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Smart Life: Review of the Contemporary Smart Applications

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Abstract. Research efforts in various fields related to Smart life increase constantly. There are very well-established fields like Smart home, Smart city, and Smart grid, and more emergent ones, like Smart farming, Smart university, and Smart tourism. Smart life intends to enhance human life and serves as an umbrella term for all Smart topics. However, the research domain of Smart life is very diverse and multifaceted. Our main goal is to systematize the existing research work around Smart life to provide direction for the development and maintenance of Smart artefacts and applications, thus, to move towards Smart life engineering. To achieve this goal, a mandatory step is to understand and organize all the different Smart topics studied in the scientific literature by means of a systematic mapping study. We analyzed 2341 existing Smart state-of-the-art works and research agendas. We propose a taxonomy of Smart applications, study their evolution over time, analyze their venues, specific terminology, and driving factors. The resulting overview is useful to researchers and practitioners to improve the positioning of their work and to identify the research opportunities in all types of smartness for humans, organizations, and society.

Keywords: Smart Life, Smart Application, Systematic Mapping Study.

1 Introduction

The number of research works in "Smart" fields grows continuously. Many related fields have appeared over the last decades. For instance, Smart home is defined in [1] as "the integration of different services within a home by using a common communication system. It assures an economic, secure, and comfortable operation of the home and includes a high degree of intelligent functionality and flexibility." In [2], Smart city is "a city that collects and utilizes data gathered from distributed sensors and video cameras that connect everything from trash bins to streetlights." Since then, appeared new concepts like Smart farming or Smart agriculture [3], Smart university [4], Smart tourism [5], and so on. Numerous state-of-the-art works exist in all these

fields, as for the Smart home domain for which we identified almost 180 state-of-the-art and research agenda papers, for instance [6] [7] [8], or [9]. Despite a huge number of works in Smart fields, works aiming at classification, organization, and systematization of the different Smart fields are neglected.

We unify all these Smart fields within the concept of Smart life that we define as "*a system of integrated Smart application systems for the purpose of an enriched life experience*". In our vision, Smart life is a set of different Smart applications (e.g., Smart home, Smart city, Smart transportation, and so on) which, in their turn, are composed of different Smart artefacts (e.g. Smart car, Smart ship, Smart railway, etc. for the Smart transportation application). We believe that optimization could and should be done to design, develop, and maintain all these various applications in a smarter way. In our vision, different methodologies, technologies, and tools could be shared and reused between the Smart fields. This leads us to promote a new field we called Smart life engineering.

To start to investigate this research direction, we should first analyze the existing works. In the already published literature on Smart life, we did not identify any detailed taxonomy on Smart applications. Most of the state-of-the-art works on Smart life deal with a particular sub-topic within this context: IoT application for energy consumption [10], Security in Internet-of-Things (IoT) [11], IoT usage in Smart cities with a classification of Smart technologies [12], computer technologies from the viewpoint of artificial intelligence [13], machine to machine usage [14], and an integrative study about IoT [15]. Only two papers are generic: one source gives a classification of Smart technologies [16]. The second one suggests a systematic literature review on Smart systems [17]. In addition, [18] reviews Information and Communication Technologies (ICT) within a "Smart Earth" concept.

In the current work, we focus on a study of Smart applications. We analyzed the titles and abstracts of 2341 State-of-the-Art- and Research Agenda-oriented papers in order to establish a taxonomy of Smart applications, analyze their venues, understand the underlying terminology, and, finally, understand what are driving factors of Smart life. We used the Systematic Mapping Study method [19] to develop our research approach.

We explain our research approach in section 2. We highlight the obtained results in Section 3. In Section 4, we conclude the paper and outline our future research.

2 Research Approach

We used a systematic mapping design [19] to study the Smart life field of research. Systematic Mapping Studies (SMS) are similar to other systematic reviews (like SLR – systematic literature review synthesizing the existing research in established fields), except that they employ broader inclusion criteria to select a wider range of research papers and are intended to map out topics with a field classification rather than synthesize study results. The study presented here covers the existing work in the field of Smart life. We followed the process presented in [19] which includes five steps: defi-

nition of research questions, conducting search for primary studies, screening of papers, keywording of abstract and data extraction and mapping of studies.

Based on [19], we followed the procedure on SMS summed up in Table 1. We named differently Steps 2 and 4 as more compliant with our research process.

Table 1. Five-Steps Procedure of SMS on Smart Applications.

Number	SMS Process Step	Outcome
1	Definition of Research Questions	Review Scope
2	Finding Papers	All Papers
3	Screening of Papers	Relevant Papers
4	Keywording using Abstracts (Classification Scheme Definition)	Classification Scheme
5	Data Extraction and Mapping Process	Systematic Map

Step 1: Definition of research questions. The goal of this SMS is to identify and structure different Smart applications. To detail this goal, we established the following research questions:

RQ1. What are the different applications studied in the Smart life field and their evolution?
RQ2. In what venues are published research papers on Smart life applications?
RQ3. What is the specific terminology used in Smart life applications?
RQ4. What are the main driving factors of Smart life based on data about Smart applications?

Step 2: Finding Papers. This step aims at identifying a set of papers based on a relevant search string. We searched and selected papers in the SCOPUS scientific database using the SCOPUS Search API in November 2021. (This database includes all "articles being published in virtually all scholarly journals of any significance in the world"[1]). Firstly, we searched for papers containing the term "Smart" only in the title, and the number of obtained papers was more than 126 000. Thus, we limited our search to secondary research papers like state-of-the-arts and research agendas. This reduced search allowed to obtain 2410 sources with DOIs. The inclusion criterion related to the search string is given in Table 2.

Step 3: Screening of Papers. We analyzed the titles and, if needed, abstracts and papers content. We excluded 69 sources, not representing research papers or not relevant to Smart life topics papers. We obtained 2341 papers[2]. In Table 2 we summarize the exclusion criteria used to obtain the list of relevant papers.

[1] https://www.elsevier.com/__data/assets/pdf_file/0007/917179/Scopus-User-Community-Germany-API-final.pdf

[2] The complete list of these papers is available at http://cri-dist.univ-paris1.fr/rcis22/RCIS2022_Appendix%20A%20-%20references%20list.pdf.

Table 2. Inclusion/Exclusion Criteria for the Study on Smart Topics.

Selection Criteria	Criteria Description
Inclusion criteria (2410 sources identified)	The title includes the term «smart» and at least one of the terms “research agenda”, “state-of-the-art”, “review”, or “survey”: Search string: TITLE(smart) AND (TITLE("research agenda") OR TITLE("State-of-the-art") OR TITLE(review) OR TITLE(survey)).
Exclusion criteria (2341 sources selected)	The source is not a research paper (erratum, retracted, etc.). The source is related to an abbreviation SMART, like, for instance, SMART (stroke-like migraine attacks after radiation therapy) syndrome. The source mentions the term «smart», which is used in its ordinary sense, like “working smart and hard”.

Step 4: Classification Scheme Definition. The goal of this step of SMS is to identify the classification scheme to be applied to the obtained results. To answer the defined research questions, we classified all relevant papers accordingly to the following criteria:

- Criterion related to Smart topics. Smart life is a set of Smart applications. This qualification allowed us to establish a detailed taxonomy of Smart life applications:
  - Smart Application
- Criteria related to publication venues:
  - Year
  - Venue
  - Type of Venues

In addition, we used the titles and abstracts to provide additional representations.

Step 5: Data Extraction and Mapping Process. For RQ1, the main extraction was done with relation to the Smart life topics as it required additional work to classify Smart life applications into a taxonomy. Then, we classified the identified applications into four Smart domains: Persons, Society, Environment, and Enterprises, and we analyzed the distribution of publications in these domains over time. For RQ2, the data on years and issues were already available, we completed them by qualifying the most used issues by their type (Survey-oriented, Generic, Domain-specific). For RQ3, we created keyword clouds based on papers titles and papers abstracts to have a visual representation of the most used terms in the scientific literature related to Smart life and we extracted the main used terminology. For the two clouds, we deleted the stop words, the numbers, and the special characters. Moreover, on the second one (set of abstracts), we made a pre-processing of the data to change plural nouns into singular ones if the two forms were present in the dataset.

Validity Threats. Qualitative research is based on subjective, interpretive, and contextual data. Thus, we analyzed the potential biases, which could threaten the validity of our research. [20] proposes five categories of validity. To minimize the impact of the validity threats that could affect our study, we present them with the corresponding mitigation actions in Table 3.

Table 3. Validity Threats.

Validity	Actions
Descriptive validity refers to the accuracy of the data.	- We unified the concepts and criteria used in the study and structured the information to be collected with a data extraction form to support a uniform recording of data.
Theoretical validity depends on the ability to get the information that it is intended to capture.	- We used a search string and applied it to a library including the most popular digital libraries on computer sciences and software engineering. - A set of inclusion and exclusion criteria have been defined. - We combined two different search methods: an automatic search and a manual search (backward and forward snowballing), to diminish the risk of not finding all the available evidence. - The choice of English sources should be of minimal impact concerning the discard of other languages.
Generalization validity is concerned with the ability to generalize the results.	- Our set of research questions is general enough to identify and classify the findings on Smart applications.
Evaluative validity is achieved when the conclusions are reasonable given the data.	- Two researchers studied the papers, working independently but with an overlap of studies to identify potential analysis differences. - At least two researchers validated every conclusion.
Transparency validity refers to the repeatability of the research protocol.	- The research process protocol is detailed enough to ensure it can be exhaustively repeated.

3 Analysis of Smart Application Research

We present the obtained results in the following sub-sections organized accordingly to the defined research questions.

3.1 Taxonomy and Evolution of Smart Applications

Many applications are interconnected to each other. However, a structuration should be done. We studied the topics of the selected 2341 papers. Firstly, we followed the bottom-up approach: we studied the titles of all papers, however, when titles were not sufficient to identify the application field, we read the abstracts, and, if needed, looked inside the papers. We attributed from one to three levels of applications classification to each paper (for instance, Smart energy -> Smart grid -> Smart grid communication), except papers dealing with Smart artefacts, technologies, or systems without attachment to a concrete application field. The attribution of each paper to a Smart application was done by an expert. When the mapping of a topic to a Smart domain was not obvious, the paper was analyzed in more detail by two or more experts to find a consensus. Once papers qualified, we started to organize them within a taxonomy using a top-down approach: we took the major fields of Smart life like

Smart home, Smart city, Smart industry, Smart healthcare, etc. and we organized the identified application fields within major fields. Considering the number of the major application fields, we organized them within four categories that we called Smart life domains: Smart applications for persons, Smart applications for environment, Smart applications for society, and Smart applications for enterprises (See Fig. 1.).

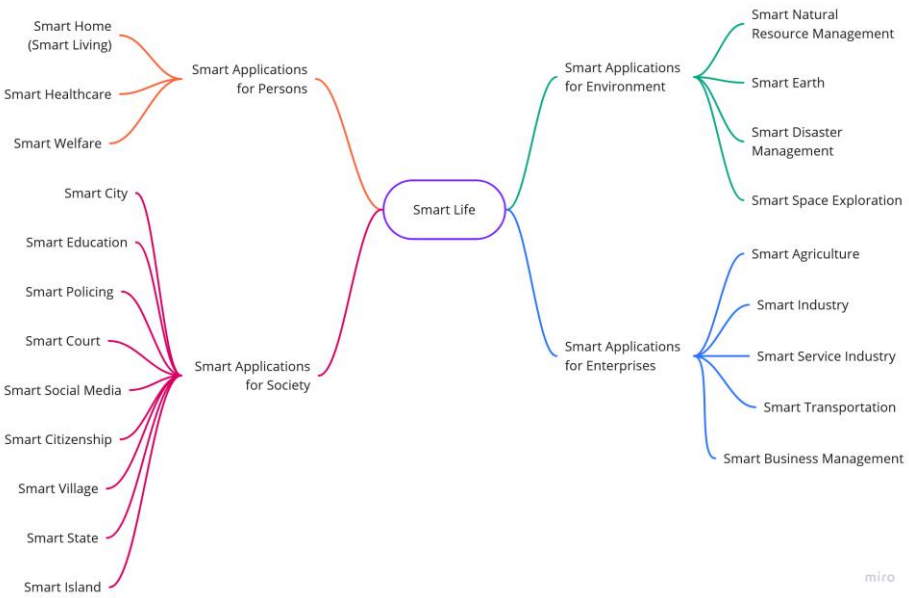

Fig. 1. Smart Life Domains.

- *Smart applications for persons* contain applications oriented on the personal life of humans, like Smart healthcare, Smart home (Smart living), Smart welfare, etc. (See Fig. 2).
- *Smart applications for environment* include different topics related to the environment study and preservation: Smart natural resource management, Smart earth, Smart disaster management, and Smart space exploration. (See Fig. 3.).
- *Smart applications for society* deal with various not-for-profit aspects of human life in groups like Smart city and Smart village, but also applications related to the management of people living in groups: Smart citizenship, Smart state, Smart policing, and so on. (See Fig. 3.).
- *Smart applications for enterprises* gather applications for-profit sectors and cover three basics sectors: Smart agriculture, Smart industry, Smart service industry, but also Smart transportation and Smart business management, the latter unifies various transversal to sector business applications (See Fig. 4.).

To give some more detailed illustrations, the Smart city concept is used to solve the challenges in urban cities by providing a good livable environment for the citizens [21]. Therefore, in the taxonomy, the Smart city application domain contains sub-

applications addressing security, growth, lighting, parking, and so on. With regards to Smart agriculture, new technologies are more and more used in modern agriculture and IoT farmers can remotely monitor their crop and equipment by phones and computers [22]. The Smart agriculture application domain contains usual agricultural types like Smart farming, Smart fishery, Smart crop management, and Smart livestock farming, but also some other domains influencing agriculture, like climate-smart agriculture, Smart pest management, and Smart irrigation.

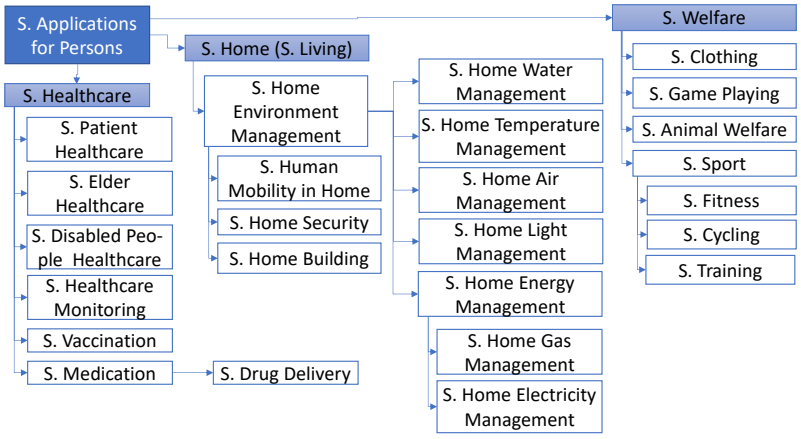

Fig. 2. Smart Life Applications for Persons.

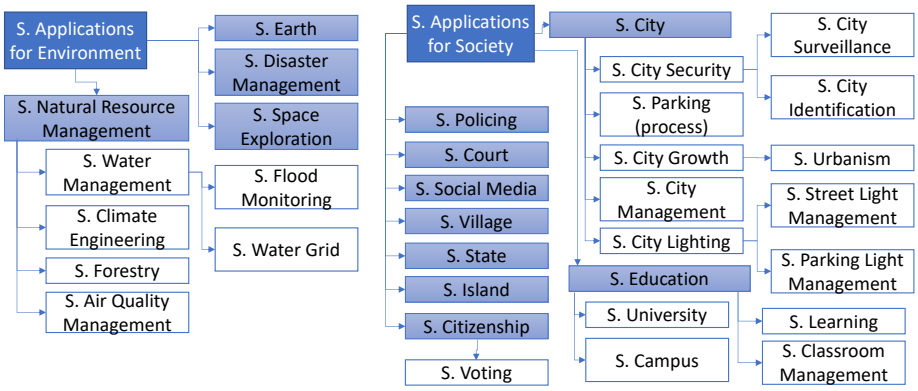

Fig. 3. Smart Life Applications for Environment and Society.

In addition to this main taxonomy, we identified the presence of "generic clusters" that can be used in different Smart applications. For instance, Smart energy is an independent application domain, within Smart industry. However, we can find it in other domains: Smart city, Smart home, etc. Another identified cluster is the Smart transportation one. This specific cluster identifies the Smart applications related to the

transportation domain. These applications can be relative to several other applications, like Smart vehicle charging which can be applied in Smart cities (to identify the flow of electric vehicles in a specific area and the distribution of energy in the grid), or in a Smart home (to analyze the consumption of a specific house).

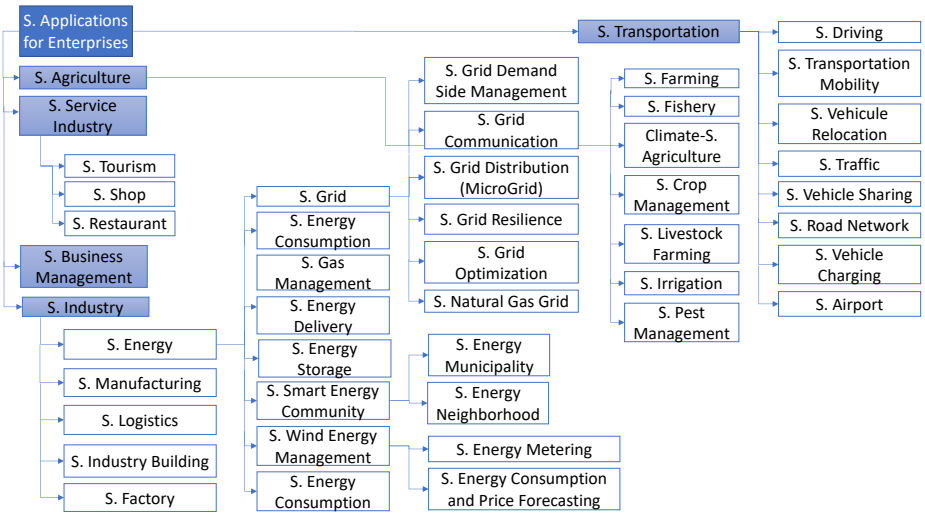

Fig. 4. Smart Life Applications for Enterprises.

We observed that new notions are introduced in the literature, even if they are not completely implemented yet. Smart earth is defined as an innovative approach to environmental monitoring in [18]. Smart island is an attempt to classify the existing smart-related methodologies in the urban context to analyze their possible application to the islands [23]. Smart state is described in [24] as a direction of "Knowledge-Based Urban Development". In [25], a literature review is done on the usage of the blockchain technology in Smart villages. Finally, the term Smart world appeared in the literature [26] [27] as a unifying term of various Smart applications. For instance, [27] defines Smart world as "an attractive prospect with comprehensive development of ubiquitous computing involving penetrative intelligence into ubiquitous things". In our vision, this term corresponds to our vision of Smart life.

When constructing the Smart life applications taxonomy, we excluded 328 sources dealing only with Smart artefacts, Smart technologies, and Smart systems not related to specific application domains. The taxonomy does not either include Smart infrastructure-related applications as we foresee them as transversal issues, we can find infrastructure almost in all major Smart applications fields.

The evolution of Smart domains is shown in Table 4 for the period from 1986 to 2022 (publications already available in 2021). We grouped the first 21 years in the same column as the number of publications was very law for this period. We complete this chronological vision by a graphical representation illustrating the distribution of Smart domains (See Fig. 5).

Table 4. Smart Domains Evolution.

Smart Life Domains	1986-2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	*Total*
Persons	**3**	**4**	**6**	**9**	**3**	**6**	**9**	**13**	**9**	**10**	**25**	**21**	**45**	**64**	**93**	**84**	**4**	***408***
Smart healthcare	3	3	5	4	2	3	4	5	6	5	7	11	13	31	39	47	2	***190***
Smart home (Smart living)		1	1	4	1	2	5	8	3	4	18	9	27	29	45	33	1	***191***
Smart welfare				1		1				1		1	5	4	9	4	1	***27***
Society	**1**	**1**		**1**		**1**	**2**	**4**	**6**	**13**	**23**	**37**	**50**	**107**	**89**	**100**	**5**	***440***
Smart city	1	1		1		1	1	3	6	12	16	32	42	96	80	87	5	***384***
Smart cityzenship											1	1		1				***3***
Smart court							1											***1***
Smart education										1	5	4	6	9	7	11		***43***
Smart island														1				***1***
Smart policing															1			***1***
Smart social media								1							1	1		***3***
Smart state											1							***1***
Smart village													2			1		***3***
Environment				**1**					**1**	**3**			**1**	**2**	**2**	**6**		***16***
Smart disaster management									1						1	3		***5***
Smart earth													1					***1***
Smart natural resource management				1						3				1	1	3		***9***
Smart space exploration														1				***1***
Enterprises		**1**		**2**	**11**	**15**	**40**	**39**	**43**	**56**	**98**	**89**	**130**	**179**	**199**	**231**	**9**	***1142***
Smart agriculture								1	2	1	2	9	8	12	26	41	2	***104***
Smart business management								1				2	5	10	15	24	3	***60***
Smart industry	7	1		2	11	14	38	37	37	50	91	72	108	137	137	145	4	***891***
Smart service industry									1		1	1		5	5	3		***16***
Smart transportation						1	2		3	5	4	5	9	15	16	18		***78***
Total by year	***1***	***6***	***6***	***13***	***14***	***22***	***51***	***56***	***59***	***82***	***146***	***147***	***226***	***352***	***383***	***421***	***18***	***2013***

We can see that the first reviews appearing in the literature concern Smart applications for enterprises (in 1986). Then literature shows interest in two other domains, namely Smart applications for persons and for society, in the 2000s. More recently, Smart applications for the environment came out more prominently.

In the Smart applications for enterprises domain (1142 papers), Smart industry dominates (891 papers), essentially with Smart energy-related topics, followed by Smart agriculture (104 papers), Smart transportation (78 papers), and Smart business management (60 papers). Smart home and Smart healthcare are equally represented in Smart applications for persons (191 and 190 papers respectively over 408), with a little part for Smart welfare. Smart applications for Environment are only represented by 16 papers, half of them focused on Smart natural resource management (9 papers). Smart city is taking the big part of the Smart applications for society (384 papers over 440), followed by Smart education (43 papers).

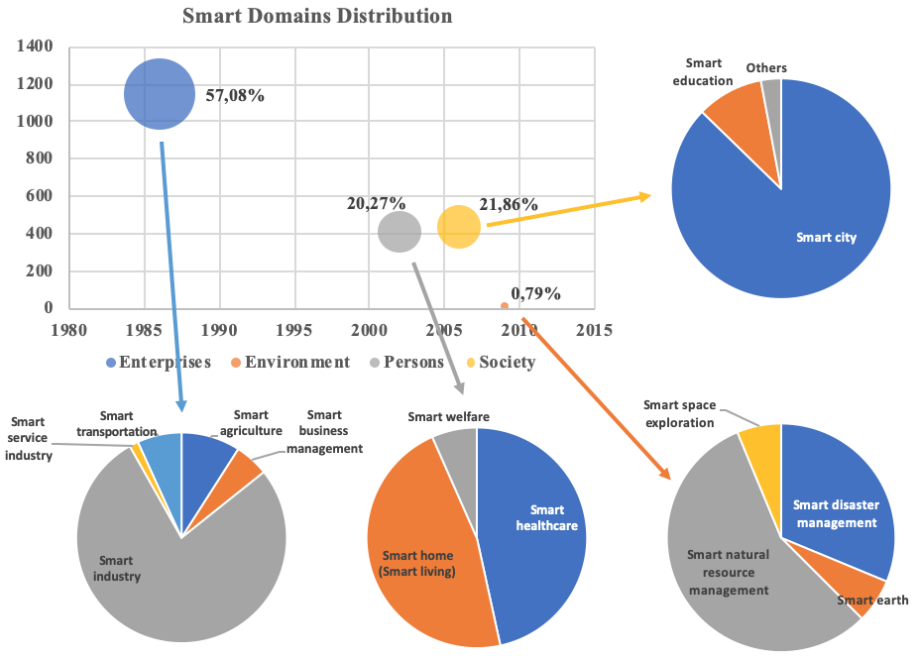

Fig. 5. Smart Domains Distribution.

3.2 Sources of Papers Publishing on Smart Applications

One of our goals is to analyze the venues of papers published on Smart life. This question leads us to study the distribution of publications by type of venue: conferences, journals, or workshops, resulting in the distribution presented in Table 5. The most used type is journals (66%) with conferences at second place (27%), and a very small number of venues are presented by books and workshops.

Table 5. Papers Distribution by Publication Type.

Publication Type	Number	Percentage
Journal	1553	66%
Conference	629	27%
Book or Book chapter	149	6%
Workshop	10	1%

We identified the principal venues publishing on Smart life (Table 6). We selected venues that published 10 and more papers on Smart life state-of-the-arts and research agendas. Three first places are taken by Renewable and Sustainable Energy Reviews (74 venues), IEEE Access (65 venues), and Energies (43 venues), thus 117 venues in

the field of energy, and 65 generic venues. 262 venues have between 2 and 9 papers, and 931 venues have only one paper.

Table 6. Most Publishing Venues on Smart Life and their Category.

Publishing Venue on Smart Life	Number	Category
Renewable and Sustainable Energy Reviews	74	Domain-specific
IEEE Access	65	General
Energies	43	Domain-specific
Sustainability (Switzerland)	36	Domain-specific
Advances in Intelligent Systems and Computing	30	General
IEEE Communications Surveys and Tutorials	30	Survey-oriented
Applied Sciences (Switzerland)	29	General
Lecture Notes in Computer Science	29	General
Lecture Notes in Electrical Engineering	29	Domain-specific
Sensors (Switzerland)	25	Domain-specific
Sustainable Cities and Society	25	Domain-specific
Journal of Cleaner Production	23	Domain-specific
Lecture Notes in Networks and Systems	18	Domain-specific
ACM International Conference Proceeding Series	16	General
Journal of Network and Computer Applications	15	Domain-specific
Communications in Computer and Information Science	14	General
Smart Innovation, Systems and Technologies	14	Domain-specific
ACM Computing Surveys	12	Survey-oriented
Electronics (Switzerland)	12	Domain-specific
IOP Conference Series: Materials Science and Engineering	12	Domain-specific
Journal of Physics: Conference Series	12	Domain-specific
Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering	12	Domain-specific
EAI/Springer Innovations in Communication and Computing	11	General
Procedia Computer Science	11	General
Sensors	11	Domain-specific
IOP Conference Series: Earth and Environmental Science	10	Domain-specific

With regards to the venues categories, we obtained 16 most publishing domain-specific venues (371 papers), 8 generic venues (205 papers), and 2 survey-oriented venues (42 papers), thus 26 venues in total. On the 619 different venues identified in our dataset, more than half can be classified as domain-specific.

3.3 Smart Applications Underlying Terminology

We created two keyword clouds: one based on the title of the selected publications (Fig. 6) and the second one based on their abstract (Fig. 7). The size of the word in the cloud indicates its frequency in the dataset.

Fig. 6. Word Cloud Based on the Papers Titles.

The titles contained 2023 occurrences of the word “Smart”, which put it in the first place before the others. Table 7 shows the frequency of the most popular words in this title dataset (over 200 occurrences).

Table 7. Popular Words Frequency in the Titles.

Word	Frequency	Word	Frequency	Word	Frequency
Smart	2023	Internet	266	Things	245
Grid	476	Data	255	IoT	241
Energy	425	System	252	Systems	216
City	342	Management	249	Security	210

Some words concern the main objective of this study which is “Smart” of course. We can identify also that we are in the domain of “internet”, “data”, “system”, “things”, “IoT”, and “systems” (1475 occurrences). What is more interesting however is the frequency of the set of terms “grid” and “energy” (901 occurrences) which means that this specific topic is at the heart of the selected research works in this study. The term “city” appears 342 times, “security” 210 times, and “management” 249 times which are still important frequencies.

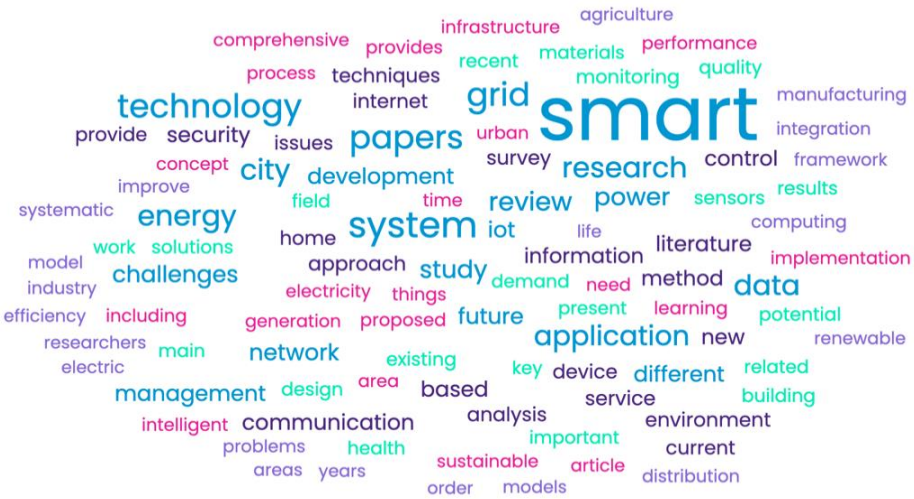

Fig. 7. Word Cloud Based on the Papers Abstracts.

The dataset based on the selected publication abstracts contained 8098 occurrences of the word “Smart”, four times more than the next frequent word. Table 8 shows the frequency of the most popular words in this dataset (over 1000 occurrences).

Table 8. Popular Words Frequency in the Abstracts.

Word	Frequency	Word	Frequency	Word	Frequency
Smart	8098	Energy	1806	Review	1456
System	2803	Research	1795	Study	1287
Technology	2403	City	1890	Power	1252
Papers	2330	Data	1736	Challenges	1073
Grid	2326	Application	1669	Network	1044

Apart from the “Smart” word, we can also identify words concerning our research method, like “papers”, “research”, “study”, “review” and “challenges” (7941 occurrences), as we restricted our SMS to papers which were literature studies. As in the title dataset, we identify words about our domain of “system”, “technology”, “data”, “network”, and “application” (9655 occurrences). Again, the frequency of the set of terms containing “grid”, “energy”, and “power” (5384 occurrences), reiterates our preceding finding that this domain is massively present in the selected publications. The term “city” appears 1890 times which is still an important frequency.

Based on the study of the keywords, we established that, except for the research study terms and the development-related ones, the most used application areas are home, agriculture, health, energy, and parking. The main purposes are metering, monitoring, manufacturing, and intelligence. The most present characteristics are mobile,

electric, sustainable, and renewable. And, finally, the more frequent technologies are sensors, grids, state of control, and network.

3.4 Smart Life Driving Factors

Addressing Smart life applications raises some specific requirements. The most important ones, in our humble point of view, are related to driving perspectives. What are the main issues we should take care of to be able to successfully build this new generation of applications? There is many, but let's focus on what we expect to be the most significant ones through application domains.

The first one corresponds to the *ability to scale*. From Smart cities to Smart homes, applications and technologies have to face numerous units: sensors, computers, communication devices, people or users, buildings, data produced and consumed… Their considerable quantity implies the ability to scale, eventually to scale to the world. The panoptic model from Jeremy Bentham [28], already contradicted by Michel Foucault, is no longer a reference. This has already been considered by Cloud providers as they adopted the CAP Theorem stating that, among the 3 properties of Consistency/Adaptability/Partitioning, you can only insure two of them. This is due to the deep nature of Cloud Computing and its inherent dimensions of distribution and scaling.

Application designers will address *safety and security as key issues*. They are mandatory, we fully agree and there is no discussion about these requirements. It is very general for any application that involves human beings in someplace. From our point of view, ubiquity - sometimes also addressed as pervasivity - belongs to the deep heart of Smart life applications. Nowadays, through the pandemic crisis, most people have experienced collaborative tools such as Zoom, Teams, Google meet, or whatsoever. These tools bring more than connectivity. They took a part of ourselves and put it in some shared void enforcing belongingness. We are at the beginning of a new era where we are in the physical world and one or more virtual worlds at the same time. From Building Information Modelling (BIM) to Metaverses, the feeling of being "more than one" and being "only one" at the same time is enforced. Maybe we are moving forward to the empathy box of the mercerism described in "Do androids dream of electric sheep" from Philip K. Dick [29]?

The relationship between human beings and technology is an emerging issue. From a human perspective, *we are driving the system, not the other way round*. But this is not just black or white; there is a blurred frontier between what human needs and what Smart life brings. Sentience is the key issue dealing with requirements. Sentience has been defined a long time ago, especially in the context of animal rights. Such a concept can be derived and adapted to technology. It is easier to understand in the context of Robots, more precisely when you apply it to robots' consciousness. Recently, this concept has started to be refined in [30]. ICT should be able to sense human expectations without any explicit specification and adapt to these expectations consistently. Modern application designers will take care of sustainability and ecological footprint. We deeply believe that a sentient-ready application or technology will be able to fully take care of this requirement if properly designed and self-aware.

4 Conclusion and Future Research

Our main goal is to promote the field of Smart life and Smart life engineering to provide fundamentals for more efficient and sustainable research efforts. In this paper, we summarize the research work on “Smart” state-of-the-arts and research agendas to identify and classify Smart applications. We carried out a systematic mapping study based on 2341 publications to define a taxonomy of Smart applications, understand their distribution, analyze sources of the research works, and identify the underlying terminology. Finally, we discuss driving properties allowing us to move forward the Smart life.

Based on the obtained results, we plan to investigate how the identified driving properties could be considered to identify possible relationships between different Smart applications. We will carry out a bibliometric study for this purpose. We also intend to go further with the identification of research challenges in the field of Smart life and Smart life engineering. Our main goal is to discover if common methodological basics could be identified in the field of Smart life.

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