI, ORTENSIA ILARIA PARISI AND NEVIO PICCI	
EDIBLE INSECTS FOR FOOD APPLICATIONS: A CRITICAL REVIEW OF THE EUROPEAN REGULATIONS232 MARCELLO RUBERTI, STEFANIA MASSARI, STEFANO PASTORE	
LIFE CYCLE INVENTORY ANALYSIS AS A TOOL FOR EXPLOITING THE SICILIAN PRICKLY PEAR (OPUNTIA FICUS INDICA (L.) MILL.) PRODUCTION CHAIN.....237 AGATA LO GIUDICE , AGATA MATARAZZO, MARIA TERESA CLASADONTE	
TOCOPHEROLS AND TOCOTRIENOLS IN ANNONA CHERIMOLA MILL. FRUITS.244 LANUZZA FRANCESCO, MONDELLO FABIO, MONFORTE MARIA TERESA, TRIPODO MARIA MARCELLA, D’ANGELO VALERIA, GALATI ENZA MARIA	
PECTIN CONTENT IN TROPICAL FRUIT GROWN IN SICILY250 TRIPODO MARIA MARCELLA, MONDELLO FABIO, GALATI ENZA MARIA, LANUZZA FRANCESCO	
QUALITY AND TRADITION IN PDO CHEESES A COMPARATIVE STUDY OF CHEESE-MAKING PROCESSES, TRADITIONAL AND INDUSTRIAL, USING FT- IR/ATR.....257 SPOGNARDI S., BRAVO I., CARELLI A., CAPPELLI L., PAPETTI P.	

DETERMINATION OF PERSISTENT ORGANIC CONTAMINANTS IN M. MERLUCCIUS FOR THE EVALUATION OF ENVIRONMENTAL QUALITY AND RISK IN THE FOOD CHAIN	264
REA R., SPOGNARDI S., BRAVO I., IANNUCCI E., CAPPELLI L., PAPETTI P	
NUTRITIONAL PROPERTIES OF DIFFERENTLY PROCESSED FOODS FOR INSTITUTIONALIZED ELDERLY PEOPLE.....	271
ANTONELLA CALABRETTI, PAOLO BOGONI, BARBARA CAMPISI, GIULIO BAROCCO	
LIFE CYCLE ANALYSIS OF A CHERRY SUPPLY CHAIN IN APULIAN REGION.....	278
CATERINA TRICASE, ANGELA M. ANDRIANO, CARLO INGRAO, ROBERTO RANA	
COUPLED LC-GC TO DETERMINE THE SESQUITERPENE FRACTION OF CANNABIS SATIVA VAR. CODIMONO ESSENTIAL OIL.....	283
LANUZZA FRANCESCO, CIRCOSTA CLARA, MONFORTE MARIA TERESA, MONDELLO FABIO, D'ANGELO VALERIA, GRASSI GIANPAOLO, GALATI ENZA MARIA	
STUDY ON STABLE ISOTOPES ¹⁸O/¹⁶O IN ABRUZZO WINES.....	289
CICHELLI, N. D'ALESSANDRO, M. DI MARTINO, C. PATTARA	
CONSUMER PERCEPTION OF MEAT QUALITY AND CUSTOMER BEHAVIOR.....	298
DIANA DE SANTIS, CECILIA SILVESTRI, ALESSANDRO RUGGIERI	
VERSO L'ECONOMIA CIRCOLARE LA VALUTAZIONE E LA GESTIONE DELL'AMBIENTE E DELLE RISORSE.....	308
THE CARBON MARKET AND ITS EFFICIENCY	309
RAFFAELE CIASULLO, CRISTINA SIMONE, MARCELO ENRIQUE CONTI	
FROM FOOD-WASTE TO COMPOST AND FEED: LIFE CYCLE ASSESSMENT OF A PILOT PLANT OF INSECT MASS-REARING.....	316
SALOMONE R, SAIJA G, MONDELLO G, GIANNETTO A, FASULO S, SAVASTANO D.	
LEAN PRODUCTION: EVOLUTION AND PERSPECTIVES OF INTEGRATION WITH CLEAN(ER) PRODUCTION RESEARCHES	323
RAFFAELLA TADDEO, ALBERTO SIMBOLI, ANNA MORGANTE	
SUSTAINABILITY, INNOVATION AND GREEN CHEMISTRY IN THE PRODUCTION AND VALORIZATION OF PHENOLIC EXTRACTS FROM <i>OLEA EUROPAEA</i> L.	330
ANNALISA ROMANI, PATRIZIA PINELLI, PAMELA VIGNOLINI AND ROBERTA BERNINI	
HEMP CROP FOR A SUSTAINABLE ECONOMY MODEL.....	336
GIOVANNI LAGIOIA, VERA AMICARELLI, TEODORO GALLUCCI	
CIRCULAR ECONOMY: EXPLORING THE REVERSE SUPPLY CHAIN MANAGEMENT OF LAPTOPS	343
LAURA GOBBI, MARIA CLAUDIA LUCCHETTI, ILARIA MASSA	
MUNICIPAL WASTE MANAGEMENT BY SAVNO IN EASTERN VENETO	347
VERONICA NOVELLI, PAOLA GEATTI, LUCIANO CECCONAND SARA MASO	

ENVIRONMENTAL MANAGEMENT AND SUSTAINABLE LABELS IN THE SKI INDUSTRY. A CRITICAL REVIEW.....	354
STEFANO DUGLIO, RICCARDO BELTRAMO	
THE DETERMINANTS OF THE ENERGY EFFICIENCY POTENTIAL AND ITS EXPLOITATION.....	363
GIOVANNI GOLDONI	
PRELIMINARY ECONOMIC AND ENVIRONMENTAL ANALYSIS FOR THE APPLICATION OF A LIFE CYCLE COST ASSESSMENT- MODEL TO A BIOMASS ENERGY GENERATOR IN SICILY.....	370
AGATA MATARAZZO , FEDERICO LA PIRA , ANTONIO ZERBO, AGATA LO GIUDICE	
EUROPEAN WHEAT ENVIRONMENTAL PROFILE	379
GIUSEPPE TASSIELLI, BRUNO NOTARNICOLA, PIETRO A. RENZULLI	
INNOVATIVE TECHNOLOGIES FOR ODOR CONTROL EMISSION IN LANDFILL	386
P. GIUNGATO, G. DE GENNARO, P. BARBIERI, F. LASIGNA, M. AMODIO , L. DE GENNARO	
CRITICAL RAW MATERIALS: RARE EARTH ELEMENTS.....	393
ALFREDO ERNESTO DI NOIA, GIULIO MARIO CAPPELLETTI, GIUSEPPE MARTINO NICOLETTI, CARLO RUSSO	
LIFE CYCLE ASSESSMENT OF A STEELWORKS	400
PIETRO RENZULLI, BRUNO NOTARNICOLA, GIUSEPPE TASSIELLI.	
THE WATER FOOTPRINT OF ENERGY CROPS FOR THE SUPPORT OF ITALIAN BIODISEL PRODUCTION	407
PIER PAOLO MIGLIETTA, FEDERICA DE LEO, SIMONE PIZZI	
ORGANIC BARLEY: A PRELIMINARY ANALYSIS IN THE PERSPECTIVE OF LIFE CYCLE THINKING	415
CATERINA TRICASE, EMILIA LAMONACA, CARLO INGRAO, MARIAROSARIA LOMBARDI	
SUSTAINABLE STRATEGY, TQEM AND SUSTAINABLE BALANCED SCORECARDS: MANAGING VALUE TO BUSINESS	423
SERGIO SPARACIA	
THE NEW NATIONAL LOGISTICS PLATFORM: AN ANALYSIS OF POTENTIAL ENVIRONMENTAL BENEFITS.....	433
CARLO AMENDOLA, MARCO SAVASTANO, RITA JIRILLO	
POTENTIAL AND EXPLOITATION OF NATIONAL FORESTS FOR THE PRODUCTION OF ENERGY IN COGENERATION: TECHNOLOGIES AND DEVELOPMENT OF A BUSINESS CASE.....	442
LAURA GOBBI, RITA JIRILLO, ANDREA GRIPPA	
ARE LOSSES OF BUSINESS VALUE IN MANUFACTURING ENVIRONMENTS “LEAN” ?.....	451
SERGIO SPARACIA	

THE ROLE CHARGING SERVICE PROVIDERS TO SUPPORT ELECTRONIC MOBILITY	458
GIUSEPPE IANNIELLO, MICHELA PICCAROZZI, ALESSANDRA STEFANONI	
FREE ROOMS FOR SUSTAINABILITY IN URBAN DEVELOPMENT: THE COMMODITY SCIENCE PERSPECTIVE.....	466
GIUSEPPE IOPPOLO, SERGIO SPARACIA, SALVATORE CHIRICOSTA, ROBERTA SALOMONE, DAVID BARILLA	
PUBLIC POLICIES FOR SUCCESS SPIN-OFF?	474
STEFANO POPONI, ALESSANDRO RUGGIERI	
THE QUALITY OF THE REPORTED EARNINGS IN PRESENCE OF SOCIALLY IRRESPONSIBLE MANAGEMENT PRACTICES	482
RICCARDO CIMINI	
A META MODEL OF INTER-ORGANIZATIONAL COOPERATION FOR A SHIFT TO CIRCULAR ECONOMY	488
<i>ALESSANDRO RUGGIERI, ENRICO MARIA MOSCONI, ALESSIO MARIA BRACCINI, STEFANO POPONI</i>	
COMPARING ALTERNATIVE SCENARIOS OF WASTE TREATMENT: THE CASE OF FOOD-WASTE PRODUCTION BY THE MASS-RETAIL SECTOR.....	498
SALOMONE R., SAIJA G., IOPPOLO G., PIRILLI M., MONDELLO G.	
ECONOMIC AND ENVIRONMENTAL EVALUATION OF A RURAL BIOGAS SYSTEM	505
GIULIANA VINCI, MARTINA MUSARRA, ROBERTA BERNACCHIA	
AN ANALISYS ON THE ORGANIZATIONS THAT WITHDREW FROM EMAS REGISTRATION AND THE ROLE OF PUBLIC INSTITUTIONS' MEASURES	512
MICHELE PREZIOSI, ROBERTO MERLI, ANDREA COPPOLA	

The new economic environment requires not only a change in production systems but also a cultural change, with innovation and quality being the foundations for a new management model. The development of sustainable organizations and, above all, the creation of business networks for the realization of sustainable values represent an important opportunity to design new business models, where sustainability, innovation, quality and respect for the consumer can work together in a perfect synergy based on an approach that can be related to the concept of Circular Economy. This is a significant set of research topics for the scientific community, particularly in the field of Commodity Sciences, where it has always been a subject of study and analysis.

The XXVII Congress of Commodity Sciences will be an opportunity for the discussion and study of these topics. Special focus areas will be: energy, food, services, transport, waste, product certification and circular economy.

TOPICS

- **Innovation:** Creativity, innovation and global entrepreneurship; innovation, Start-ups and spin-off; R & D and innovative technologies, Process Management, Commodity features; New process design and continuous improvement; Technology and management innovation; Entrepreneurship; ICT.
- **Quality Management Systems and Agribusiness:** Quality Management Systems, Product technical quality and customer satisfaction, Service quality and consumer protection, Safety and traceability, Human resource management and quality culture; Theoretical and empirical analysis of excellence models; Agrifood quality; Food safety, the Circular Economy in the agrifood business; Consumer perception and sensory analysis; Labeling and nutritional and healthy food profiles.
- **Corporate Social Responsibility and Sustainability:** Environmental protection, Environment, safety & ethics management systems, Integrated Management System; Circular Economy; Management of energy resources and raw materials; Renewable energy sources; Advanced technologies for energy production and the industry; Environmental technology; Energy and environmental modeling; Life Cycle Analysis (LCA, LCC; S-LCA); Code of ethics; Industrial symbiosis; Industrial Ecology methods and tools.

**INNOVAZIONE E RESPONSABILITA' SOCIALE PER
UNO SVILUPPO SOSTENIBILE**

LABELLING AND HYGIENIC-SANITARY SAFETY IN CHINA: RESULTS OF A PRELIMINARY SURVEY BASED ON A SAMPLING OF CHINESE CONSUMERS

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ABSTRACT

This study is divided into two parts. The aim of the first section is analysing the Chinese so called “*Food Safety Law*” as well as offering a short comparison between the Chinese Law and the EU Regulation on “provision of food information to consumers”. The second part, instead, wants to understand the comprehension and knowledge of labels on packaged food through the results of a recent survey distributed to a sample of Chinese consumers residing in Torino, who usually fly back to their home land. The questionnaire is divided into four sections. The first part concerns consumers’ attitudes when grocery shopping of the interviewees when in China; the second part is about the interviewees’ habits while in Italy; the third part is aimed at understanding the “quality” of the information given by the labels, whereas the fourth is about personal information of the interviewees.

Keywords: Food; Labelling, Food Safety Law; Provision of Food Information to Consumers; Health; Hygienic and Sanitary Safety; Survey; Consumers; China; Italy.

INTRODUCTION

This study has to be read in line with other significant ones regarding labelling and its understanding among Chinese consumers (Liu, Hoefkens and Verbeke 2015, 103-105) as Chinese people have become more and more aware of the importance of the relationship between health and food (Cheng, Cao and Xu, 2007; Sakamaki et al. 2005, 4).

After the announcement of a new program, known as the “healthy China 2020”, Chinese food producers have started to add a new nutrition label, because all over the world and mostly in Europe it is seen as an attractive and potentially effective policy instrument to transmit information and to help people to freely decide on what to buy (Capacci et al. 2012; Grunert and Wills 2007; Grunert, Wills and Fernandez-Celemin 2010).

Some Authors believe that this information may affect consumers’ dietary intake because of the well known and widespread attitude of showing socially desirable behaviour (Middleton and Jones 2000; Liu, Hoefkens and Verbeke 2015, 109).

In fact, its aim is not only to generally underline the differences between the European Regulation nr. 1169/2011 and the Chinese Law GB 7718-2011 on packaged food labelling – know as *Food Safety Law* (FSL), but also to show the results of a preliminary survey on the comprehension and knowledge of labelling regulation among a consumer group consisting in Chinese people residing in Torino, Italy.

BACKGROUND

After the widespread and well known food related scandals in the early 2000s (among which the most known are the melamine milk powder, the pesticide in the “Jinhua” ham and the dumplings with *staphylococcus aureus*), China’s export has been severely hit and the concern about food safety grew both within and outside China’s borders (Chenhao and Jukes 2007; Mol 2014, 49-50). Therefore, since the very beginning of the 1990s the Chinese State authorities have been strengthening their food safety system, starting with updating, in 1995, the Food Hygiene Law originally enacted in 1983 and then, in 2009, enacting a “revolutionary” law: the FSL (GB 7718-

2011). This law raises food safety standards, increases punishment and institutes a system of risk evaluation (Confapi Export, 2015), enabling Chinese food standards to meet the international ones such as the ones drafted by WHO & FAO in 2003 and 2006. The results of the new law is a new transparency in the food system, in order to ensure disclosure of information (Mol 2014, 50). Compared to the previous law, the FSL has introduced six major changes (Balzano, 2009): firstly, it integrates the inspection system and defines the responsibility of each authority; secondly, it sets up a system of surveillance and assessment of food safety risks; thirdly, it tries to unify the national food safety standards (which were set at sub government level, and particularly by provincial governments); fourthly, it states that liability is on the food producers; fifthly, it enhances legal sanctions on enterprises infringing consumers' interests and rights; sixthly, it increases punishments on law enforcement Authorities violating their responsibilities in protecting consumers and their safety (Jia and Jukes 2013, 238).

Moreover, the new Chinese law aims at using labels both to inform consumers and to spread the consciousness of nutrition (Liu, Hoefkens and Verbeke 2015, 104).

As known, labels are called "silent sellers" (Varese 2012, 17) because of their ability to convey information and to orient people's choices. It is interesting, then, to analyse similarities and differences between the EU Regulation nr. 1169/2011 and the Chinese FSL.

Although it is not appropriate here to scrutinize every single detail of the said regulations, it is important to note that, differently from EU Regulation nr. 1169/2011, the Chinese FSL integrates an inspection system and provides criminal offence rules. In Europe, the EU can not enact criminal law because it is a competence of each Member State.

Moreover, the field of application is slightly different, although they are both applicable to packaged food (which does not include direct sell packaged food and bulk products): the Chinese one is applicable only to directly served pre-packaged food, whereas the European one extends its field of action to pre-packaged food including selling food by means of distance communication (distance selling).

Conversely, as both the FSL and the EU Regulation aim at correctly informing consumers, both laws state that information should be easily readable and not misleading, setting a minimum front size for the prescription (although they differ, from 1,2 mm in the European one for packaging over 80 cm², to 1,8 mm for packaging over 35 cm² in the Chinese one).

Last but not least, the FSL adds a long series of prescriptions on what to do for single packaged food resembling European food, after which it states what should appear on labels: - the name of the food; - the list of ingredients; - the quantity of certain ingredients or categories of ingredients; - the name or business name and address of the food business operator; - the date of minimum durability or the 'use by' date; - any special storage conditions and/or conditions of use; other mandatory details.

MAIN FOCUS OF THE PAPER

Aim, Issues, Controversies, Problems

The most significant differences between Chinese and EU Regulations are the following:

- Substances that can cause allergies or intolerances: the EU Regulation states that they must be indicated on the label, whereas the Chinese law only recommends to declare them;
- Instructions for use and nutrition declaration: these two elements are both compulsory in Europe, whereas they are not in China, where it is left to producers to insert them or not;
- Date of minimum durability: it is the indication that has to be present on Chinese labels. In Europe it is replaced by the "use by" date for perishable food;
- Name of the food: the EU Regulation has a hierarchy for it (legal name, customary name and descriptive name) whereas in China it has to be a descriptive one;
- Production date: in China it is compulsory, whereas in Europe it is not.

Considering this background of similar yet different legislations, the Authors decided to undertake an investigation among Chinese consumers residing in Torino in order to ascertain how well this

“new” law is understood by people dealing with two different languages and different label indications.

As already said, this paper aims at investigating the comprehension and knowledge of labels on packaged food after the enactment of the FSL and the EU Regulation nr. 1169/2011 through the results of a recent survey distributed to a sample of Chinese consumers residing in Torino, who usually fly back to their home land. The fact of them flying back home is important due to the connection between the two laws, as they have to face the Chinese one when home, and the European one when they reside in Italy.

Therefore, the Authors prepared a questionnaire both in Italian and in Chinese (helped by Chinese students of the University of Turin who translated it) which was divided into four parts.

The first part concerned interviewees’ attitudes when grocery shopping in China: it aimed at ascertaining whether the Chinese labelling regulation is known and understood. The second part was about interviewees’ habits while in Italy: it investigated whether they buy Chinese products imported into our Country and, in this case, whether what is read is the Chinese or Italian (mandatory according to EU Regulation nr. 1169/2011) version of the labelling. The third part was aimed at understanding the “quality” of the information given by the labels, whereas the fourth was about personal information of the interviewees.

In this regard, the Authors have not found other literature on the exact theme, as literature mainly investigates a specific kind of labels (Liu, Hoefkens and Verbeke 2015) or the evolution of the legal frame (Jia and Jukes 2013) or transparency as a tool of guaranteeing food quality (Mol 2014) or the evaluation of information in order to achieve safe food (Liu, Pieniak and Verbeke 2014; Liu, Pieniak and Verbeke 2013).

Method

This research has been carried out from the consumers’ perspectives. Table 1 provides technical specifications of the survey.

Table 1. Technical specifications of the survey

Sample size	148 Chinese consumers (PAPI and CAWI interviews)
Pilot survey	Pre-questionnaire with 20 consumers
Field-work	June 2015
Information processing	SPSS 18.0

Source: Own elaboration

A pilot survey was conducted before embarking into the main data collection. Some adjustments were subsequently made. As soon as the final questionnaire was ready, in the month of June 2015, Chinese consumers residing in the area of Torino were contacted in person, or via e-mail and social networks (mostly FaceBook), thanks to Chinese students of the University of Torino. The interviews were conducted in the following 4 weeks.

The questionnaire explained the objective of the study and invited all recipients to participate via PAPI (Paper and Pencil Interview) and CAWI (Computer Assisted Web Interview).

Survey instruments consisted in a questionnaire containing 17 “closed ended questions”, all aimed at collecting data on consumers (profile, consumers’ attitudes when grocery shopping in China and in Italy, “quality” of the information given by the labels). If consumers were asked to rate the importance of an element, a five-point Likert-type scale was used (1 = not important; 2 = somewhat important; 3 = important; 4 = very important; 5 = extremely important). The interviews lasted for an average of 4 minutes.

The questionnaire was created using the software “LimeSurvey”, an open source tool for online surveys. The data collected were loaded and processed using the SPSS (Statistical Package for Social Science - PASW

Statistics 18) statistics program and this was followed up with the plotting of graphs using Microsoft Office Excel.

Limitations (if any)

Firstly, the Authors have focused on a sample of self-selected urban consumers, which limits the potential of generalizing this study to the entire Chinese population residing in Italy. Future studies, using broader and more representative consumer samples, would provide further insights and contribute to a better interpretation of this study. Secondly, it is limited to people residing in just one Italian town, Torino, so it would be interesting to distribute the same questionnaire to other cities all over Italy in order to compare results and draft a more accurate picture of labelling knowledge. Thirdly, as other studies in the same field, it depends on self-reported behaviour so, as already said, it may suffer from what is known as “social desirability bias”, therefore it may be different from the actual behaviour of the interviewees. It would have been better, although not possible here, to have more experimental and observational studies on the topic. Hopefully they will be carried out. Fourthly, the study is limited to understanding which language is the one read by consumers, between the “original” – Chinese – and the one required to be used for imported pre-packaged food according to EU Regulation nr. 1169/2011 – Italian –.

RESULTS AND IMPLICATIONS

Chinese immigration in the Turin area is a relatively new phenomenon – since it started about 20 - 30 years ago-

Therefore, in order to identify the interviewees’ profile, the Authors decided to set following age groups: 18-25; 26-36; 37-50; 51-60; >61. About half of the interview sample is quite young, aged between 18 and 36, whereas the other half is between 37 and 60 years old (37-50: 32 and 51-60: 38) and only 2 are over 61. This result was predictable due to the way of handing out the questionnaire and to the condition set at the beginning of the interview: having flown home at least once since January 2014.

37.84% of the interviewees are in an employer/employee relationship, whereas 23.65% are self-employed. Students add up to 24.32% of the sample, whereas housewives account for 14.19% and nobody is unemployed. Men are 68 (45.95%), women 80 (54.05%).

The most relevant results regarding consumption habits of the interviewees when in China are following:

87.84% of the interviewees state they always or often read labels of not usually bought pre-packaged food while in China and 94.59% declare that the front size of the mandatory information is easily legible, 3.38 % that it is too small and 2.03% that it is too big. Almost the entire group of the consumers’ sample (93.24%) affirm to have heard of FSL and general ruling on labelling.

Nevertheless, this brilliant result does not mean that each person knows what lies underneath the mandatory food information: only 33.78% of the consumers know that the list of ingredients should include all ingredients of the food in descending order of weight, as recorded at the time of their use in manufacturing the food; 27.03% believe that the order in the list of ingredients is up to producers’ discretion, whereas 39.19% think that ingredients should be listed in a growing order of weight at the time of production.

The definition of the “date of minimum durability” is known by only 58.11% of the sample, as the rest of it thinks that after that date the food could be harmful for human health.

Section 2 of the questionnaire, made up of 3 questions, concerns the grocery shopping habits of Chinese consumers buying Chinese products in Turin.

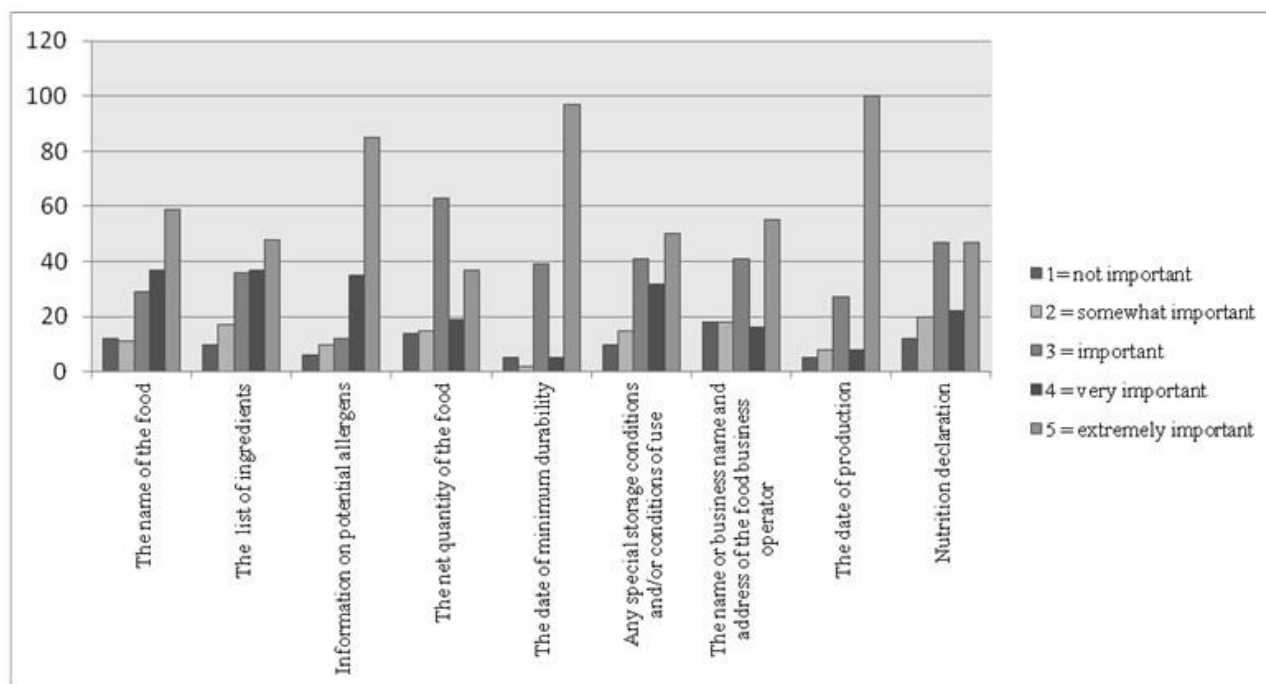
The majority of the interviewees (47.30%) declared they buy Chinese products once or more often a week (37.84% once; 9.46% more than once), 8.11% every day, 20.95% every 15 days and 23.65% occasionally.

When buying a not known Chinese pre-packaged food, the preponderance of the sample only reads the Chinese version of the label (60.81%), just 10.81% reads it in Italian whereas 22.97% declare to pay attention to it both in Chinese and in Italian. The 5.41% state that they buy by impulse, without even reading the label.

The majority of the interviewees believe the information written in Italian to be only the “essential” one, 24.32% think there is a complete translation of the mandatory food information whereas 30.41% declare a complete lack of attention regarding this point.

Graphic 1 underlines the importance given by Chinese consumers to some of the mandatory information required under EU Regulation nr. 1169/2011 and FSL.

Graphic 1. Consumers’ perception about some of the mandatory information provided by Chinese and European regulation



Source: Own elaboration

FUTURE RESEARCH DIRECTIONS

The survey is limited to the Turin district, although, thanks to the obtained results and the appeal to the interviewees, the survey could be extended to other geographical areas.

CONCLUSIONS

The most relevant differences between the Chinese and the European law are basically referable to the different sanction system, which is the same all over China, while it differs from Member State to Member State in the EU, and to the distinction regarding mandatory food information reported on the label.

The survey analysis highlighted what the sample members believe should be reported on the labels: in fact, 81.08% said it is very important to have information on potential allergens. To be more precise, it is “very important” for 23.64% and “extremely important” for 57.43%. As already said, this information is not compulsory in China. Another interesting outcome regards the nutrition declaration as only 21.6% thinks it is not important in order to better identify the pre-packaged food.

Hopefully, these two indications will become mandatory under the FSL, as they already are under the EU Regulation.

Less relevant, but always somewhat important, are the special storage conditions: only 16.90% believe they are not.

Due to the fact that the FSL only provides the date of minimum durability, the questionnaire did not address the distinction between it and the “use by”. Nevertheless, because of the encouraging results on the date of minimum durability (only 4.73% believe it is a not important information), also the prevision of the “use by” indication, after which the food product can be harmful for human health, could be useful for better informing consumers but only if the distinction is well expressed and explained.

91.22% of the sample believe the date of production to be important (or very important or extremely important). It would be interesting to understand the perception of it by European consumers in order to consider its possible introduction into EU Regulation nr. 1169/2011.

Chinese consumers declare that Chinese labels are easily readable thanks to the front size (1,8 mm) and this is confirmed by the fact that they normally read the Chinese version of the label (83.77%). Therefore, the possibility of enlarging the front requested under EU Regulation nr. 1169/2011 in order to improve legibility of labels should be considered.

In conclusion, this survey being just a preliminary one, the Authors hope to extend sample and geographic area in order to obtain more precise and representative results

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