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**LibrarIN [101061516]: Value Co-creation and Social Innovation
for a new Generation of European Libraries**



**D2.1 Conceptual framework and model of participatory
management and sustainable growth v1.0**

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Executive Summary

This report reviews the theoretical development of co-creation and innovation in libraries in the academic literature, showing their definitions, typologies, drivers, and barriers as well as the existing analytical framework. This sets the foundations of an integrated conceptual framework to understand the process of value co-creation in public libraries service delivery, the main outcome of WP2.

The main outcomes of this first year of work were two literature reviews, one on innovation in public libraries and another on innovation in academic libraries. This literature review provides a comprehensive understanding of research on innovation in libraries. In this regard, it has been confirmed that there is significant theoretical development in terms of definitions, theoretical frameworks, typologies, determinants, drivers, and challenges for innovation in libraries. This provides a solid theoretical foundation for addressing this topic. Furthermore, the reviews find that the study of innovation in libraries is an emerging research field, as the majority of research on the subject has been concentrated in the last 15 years and continues to grow each year. On the other hand, one of the key conclusions of the work carried out by WP2 this year is that libraries have a distinct and specific language when referring to innovations, changes, transformations, or renewals. Therefore, to study innovation in libraries, it is essential to use the language they employ.

Using the language that libraries and librarians employ to refer to innovations, changes, transformations, or renewals allows us to understand what are the categories of services in which there is innovation and co-creation in libraries. It also allows us to understand the essential dimensions of co-creation and related activities (collaboration, citizen participation, co-operation, co-production or open innovation) in libraries and how intensely these activities are pursued. Thus, academic libraries research tends to focus more on innovations than public libraries research, which can be explained by their higher level of research and development that allows them to be closer to the latest transformations and ways of understanding innovation. However, public libraries also engage in significant innovative activities, often materializing in projects and partnerships between both types of libraries to address specific issues. In this sense, although public and academic libraries have certain differences, it was concluded that innovation in them can be studied similarly, as both types of libraries typically use a similar language and the innovative services they offer tend to involve similar typologies.

Using the language applied by libraries and librarians is also essential when searching for literature on innovation in libraries. The first searches carried out using the terminology that academics and scholars use for innovation gave much lower results than when the library terminology was used. Thus, a new literature review on innovation in both public and academic libraries has been conducted to offer an integrative overview of innovation in libraries.

Additionally, the limited amount of literature in the interdisciplinary field of library innovations and co-creation is addressed in exploratory pilot studies carried out at a few selected libraries. They serve to improve understanding of developments in the sector and are useful as inputs for the conceptual



framework design and case studies work. These studies broaden the scope of innovation and co-creation in library services by enhancing the thoroughness and quality of the literature reviews. Additionally, the exploratory pilot studies have contributed to a more comprehensive and practical understanding of library innovation, boosting the project's overall goals, by investigating entrepreneurial service support and co-creation with both traditional and entrepreneurial patrons.

The literature reviews and the exploratory pilot cases have confirmed the usefulness of addressing 4 key request questions across the LibrarIN WPs related to 4 topics: 1) Identification of innovation and co-creation, the loci where they happen, and the ecosystems; 2) Innovation drivers, barriers, and impacts; 3) Value Co-creation drivers, barriers, and impacts; and 4) New ways of participation – co-creation process.

Finally, the results of the literature reviews and the work done so far serve to define the conceptual framework for the study of innovation from a service innovation Lancastrian approach. This is work in progress and preliminary results are also presented in this report. The conceptual framework will contain the following dimensions: the “what” and “what for”, service characteristics (new or improved), public and private values, and innovation outcomes. The “who” refers to use preferences/goals, user competencies/capabilities, and provider preferences and competences. The “how” refers to co-production and co-creation by different agents, innovation processes, and roles played by technology, stakeholders, policymakers, and ecosystems.



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List of Terms and Abbreviations

Abbreviation	Definition
AI	Artificial Intelligence
GA	Grant Agreement
PSL	Public Service Logic
RQ	Research Questions
SDL	Service Dominant Logic
UAH	University of Alcala
VTT	Teknologian Tutkimuskeskus VTT Oy
WP	Working package



1 Introduction

1.1 Purpose and Scope

The key objective in the first 12 months of the project is to address Task 2.1: Baseline definition and mapping (M1-M9).

This Report presents the highlights and key findings of the work conducted by UAH and VTT on structured literature reviews for two different types of libraries – public municipal libraries and university libraries. This recognizes that these two forms of library are potentially very different, with different types of users with different user interests and needs, and potentially very different types of technology and new service development. To this end, the deliverables of WP2.1 are extended beyond the original remit of a single literature review for public libraries (only) to include an additional literature review on academic libraries.

A comprehensive literature review on public libraries conducted by VTT is attached as Annex 1, and a comprehensive literature review on university libraries, carried out by UAH, is attached as Annex 2. As promised in the original proposal, the focus is on library-focused journals and reports, public administration literature, and innovation studies.

A key finding of Task 2.1 is that key concepts and words commonly used in innovation studies, such as 'co-creation', 'co-production', and even 'innovation' are not widely used in the field of library sciences (Section 2 reviews the frameworks that we could find). As a direct consequence, it is highly problematic to perform a simple bibliometric study using these as keywords - doing so means that a large number of journal papers will be missing, and of those that are captured there is a high probability of biases in the types of services discussed. To address this problem, a new approach was developed. The literature review conducted by the VTT team focused on a set of key research journals that specialize in library research. This in-depth work identified a set of 100 journal papers in which new service innovations are discussed.

In addition to identifying the types of new services and service categories being developed by public libraries around the world, a detailed, in-depth analysis of 100 journal papers in the VTT journal sample provided a set of keywords used by library researchers when discussing new service innovations (see Annex 1 for more detail).

The UAH team has subsequently used these keywords to conduct a bibliometric study of service innovation in university libraries. This provides a test case – the results of the bibliometric exercise using the identified keywords can be compared and contrasted with a bibliometric exercise using the words 'co-creation', 'co-production', and 'innovation'. The findings are presented in this report. This covers all types of service innovations used in academic and public libraries.

Using the sample of papers generated using the identified keywords, UAH has analyzed the sub-sample of papers that discuss innovation in academic libraries. The highlights are reported here (also see Annex 2 for more detail). This analysis includes an identification of new categories of services offered in academic libraries, enabling a comparison to be made with the changes that have occurred in public libraries.

The findings of this work in Task 2.1 have, as intended in the original proposal, directly fed into initial work conducted in WP3 (case studies), in Task 2.2 of WP2 and task 4.1 of WP4. This has been achieved through the rapid circulation of different versions of the VTT and UAH reports to the consortium and through presentations made at project meetings in Athens, Copenhagen/Roskilde, and Amsterdam.

In addition to the in-depth literature reviews, Task 2.1 has also reviewed pre-existing conceptual frameworks that could be used to understand and enact public library service reform and to evaluate the strength of each of these frameworks against the LibrarIN criteria. In particular, we refer to the public service logic framework (PSL) and the service innovation multiagent framework. Our focus has been on i) reviewing relevant information from previous EU projects on public innovation and co-creation, ii) mapping research gaps and new research avenues through selected case stories, and iii) reviewing pre-existing conceptual frameworks that could be used to understand and enact library service reform. In years 2 and 3, the LibrarIN conceptual framework will be enriched and further developed by empirical evidence provided by other WPs and by interactions with stakeholders (WP3, WP4, WP5). Figure 1 below presents the inputs into the conceptual framework.

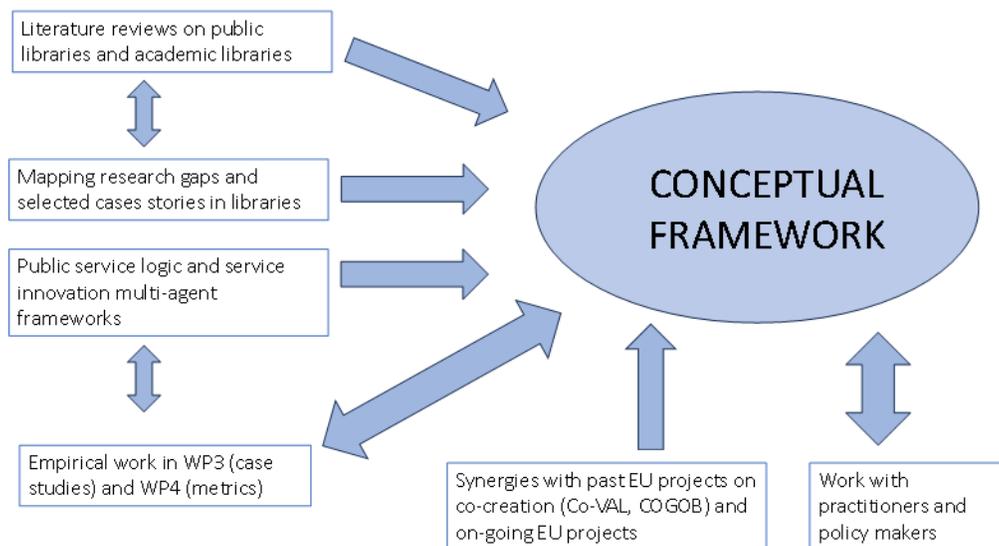


Figure 1: Inputs for developing the conceptual framework for innovation and co-creation in libraries



Finally, initial work has begun on Task 2.2: Definition of the Conceptual Framework (M10-M18). Here we report the set of meetings that have taken place. This work has, as intended, fed into the work of WP3 and WP4.

1.2 Approach for WP2 and Relationships with other WPs and Deliverables

The LibrarIN project proposal establishes the following three case study areas: i) digital transformation linked to ICT development in libraries, ii) social entrepreneurship and the use of public-private-third sector networks for library services, and iii) library innovation labs. Likewise, the project proposal establishes these three areas as “the best example of integration among the WPs” (p. 13) and develops concepts, typologies, theories, metrics, case studies, and economic policy recommendations. To guarantee the integrative theoretical grounding for all work packages of the project, WP 2 generates a conceptual framework that serves as a guide for the activities implemented throughout the project. The framework aims to offer theoretical groundings that facilitate the study of the three case study areas (WP3), help in the preparation of surveys to measure innovation in libraries (WP4), promote work with Stakeholders (WP5), and generate strategies and policies to promote innovation in libraries (WP6). This framework is based on the findings of the different literature reviews implemented in WP2 and enriched by the service innovation multiagent approach which identifies cross-cutting dimensions for all WPs. Key dimensions are:

WHAT AND WHAT FOR

- Service characteristics (new or improved characteristics)
- Public and private values
- Innovation outcomes and impacts

WHO

- User preferences/goals and user competencies/capabilities
- Provider preferences and competences

HOW

- Co-production and co-creation among different agents
- Innovation processes and the role of technology
- Role of stakeholders, policymakers, and ecosystems

Related to these dimensions are several key research questions (RQs).

RQ1: Identification of innovation and co-creation, the loci where they happen, and the ecosystems that support them. How to identify innovation and co-creation in libraries? Which innovation types are produced in libraries? Which types of services are produced? Which types of libraries do innovation and



co-creation? Where do innovation and co-creation take place? What are the objectives of innovation in libraries?

RQ2: Innovation drivers, barriers, and impacts. How to define the impact or value of library innovations? What are the drivers, facilitators, determinants, and barriers to innovation in libraries?

RQ3: Value co-creation drivers, barriers, and impacts. What is the process of value co-creation (and value co-destruction) in libraries in collaboration with multiple stakeholders (such as users, citizens, public service organizations, and policymakers); what are value expectations, and are they congruent or competing?

RQ4: New ways of participation – co-creation process. How to conceptualize the relationship between value co-creation and traditional forms of participation to assess co-creation in terms of inclusiveness, meaningfulness, and legitimacy?

1.3 Structure of the Deliverable

This document will present the key findings based on the research agenda that was followed in WP2. The structure of the deliverable is as follows:

- State of the art
- Key findings on public libraries
- Key findings on academic libraries
- Towards a conceptual framework
- Next steps
- Conclusions



2 State of the art on innovations in libraries

Despite the differences in language applied by innovation researchers and the researchers in the library field, we identified several existing analytical frameworks that partially help to define and conceptualize innovation in libraries, identify their challenges and barriers, and provide tools for a practical approach to innovation in libraries (Jantz 2012, Chuang et al 2019, Lembinem 2021, Pellack 2022, Winberry and Potnis 2021, Potnis et al 2020, Nicholson 2019, Suchá et al 2021). For Instance, Marquet (2021) proposes a model for measuring the degree of digital transformation in libraries. Helminen et al (2016) analyses user involvement in the development of products and services in libraries and Wheeler et al (2022) study technology and collaboration as fundamental aspects of innovations in libraries. Additionally, there are frameworks for studying and measuring innovations in academic and public libraries.

Furthermore, some relevant studies on co-creation and other collaborative forms of innovation and service delivery have been identified. For instance, Islam et al. (2015a) conceptualize value co-creation in the context of libraries and propose a framework of value co-creation for service innovation in academic libraries. Schopfel et al (2015) study concepts such as co-working and learning centres for innovation in academic libraries.

This section introduces the state of the art as regards innovation-related (i) definitions, (ii) typologies, and (iii) frameworks identified in the review.

2.1 Definitions of innovation

When searching for a definition of innovations in the field of libraries, we found that the literature shows a lack of consensus, as evidenced in the following quotes:

- “Literature reviews all provide ideas and examples that may help generate creative solutions; however, none of them are very helpful to novices looking to learn more about the basics of innovation in libraries or identifying best practices for implementing innovation in libraries” (Pellack 2022 p. 5)
- “There is rarely any classification of innovations proposed using empirical research on innovations in libraries or grounded in the library science literature. There are significant contextual differences in terms of strengths, opportunities, weaknesses, and threats experienced by academic, public, special, and school libraries” (Potnis et al 2020 p. 795)
- “As this review indicates, the literature on innovation in academic libraries is scattered, thin, and, considering the importance of the topic, in need of additional empirical inquiry. Most of the work is exploratory or conceptual”. (Brundy 2015 p. 36)
- “Overall, innovation in public libraries is an underdeveloped topic in the literature” (Potnis et al 2021 p. 434)



The Oslo Manual defines innovation as “a new or improved product or process (or combination thereof) that differs significantly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process).” (OECD 2018 p. 20). Thus, recently there have been some attempts to define innovation in libraries that are linked to this Oslo Manual approach:

- “However, innovation can be a new idea, concept, product, system, or service related to library and information provision. Therefore, innovation in libraries is not necessarily limited to technology implementation.” (Potnis et al 2020 p. 794)
- “Innovation in academic libraries is not primarily the result of top-down decision-making. It is a deeply collaborative process in which leaders facilitate the possibilities of libraries as centers of student learning and knowledge construction. This type of leadership empowers others to pursue innovation and change, resulting in the collective action Ward believes is essential for success” (Brundy 2015 p. 34)
- Innovations in libraries concern five main areas: collections, customer services, technology, programs, and library buildings (Nicholson, 2017).

Therefore, on one hand, the literature indicates a lack of consensus in the definition of innovation in libraries, and on the other, some definitions follow the Oslo Manual. At this point, it is worth asking whether adequate typologies of innovations in libraries exist. Are there studies on the determinants, drivers, and barriers to innovation in the case of libraries? Are there analytical frameworks for the study of innovation in libraries? Is there any guide for the definition of innovations in libraries? The following subpoints answer these questions.

Rubin et al (2011) establish that a definition of innovation for libraries needs to consider the following elements:

- Examining how libraries themselves apply the term,
- Articulating the contexts in which innovation is mentioned by libraries,
- Examining library practices by surveying library website applications, and
- Exploring whether there is a relationship between a library’s website application inventory and how libraries present innovation in their public documents.

As per Rubin et al (2011), “To determine what innovation means for and to libraries requires an examination of how the term is used, what it refers to, in what context it is used, to what effect it is used, and so on.” (p. 414). To understand how libraries understand innovation, Rubin et al (2011) turned to the white literature available through the websites of 160 public and academic libraries in the USA and Canada. Through their analysis they developed a list of 10 areas of innovation in libraries, listing them in order of from highest to lowest occurrence in the data set. This brings us to the next point of this operational guide, in which the typologies of innovation found in the literature are presented.



2.2 Typologies of innovation

The areas of innovation in libraries proposed by Rubin et al (2011) are one of the first and most cited typologies in the current literature. For these authors, innovation in libraries (both academic and public) occurs in 10 areas:

- Technology
- Service
- Culture
- Vague
- Character
- Use
- Program
- Facility
- Resource
- Partnership

Departing from the approach of Rubin et al (2011), Potnis et al (2020) analysed 80 innovations reported by the administrators of 108 award-winning public libraries in the United States and proposed a classification public library innovations into four types:

Table 1: Classification of innovations in public libraries

Type	Description
Program innovations	a new initiative designed and implemented for catering to the needs of a specific patron population
Process innovations	a novel combination of actions, routines, or procedures for serving patrons. Process innovations are implemented mainly for creating effectiveness (i.e. doing right things) and efficiency
Partnership innovations	a novel integration of resources such as people and information, which are contributed or shared by organizations or units within a single organization
Technological innovations	a new initiative or procedure driven by or centered on the features and capabilities of a specific or a combination of technologies

Source: Potnis et al (2020)

Furthermore, Jantz (2012) used the method of structured interviews to examine the views of academic librarians on the implementation of innovations in academic libraries in the United States. Based on this research, he identified a difference between technical innovations (e.g., access to research data, publishing electronic magazines, video streaming, etc.), and administrative innovations (support processes in the library). According to this framework, the implementation of new services in academic libraries has certain specifics: the innovations are typically incremental rather than radical; the degree



of formalization greatly affects the type of innovations promoted in the library; and factors such as education, industry, age, and work experience of the leading library employees also influence the type of innovations promoted in a particular library. In another study, Nicholson (2017) notes that innovations in libraries concern five main areas: collections, customer services, technology, programs, and library buildings.

Furthermore, in the literature reviews, several typologies of social innovation in libraries have been identified, which is of special relevance for the LibrarIN project. The Young Foundation (2012) defined social innovations as “new solutions (products, services, models, markets, processes etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources. In other words, social innovations are both good for society and enhance society’s capacity to act” (p.18). From this definition it is possible to study the definitions of social innovation in existing libraries

Winberry and Potnis (2021) used thematic analysis of the library innovations literature from 2009 to 2019 and proposes six types of social innovation in public libraries along a spectrum from user-centred to community-centred.

Table 2: Classification of social innovations in public libraries

Type	Description
Lifelong Learning	Social innovations in this category are a means for meeting ongoing information literacy training. Examples from the literature such as programs for adolescents that move beyond traditional story time and programs that support literacy improvement among adults demonstrate how these innovations are helping libraries educate people throughout their lifespan.
Emergency response	Social innovations related to emergency response demonstrate the library’s role in disaster response and recovery efforts. Public libraries taking part in emergency response often are involved in a disaster as it is unfolding.
Civic Engagement	Some social innovations promote civic engagement through public interaction with stakeholders and institutions. Public library initiatives can help citizens use government services, exemplifying social innovations in the civic engagement category.
Health	These types of social innovations encourage a community’s desire to increase physical and mental well-being. Some examples of physically focused innovations include fitness programming in public libraries.
Diversity and Inclusion	Social innovations for diversity and inclusion seek to achieve a more equitable society by providing support for social groups that may not have adequate support in the community. These innovations help meet the needs of different communities, such as immigrants, LGBT, youth, and homeless persons (Giesler 2019).

Source: Winberry and Potnis (2021)



Suchá et al (2021) argue that social innovation promoted in public libraries is divided into five groups of activities:

- **Educational activities.** Libraries can carry out innovative educational practices in any area.
- **Culture activities.** The cultural activities include, for example, readings, fairy tale performances for children, cultural events to promote specific topics (e.g., mental health), poetry readings, museum exhibitions, local and thematic film festivals, and more.
- **Leisure, hobby, and sports activities.** The role of the public library in providing leisure opportunities has been traditionally undervalued. In addition to just “spending time”, being in the library means, for example, socialization benefits, an opportunity for relaxation with positive effects on health, and more opportunities for leisure time for relatively low costs.
- **Meeting and connecting activities.** Libraries may serve as a neutral urban space to connect different social groups.
- **Helping hand to a specific group of people.** Some libraries provided even social care, social enterprise, or public services.

Definitions from Wimberry and Potnis (2021) are focus on broader social goals, while Suchá et al (2021) definitions are focus on outcomes for individuals. In this sense, both definitions cover elements typical of the definition proposed by The Young Foundation (2012), since social innovations in libraries are meant to face social needs (poverty, health, inclusion, civic engagement among other) through an offer of specific and innovative services and activities for citizens.

2.3 Determinants, drivers, barriers (challenges) for innovation

Determinants

We identified several studies that address the determinants, drivers, barriers, and challenges for the development of innovations in libraries. As an example, Table 3 illustrates the three types of determinants—resource-related, process-related, and value-related—identified by Yeh and Walter (2016).

A number of publications address knowledge management as an important determinant of innovation in libraries, especially in academic ones (Islam et al 2015b, Islam et al 2017, Pacios 2020, Shropshire et al 2020, Ugwu and Ekere 2018, Xiao 2020, Sarrafzadeh et al 2010, Kolionari et al 2018). Among these studies, a statistical study carried out by Islam et al (2017) can be highlighted. Based on a survey of 107 librarians from 39 countries, Islam et al (2017) found that knowledge capture and creation and knowledge application/use both significantly impact service innovation. The effect of knowledge sharing and transfer on innovation was also insignificant. (p 266)



Table 3: Determinants of innovation in libraries

Related to resources	Related to processes	Related to values
<ul style="list-style-type: none"> Personnel and financial resources for innovation can lead to innovation success (funding, innovation strategies, physical spaces) 	<ul style="list-style-type: none"> There must be innovation departments and teams that implement strategies and processes for innovation such as user involvement or partnerships. 	<ul style="list-style-type: none"> A pro-innovation leadership and an innovation-supportive culture are particularly relevant to libraries in supporting innovation processes.

Source: Yeh and Walter (2016)

Drivers, Barriers and Challenges

Barriers consist of factors that can prevent an innovation from occurring or obstacles that increase the difficulty of innovating, but do not necessarily prevent an innovation. A challenge is similar to an obstacle. Suchá et al (2021) identified several barriers and drivers for innovation in public libraries, a summarized in Table 4.

Table 4: Barriers and drivers to innovation in libraries

Level	Barriers	Drivers (stimulators)
Structural	<ul style="list-style-type: none"> Legislative obstacles and bureaucratic environment. Finances (lack of appropriate grants, tight budgets, cuts) 	<ul style="list-style-type: none"> Platforms for drawing inspiration Finances (new types of grants, crowdfunding, social enterprise, etc.)
Local	<ul style="list-style-type: none"> Passive role concerning users and other Stakeholders Weak partnerships with the founder 	<ul style="list-style-type: none"> Active cooperation with the founder User-centred approach, community-driven approach, co-creation
Organizational	<ul style="list-style-type: none"> Lack of an innovation strategy in the library Homogeneous team 	<ul style="list-style-type: none"> Staff autonomy Process management Heterogeneous team
Personal	<ul style="list-style-type: none"> Burnout, overburdened by work Insufficient competency to provide services to the target group 	<ul style="list-style-type: none"> Intrinsic motivation (awareness of visions and goals) Grounding in the community



Source: Suchá et al (2021)

Chuang et al 2017 and Chuang et al 2019 found that the barriers are also divided according to levels, in this case, barriers at the organizational level and barriers at the environmental level. “Findings identified two specific barrier types that academic libraries face, environmental and organizational barriers, identifying 19 barrier factors that intertwine to yield seven dimensions across two levels of analysis. It is advised that the library leadership team should both encourage innovative behaviors and eliminate the innovation barriers to enhance library innovation capacities.” (Chuang et al 2019 p. 402)

Studies have also been found on challenges to social innovation in libraries. Winberry and Potnis (2021) identify several challenges (see Table 5).

Table 5: Challenges for social innovations in public libraries

Type	Description
Measurement	Challenges related to measurement represent the difficulties public libraries face in evaluating the impact of their social innovations. Public libraries often struggle to quantify their value for the public good.
Education	Without real-world experience tied to their education, early career librarians will not be positioned to design social innovations that consider realities like patron tardiness or absence.
Librarian Identity	Challenges related to librarian identity pertain to how librarians conceptualize their role. Some librarians believe they could put themselves or their organizations at risk if they go beyond what they see as their traditional role.
Partnerships	Numerous factors influence partnerships for social innovations in public libraries, such as the need for enthusiastic engagement from an outside organization, competing interests and goals.
Communication	Communicating change has long been understood as a challenge for libraries. Librarians need to find successful strategies for sharing social innovations with the community. The literature suggests several challenges around doing so such as finding the best venues for “selling” library services to potential patrons such as entrepreneurs.
Funding	Some innovations such as yoga in the library are a response to growing health interests among patrons and help earn long-term funding in the budget for related programs.
Guidance	Guidance—or a lack thereof—is another challenge for implementing social innovations. In the review of the related articles, a lack of guidance was noted in reference to national or international library associations rather than to peer-to-peer learning from fellow library professionals.
Political Will	Political will requires social and financial support through public policy actions. Because most public libraries are funded by local tax dollars, local



	politician perceptions of public libraries can greatly influence the amounts and types of funding that the library receives.
Community Support	Community support driven by the public perception of the library is another challenge for public libraries when implementing social innovations.

Source: Winberry and Potnis (2021)

2.4 Exploratory pilot studies

There is a scarcity of existing literature in this interdisciplinary field of innovations and co-creation in libraries, which encompasses library sciences, technology, and social sciences. To address the challenge of limited available literature there is a need to provide real-world insights drawn from pilot case studies conducted at American libraries, as well as contributions from European libraries.

The conducted pilot case studies with 2 American libraries, for instance, the University of Toronto Libraries, Canada, and the Public Library of Toronto, Canada, and 06 European libraries serve as essential complements to the literature, offering empirical evidence and contextual depth to the review, thereby improving the comprehensiveness and validity of the literature reviews, and serving as an exploratory work before addressing the LibrarIN case studies in the second year of the project. The reason for including American libraries, for instance, Gerstein Science Information Centre, the largest science and health science academic library in Canada, is to leverage best practices across American libraries and use them to generate knowledge valuable for European libraries.

Moreover, the experiences, particularly those related to fostering innovations in libraries, not only enrich the literature review process but also influence the planning and execution of the search for relevant literature. By drawing from real-world experiences, the pilot studies bring the concepts of innovation and co-creation in library services to life, allowing for a more in-depth and holistic examination of the subject matter. This integration of practical insights and theoretical foundations will play a pivotal role in enhancing the conceptual model-building process, as it ensures that the model is not solely theoretical but firmly grounded in real-world practices, making it more relevant and actionable for library services.

Additionally, studying the entrepreneurial service support of libraries is a crucial endeavour with wide-reaching implications. Libraries serve as essential hubs for innovation, impacting not only traditional patrons but also entrepreneurs and innovators. However, the literature in this area is notably limited, leaving a significant gap in our understanding of how libraries effectively support entrepreneurship and how it further fosters innovations in libraries. Joint co-creation with entrepreneurs and traditional patrons has a synergetic effect.

Understanding how libraries support entrepreneurship and innovation enhances the comprehensiveness and applicability of the conceptual model under development, as it incorporates the distinct role libraries play in nurturing entrepreneurial activities and fostering innovation for



different patron categories. Investigating the entrepreneurial service support in libraries not only addresses the gap in the literature but also contributes to a more holistic and practical understanding of innovation and co-creation within library services, based on co-creation with traditional and entrepreneur's patrons, complementing the project's overarching goals.

The pilot studies particularly help to answer the following research questions:

RQ1: Identification of innovation and co-creation:

The pilot studies provide insights into how libraries identify innovation and co-creation by showcasing the various innovation types produced within libraries, such as the adoption of AI technology, mobile app development, and text-to-video generators. For instance, University of Toronto libraries has adopted an incremental and small experimental approach to continuously test new AI applications before adopting it on larger scale. The digital transformations occurs because of (a) strategic adoption of digital technologies and (b) cultivating the positive culture towards such adoptions by fostering curiosities among its librarians to test new technologies. They offer real-world examples of where these innovations occur within library services and ecosystems, addressing the "loci" aspect. The studies shed light on the objectives of innovation in libraries, helping answer the question of why innovation is pursued in the first place.

RQ2: Innovation drivers, barriers, and impacts:

The pilot studies provide an insight of the motivating elements behind these innovative endeavours as well as the limitations and problems faced in libraries by exploring the drivers, determinants, and impacts of innovations inside libraries. For instance, public library of Toronto had been innovating digitally to cater to continuously changing needs of the citizens and opportunities provided by the technological innovations. The use has an important role here not only to recommend such transformations but also to make a significant contribution for its streamlined adoption and evolution. This offers insightful information about the motivations for and constraints on innovation in libraries, as well as the products and results of those innovations, notably the actual effects of such digital changes.

RQ3: Value Co-creation drivers, barriers, and impacts:

The pilot studies focus on co-creation with traditional patrons and entrepreneurs, focusing on the synergetic effects they have on each other as well on library innovations. They contribute to identifying the contingencies of value co-creation by showcasing practical examples of libraries collaborating with patrons to produce innovative services. For instance, University of Toronto libraries caters to the need to traditional patrons as well as those who wish to build their entrepreneurship skills. Further, they also help building entrepreneurship skills of the entrepreneurs who get associated with Centre of Entrepreneurship or various incubator systems of the university. Such entrepreneurs also play an important role in helping library to innovate their services, for instance by providing resources to adopt technologies and valuable post adoption feedback. The co-creation with traditional patrons and



entrepreneurs creates synergy, helping to improve library services. They offer insights into the drivers and barriers of value co-creation, considering a range of key stakeholders, including patrons, citizens (in the case of public libraries), and policymakers and how their interests may align or compete.

RQ4: New ways of participation – co-creation process:

The pilot studies introduce new ways of participation and co-creation processes that bridge the gap between traditional library patrons and entrepreneurs. They illustrate collaborative models where both groups actively engage in shaping library services and content. The pilot studies offer practical examples of how traditional patrons and entrepreneurial individuals can collectively contribute to the development of innovative library services, emphasizing inclusiveness. For instance, entrepreneurs supported by the library are expected to help their peers to build their entrepreneur skills. This leads to creation of a very strong innovation ecosystem in the university thereby leading to overall productivity and firm performance. There is a need not only to focus on traditional patrons or entrepreneurs but to find the ways to leverage across the synergy that exists between them. This approach enhances meaningful participation and encourages legitimacy within the co-creation process. The co-creation process is no longer confined to the realm of library professionals but extends to a diverse and engaged community of users.

The pilot studies helped to provide directions to the literature review and will be valuable for undertaking conceptual model development. Some publications have been produced out of this exploratory case studies, such as:

- Varun Gupta, Chetna Gupta, Jakub Swacha, and Luis Rubalcaba, “Prototyping Technology Adoption among Entrepreneurship and Innovation Libraries for Rural Health Innovations”, *Library Hi Tech*, Emerald, 2023.
- Varun Gupta and Chetna Gupta, *Transforming Entrepreneurial Research: Leveraging Library Research Services and Technology Innovations for Rapid Information Discovery*, *Online Information review*, 2023, Emerald.
- Varun Gupta, “From Hype to Strategy: Navigating the Reality of Experimental Strategic Adoption of AI Technologies in Libraries”, *Aslib journal of information management*, Emerald, 2023.

2.5 Summary of key concepts and definitions for LibrarIN

The findings made in the state of the art can be summarized in order to establish definitions and typologies specific to the Librarin project that serve to guide the review of subsequent literature. In this sense, Table 6 shows a first proposals for basic concepts on innovation in libraries

Table 6: Proposal of concepts and definitions of the LibrarIN project



Concept	Description	Based on
Definition of Innovation in Libraries	Innovation can be a new technology, service, program, facility, resource, concept, product, culture, system, or partnership related to library services and information provision.	Potnis et al (2020) Jantz (2012) Rubin et al (2011) Balk et al (2014) Brundy (2015)
Typologies of innovation in libraries	Technological services innovations Partnership innovations Social and community services innovations Recreational services innovations Administrative services innovations Infrastructure innovations	Winberry and Potnis (2021) Suchá et al (2021) Nicholson (2017) Marquet (2021) Potnis et al (2021)
Typologies of New Library Services by VTT (2023)	1. 'Reading and Education' services 2. 'Community' services 3. 'Health and wellbeing' 4. 'Creativity' services 5. 'Business and finance'	VTT (2023)
Drivers of innovation in libraries	1. Founding and resources (new types of grant) 2. User-centred approach, community-driven approach, co-creation, collaborative approach 3. Process management 4. Heterogeneous team 5. Active leadership 6. Grounding in the community 7. Knowledge management	Suchá et al (2021) Yeh and Walter (2016) Islam et al (2017) Kolionari et al (2018)
Barriers of innovation in libraries	1. Environmental barriers 2. Organizational barriers 3. Personal Barriers 4. Local Barriers	Winberry and Potnis (2021) Chuang et al (2017) Chuang et al (2019)



Key Findings from the Literature Review on Innovation in Public Libraries

Library-focused journals discuss novel developments in their field using specific terminology. Consequently, relevant studies are missed when using innovation-related search strings.

To grasp the multiplicity of novelties discussed in library-related research arenas, the literature review on public libraries made by VTT addressed two generic research questions that are of direct interest to all WPs within the LibrarIN project:

- 1) How have public libraries responded to the transformation pressures during the past 7 years?
- 2) What are the key dimensions in this transformation – in terms of what a library 'is' and what types of new services have been developed?

This review aimed to identify the viewpoints and terminology applied by library field professionals and researchers. Therefore, after an initial scanning of library-focused journals, the research team decided to analyse innovation-related studies in six library-focused journals (*Library Quarterly*, *Public Library Quarterly*, *Library Management*, *Journal of Library Administration*, *IFLA journal*, *LIBRI*), using the terminology of the library researchers for novelties in the field. A total of 1,537 papers in six journals were examined. Of this total, 100 papers met the selection criteria and were included in the sample.

Overall, the literature review involved the following tasks:

- An explorative search in Scopus to specify the method and goals of the literature review
- A detailed study of six library journals including the following analyses:
 - A survey and analysis of empirical studies reporting novel developments in libraries
 - A keyword analysis of the selected empirical studies
 - An identification and analysis of general papers that discuss the changing role of public libraries in their communities and factors that have affected change and renewal over the past decade.

A more detailed description of the literature review (including paper selection criteria, description of the sample, literature review implementation, and the study results) is described in Annex 1.

Traditional library services was providing book loans and reference books, but changes in user demand have meant, on the one hand, that libraries offer books with a new delivery mode, such as electronic books or mobile services, and on the other, the emerging of new services categories in libraries. Based on the analysis, five categories of services were identified that libraries have developed to respond to external changes (see Table 7). The categories are considered to represent the "core" services provided by libraries. The categories illustrate the diversified services in libraries as well as new services within the categories to respond to external (societal) changes. Identified services may provide several other service characteristics, for example, a yoga class may have a social element as well as being a service



that improves the participant’s health and well-being. The core service in this case is health and well-being and so we place it in that category.

Table 7: Core services in public libraries

Category	Definition of the category
Reading and Education	Services include literacy and cultural services for multiple societal groups. This includes basic literacy for very young children; capability building in specific topics such as science, technology, engineering, and mathematics (STEM) services and digital technologies for older school children; adult literacy services; basic digital literacy (from how to navigate the internet to basic programming); and cultural services (including music, cinema, and cultural heritage).
Community	Services promote social inclusion, community building, and ensuring equal opportunities for different citizen/ societal groups. These include, amongst others, new advisory services and spaces for homeless people and young people who are at risk for societal exclusion; new services for promoting and sustaining the culture (cultural heritage) and language of local communities and providing services to serve various ethnic minority groups.
Health and wellbeing	Services aim to foster the health, physical activity, and well-being of the library users. These include advisory services (advice on personal health-related matters, such as cervical cancer screening services and health insurance); and (preventative) wellbeing services such as yoga and exercise classes, provided on-site or online. The category may include services directed at a specific user group, such as strength training or memory cafes for elderly people.
Creativity	Services enable and support library users to engage in new forms of creative activities, collaboratively or individually. These may be intended for the development of new creative ideas, new skills, or prototyping of solutions for individual or community use. The services include combinations of services (tutoring, guidance in workshops, etc.) and spaces/resources equipped with materials, machines, and other technologies.
Business and finance	Services include assisting businesses and individuals in filling in their annual tax forms and assisting in financial law. Providing resources, advice, and spaces for businesses.

In addition, several papers pinpointed the relevance of new delivery modes, that is, services that support new or pre-existing core services by facilitating greater accessibility of the services for different users. These modes include new ways of delivering library collections – such as home delivery of physical books via mobile libraries - and the digital delivery of existing services such as ebooks and digital catalogues and ordering over apps. These new delivery modes and substitutions of pre-existing technology by new technologies serve the same core function.

Papers of the sample are divided into these five service categories and in new delivery modes. The findings are shown in Figure 2 below.



Figure 2: Number of papers by each service category and by delivery mode

Many of the services in the sample are in the traditional service categories nominated as 'Reading and Education' services. However, a significant proportion of articles discuss other types of services, such as 'Health and Wellbeing', 'Community', and 'Creativity' services. This diversity very much reflects an expansion and diversification of the core set of services provided by public libraries, beyond the traditional core of reading and education. This expansion of services represents a significant change in the renewal of the public library.

Public libraries have developed these core services in multiple ways. Overall, the analysis concluded that innovations in the library field are extending the public space that libraries provide for users and society in several ways.

Examining the literature sample, we found that the innovations in the core services renew and extend the public space offered by libraries from the perspective of three spatial dimensions: the **social space**, the **physical space**, and the **digital space**.

- Considering *the social space*, innovations in libraries help people meet each other in novel ways and novel combinations. Examples of such innovations are cultural events for ethnic minorities and outreach and literacy services for at-risk youth.
- Innovations that renew or extend the *physical space* include finding new purposes for existing library facilities or identifying novel spaces for offering library services. Examples include outdoor library programming, which responded to urgent needs during the COVID-19 pandemic but simultaneously aimed to support the health and nature relations of library users.
- Innovations in *digital space* include new delivery modes, such as mobile library apps, and novel services in the digital sphere, such as educational games. Many novelties extended several spaces simultaneously. For example, maker spaces offer possibilities for new types of social



The review demonstrates how new elements, such as community building and creative activities, have increased in importance in public libraries' service offerings. The reviewed articles also suggest that entering these novel service areas has required public librarians to collaborate with other actors, ranging from municipal social and healthcare providers to citizen groups. As a consequence, traditional functional boundaries between public libraries and other public and private services organisations are being renegotiated and reshaped. Furthermore, the analysis of the three different spaces explains how libraries have changed their value co-creation from one-to-one interactions between individual users and library professionals, to processes that encourage people to meet one another and collectively create value (the extension of social space), while the same time ensuring that both one-to-one interactions and collective processes create value smoothly and efficiently for their users (innovations in physical and digital space). Overall, these findings provide insightful research avenues to be explored and discussed in WPs 3 to 5 to fully understand the antecedents and implications of such changes in public libraries.



3 Key Findings from the Literature Review on Innovation in Academic Libraries

3.1 Initial literature review for academic libraries

A literature review on innovation in academic libraries was made by UAH (2023) and followed the method that VTT (2023) developed and applied to carry out Task 2.1. These survey methods provided the data for the literature review. In this sense, this literature review follows the same structure and objectives as those proposed by VTT (2023). However, this work focuses its attention on a set of key findings in the literature on innovation in academic libraries, showing the interest that this has for the LibrarIN project and the rigorous study of innovative elements, in some cases through complex models and statistical analyses.

The literature review, searched the Scopus Database using traditional words that researchers and scholars associate with innovation and co-creation, such as collaboration, engagement, co-operation, co-construction, social innovation, technology, digitalization; this search did not use the terms identified for public libraries, but this is done in a later analysis (see section 4.2). This led to a database of 301 articles on innovation in academic libraries. The analyses resulted in the following conclusions.

The topic of innovation in academic libraries has increased greatly in the last 10 years, with 77.4% of the papers selected for the final sample of the review (301 papers) written since 2013. The literature covers topics such as digital transformation, library 2.0, living labs, and the importance of knowledge management practices that are relevant to innovation in academic libraries. The survey findings and review are of great interest to other LibrarIN partners active in WPs that cover Digitization, Social Networks, Living Labs, Metrics, and to the project in general. The findings are used to classify the innovations and transformations carried out in academic libraries and for analysis of their role in the co-creation of value.

A database of the 301 relevant papers on innovation in academic libraries was constructed that included the title, abstracts, and keywords for each paper. This information was used to classify each paper by the type of innovation they study or develop into four clusters: 1) technological innovations, 2) social innovations, 3) service innovations and 4) general innovations (see Figure 4). The next step was to analyse the main characteristics of the papers within each cluster, the topics they study, the common characteristics that exist in them, and the possible relationships between each cluster.

The bibliographic information obtained will be very useful for future research to understand the interactions between the different areas of study on innovation in academic libraries. Likewise, the identification of the clusters, as well as the specific topic touched upon in each work, provides important insights for the other LibrarIN work packages.



<p>Cluster 1: Technological innovations (154 papers)</p> <ul style="list-style-type: none"> • Library 2.0 • Smart Libraries • Digital Libraries • Mobile services • Artificial intelligence services 	<p>Cluster 2: Service innovations (60 papers)</p> <ul style="list-style-type: none"> • Knowledge management • Covid 19 • Value co-creation for service innovations • Living book services • Measures of innovation in libraries
<p>Cluster 3: General innovations (50 papers)</p> <ul style="list-style-type: none"> • Models and frameworks • Studies on barriers to innovation • Strategies for promoting innovation • Innovation management • Reviews 	<p>Cluster 4: Social innovations (37 papers)</p> <ul style="list-style-type: none"> • Innovation communities • Markespaces • Innovation labs • Learning spaces • Partnerships

Figure 4: Clusters from the literature review on innovation in academic libraries¹

The co-creation of value is a dimension that has attracted increasing interest in innovation research on academic libraries. More than a quarter of the selected papers include some dimension of the co-creation of value (see Figure 5): collaboration, participation, engagement, and partnerships among others (see Figure 6). Likewise, the most frequent dimension of co-creation is collaboration, which is the most repeated word in the titles, abstracts, or keywords.

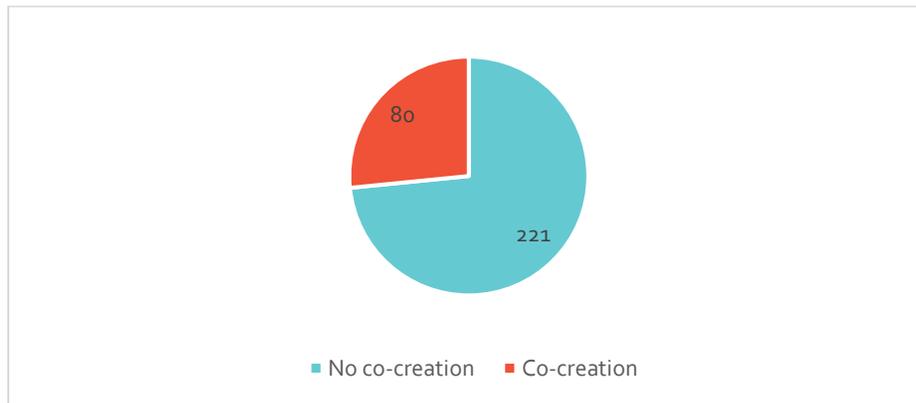


Figure 5: Papers with a co-creation word in title, abstract or keyword

¹ Clusters in the figure are proxy categories since they may overlap each other and cover common concepts, nevertheless, they are useful for a first approach of the research on innovation in academic libraries. This clusters will be redefined in future research

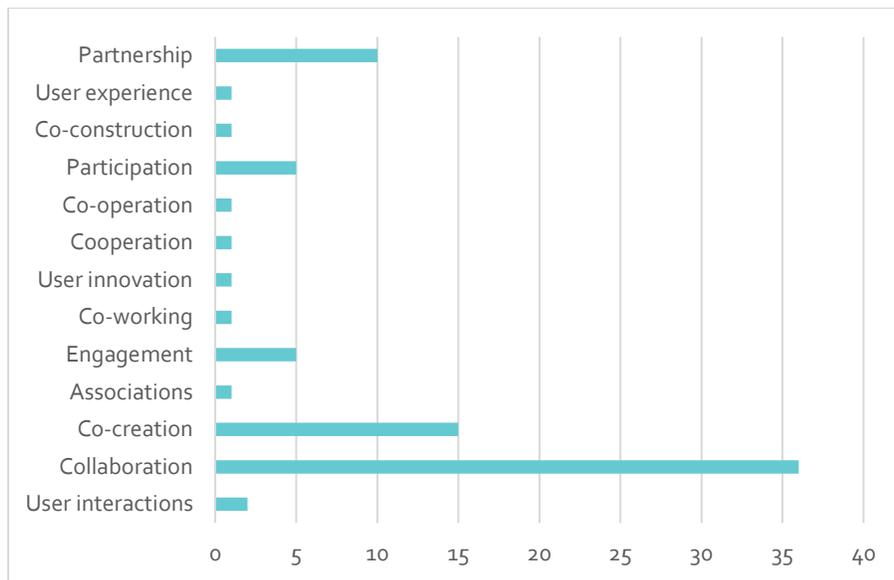


Figure 6: Co-creation dimensions in papers

3.2 Extended literature review for academic libraries

Despite the important findings on innovation in both academic and public libraries, the databases only include a limited number of papers (100 papers for the review of public libraries and 301 papers for the review of academic libraries). On the other hand, VTT (2023) found that “the language used by library scholars is different to that of innovation scholars” (p. 2), so “to determine what innovation means for and to libraries requires an examination of how the term is used, what it refers to, in what context it is used, to what effect it is used, and so on.” (Rubin et al 2011, p. 414). Thus, another search about innovation in academic libraries was done in Scopus, but this time not using the traditional words that academics and scholarships associate with innovation, but using the keywords and innovation categories founded in the literature review of innovation in public libraries, and the innovation and co-creation dimensions founded in the literature review of academic libraries. The search was made in the Scopus Database following the following parameters:

- Academic librar* within the title of the papers
- VTT and UAH inputs within title-abstract-keywords of the paper
- subject area: Social science
- Document type: Article
- Language: English

Table 8 shows the new keywords associated with the VTT and UAH inputs used in the search. The Keywords associated with each input were those searched in each title-abstract-keywords of the papers to enter them in the database. For example, if a paper has some of the keywords from the Academic Library input in the title and also has the keyword participation (which is a word associated



with the co-creation dimension) said work will be counted as a paper on co-creation dimension in academic libraries. Likewise, it is important to highlight that the same paper can be located in two or more entries.

Table 8: Inputs and keywords of the new search on innovation in academic libraries

Input	Keywords
Academic library	Academic library, research library, university library
Keywords (VTT, 2023)	service, program, project, makerspace, transform, new
Categories of New Library Service (VTT, 2023)	'Reading and Education' services: education, training, classroom, reading 'Community' services: community, inclusive Integra*, youth, homeless, immigrants, social minorit* 'Health and wellbeing': health, wellbeing, care 'Creativity' services: create*, living labs, workshops, design 'Business and finance': entrepreneurship, entrepreneur*, company, consultancy, advisory, start-ups,
Innovation dimension (UAH, 2023)	Words associated to innovation: innovat*, transform*, digital*, technology, AI, New, chang*
Co-creation dimension (UAH, 2023)	Co-creation dimension found on UAH review: Collaborat*, Participat*, Cooperat*, coproducti*, Cocreation, Co-operat*. co-producti*. Co-creation, Partnership. Networks
Research areas established by the LibrarIN proposal	Digitalization Living Labs Networks

This second search using these new parameters and keywords allowed the creation of a database of 11769 papers with the input "academic library*" in the title and one or more keywords, service category, or dimension of co-creation and innovation in the abstract. First, this enormous database confirmed the importance of language in the field of innovation; second, it showed that there is a substantial empirical development of research and investigations in transformations, changes, and innovations in academic libraries. These categories registered in the database are used to determine which categories of services are the most studied within the research field of innovation academic libraries.

The main descriptive results of this second search are shown in Table 9, which gives the inputs for selecting the new sample, innovation dimension, the services categories, and keywords which are included in significant percentage of the total sample.



Table 9: Descriptive results of the second search on innovation research in academic

Category	Number of papers	% of the sample
TOTAL SAMPLE	11769	100.0%
Keywords (VTT 2023)	10781	91.6%
Service categories (VTT)		
education	4038	34.3%
health	1214	10.3%
community	4411	37.4%
creative	4192	35.6%
business	624	5.3%
innovation dimension	7218	61.3%
cocreation dimension	2838	24.1%
Digitalization	1917	16.2%
Living labs	442	3.7%
Network	955	8.1%

Finally, the most important element of the second database is the possibility of carrying out analyses, inferences, or correlations between the dimensions of co-creation and innovation for specific service categories and keywords. This would greatly contribute to identify what are the innovative and co-creative service categories offered by academic libraries with the most academic interest. Table 10 shows a preliminary result of this analysis by showing the papers that present one of the service categories (VTT 2023) and one co-creation dimension (UAH 2023), innovation dimension (UAH 2023) or any of the keywords proposed (VTT 2023). In total, around a quarter of papers on services also include the dimension of value co-creation. Likewise, the keywords proposed by VTT (2023) are present in about 90% of the papers about some of the service categories. The innovation dimension is present in about 60% of papers for some of the service categories. Finally, the main services offered by academic libraries are those associated with 'Reading and Education', 'Community', and 'Creativity' services, while they offer many fewer services associated with 'Health and wellbeing' and 'Business and finance' services. This kind of analysis might be done with all the categories.



Table 10: Papers of each service category vs keywords, innovation dimension co-creation

TOTAL NUMBER OF PAPERS	11769				
	Education	Community	Health	Business	Creative
Total	4038	4411	1214	624	4192
Any keyword/service categorie	3630	3990	1044	571	3842
Cover	89.9%	90.4%	86.0%	91.5%	91.6%
service /service categorie	2198	2529	643	360	2462
program/service categorie	1312	1061	363	133	948
project/service categorie	686	833	210	121	813
markerspace/service categorie	3	5	0	1	3
trasform*/service categorie	194	240	41	51	228
new/service categorie	1133	1385	351	241	1372
Innovation/service categorie	2450	2862	682	451	2841
Cover	60.6%	64.8%	56.1%	72.2%	67.7%
Co-creation/service categorie	1055	1311	310	181	1137
Cover	26,1%	29,7%	25,5%	29,0%	27,1%
Digital/service categorie	625	811	124	105	866
Cover	15.4%	18.3%	10.2%	16.8%	20.6%
Living labs/service categorie	168	208	50	34	442
Cover	4.1%	4.7%	4.1%	5.4%	10.5%
Network/service categorie	315	520	89	58	377
Cover	7.8%	11.7%	7.3%	9.2%	8.9%

The identical search could be carried out for public libraries. This would allow us to compare how innovation is covered in both literatures. Thus, one of the next steps is to create an integrative literature review on innovation in public and academic libraries.



4 Towards a conceptual framework

The conceptual framework is a work in progress that will continue throughout the project. This section covers the first 3 months on this task (M10-M12).

The research to develop a conceptual framework takes into account the findings of the literature reviews conducted in Task 2.1, aligned with what is established in the LibrarIN GA.

Additionally, in line with the research grant description, the task is to develop a conceptual framework of value co-creation in library service delivery from different perspectives, including the service-dominant logic (SDL) paradigm, the service innovation perspective, and co-innovation frameworks leading to change. This approach should enrich or complement existing public governance perspectives and identify the contingencies of value co-creation (and value co-destruction) in public service delivery. The results should be relevant to a range of key stakeholders (e.g. users, citizens, public service organisations, politicians).

A series of meetings were organised to gain inputs from consortium members engaged in WP3 and WP4 on the initial set of ideas for the conceptual framework and how these can be used in those WPs for the empirical development of key concepts.

These meetings include:

- 8th September 2023 meeting with Anthony Arundel (WP4),
- 13th September 2023 meeting with all members involved in Task 2.2 (VTT, UAH, RUC, and ULILLE).

There were two presentations of the initial work:

- 25th September 2023 presentation to all WP3 and WP4 partners.
- 4th October 2023 consortium presentation in Amsterdam.

Feedback from these meetings led to a detailed set of plans for the development of the Conceptual Framework. In addition, the work has gained agreement amongst the WP3 lead partners as a basis for empirical work, and also a key part of the Conceptual Framework will be implemented in the WP4 survey for 'Measuring and monitoring co-creation in EU public libraries'.

The agreements include:

Building on the existing literature review and the service innovation multi-agent framework, which will include these dimensions:



WHAT AND WHAT FOR

- Service characteristics (new or improved characteristics)
- Public and private values
- Innovation outcomes

WHO

- User preferences/goals and user competences/capabilities
- Provider preferences and provider competences

HOW

- Co-production & co-creation among different agents
- Innovation process and role of technology
- Role of stakeholders, policymakers, and ecosystems



5 Next steps

5.1 Completion of an integrative literature review

The next steps of WP2 will develop the conceptual framework for the study of innovation in libraries. To do so, the outcomes and findings from the literature reviews will be taken as a starting point. The first step in the following months of work will be to carry out an integrative literature review on innovation in public and academic libraries. This review is "integrative" as it will be based on the key findings of both literature reviews.

The integrative literature review has already begun, with a search in the Scopus database using the categories, dimensions, and keywords from the second search for the literature review on innovation in academic libraries. Thus, a database of 17840 papers on innovation in libraries in general (both public and academic) was created. All papers have the word "library" or an associated term in the title and one or more of the categories, dimensions, or keywords found in the literature reviews on public and academic libraries are present in the abstract. The preliminary results of this integrative review are show in Table 11. Further work will compare results between academic libraries and public libraries.

Table 11: Papers of each service category vs keywords, innovation, dimension co-creation

TOTAL NUMBER OF PAPERS	17840				
	Services categories				
	Education	Community	Health	Business	Creative
Total	5433	6249	1824	918	5458
Any keyword/service category	4879	5640	1562	839	4994
Percent of total papers	89.8%	90.3%	85.6%	91.4%	91.5%
service /service category	2918	3585	980	540	3112
program/service category	1749	1468	514	200	1210
project/service category	886	1121	299	157	1066
makerspace/service category	3	5	0	1	3
transform*/service category	259	336	65	68	285
new/service category	1545	1969	523	345	1842
Innovation/service category	3258	4005	1005	639	3729
Percent of total papers	59.9%	64.0%	55.1%	69.6%	68.3%
Co-creation/service category	1352	1775	444	241	1425
Percent of total papers	24.8%	28.4%	24.3%	26.2%	26.1%
Digital/service category	836	1148	199	153	1170
Cover	15.3%	18.3%	10.9%	16.6%	21.4%



Living labs/service category	211	283	67	49	622
Cover	3.8%	4.5%	3.6%	5.3%	11.4%
Network/service category	425	736	140	82	502
Cover	7.8%	11.7%	7.6%	8.9%	9.2%

This integrative literature review will focus on the correlations between all categories and dimensions in the database, which will contribute to the understanding of which are the trajectories and clusters of library research.

5.2 Building the conceptual framework

At the last Plenary Meeting made in Amsterdam from 4-6 October 2023, all members of the project agreed to the conceptual framework for the study of innovation in libraries based on service innovation multiagent frameworks. The general approach is inspired by Lancaster (1966) and the framework builds upon previous research, using the Lancaster approach to innovation in services, by Gallouj and Weinstein (1997); Gallouj (2002); Windrum and García-Goñi (2008); Windrum et al (2016); and Rubalcaba et al (2017).

The conceptual framework enables one to comprehend the processes and results of service, social, and open innovation. Moreover, it allows for a deliberate examination of the skills and preferences of individuals, organizations, and policymakers, and the interactions between these agents to facilitate or inhibit the co-creation of new services and the spread of innovations.

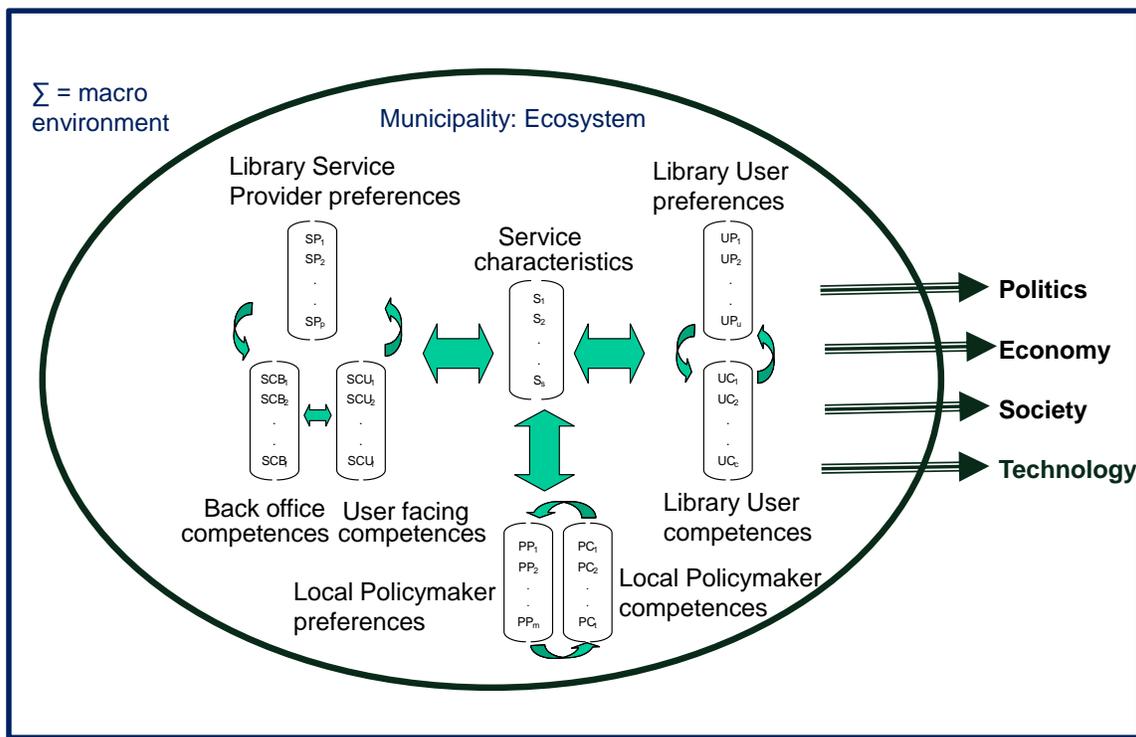




Figure 7: Multi-agent framework for innovation in libraries

Figure 7 shows the initial multi-agent framework for innovation in libraries. It highlights how the ways in which libraries interact with people has changed. In the past, interactions were assumed to be simpler, but now they are more varied and involve different types of libraries, both public and private. This change highlights that innovation is an open process that libraries have adopted. It's also important to mention that library users can participate in different ways. For example, they can collaborate directly, such as using online platforms to generate innovative ideas, or they can be represented by third-sector organizations.

5.3 Identifying common key RQ across WPs

The multiagent framework outlined in Figure 7 will provide a guide for all LibrarIN WPs through two fundamental elements: the key dimensions of the service multiagent framework for libraries (reported in the previous section) and the research questions (RQs). The core RQs to be addressed in the empirical work of LibrarIN are given below.

RQ1 Identification of innovation and co-creation, the loci where they happen, and the ecosystems

How to identify innovation and co-creation in libraries? Which innovation types are produced in libraries? Which types of services are produced? Which types of libraries are active in innovation and co-creation? Where do innovation and co-creation take place? What are the objectives of innovation in libraries?

RQ2- Innovation drivers, barriers, and impacts

How to define the impact and value of library innovations? What are the drivers, facilitators, determinants, and barriers to innovations in libraries?

RQ3 – Value Co-creation drivers, barriers, and impacts

What is the process of value co-creation (and value co-destruction) in libraries in collaboration with multiple stakeholders (e.g. users, citizens, public service organisations, policymakers); what are value expectations, and are they congruent or competing?

RQ4. New ways of participation – co-creation process

How to analyse the conceptual relationship between the co-creation of innovation and traditional forms of participation to assess co-creation in terms of inclusiveness, meaningfulness, and legitimacy.



5.4 Timing, topics

M15 Complete integrative literature review on innovation and value co-creation in libraries

M18 Conceptual framework, first complete draft

M36 Conceptual framework

5.5 Publication plan

1. Publication related to the integrative literature review
2. Publications related to the mapping of selected exploratory cases
3. Publication of the conceptual framework



6 Conclusions

Innovation in libraries, both public and academic, has played a fundamental role in the evolution and transformation of these traditional spaces into open, participatory, and adaptable environments that cater to the changing needs of modern society. With technological advancements and the paradigm shift that views innovation as an open process in which users and individuals play an essential role, libraries have embraced innovation in various dimensions. This entails changing how they interact with users and diversifying and expanding their services and resources.

The literature review made by WP2 provides a comprehensive understanding of research on innovation in libraries. In this regard, it has been confirmed that there is a significant theoretical development for definitions, theoretical frameworks, typologies, determinants, drivers, and challenges of innovation in libraries. This provides a solid theoretical foundation for addressing this topic. Furthermore, the study of innovation in libraries is an emerging research field, as the majority of research on the subject has been concentrated in the last 15 years and continues to grow each year. One of the key conclusions of the work carried out by WP2 this year is that libraries have a distinct and specific language when referring to innovations, changes, transformations, or renewals. Therefore, to study innovation in libraries, it is essential to use the language that library managers employ.

Academic libraries research tends to focus more on innovation than public libraries research, which can be explained by their higher level of research and development that allows them to be closer to the latest transformations and ways of understanding innovation. However, public libraries also engage in significant innovative activities, often materializing in projects and partnerships between both types of libraries to address specific issues. In this sense, although public and academic libraries have certain differences, innovation in them can be studied similarly, as both types of libraries typically use a similar language and the innovative services they offer tend to follow similar typologies.

The literature reviews and the exploratory pilot cases have confirmed the usefulness of addressing 4 key request questions across the LibrarIN WPs related to 4 topics: 1) Identification of innovation and co-creation, the loci where they happen, and the ecosystems; 2) Innovation drivers, barriers, and impacts; 3) Value Co-creation drivers, barriers, and impacts; and 4) New ways of participation – co-creation process

Finally, the WP2 work has set the foundations for a Lancasterian Framework for service innovation in libraries, which will be the main outcome of the WP2. The conceptual framework will contain several dimensions. The first concerns the “what” and “what for” of different types of innovations, public and private values, and innovation outcomes. The “who” covers user preferences/goals and user competencies/capabilities; and provider preferences and provider competences. The “how” concerns co-production and co-creation among different agents, innovation processes and the role of technology; and the role of stakeholders, policymakers, and ecosystems.



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Annexes

Annex 1. Literature Review on Innovation in Public Libraries



HORIZON-CL2-2021
HORIZON-CL2-2021-HERITAGE-01-02

LibrarIN [101061516]: Value Co-creation and Social Innovation
for a new Generation of European Libraries



ANNEX 1

WP2 Task 2.1

Literature Review of Public Libraries

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Background

This document provides a description of the survey method that VTT has developed and applied to carry out Task 2.1. 'Baseline definition and mapping' for collecting and reviewing existing research on recent developments in libraries. This survey method provided the data for the literature review. This document also summarises a set of key findings from the literature review. This work carried out by VTT is focused on public libraries, as stated in the task description in Part B, p. 34. The concept of 'Public Library' is here understood in the way it is defined in library-focused journals.

Overall, the literature review has involved the following tasks:

- An explorative search in Scopus to specify the method and goals of the literature review (see section 1.1)
- A detailed study of six library journals, including the following analyses:
 - A survey and analysis of empirical studies reporting novel developments in libraries (see sections 2 and 3 for the method, 4.2 and 4.3 for findings)
 - A keyword analysis of the selected empirical studies (see section 5)
 - Identification and analysis of general papers that discuss the changing role of public libraries in their communities, and factors that have affected change and renewal over the past decade (see 4.1)

The survey methodology presented here can be complemented by other partners (either in Task 2.1 or in WPs 3 and 5) who are interested in carrying out the same survey method for other types of libraries. To this end, the survey method is discussed in a detailed way to allow other partners to follow the same approach and ensure compatibility of results if so desired.

The stated objective of the literature review in Task 2.1 is to "identify current frameworks to understand and enact public libraries service reform and to evaluate the strength of each of these frameworks against the LibrarIN criteria" (LibrarIN project proposal, p. 34). To define an optimal review method to address this objective, we carried out an explorative search, as discussed next in section 1.1. Based on his search, we refined the goals of the review (section 1.2).

Findings of an explorative search: language and methodological position

The review began with an explorative search in September 2022 to:

- 1) map the journals where public libraries service reform is discussed, and
- 2) identify a set of keywords for a structured review.



The explorative search involved two activities. First, a set of library-focused journals were identified using the Scimago Journal ranking database (category 'Library and Information Sciences'). Recent papers from several journals² were browsed to see how service development, service innovation, and value creation are addressed within the library-focused journals. Second, a set of searches were carried out in Scopus using the keywords 'library', 'innovation', 'transition', and/or 'transformation' (see Appendix A for the findings of the Scopus searches).

This preliminary search resulted in three important insights. First, *the language used by library scholars is different to that of innovation scholars*. Specifically, those writing and publishing within library-focused journals of LIS (Library and Information Science) do not commonly use words such as 'innovation' or 'services development', 'transition', or 'transformation', let alone words such as 'co-creation' or 'co-production' in their titles, abstract text, or keywords. This is despite the fact, as initial browsing of these journals revealed, that the papers with these journals do discuss many cases of service development that are relevant to LibrarIN baseline mapping.

The second insight concerns why this occurs. The emphasis within LIS library-focused journals is placed on empirical insight. It is not the development or application of theoretical concepts. For this reason, concepts deriving from management, public administration, or innovation studies are rarely applied. As an example, the concept of 'patrons' is used rather than terms more familiar in innovation and management journals, such as 'users'. Similarly 'library programming' is used rather than 'service offering' or 'service development'.

Furthermore, novelties in service development and/or delivery are discussed case by case, using more empirically founded notions such as 'seed libraries', 'music-and-movement programming', 'memory cafes'. These are not viewed as examples or categories of a more general concept of 'innovation'.

The third insight is that - despite these differences in language and methodological approach – LIS library-focused journals do examine many different forms and types of innovation. We have found that papers in these journals discuss a great variety of new service and process developments. These include, amongst others, the changing roles and meanings of public libraries, and new types of partnerships and networks, to maintain and/or recreate the relevance of public libraries in society.

Goals of the literature review

² Library and Information Science Research Journal, Journal of Library Administration, Library Management Journal, the Library Quarterly, and Public Library Quarterly.



Based on the insights gained during the explorative search, we decided to carefully plan a literature review procedure that would help us identify and analyse these recent developments within public libraries, as discussed by library-focused journals.

Given the issues raised above, we have not sought to conduct a search strategy that relies on keywords since this would miss far too many key papers and research. Instead, we decided to manually search publications with a set of selected journals. In this way we ensure that we include all key types of new services that are discussed in the library research field.

The following main research questions were defined:

1. How have public libraries responded to the transformation pressures during the past 7 years?
2. What are the key dimensions in this transformation – in terms of what a library 'is' and what types of new services have been developed?

Key decisions related to the selection criteria for the target journals, papers, and timeframe are discussed below. This is followed by a detailed explanation of the categories applied in data collection and the thematic analysis of the papers.

The selection of journals, time period, and papers

The issues raised regarding keywords mean that the most effective strategy for literature of key themes within the public library literature is to manually sort and select journal papers for assessment. By contrast, an automated bibliometric exercise would lead to biases due to the keyword issue. The downside of a systematic manual review is the cost in terms of time and labour implications of systematically reading and processing a set of library-focused journals.

In this section, we describe the criteria used for (a) journal selection, (b) time period selection, and (c) paper selection.

Journal selection

An initial list of library-focused journals and public administration journals were selected based on their quality, accessibility, and relevance in discussing changes in public library services and the impact of wider external factors affecting public libraries such as international trends such as digitisation, and regional/national policy reforms.

To make the journal selection, we used the Scimago database, focusing on the category 'Library and Information Sciences'. Within this category, we identified those journals which focus on libraries and which are ranked as Q1 and Q2. It was decided not to examine journals in other fields because these



do not address the breadth of service and other changes ongoing within public libraries and, hence, would introduce skew and bias. For example, information science journals predominantly focus on digital platforms and technical standards whilst excluding many other forms of service transformation found in public libraries. Three public administration journals were included at this stage but later excluded due to a lack of library-related papers.

In addition to the Scimago ranking, we considered Impact Factors and Citescore numbers. This provided an initial list for selection, shown in Table 1.

Highlighted in bold is the final selection. This final selection is based on two criteria for assessing the scope and relevance of each journal to the literature review: (a) the stated aims and scope of each journal, and (b) a manual examination of the latest (current) issue of each journal to identify the types of papers published therein.

Table 12: List and final selection of journals

Journals assessed		Journals selected
1	Library Quarterly	X
2	Public Library Quarterly	X
3	Library Management	X
4	Journal of Library Administration	X
5	Library Hi Tech	
6	Advances in Library Administration and Organization	
7	Library Review	
8	Library Trends	
9	New Library World	
10	Library Philosophy and Practice	
11	IFLA Journal	X
12	Electronic Library	
13	Library Hi Tech News	
14	LIBRI	X
15	Public Administration Review	
16	Public Administration	
17	Public Management review	

As a useful cross-check, we note that three of these journals are also identified by as Harsanto (2021) as main outlets for publications on library innovations. It should be noted that the focus of his bibliometric study is different – i.e. innovation management practices rather than new services – and is predominantly focused on academic libraries. A notable difference is Public Library Quarterly. This



was not a key source of papers for Harsanto but is, given its explicit focus on public libraries, is a key source of papers on public library service innovations.

Public administration journals did not make the final selection due to the lack of public library-focused papers.

Sample time period

A further selection criterion is the sample time period. In order to establish a relevant and meaningful time frame, each issue and paper within one of the selected journals – Library Quarterly – was examined from 2012 to 2022 (inclusive). It was found that key changes in the role and services of public libraries – such as the influence and impact of digitisation on library access and library services – became a research topic in this journal from 2016 onwards. Consequently, it was decided to set a 7-year time period for selection, i.e., 2016 to 2022 (inclusive).

Paper selection criteria

Finally, to complete the inclusion/exclusion criteria, it was decided that the selected papers must

- Address public libraries (either solely or the public libraries are a key organisation within a wider set of organisations).
- Report an empirical study or provide a review/synthesis of empirical findings on a service innovation (defined as a change or a new solution within the library field).

The selected journals for this time period were divided between three researchers (Kirsi Hyytinen, Tiina Tuominen, and Paul Windrum). The data collection process involved reading and analysing each and every journal paper using the above inclusion criteria.

Each selected paper was downloaded and read manually. Key information on paper titles, authors, abstracts, and keywords plus further relevant information gleaned by reading the text of each paper was collected and saved an excel sheet under a set of relevant themes and categories. These themes and categories are discussed in the next section.

As shown in Table 2, a total of 1,537 papers in six journals were examined by the three members of the VTT team. Of this total, 100 papers were identified as meeting all the selection criteria for inclusion in the sample. This represents 6.5% of all the total number of papers read. The final sample is provided in Appendix B.

There are many reasons for the high exclusion rate. Notable amongst these is that the low number of published papers that focus on public libraries. By contrast, a far higher number of research papers are



concerned with university libraries. Another reason is that the journals address a multitude of issues related to the management of libraries, and the analysis of novel solutions plays a minor role in their agendas. Addressing the paucity of research on innovation within public libraries is one of the key objectives of the LibrarIN project.

Table 2: Numbers of papers examined and numbers of in-scope papers (by year and journal)

Journal name	Year	Volume and issues	Total no. of papers per year	No. of in-scope papers selected for sample
Libri	2016	Vol. 66; 4 issues	24	0
	2017	Vol. 67; 4 issues	23	1
	2018	Vol. 68; 4 issues	25	3
	2019	Vol. 69; 4 issues	23	3
	2020	Vol. 70; 4 issues	25	4
	2021	Vol. 71; 4 issues	31	3
	2022	Vol. 72; 3 issues	22	0
Libri TOTAL			173	14
Journal of Library Administration	2016	Vol. 56; 8 issues	74	2
	2017	Vol. 57; 8 issues	63	2
	2018	Vol. 58; 8 issues	56	2
	2019	Vol. 59; 8 issues	57	2
	2020	Vol. 60; 8 issues	68	2
	2021	Vol. 61; 8 issues	70	2
	2022	Vol. 62; 8 issues	69	2
JLA TOTAL			457	14
Library Quarterly	2016	Vol. 86; 4 issues	23	2
	2017	Vol. 87; 4 issues	28	0
	2018	Vol. 88; 4 issues	19	2
	2019	Vol. 89; 4 issues	19	3
	2020	Vol. 90; 4 issues	25	1
	2021	Vol. 91; 4 issues	27	3
	2022	Vol. 92; 4 issues	21	4
Library Q TOTAL			162	15
Library Management	2016	Volume 37: 9 Issues	41	2
	2017	Volume 38: 9 Issues	43	1



	2018	Volume 39: 9 Issues	47	0
	2019	Volume 40: 9 Issues	50	5
	2020	Volume 41: 9 Issues	47	3
	2021	Volume 42: 9 Issues	44	6
	2022	Volume 43: 9 Issues	38	1
Library MGT TOTAL			310	18
IFLA	2016	Volume 42: 4 issues	30	0
	2017	Volume 43: 4 issues	29	0
	2018	Volume 44: 4 issues	25	1
	2019	Volume 45: 4 issues	28	2
	2020	Volume 46: 4 issues	17	1
	2021	Volume 47: 4 issues	46	2
	2022	Volume 48: 4 issues	56	2
IFLA TOTAL			231	7
Public Library Quarterly	2016	Volume 35: 4 issues	31	4
	2017	Volume 36: 4 issues	23	5
	2018	Volume 37: 4 issues	32	7
	2019	Volume 38: 4 issues	26	2
	2020	Volume 39: 6 issues	32	7
	2021	Volume 40: 6 issues	31	3
	2022	Volume 41: 6 issues	29	4
PLQ TOTAL			204	32
TOTAL SUM			1537	100

Themes addressed within the literature review

In order to enter data on relevant information from the reviewed papers, a list of key themes for the paper analysis were defined and placed as separate columns on an excel sheet. In this way, key content from every journal paper could be entered using 1-3 sentences while retaining the original meaning and language used by the original authors of the paper. In this way, the columns of the excel sheet can be used as '1st order categories' for subsequent thematic and conceptual analysis carried out by the VTT team.

Table 3 lists all the categories within the excel sheet and provides an explanation for each category. Some categories provide basic information on the individual paper (e.g. author(s) name, title of paper, DOI, year of publication etc.). Other categories provide information on the themes discussed within



the content of each paper. Additionally, Table 3 provides information collected from one paper (Tanner et al., 2016). This illustrates the type of data collected and inputted within the excel sheet.

Table 13: First-order categories used to collect data

Column title (theme)	Explanation	Example
No.	Running numbering for the papers listed in the dataset	1
Paper and reference	Citation information of the paper	Tanner, A., Owens, O. L., Sisson, D., Kornegay, V., Bergeron, C. D., Friedman, D. B., Weis, M., & Patterson, L. (2016). Dodging the debate and dealing with the facts: Using research and the public library to promote understanding of the affordable care act. <i>Library Quarterly</i> , 86(2), 172–192. https://doi.org/10.1086/685401
Research questions	The research questions or aims of the paper, as they are stated in the paper text.	Aims to determine the feasibility of establishing the public library as a trusted and nonpartisan source of ACA-related information (Affordable Care Act in the US)
Empirical design	A short description of the research design of the paper	Case
Empirical context	Country in which the study is carried out (also region(s), if relevant)	US
Change drivers/pressure	The broader change / institutional context associated with the studied change - why the library field is seeking new solutions? (e.g. digitalisation, pressures to increase efficiency, urgent citizen needs in the area, trends in public administration)	1) Change in legislation (ACA), creates the need to raise awareness of ACA. 2) Public libraries as trusted parties who are increasingly integrating community engagement into their core services.



Problem tackled	A detailed description of the problem for which new solutions are developed in the studied libraries	many Americans are confused about the ACA and lack the information they need to make informed decisions about their health and their health insurance coverage
Goals	The originally / initially stated goals for the new solutions in the studied libraries	to promote awareness and understanding of the ACA to residents living in one south-eastern county
Identified change / innovations / solutions	The actual innovation / novelty identified in the paper	an innovative, community-based effort to promote awareness and understanding of the Affordable Care Act (ACA) through a public library system (incl. events in libraries, ACA-trained navigators, media coverage, advisory via phone, etc.)
Means/production	What do the libraries need to create the innovation/novelty: skills, IT, etc. (by different groups/ actors if necessary)	Innovative partnership between organisations who communicated ACA-related information via several channels
Benefits (value) (for different groups if necessary)	The benefits or value created by the change/novelty. (A focus on empirical findings, if reported in the paper)	to alleviate health disparities via increasing knowledge - to help people avoid penalties by choosing a health insurance.
Actors in/driving the change	List all the actors that were involved in the creation of the innovation/novelty	"Social marketing" - Partnership between countywide public library system, an academic institution, and a non-partisan health policy institute + 30 community organisations
Analysed	Initials of the LibrarIN researcher who analysed this particular paper	TT
DOI	DOI, to help easy sorting/filtering of the excel sheet	https://doi.org/10.1086/685401
YEAR	Publication year, to help easy sorting/filtering of the excel sheet	2016
Journal	The name of the journal, to help easy sorting/filtering of the excel sheet	Library Quarterly
Other notes	Other relevant comments, including notes about possible theories of change applied in the paper	see also another paper reporting a survey: https://doi.org/10.1086/685400



Some issues that emerged during the browsing process and that required discussion and decision among the three researchers are included below:

- In many papers, it was difficult to establish whether the paper addressed a novelty in the library field. Many of the journals did not embrace the studied solutions/services as novelties in the field; rather, new solutions/services were generally discussed only after they had already spread throughout the library field and thus proved their relevance (makerspaces, seed libraries, outdoor programming, etc.). In such cases, the person looking at the paper must make an inclusion/exclusion decision based on their understanding of the field.
- Some papers addressed new developments within public libraries but it was not clear whether and how these developments translated into 'new services'. For example, some papers discussed skill development by librarians which border social work and (more traditional) librarianship. Some papers discuss general societal needs that public libraries 'should' address according to the authors of a paper, e.g. the need for libraries to change in order to meet the information needs of the urban poor. Papers such as these were only included in the sample if we were able to identify evidence of new types of actor-to-actor interactions, solutions, tools or guidelines that could lead to new service development.
- Not all the relevant information discussed in Table 3 was identified in all papers. In this event, cells were left blank.
- We found that some thematic categories were overlapping and/or could not clearly be distinguished in some papers. Notably, 'change drivers', 'problem', and 'goals' could overlap in the discussion. Also 'identified change', 'means', and 'actors' could overlap or be indistinguishable in the way they were described by the authors. This was handled by indicating within an excel cell where the relevant information can be found, e.g., 'see Goals' to indicate where overlapping content can be found.
- Finally, as part of the analysis, we identified a number of papers which were not focused on individual cases of service development but which, nevertheless, were of interest for the LibrarIN project. This includes, for example, papers with a broad conceptual/theoretical focus (including theoretical typologies), review papers, and papers that provide a historical overview on the long-term development of public libraries. Such papers are not relevant to our search, but have been collected and listed as being relevant for other activities within WP2 and also for other WPs. These papers are listed in Appendix C.

Findings



Using the sample of papers drawn from our literature review work, we address two generic research questions that are of direct interest for all other WPs within the LibrarIN project.

1. How have public libraries responded to the external changes – notably, digitisation, changes in the society, reduced budgets (in some countries), and other pressures – over the past 7 years?
2. In what ways have public libraries transformed in response to these external pressures by developing new services and/or changing the composition of services offered to the public?

In what follows, we first report findings from the general papers (conceptual papers and review papers in 4.1. Then we present the findings of the review of empirical papers (4.2 and 4.3). Findings of the keyword analysis of the empirical papers are presented in section 5.

Trends and General Factors: Findings from General Papers (Appendix C)

Reading the 'general papers' on public libraries and trends over the past one to two decades is very useful because it highlights a number of key contextual factors/drivers of change. The following material in this section is inductive and includes some tentative reflections on the material.

The Role of Public Libraries and the Existential Challenge

The public library is a mid-19th century invention. At its heart is the idea that all people – women as well as men, poor as well as rich – have a right to education and learning, and that the benefits of education are not limited to the individual but improve society as a whole. This was a radical social and political idea at that time and was part of a wider movement to improve public health, public parks, universal education, and working conditions in industrialised cities across Europe and North America. The rates-based tax-supported public library became the commonly accepted model.

In addition to its being a place for accessing information and learning, the public library plays a potentially important role in fostering democracy. The exercise of democratic rights is based on certain preconditions such as having educated citizens, and access to the information which is needed to inform and exercise such rights (Stilwell, 2018). Klinenberg (2018) highlights its role in supporting social coherence. It is a place where individuals from different groups within society meet and learn about each other, dispelling myths and prejudices, while creating tolerance and understanding. This has benefits in terms of fostering social coherence and equality.

A number of authors have highlighted the existential challenge faced by public libraries as a consequence of a set of technological, social, and financial changes that arose at the outset of the 21st century (e.g. Godin 2016; Field and Tran 2018, Heseltine 2020; Kajberg 2018; Mathysen and Glorieux 2022). The development of the internet brought with it e-books and changes in society associated with new patterns of online education, work, and leisure, particularly amongst the young.



In the emerging discourse, public libraries were viewed as an anachronistic irrelevance – their role being reduced to that of repositories for old books that (almost) no-one had an interest in reading (Field and Tran 2018). Added to this, the neoliberalist New Public Management view, which had become established in national and local government in many countries, reinforced this narrow understanding of the role of public libraries and questioned the continued funding of local libraries in an age of austerity and competing demands for scarce public tax revenue. If they were to survive, local libraries would need to embrace links with business, develop business practices, and customise their services to meet new demands (Kajberg 2018).

As we shall see in section 4.2, the literature shows that librarians around the world have risen to the challenge and adapted to changing political and community needs and expectations; reinventing the public library as a place in which that connects communities and fosters lifelong education, creativity, and social interaction in new ways. It is a transformation that embraces continuity as well as change, creating positive social, economic, and environmental outcomes for individuals and communities.

Professional Organisation of Work and New Skills Development

Librarianship is a profession focused on the organisation, management and dissemination of information. Library and Information Science (LIS) is a distinct knowledge and discipline field with its own academic and professional qualifications, and libraries belong to professional representative bodies (such as IFLA) which control and provide rules for the organisation of work and legitimacy.

The role undertaken by librarians is changing due to the emergence of new technologies and societal changes discussed above. This has led to changes in the role of librarians and a new to develop new skills to meet new the new role. A number of authors have highlighted the role of changing library curricula in preparing early career librarians for this new role (e.g. Masten 2018; Wahler et al. 2019). Lenstra and D'Arpa identified "a trend in LIS curricula and education towards greater awareness of the responsibilities of the public library in society and the role of librarians as members of their community Lenstra and D'Arpa (2019, pp.59–60).

This development challenged traditional librarian identity, and change has not been universally embraced by all librarians (Winberry and Potnis 2021). Some have resisted change, believing it put themselves or their organisations at risk (Bossaller 2016), and there has been resistance against a community-minded role (Williment and Jones-Grant 2012; Smith and Eschenfelder 2013). LIS is itself an amalgamation of two, previously separate fields of librarianship and information sciences. This was, and remains, contentious.



Local versus global

One interesting issue is the extent to which service developments are local, and to what extent they are part of a more global shift in library services. The internet and public funding constraints are fairly general (global) pressures for change. In principle, there could be a great many different directions in which new services development could go, with much diversity expressed globally.

General trends in new library services across different countries around the world raises the question of what is causing this. One factor to consider is the interaction between librarians. Librarians are a professional community through which shared ideas and practices are communicated. This includes the sharing of ideas for new service development, and also of communicating experiences on what works and why, and challenges in development and implementation. These sources include library journal, conferences, LIS education programmes, and professional representative bodies such as IFLA. This community may give rise to path dependency and trends along certain trajectories of new service development.

There are other factors which may also lead to a narrowing of focus to a more limited set of options. One factor is the interests of municipal governments, who are the primary funders of local libraries. Another is changing preferences and lifestyles of library users. We will deal with each of these below. Each can affect the direction of new service development.

Heterogeneity of public libraries: 'World city' libraries and local municipal libraries

There is clearly heterogeneity across public libraries. At one end, there are 'world city libraries' (Mainka et al 2013) and networked 'smart cities' (Dresel et al. (2020). These are central and large libraries in large capital cities, such as New York, Amsterdam, Paris, and London, often these are new buildings or else newly and extensively refurbished buildings.

The common theme here is a focus on the importance of creating global and local digital connections in the new century – situating a city within a global informational structure. Mainka et al (2013) identify 31 of these World City Libraries. These are seen as playing a key role within parts of the digital, smart, knowledge and creative infrastructures of these globally linked, information cities.

These World City Libraries are very different to the local suburban public library and the local library in a small town or village that lie at the other end of the spectrum. Where the focus is on digital communication and the world city library as a physical hub within a global network, in small local libraries the focus is more on the local community and community service innovations.



Partnerships for service delivery

A note of caution needs to be given when considering partnerships for the delivery of services. Not all partnerships are examples of 'co-production', just as an interaction between a librarian and a library user is 'co-creation'. The delivery of a social service, for example, within a room in a library may involve librarians – but, again, it might not. It may be that a room within a library is a 'host' site at which a social service is solely delivered by social workers. Equally, one should not assume that a gym or yoga class held in a local library is taught by librarians.

Various factors can influence partnerships for health and wellbeing, and for community services in public libraries. Those discussed by Winberry and Potnis (2021) include positive engagement by the outside delivery organisation, competing interests and goals of different partners, whether there needs to be extensive planning and coordination with partners, the benefits for the partners, and whether and how partnerships can meet the needs of a particular community. The investment required to build and develop partnerships is such that public libraries need to be strategic in their decision on whether to enter into partnerships.

Political will in agenda setting

Most public libraries are funded by local taxes. Hence, local politician perceptions of public libraries greatly influence funding levels and also possibly the range of services offered (Jaeger et al. 2013). From the New Public Management perspective, the role of municipal politicians is to efficiently allocate scarce funding resources amongst many competing services managed and/or sourced by a municipality. This requires the establishment of performance indicators for different services and choices to be made on what to fund, and the amount of funding to be given.

NPM, in turn, requires municipal libraries to develop written strategies, and implement cost and activity accounting as well as benchmarking performance indicators. The latter allow municipal funders to measure and assess change over time, and to compare one library's processes, costs and activities with those of other libraries within the municipality and/or nationally (Düren, Landøy and Saarti 2017). A core motivation of NPM is to challenge traditional structures of daily work and governance controlled by professional librarians, and to new governance structures which prioritise the development of new or improved service products which modes of work that are more consumer oriented and quasi-market. In doing so, there is push towards greater efficiency and an ongoing search for cost reduction, ushering in flexible working and lean forms of management.

In many countries the expenditure and priorities/responsibilities of municipalities are also partly set or affected by national policies. This leads to potential links between library funding and library targets that assist local municipal services in national policy agendas areas as diverse as education policy,



health policy, and social policy (Gazo 2011; McShane 2011; Malachowski 2014; Evjen 2015; Bossaller 2016; Lloyd 2020).

There remain many questions, such as how are new services negotiated and developed; to what extent are local politicians directly involved in this; and how library performance indicators are set, and by whom.

Ability of libraries to 'fill in' for other public services

The discussion leads us to a further set of questions. What is the core expertise of the public librarians? Can librarians be expected to supplement or else cover for limitations in other public services?

Stillwell (2018) discusses how public libraries in the past were been seen as a magic wand for social reform during the 19th century. In more recent times, Al Gore hoped public libraries could provide a social safety net in terms of providing online access to tackle the 'digital divide' of the 1990s. They could not (Cunningham, 2019).

Library Users and Community Support

NPM (and its successors) informs a drive for consumer surveys to collect information on the use of existing services possible new areas of service development. We found a number of such papers in the journals we examined that discuss new ways of reporting user services and user satisfaction with current library services. These papers were included if they discussed a recently implemented new service (see section 2.3).

Laitinen (2018) discusses the current lack of standardisation in evaluation. The only standardised guidance for libraries on evaluating the impact and value of their organisation is ISO 16439. ISO 16439 encourages libraries to find new ways of measuring their operations but, since, many libraries do not have resources for large surveys, it proposes that effort is focused on the assessment of three areas; the impact of library collections; the impact of the library as a place; and the impact of library on users' success.

It is notable that this does not include ways to actively engage users in service development. Community support and active engagement is not necessarily a trivial or straightforward issue. For instance, new community services that situate the public library as a force for social change may benefit the library and the community as a whole but these can experience pushback from certain sections of the community. We found papers discussing pushback against, for example, storytelling programmes given by LGBTQ+ (Kitzie et al. 2022), or the creation of spaces within the library for homeless people (Hill and Tamminen, 2020; Provence 2020). By contrast, there tends to be greater



public support for programmes such as makerspaces and education programmes for adults (e.g. computer training for job seekers, and language programmes for foreigners).

One should be careful when interpreting the introduction of new social services and health services within libraries. As previously noted, within the ethos of public librarians is the idea of the public library as having a social role and social impact. This was traditionally pursued through education and information. One could see community and health service provision within local libraries as a revision and extension of this ethos and role, rather than it being a total break with the past. What is of interest in case studies is how this is negotiated, and whether the direction of travel is largely instigated by local politicians, by local libraries, local users (or advocate groups) or a particular combination of these.

This leads us to a final point. A key interest of the LibrarIN project is co-creation. Co-creation is itself a contentious and fuzzy concept that will need defining within the project. Not every interaction between a librarian and a library user is a co-creation. Another issue is that the concept is not readily found within the Library Journals we examined, indicating it is not a concept used within the library field. The terms co-create and/or co-creation only appears in the titles, keywords or abstracts of one of the 100 papers in our sample.

Next, we present tentative findings from an inductive thematic analysis of the reviewed papers. We use Gioia et al.'s (2013) method description and proceeded from empirical categories towards theoretical interpretation of aggregate themes via three rounds of analyses. Examples of the empirical first-order categories (i.e. issues discussed in the reviewed papers) are shown in Table 3. The second round of analysis focused on categorising the novelties discussed in the papers, resulting in six tentative service categories (referred to as second-order categories, see section 4.2.). The third round of analysis assessed what these types reveal about the renewal of public libraries as spaces in the society (referred to as aggregate themes, see section 4.3). These analyses will be refined in forthcoming LibrarIN publication(s) that contribute to the deliverables of WP2.

Findings from second-order category analysis of the empirical papers

In this section we discuss some second-order findings drawn from the empirical research papers. In this analysis, we focused on understanding the types of services that libraries develop in novel ways to respond to the external changes (e.g. social sustainability and inclusion, resources, technology).

4.2.1 Definitions of Each Category of a Library Service

There are 5 deductively derived categories of public library services which we found in the journal papers. These are the “core” category of a service. The categories illustrates the diversified services in



libraries as well as new services within the categories in order to respond to the external (societal) changes. A library service may provide a number of different service characteristics, for example, a yoga class may have a social element as well as being a service that improves the participant's health and wellbeing. The core service in this case is health and wellbeing and so we place it in that category.

1. **'Reading and Education'** services include literacy, and cultural services for multiple societal groups. This includes basic literacy for very young children; capability building in specific topics such as science, technology, engineering, and mathematics (STEM) services and digital technologies for older school children; adult literacy services; basic digital literacy (from how to navigate the internet to basic programming); and cultural services (incl. music, cinema and cultural heritage).
2. **'Community'** services have a focus on promoting social inclusion, community building and ensuring equal opportunities for different citizen/ societal groups. These include, amongst others, new advisory services and spaces for homeless people, young people who are at risk for societal exclusion; new services for promoting and sustaining the culture (cultural heritage) and language of a local communities and providing services to serve for various ethnic minority groups.
3. **'Health and wellbeing'** services include services that aim to foster the health, physical activity, and well-being of the library users. These include advisory services (advice on personal health-related matters, such as cervical cancer screening services and health insurance); and (preventative) wellbeing services such as yoga and exercise classes, provided on-site or online. The category may include services directed at a specific user group, such as strength training or memory cafes for the elderly people.
4. **'Creativity'** services include services that enable and support library users to engage in new forms of creative activities, collaboratively or individually. These may be intended for the development of new creative ideas, new skills, or prototyping of solutions for individual or community use. The services include combinations of services (tutoring, guidance in workshops, etc.) and spaces/resources equipped with materials, machines and other technologies. Examples are makerspaces and other learning environments, living labs, journals presenting users' artworks, contests and exhibitions showing users' creative works, and author services.
5. **'Business and finance'** services include assisting businesses fill in their annual tax forms and assisting in financial law. Providing resources, advice and spaces for businesses.

In addition:

New delivery modes combine with new /pre-existing services to facilitate greater accessibility services. Extending the scope of access includes new ways of delivering physical services – such as home delivery of physical books via mobile libraries - and the digital delivery of existing physical services such as ebooks and digital catalogues and ordering over apps. These new delivery modes and



substitutions of pre-existing technology by new technologies but which serve the same core function. For example, a physical book – e.g. War and Peace - is written once but can subsequently be delivered to the reader via different physical means, or as a digitised version. The main advantage of these new delivery modes is in terms of convenience of access. It does not change the quality of the core service (e.g. the quality of a novel) itself. This extends the library beyond the physical building. For example, delivering reading programmes to mothers in prison. Mothers record their voice reading a story and the library delivers this to the children.

4.2.2. Findings by Service Category

The 100 papers in our sample have been put into these 5 service categories and in new delivery modes. The findings are shown in Figure 1 below. We see services in quite traditional service categories such as 'Reading and Education' services. This has involved building upon, and expanding services in this category. Examples include co-developing childrens reading programmes in schools, developing still further storytime services so that parents learn how to better engage with their children when reading.

The most notable development in terms of service categories are in 'Community', and in 'Health and Wellbeing'. We find many different types of new services amongst community services. This diversity very much reflects the diversity found in each local geography. One common thread is a desire to meet the ethic and cultural needs of different groups served by a local municipality. For example, in South Africa a legacy of apartheid is that local libraries excluded non-whites. The situation has been transformed over the past two decades with many different services being introduced that support the local languages, cultural heritage and traditions of the majority communities. By contrast, there are many examples of community services that support the interests of ethnic minorities in particular local municipalities. These may be newly arrived immigrants but equally new services may be developed to support long existing minority groups. This diversity reflects the diversity of situations in different geographies.

The development of 'Health and Wellbeing' services across the world have, relatively, more shared features. These are commonly places and spaces in which local people come together to engage in yoga, keep fit and other forms of exercise classes, or else meditation and other wellbeing activities.

The most frequent type of service offering within the 'Creativity' category is makerspaces. This typically includes offering library users the possibility to the hire 3D printers alongside some training in their use. There may be other creativity offerings such as sewing machines, or more arts and music orientated activities.

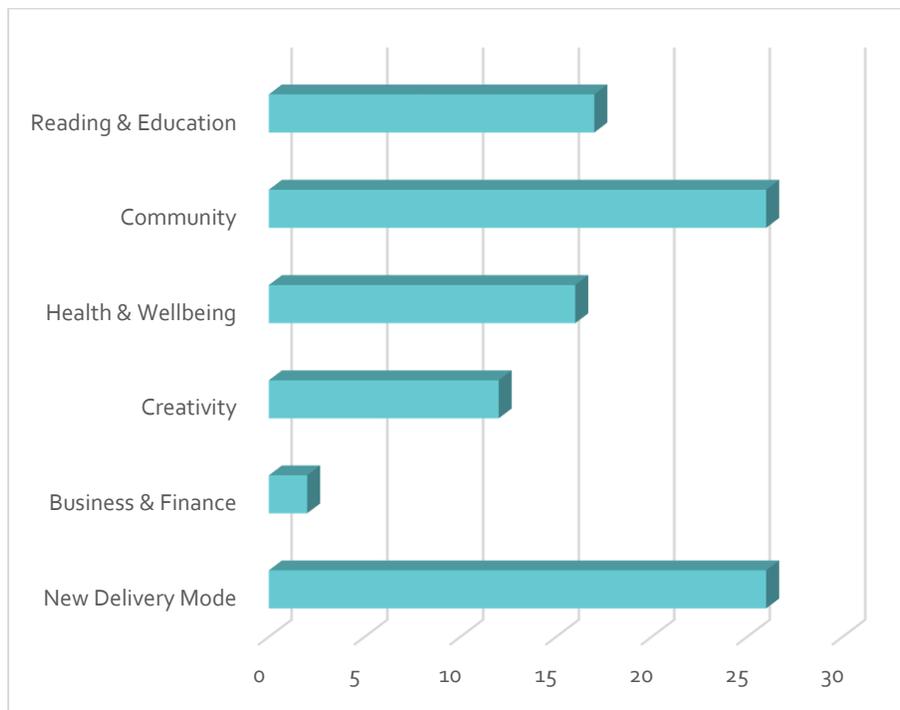


We found relatively few services that support the 'Business and Finance' of existing firms. Of those which we did find, these were all in the USA.

Turning to new delivery modes, we find that new physical delivery modes are predominantly new ways of delivering books and other physical resources (e.g. music CDs or film DVDs) to users. These include the development of new portable services to deliver books and other services to old people who are unable to reach their local library and, during covid lockdowns, the alternative delivery of library services outside the physical building but within the grounds of the library. As expected, we also see new digital services delivering e-versions of books and literature, and the streaming of audio books and music services by municipal libraries.

One important connection between digitisation and other service variety is that digitisation has meant less physical space is given over to housing books, newspapers, magazines etc. This physical space has been given over to the new types of 'Community', 'Health and Wellbeing', and 'Creativity' services discussed above.

Figure 1. Number of papers by each service category and by delivery mode





Findings from the third round of analysis of the empirical papers

In this section we discuss some aggregate themes drawn from the literature dataset. These have previously been presented at the 2022 RESER Conference in Paris (Hyytinen, Tuominen, and Windrum 2022) and circulated across the LibrarIN consortium. Examining the literature sample, we found it meaningful to assess what the identified service types reveal about the renewal of *public libraries as spaces* serving the society. Examining the literature sample, we identify new or improved services as taking place either within or across three types of space, and simultaneously these services renew the three spaces:

- Social space
- Physical space
- Digital Space

Hence, a public library can be thought of as being situated within three different spaces: a physical space (within a library building and outside), a social space, and a digital space. Interestingly, Born, Henkel, and Mainka (2018) previously discussed physical space and digital space as being dimensions of 'Informational World Cities'. Their conceptual is much broader in terms of a number of interacting organisations. Here we define physical, digital, and social space within the narrower context of spaces within which a public library is repurposed and transformed. The wider environment is here treated as external to this public library space.

We use understanding of *physical space* as a built environment in order to define the physical space of a library building and other spaces hosting library activities. That building has an overall physical footprint – three-dimensional built space whose outer perimeter (set by foundations, external walls, and roof) is subdivided inside into a number of smaller physical spaces (i.e. rooms with specific functions). These internal areas may house book collections, or a group of computers, or lending desks, reading areas, communal meeting spaces, cafés, toilets or other physical spaces in which users and librarians meet and interact in a myriad of ways.

We should not think of these as fixed containers. This internal space can be changed or repurposed to varying degrees. For example, a reading area has certain physical qualities. It is a large sized room, with few dividing areas, allowing free flow of users around stacks of books and reading areas. There will be a few electrical points for lighting, laptops etc. This type of physical space can be repurposed into a communal meeting space by removing the desks and bookshelves. In turn, an open plan room can be repurposed for many different activities, and the use of the physical three-dimensional space may be thought of as having different 'flows' according to the activities held within it. For example, a yoga wellbeing class will flow and use space in a different way to a language lesson in which students are seated at tables and a teacher moves around the room to engage students.



Some spaces, such as cafés and eating areas have more specific physical requirements for the preparation and cooking of food, cleaning and drainage requirements. Such spaces are not easily repurposed into, say, toilets (which have a very different spatial infrastructure), or reading rooms.

We should also consider the activities of the library as also extending beyond the interior of a library building. For example, during covid lockdowns some libraries used the land outside the library in order to deliver services safely. Others developed commuting services (a library in a van) in order to deliver books and other services to the elderly and vulnerable.

The library is also an infrastructure for *social space*. Here we define a social space is one in which a set of social relations between people is layered onto a physical space through proximity, use, and interaction. For instance, the domestic home is the setting for the closest social relations of family and friends; the workplace is the setting for another set of important social relations. Local face-to-face interactions are the building blocks of social ties amongst family, friends, acquaintances, work colleagues and neighbours. Institutions provide means for interactions among people that do not have previous connections with one another.

A hierarchy exists within social space. The strongest ties are kinship (family) and close friends. These are the closest to an individual within their social space. Further out in social space – indicating less strong ties – are typically relations with work colleagues, neighbours, friends-of-friends, or acquaintances with whom one shares a hobby or interest and interacts regularly (e.g. members of a club or a society). The anthropologist Robin Dunbar (2008, 2010) proposes that the structure of ties within an individual's social space is connected to the cognitive limits of the human brain. It requires a lot of time, effort, and processing power (i.e. memory) to maintain the kinds of information needed to maintain stable social relationships. Dunbar's empirical work suggests the tightest kinship group within is social space is amongst loved ones. This group numbers 5 to 6 people. At further distances of social connection is a group of good friends, numbering around 15 people. Thereafter, at further social distance, is a more general group of friends (around 35 people), followed by 150 other people meaningful contacts and acquaintances. The latter is the upper limit to the number of meaningful relationships that a person can maintain.

Appreciating the 'local nature' of personal ties within social space helps us understand the importance of the public library. The public library is part of a broader infrastructure that includes other public spaces, such as parks, which encourages social interaction and the formation of ties between people from different social backgrounds and social ties, who would otherwise not come into contact with one another. The library is a place in which where heterogenous people, with different social classes, ages, ethnic backgrounds and colour, meet and interact. As noted, Klinenberg (2018) argues that libraries and other public spaces are important for developing tolerance and understanding of other individuals and groups within society. This has benefits in terms of fostering social coherence and equality, in addition to its being a place for improving access to information and learning.

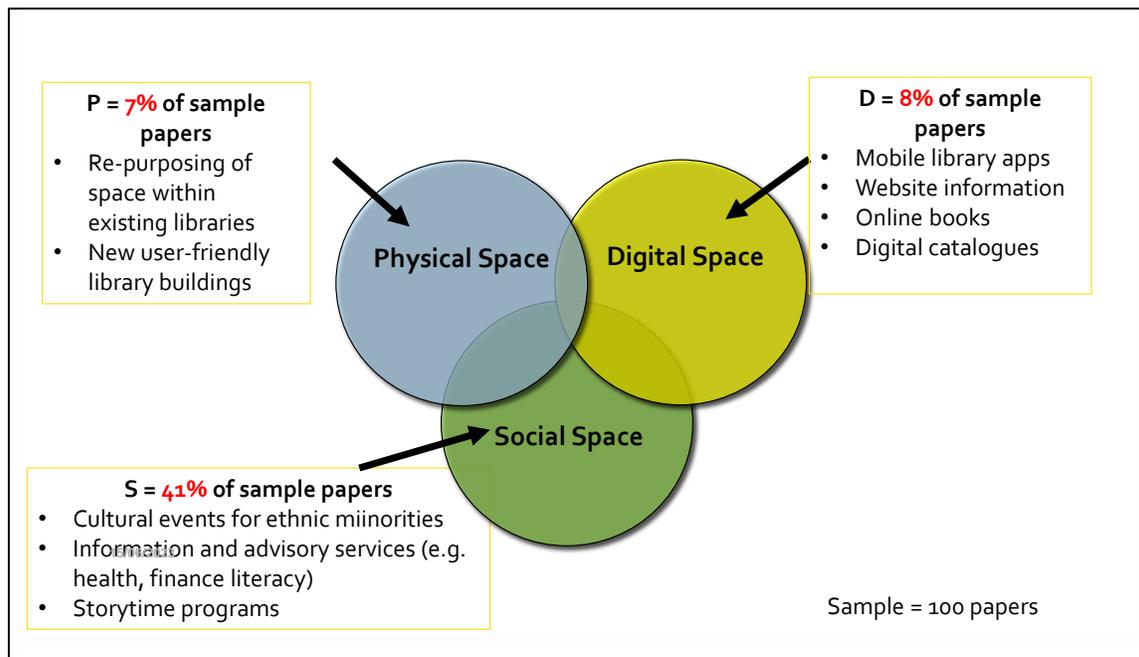


Digital space is here used in the common understanding of virtual space for e-services and online interactions with the library. These are provided by services such as e-books, online catalogues, and online ordering systems.

The three dimensions space of a public library overlap and interact. The digitization of library catalogues, books, and other services is having an impact on the physical space of the library. As physical book collections are reduced, so more opportunities arise to repurpose the library as a physical space for other forms of social activity and interaction. There is also a very real issue of whether, and how, to bring together digital space and social space within the physical space of the library. The creation and design of digital space is not neutral. Digital design has been primarily advocated by ICT businesses over the past 20 years. It involves the routinisation and commercialisation of processes and activities. The development of social platforms that facilitate one-to-one or one-to-many contact (e.g. WhatsApp, Facebook, YouTube) may support, and reinforce, existing close social ties of family and friends. They also provide opportunities to reach beyond existing social ties and communications, reaching out to others with shared in interests, hobbies, or beliefs. Digital platforms can foster new social silos amongst like-minded people that reduce interaction with people with other views. This can new forms of exclusion and intolerance.

Figures 2 to 4 map the service innovations discussed on to this social-physical-digital (or 'S-P-D') space. Figure 2 shows the percentage of sample papers that lie within just one spatial dimension.

Figure 2. Papers with service innovations in one spatial dimension only (as % of sample)



We see that the vast majority of journal papers within our sample (41%) discuss social innovations which focus on changing or improving the use of social space within libraries. This includes, for example, the setting up of cultural events to support ethnic minorities, new information and advisory services for women's health (e.g. breast cancer awareness), new advisory services on financial and financial literacy, and children-parent storytime programmes.

Of course, some service innovations span more than one of the S-P-D spatial dimensions. These are shown in the Venn diagrams of Figure 3 and Figure 4 below. Taken together, we see a predominance of changes in social space as a key aspect in developing new / improved services in public libraries.

Figure 3. Papers with service innovations in two spatial dimensions (as % of sample)

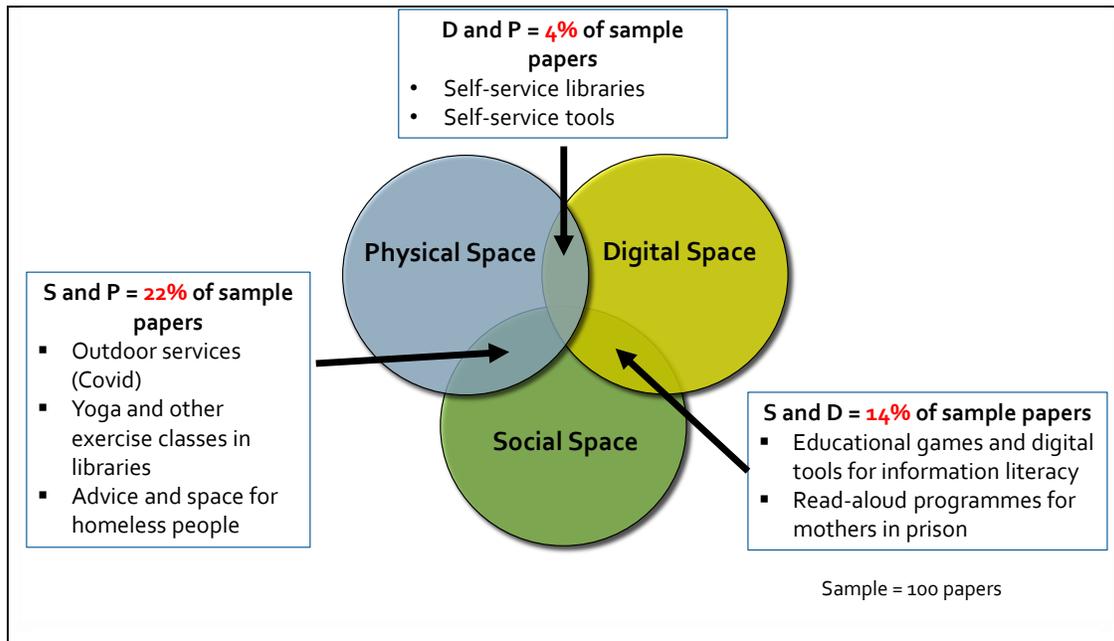
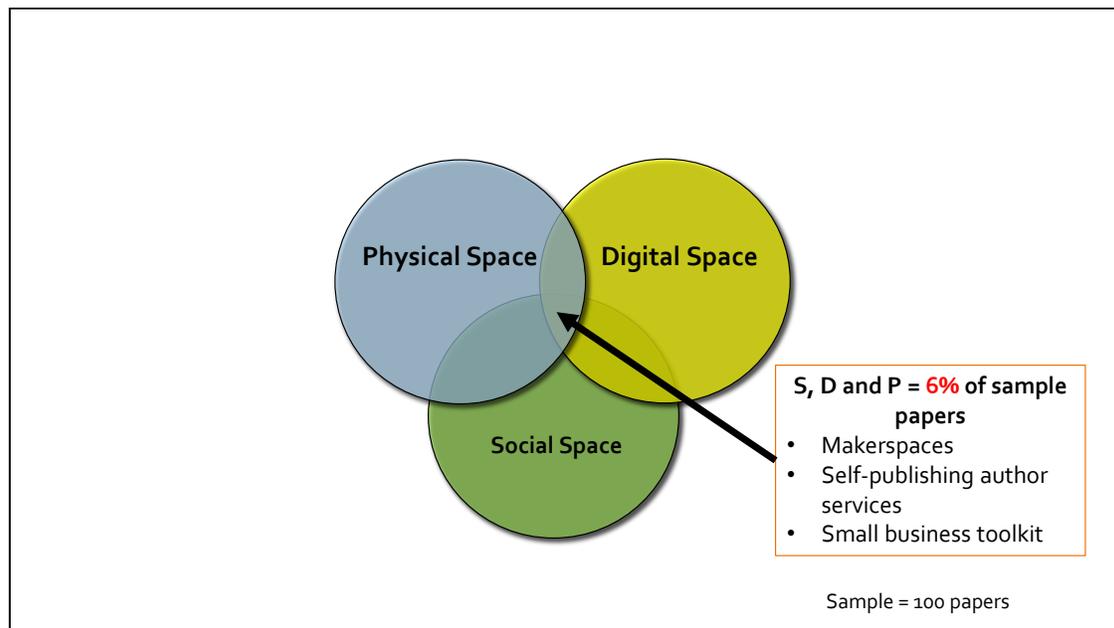


Figure 4. Papers with service innovations in all three spatial dimensions (as % of sample)





Taken together, we can see that the vast majority of journal papers within the sample have a strong component of social innovation within their service development. Some, such as the development of reading services for mothers in prison, have used digital technology to further extend a traditional function of the public civic library – inclusion and the extension of literacy to all in society. Other changes have been motivated more short-term responses to the external environment, such as the development of outside service delivery of library services during periods of covid lockdown.

We note that a further round of checked of the papers has been conducted in order to ascertain the likelihood of an under-reporting of digital space (D) within the journal papers. We consider that this is not likely within the detailed descriptions given within the papers. Where digital platforms, skills, and training are involved, these are given high prominence within the papers' discussions. By contrast, there may some degree of under-reporting of changes in physical space (P). For example, changing the function of a space from book reading to a space for yoga classes may require some minor modifications to a room. We note that these tend not to be discussed by authors.

Keyword Analysis

We have observed that authors within the library sciences field do not commonly use the word 'innovation', even when the focus of a research paper discusses the development and introduction of new services in public libraries. Our sample provides a useful indication of this. Just 11% of the papers use the word 'innovation'. Had a conventional bibliometric keyword on the words 'innovation' and 'public library' been used, then around 90% of the papers in our sample would not have been detected.

A second issue of importance is the lack of use of the term co-create or co-creation. Co-creation is itself a contentious and fuzzy concept that will need defining within the project. It could be that this concept is described in other ways, using different key words, in this literature.

The question which then follows is 'What words do authors in this field use when discussing service innovations in public libraries?'

In order to examine this, a Term Frequency-Inverse Document Frequency (TF-IDF) method has been used by Sari Vainikainen for an analysis of the key words used by the authors in our sample of empirical papers. The analysis is conducted on the text information provided by authors of the published papers in the titles, listed paper keywords, and abstracts. TF-IDF is a statistical measure used to evaluate the relevance of a term in a document based on its frequency in a collection of documents. Python libraries such as gensim, nltk, spacy were used for analysis.



or programmes for pre-school children. The other key service development that has attracted much research is 'makerspace'.

The words 'librarian' and 'patron' clearly indicate the importance tied to this relationship, as is the relationship between the library and the local 'community'. We do not, as discussed, see the words 'co-creation' or 'co-design' with library users and readers. There is no evidence of active co-design and co-development with users being a key concept in the LIS field, or in programme design practice.

Implications of research findings for other WPs

This is work in progress. Our initial findings presented here are limited to the material contained herein. There are other links and conceptual discussions to be had with other WPs.

The decision to engage in a manual review of specific library-focused journals has generated a rich stream of information and data on trends within the public library literature. This has led to some genuinely unexpected findings. The most notable of these is the reinvention of the *social space* of the public library within the digital age. At first sight, this is an unexpected finding. One might have thought that a much larger percentage of the reported services changes in public libraries would have been digital-focused over the past 7 years. Note, however, that our sample focused on journals discussing library services in general and excluded journals solely focusing on technological development (e.g. Library Hi Tech, Library Hi Tech News, Electronic Library).

On further reflection, it is important to recognise that the origins of the 'public' library lies within the 'public sphere', like parks and other public spaces within towns and cities. As such, it is a social infrastructure that has been, for over a century playing an important role in civic life (Klinenberg 2018). The findings suggest that there is continuity within transformation as librarians gave expanded and extended the use of the library as a social space in the era of digitalisation.

A further finding of interest, at the second-order level, is the role being played by public libraries in the number of papers discussing the growth of makerspaces. These providing support for creative activities and the development of new skills and hobbies. Whilst not necessarily a direct or immediate intended outcome, this type of support may provide the basis for new types of small business creation and new start-ups. All in all, the findings related to the role of social services and creative activities in libraries indicate that the boundaries between libraries and other types of societal actors and activities are currently being renegotiated, as libraries aim to revise their role in serving the citizens.



These findings have implications for the prompting regarding the focus of research in WPs 3, 4, and 5. Notably, they highlight the importance of the social dimension in shaping new services and existing service development.

We would also suggest that the S-P-D analysis is a useful conceptual lens which can provide guidance in generating new ideas regarding interactions between the social, the physical, and the digital space of public libraries discussion. At the macro level, this conceptualisation may help to understand relations between libraries and other societal actors, e.g., how library spaces differ from other public spaces (denoting the specific roles of libraries in society) and how these spaces may be collaboratively designed to host several social activities. At micro-level, they may help to analyse value co-creation in library services by providing conceptual means to understand spaces as enablers and constraints for new types of value co-creation encounters between librarians, citizens and other actors. Therefore, we will explore possibilities to further develop this analysis in WP2 and WP5.

Finally, the keyword analysis has identified a set of potentially useful words for bibliometric studies conducted elsewhere within the project – i.e. “new”, “program(me)”, “programming” and “patron”. These are not direct equivalents for service innovation but may be of assistance in initiating searches in the future.

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Kitzie, Vanessa L., Diana Floegel, Sarah C Barriage,, and Shannon M. Oltmann (2022). How visibility, hypervisibility, and invisibility shape library staff and drag performer perceptions of and experiences with drag storytimes in public libraries. *Library Quarterly*, 92(3): 215–240.

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Mainka, Agnes, Sarah Hartmann, Lisa Orszullok, Isabella Peters, Anika Stallmann, and Wolfgang G. Stock (2013) Public libraries in the knowledge society: Core services of libraries in informational world cities, *Libri*, 63(4): 295-319.

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Appendix A. Searches in Scopus

Below are summarised the results of a round of searches in Scopus.

Search within title-abstract-keywords:

- librar* AND innov* OR transit* OR transform*
- subject area: social science
- ➔ 7816 hits

Search within title-abstract-keywords:

- librar* AND innov*
- subject area: social science
- ➔ 4126 hits

- ➔ When this search is limited to English journal papers and reviews, 3006 hits.
- ➔ when the search term innov* is changed to innovation à 1620 hits.
- ➔ When the timeframe is limited to 2013-2022 à 865 hits

Most typical journals in this search, e.g.

- Emerald Emerging Markets Case Studies
- Library Management
- Library Philosophy And Practice
- Library Hi Tech
- Journal Of The Medical Library Association
- Journal Of Library Administration
- Library Hi Tech News
- Health Information And Libraries Journal
- Electronic Library
- Reference Services Review
- Public Services Quarterly

When sorted by relevance, the first 20 papers (librar* and innovation):

- Adekoya, C. O., & Adedimeji, A. A. (2021). Enhancing library performance by exploiting the potentials of disruptive innovations. *VINE Journal of Information and Knowledge Management Systems*. Scopus. <https://doi.org/10.1108/VJKMS-03-2021-0032>
- Adzobu, P., Okyere, S., & Banji, G. T. (2021). Innovation in the library: Adoption of smartphones in accessing electronic resources in a Ghanaian university. *Journal of Librarianship and Information Science*, 53(3), 367–381. Scopus. <https://doi.org/10.1177/0961000620949648>
- Awais, S., & Ameen, K. (2021). The current influential factors in adoption of innovations in university libraries of Pakistan. *Library Management*, 42(6–7), 459–470. Scopus. <https://doi.org/10.1108/LM-12-2020-0179>
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- Cruz, K. F. S., Mendes, G. H. S., Lizarelli, F. L., & Cauchick-Miguel, P. A. (2020). Antecedents and consequences of library service innovation: An investigation into Brazilian academic libraries. *Journal of Academic Librarianship*, 46(6). Scopus. <https://doi.org/10.1016/j.acalib.2020.102235>
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- Lembinen, L. (2021). Innovation in European Academic Libraries—Leadership Perspective. *Journal of Library Administration*, 61(8), 921–935. Scopus. <https://doi.org/10.1080/01930826.2021.1984136>
- Lindgren, P. (2021). The Green Multi Business Model Innovation Brain. *Journal of Mobile Multimedia*, 17(1–3), 27–64. Scopus. <https://doi.org/10.13052/jmm1550-4646.17132>
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- Zbiejczuk Suchá, L., Bartošová, E., Novotný, R., Bělehradová Svitáková, J., Štefek, T., & Víchová, E. (2021). Stimulators and barriers towards social innovations in public libraries: Qualitative research study. *Library and Information Science Research*, 43(1). Scopus. <https://doi.org/10.1016/j.lisr.2020.101068>
- Zhou, Z., Duan, Y., Qiu, J., & Yang, L. (2022). The influence of organizational learning on library service innovation. *Library Hi Tech*. Scopus. <https://doi.org/10.1108/LHT-04-2021-0148>

When “co-creation” is added as a search term in the above search, 24 hits emerge. These are listed here:

- Bai, G., Zhao, L., & Wang, Z. E. (2018). Advantech: Evolution of its IoT ecosystem strategy. *Emerald Emerging Markets Case Studies*, 8(4), 1–28. Scopus. <https://doi.org/10.1108/EEMCS-06-2018-0131>



- Bhandari, V., & Kalra, J. (2018). Design practice and craftsmanship: Reimagining the craft sector in India. *Art, Design and Communication in Higher Education*, 17(1), 61–72. Scopus. https://doi.org/10.1386/adch.17.1.61_1
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- Chen, M., & Shen, C.-W. (2020). The correlation analysis between the service quality of intelligent library and the behavioral intention of users. *Electronic Library*, 38(1), 95–112. Scopus. <https://doi.org/10.1108/EL-07-2019-0163>
- Cruz, K. F. S., Mendes, G. H. S., Lizarelli, F. L., & Cauchick-Miguel, P. A. (2020). Antecedents and consequences of library service innovation: An investigation into Brazilian academic libraries. *Journal of Academic Librarianship*, 46(6). Scopus. <https://doi.org/10.1016/j.acalib.2020.102235>
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- Islam, M. A., Agarwal, N. K., & Ikeda, M. (2017). Effect of knowledge management on service innovation in academic libraries. *IFLA Journal*, 43(3), 266–281. Scopus. <https://doi.org/10.1177/0340035217710538>
- Llewellyn, A. (2019). Innovations in Learning and Teaching in Academic Libraries: A Literature Review. *New Review of Academic Librarianship*, 25(2–4), 129–149. Scopus. <https://doi.org/10.1080/13614533.2019.1678494>
- Mainka, A., Castelnovo, W., Miettinen, V., Bech-Petersen, S., Hartmann, S., & Stock, W. G. (2016). Open innovation in smart cities: Civic participation and co-creation of public services. *Proceedings of the Association for Information Science and Technology*, 53(1), 1–5. Scopus. <https://doi.org/10.1002/praz.2016.14505301006>
- Murphy, M., & Hogan, J. (2021). Reflections on post-bailout policy analysis in Ireland. *Administration*, 68(4), 145–160. Scopus. <https://doi.org/10.2478/admin-2020-0028>
- Pacios, A. R. (2020). Knowledge management and innovation: Two explicit intentions pursued by Spanish university libraries. *IFLA Journal*, 46(3), 224–233. Scopus. <https://doi.org/10.1177/0340035219870201>
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- Sant-Geronikolou, S., Martínez-Ávila, D., & Koulouris, A. (2019). Academic libraries on the Creative Industries track: The perception of Spanish and Brazilian professionals. *Education for Information*, 35(4), 377–398. Scopus. <https://doi.org/10.3233/efi-180203>
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- Zbiejczuk Suchá, L., Bartošová, E., Novotný, R., Bělehradová Svitáková, J., Štefek, T., & Víchová, E. (2021). Stimulators and barriers towards social innovations in public libraries: Qualitative research study. *Library and Information Science Research*, 43(1). Scopus. <https://doi.org/10.1016/j.lisr.2020.101068>
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Search term “transition” – produced mostly transitions related to other issues, such as student transitions etc.

Search terms *librar** and *transform** (within business and sociology research, i.e. a bit more limited than the innovation search above), other limitations as above à 95 hits

The first 20 papers when sorted by relevance:

- Abashian, N. H. (2017). Reorganizing a library department: A case study in transformational leadership. *Library Leadership and Management*, 31(3). Scopus. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85018372585&partnerID=40&md5=c58d4a91aac7200a0a695c29c2e7fb2>
- Andersen, J., & Bilfeldt, A. (2017). Transforming welfare institutions through social innovation and action research in Denmark. *International Journal of Action Research*, 13(3), 201–220. Scopus. <https://doi.org/10.3224/ijar.v13i3.02>
- Blume, R. (2019). Balance in Demand Driven Acquisitions: The Importance of Mindfulness and Moderation When Utilizing Just in Time Collection Development. *Collection Management*, 44(2–4), 105–116. Scopus. <https://doi.org/10.1080/01462679.2019.1593908>
- Corneille, M., Lee, A., Allen, S., Cannady, J., & Guess, A. (2019). Barriers to the advancement of women of color faculty in STEM: The need for promoting equity using an intersectional framework. *Equality, Diversity and Inclusion*, 38(3), 328–348. Scopus. <https://doi.org/10.1108/EDI-09-2017-0199>
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Appendix B. Papers included in the literature sample

This appendix provides information on the journal papers included in the final sample. Papers are listed alphabetically by the first author's surname. Information is also provided on the main goals or research questions addressed in each article.

Table 4: The reviewed paper

No	Article and reference	Abstract
1	Al, U., Dogan, G., Soydal, I. and Taskin, Z. (2019), "Libraries as learning environments: the example of "Libraries for Everyone"", Library Management, Vol. 40 No. 1/2, pp. 74-87. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-09-2017-0092	Purpose – In this paper, the Libraries for Everyone Project and the studies carried out within the scope of the project are presented; the role of libraries as learning environments is discussed; and the data obtained from the library usage research/survey are shared. The paper aims to discuss these issues. Design/methodology/approach – The research includes the findings of a questionnaire study that was applied in May, 2017 to 4,566 respondents from 147 libraries participating in the project. The population is represented with a 99% confidence level and a sampling error of 0.02. The sample size was decided based on the number of registered members in the libraries. Findings – Municipal libraries have potential to be used as learning environments. Originality/value – The usage survey reported in the study is the most comprehensive usage study on municipal libraries so far in terms of the number of participants. The Libraries for Everyone Project is the most extensive project implemented at municipal libraries in Turkey.
2	Alajmi, B. (2016), "When the Nation is in crisis: libraries respond", Library Management, Vol. 37 No. 8/9, pp. 465-481. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-05-2016-0043	Purpose – The purpose of this paper is to shed light on the role of libraries as community institutions by reflecting on the experience of the Ferguson Municipal Public Library (FMPL), Missouri, USA, during the time of social unrest in the summer of 2014. The research explores the traditional and non-traditional roles of libraries during times of social unrest while focusing on relevant areas of crisis management preparedness and competencies necessary during crisis. Design/methodology/approach – The study adopts a qualitative approach in investigating the research problem and uses the case study method to collect relevant data. Findings – This paper reports on the experience of the FMPL staff during this time. Their experience of what happened, how they dealt with it, and what their expectations were after the crisis are all documented. Originality/value – Several scholars have studied how public libraries respond to disasters, yet little is known about whether public libraries proactively engage in community-wide disaster planning, and if so, what is the nature of those partnerships.
3	Alders, R. R. (2018). The National Library of Aruba goes Green! A Chronology and History. Journal of Library Administration, 58(7), 769–777. https://doi.org/10.1080/01930826.2018.1514837	The National Library of Aruba has become a leader and advocate for sustainable education since 2012. There was a gap for sustainable education for the secondary schools and higher education in Aruba, and the Green Education Symposium, which has become Sustainable Education Symposium since 2018, is nowadays a national and an international model for other educational institutions to follow across the world.
4	Aysenur Guñes & Mehmet Canatar (2022) Library makerspace in Turkey: Public and university libraries. International Federation of Library Associations and Institutions 2022, Vol. 48(4) 691–705 DOI: 10.1177/03400352211066944	This study is intended to determine the developments in Turkey and to reveal the quality of the libraries that offer makerspace service. In the light of the data, obtained from the Ministry of Culture and Tourism at the time of the study, one university library and three public libraries where this service was offered in Turkey were examined. However, one public library was examined in detail within the scope of the study. Qualitative research methods were used, and the data collected by the semi-structured interview technique were evaluated with the descriptive analysis method. According to the results not much progress has been observed in Turkey regarding the services offered by the library makerspace. The fact that the public



		libraries evaluated in this study offer only one service, however, shows that they cannot fully realize the maker philosophy.
5	Barratt-Pugh, C.; Sparrow, H., and Allen, N. "Identifying Key Factors in Library–School Partnerships to Deliver a Family Literacy Programme in Western Australia" <i>Libri</i> , vol. 71, no. 4, 2021, pp. 407-418. https://doi-org.nottingham.idm.oclc.org/10.1515/libri-2020-0091	Research indicates that partnerships between libraries and schools have potential to enhance early literacy. However, few studies have investigated the nature and outcomes of such collaborations. This paper reports on the findings from a qualitative study of a partnership between librarians and kindergarten teachers to implement a family literacy programme, developed by the State Library of Western Australia. The programme aims to facilitate connections between libraries, families and schools, to support early literacy. Using an interpretive paradigm, interviews were undertaken with 38 participants including State, branch, local and school librarians, kindergarten teachers and school principals in seven schools, to explore the effectiveness of the partnership model. The partnerships were highly valued, and participants reported confidence in the success of the co-operative model of programme delivery. However, there was little evidence of deep engagement across service sectors or sharing of expertise and resources. Four key factors that influenced the development and sustainability of partnerships are identified and discussed. Implications of the research are identified, which include the development of a library–school partnership framework and a literacy-text messaging programme. We conclude by suggesting that the partnership model could be replicated across other countries, maximising opportunities for cost efficiency while supporting better outcomes for families and children.
6	Bartlett, C., & Bos, L. (2018). STEAM Around the World: Successfully Incorporating Hands-On Learning and Diversity into Children’s Programming. <i>Journal of Library Administration</i> , 58(2), 174–182. https://doi.org/10.1080/01930826.2017.1392223	The incorporation of Science, Technology, Engineering, Arts, and Mathematics (STEAM) into library programming is a continuing trend in the United States. At the Mount Prospect Public Library (MPPL) in Illinois, there are many STEAM programs in-house that focus on science and technology, but we were looking for ways to add it to outreach programming. Our receipt of the Association for Library Service to Children’s (ALSC) Building STEAM with Día grant allowed us to build upon an established Día de los Niños, Día de los Libros (Día) program.
7	Born, Christian, Henkel, Maria and Mainka, Agnes. "How Public Libraries are Keeping Pace with the Times: Core Services of Libraries in Informational World Cities "	Abstract: In a survey of 31 informational world cities, we investigate the state of the art public library core services. For this study, we applied the core service catalog developed by (Mainka, A., S. Hartmann, L. Orszulok, I. Peters, A. Stallmann, and W. G. Stock. 2013. "Public Libraries in the Knowledge Society: Core Services of Libraries in Informational World Cities." <i>Libri</i> 63 (4): 295–319. 10.1515/libri-2013-0024), counted the services offered by the libraries and compared findings with the results from 2013, allowing us to calculate a score for each library and rank them accordingly. An overall improvement of the range of services was observed, with North American libraries taking the top three positions in the ranking. To get a clearer picture of the challenges facing libraries today, personal interviews were also conducted with (chief) librarians, especially concerning developments such as maker spaces, increasing demand for information literacy instruction and the changing role of physical library space. The results presented in this paper highlight best practice examples of library services in prototypical cities of the knowledge society.
8	Brown, A., Howard, V., & Martin, J. G. (2019). Shared reading for strengthened relationships among those experiencing maternal incarceration. <i>Library Quarterly</i> , 89(3),	Women are the fastest-growing prison population in Canada. About 75% are mothers to children under the age of 18. For most of those mothers, contact with their children is rare. The separation caused by maternal incarceration can disrupt the attachment bond, create physical and mental health problems, and lead to increased anxiety, depression, loneliness, and isolation. To ameliorate those effects, some



	203–216. https://doi.org/10.1086/703468	organizations and institutions are delivering programs designed to maintain and strengthen family connections. Shared reading programs are among them. This article explores the outcomes of a shared reading program for incarcerated women and their children from the perspectives of those who participated. Findings reveal how a shared reading program can provide meaningful mother-child contact, strengthen relationships and communication, encourage love of reading, and foster positive identity and self-worth. Furthermore, findings suggest how public libraries can support or extend those outcomes.
9	Brown, C., Young, K. B., & Wong, C. (2021). Rise Up: A Program for At-Risk Youth. <i>Journal of Library Administration</i> , 61(6), 710–717. https://doi.org/10.1080/01930826.2021.1947060	This article details the development and pilot deployment of Rise Up: A Program for At-Risk Youth, which was created by the Santa Clara County Library District (SCCLD) in partnership with the County District Attorney, County Social Services, City of Gilroy and the South County Youth Task Force. The project focused specifically on youth at risk for drug or violent activity, as well as their caregivers and the adults in Gilroy serving these youths and their families. The process of rolling out Rise Up demonstrated the benefits of adjusting assumptions and how flexibility opens the way to future opportunities. Rise Up also taught the library valuable lessons about the need for improved equity—fulfilling basic needs like childcare and food security can go a long way in ensuring that at-risk youth and families can take advantage of learning opportunities.
10	Cahill, Maria, Joo, Sohyung, Howard, Mary and Walker, Suzanne. "We've been Offering It for Years, But Why Do They Come? The Reasons Why Adults Bring Young Children to Public Library Storytimes"	Abstract: While storytime programs for preschool children are offered in nearly all public libraries in the United States, little is known about why adults choose to bring children to participate. This survey study gathered information from 346 parents and caregivers who attended storytime programs at 35 public libraries in three states. Parents and caregivers indicated child enjoyment of hearing stories and participating in activities and the opportunity for children to interact as the primary reasons for attending; however, differences in motivation to attend were noted by community density, relationship to the child, educational level of the adult, and length of attendance. In addition to identifying those aspects of storytimes that resonate most for children and building upon them, librarians should integrate cooperative activities that facilitate interaction. Further, librarians should take stock of their own contexts and modify programs to best address the needs of their specific community.
11	Cavanagh, M.J. (2017), "Are community-managed libraries effective?", <i>Library Management</i> , Vol. 38 No. 4/5, pp. 226-236. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-11-2016-0081	Purpose – The purpose of this paper is to explore the effectiveness of community-managed libraries (CMLs) in England. It traces their history and considers the evidence base in respect of their effectiveness. Design/methodology/approach – Through quantitative research (web surveys) with volunteers and chief librarians, the study establishes: the range of services being delivered; the perceived need for and extent of training given to volunteers; the criteria through which public library effectiveness can be measured, and the extent to which CMLs are able to deliver against these criteria. Findings – The study found widespread variation in the range of services offered and the extent of training received. Further, it found significant differences of opinion and priorities between the research groups in respect of the relative importance of various effectiveness criteria and the ability of CMLs to deliver against these criteria. The evidence from this study points to a fragmented and inconsistent network of volunteer delivered libraries. A key reason is the variation in approach and level of support from local authorities. The paper concludes that the lack of national standards and consistently applied professional advice could be contributing to this variation and points to the Welsh Public Libraries approach, based on their standards framework, as a model that could be replicated. Originality/value – These findings have implications for policy makers in respect of the case made for the reintroduction of a standard/quality framework to reduce service variability. The findings will also be of value to local authorities that are considering implementing a community-managed library model.



12	<p>Charbonneau, D. H., & Rathnam, P. (2020). Memory Cafés and Dementia-Friendly Libraries: Management Considerations for Developing Inclusive Library Programs. <i>Journal of Library Administration</i>, 60(3), 308–315. https://doi.org/10.1080/01930826.2020.1727282</p>	<p>Memory Cafés bring services to families and individuals experiencing memory loss, mild cognitive impairment, early Alzheimer’s, or other dementias. Memory Cafés situated in libraries are designed to be safe, engaging, and welcoming gathering spaces. These equalizing opportunities provide mind-stimulating activities and respond to the growing need to create dementia-friendly library environments. The aim of this article is to highlight management considerations for creating Memory Cafés. Issues such as building community partners, budgeting, planning, library staff training, and marketing are highlighted. Overall, Memory Cafés can be inclusive library spaces for people experiencing different phases of memory loss and their care partners.</p>
13	<p>Chin Ee Loh et al. (2021) Developing future-ready school libraries through design thinking: A case study. <i>International Federation of Library Associations and Institutions 2021</i>, Vol. 47(4) 505–519. DOI: 10.1177/034003522111028897</p>	<p>School libraries around the world need to revitalise their spaces, collections and programming to continue to be relevant for teachers and students living and learning in an information-saturated technological global age. Efforts in the rethinking of library usage and design are most effective when they are contextualised and localised, based on user needs and country or school budgets. Design thinking is a useful approach for schools to understand the needs of their populations and design targeted improvements for their libraries’ specific users. This article explains how one secondary school collaborated with university researchers to use design thinking to re-envision the role and functions of its school library. The evidence collected through the process was integrated into the redesign of an improved library for the students. This article provides a model for evidence-driven school library improvement projects.</p>
14	<p>Colasanti, N., Fiori, V. and Frondizi, R. (2020), "Promoting knowledge circulation in public libraries: the role of gamification", <i>Library Management</i>, Vol. 41 No. 8/9, pp. 669-676. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-04-2020-0064</p>	<p>Purpose – The aim of the paper is to investigate the impact of nudges and considerations stemming from behavioural economics on the promotion and enhancement of knowledge circulation in public libraries. In fact, literature indicates that an approach based on nudging individuals towards desired behaviours may be more effective than top-down policy actions that may be perceived as excessive. Design/methodology/approach – In order to answer the research question, the paper analyses an exploratory case study regarding the network of public libraries in Rome, called Biblioteche di Roma (BdR). BdR launched its online platform in 2009, but it was never able to create a strong connection with offline activities, and contributions by readers (such as comments and book ratings) remained very low. In 2018, BdR introduced a gamification section in its website, with the goal of increasing users’ interactions and book circulation. Data resulting from the use of gamification, both at city level and within different neighbourhoods, will be presented and analysed. Findings – Results indicate that the introduction of gamification was successful in increasing users’ interactions and engagement, both online and offline. Originality/value – The paper is valuable as it explores the introduction of nudge theory and gamification in the public library system.</p>
15	<p>Cowell, J. (2021), "Managing a library service through a crisis", <i>Library Management</i>, Vol. 42 No. 4/5, pp. 250-255. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-10-2020-0158</p>	<p>Purpose – The study aims to explore public libraries’ ability to respond to worst-case scenarios and whether planning and scenario planning is a useful exercise to prepare library staff and library organisations for quick and agile responses to crises in the future. Design/methodology/approach – Personal viewpoint of crisis management of a library service through the experience of the library service the author manages. Findings – This paper describes Yarra Plenty Regional Library’s (YPRL’s) response to the pandemic and lockdowns in Metro Melbourne. It offers some opinions on library services readiness to respond to crises and describes the foundations of YPRL’s successful response. Originality/value – YPRL is a regional corporation governed by a board of directors and serves three councils. This is one of 10 such corporations in Victoria. The organisation’s response and the development as a corporation through this crisis is something that other organisations can learn from.</p>



16	<p>Daniel García Gimenez & Lluís Soler Alsina (2020) City library network knowledge management for social cohesion: The case of Santa Coloma de Gramenet, Barcelona, Spain. <i>International Federation of Library Associations and Institutions</i> 2020, Vol. 46(1) 52–63. DOI: 10.1177/0340035219895994</p>	<p>In Santa Coloma de Gramenet (Catalonia, Spain) there is a network of four public libraries. They belong to the City, with technical assistance, strategic orientation and financial support from the provincial government, Diputació de Barcelona. These four libraries have been built in different historical periods and located in neighbourhoods with very unequal social backgrounds. They have been working on adapting their services to their neighbourhoods and as a network they have been moving on along the differences. Even so, the current information society challenges require a city library project in order to guarantee social cohesion and equal opportunities. This article tries to explain the strategy to achieve those goals, based on knowledge management and networking, transversal workshops and a shared communication circuit that so far has allowed this urban library network to extend and to renew services as well as to empower vulnerable sectors in accordance with the United Nations 2030 Agenda.</p>
17	<p>Dresel, Robin, Henkel, Maria, Scheibe, Katrin, Zimmer, Franziska and Stock, Wolfgang G.. "A Nationwide Library System and Its Place in Knowledge Society and Smart Nation: The Case of Singapore "</p>	<p>Abstract: What role can a library system play in the development of a knowledge society and a smart city or a smart nation? In Singapore, we are able to identify governmental master plans to develop and to consolidate a knowledge society and a knowledge-based economy since around 1980. The current Smart Nation plan aims for comprehensive digital innovations in the country. Singapore's National Library Board (NLB) is an agency of the Ministry of Communication and Information; it is responsible for the Public Libraries, the National Library, and the National Archives. Its duties are regulated by law. This article describes the tasks of NLB and its institutions, the physical as well as digital resources, NLB's services (for instance, OneSearch and the Singapore Memory Project), important programs (e.g. activities to foster digital literacy and information literacy), NLB's social media activities, and, finally, user participation (following design thinking) in the development of NLB's services. In contrast to many other countries in the world, the nationwide library system in Singapore plays an important role on the way towards a knowledge society and Smart Nation as it fosters ubiquitous access to knowledge (content), provides spaces for the community, and attempts to deepen digital literacy skills of all Singaporeans.</p>
18	<p>Durik, A. M., Milstead Post, S., Green, W., Jensen, A. P., Pawirosetiko, J. S., Gibson, C., & Dusenbery, P. B. (2021). Exploring How Public Libraries Can Build Situational Interest in Science. <i>Journal of Library Administration</i>, 61(4), 439–457. https://doi.org/10.1080/01930826.2021.1906545</p>	<p>This project aimed to cultivate library patrons' interest in earth and space science, using research on how situations can trigger and support interest to deepen across time. The project featured a dynamic but low-tech library display that showcased thematic content to help patrons realize and develop their interest in earth and space science topics. Patrons engaged with and returned regularly to the display, which predicted their participation in additional activities outside of viewing the display, indicating deepening interest. This approach uses a passive program to help libraries build patrons' interest in accessing science resources and programs.</p>
19	<p>Einarsson, Á. M. (2021). Sustaining Library Makerspaces: Perspectives on Participation, Expertise, and Embeddedness. <i>The Library Quarterly</i>, 91(2), 172–189. https://doi.org/10.1086/713050</p>	<p>As the novelty of makerspaces in libraries slowly fades, this study examines how participation, expertise, and embeddedness in the library organization and surrounding community are sustained in library makerspaces. Based on interviews with makerspace practitioners in 13 Danish libraries, practices of maintaining, scaling, replicating, and evolving library makerspaces are analyzed. The findings propose a variety of practices and tensions concerning sharing ownership with user communities; scaling and prolonging users' participation; building expertise through documentation, repetition, and sharing; collaborating with local community partners; and embedding makerspace practices into existing library practices, resources, and values. The results inform a discussion of participation, expertise, and embeddedness, which are distilled into three guiding principles that can help libraries reflect and address the sustainability of their makerspace over time.</p>



20	<p>Fletcher, R. (2019), "Public libraries, arts and cultural policy in the UK", <i>Library Management</i>, Vol. 40 No. 8/9, pp. 570-582. https://doi.org/nottingham.idm.oclc.org/10.1108/LM-04-2019-0022</p>	<p>Purpose – Public libraries in the UK are increasingly expected to provide arts activities and events as part of their usual operations. The purpose of this paper is to summarise recent policy trends in this direction from both the perspective of libraries’ and the arts sector. A touring theatre project aimed at children and families is discussed in further detail to examine some of the outcomes of these policies. Design/methodology/approach – The paper will present a brief history of policy developments and debate in this area. Mixed method findings from the research element of “Among Ideal Friends” will be discussed, having used surveys and interviews with audiences and librarians, geodemographic profiling, box office records and library card data. Findings – Public funding across both libraries and the arts has decreased at a national and local level, though both sectors are encouraged to work together to share expertise and community knowledge. Research limitations/implications – The primary funding for the project was an arts funding body. While a holistic approach to evaluation was taken, this limited any specific focus that might have been given to educational outcomes or cost-benefit analysis compared to other interventions. Practical implications – Public libraries can see the results and challenges of a successful regional touring theatre project for consideration in their own activity planning, especially those related to families and younger users. Social implications – Libraries and Arts organisations have different priorities in regards to these areas. Though co-operative, the situation is not without tension. The topic is illustrative of some wider debates around cultural value, everyday participation and cultural democracy. Originality/value – This paper offers a timely discussion of cultural policy in relation to libraries, e.g. The Society of Chief Librarians “Universal Cultural Offer” (October 2017).</p>
21	<p>Giesler, M. (2021). Perceptions of the Public Library Social Worker: Challenges and Opportunities. https://doi.org/10.1086/715915, 91(4), 402–419.</p>	<p>Using a qualitative ethnographic approach, this article explores the work of library social workers. Drawing on individual interview and focus group data from three public library sites around the country, the study assesses the self- perceptions of the social workers and the views of their colleagues about this work. Findings indicate that the call to enact a culture shift in the library to better serve vulnerable populations is tempered by challenges related to effectiveness of staff trainings, clarity of protocol and procedure, gaps in supervision, and use of space. Recommendations for library administrators, staff, and library social workers themselves to meet these challenges are included.</p>
22	<p>Guo, Y. R., & Goh, D. H. L. (2016). Library escape: User-centered design of an information literacy game. <i>Library Quarterly</i>, 86(3), 330–355. https://doi.org/10.1086/686683</p>	<p>The number of digital games for educational purposes has grown rapidly, and there is a potential for libraries to utilize them in information literacy (IL) education. Scholars have called for rigor in both the educational effectiveness and game-play experience in educational game design. One way to achieve this is to adopt a user-centered approach. Therefore, this article describes the user-centered design process of an IL game that actively involved potential users. A participatory design workshop and subsequent user evaluation yielded low- and high-fidelity prototypes. Insights on the complexities of educational game design were uncovered, including being accommodating yet pragmatic toward user input, keeping the balance between enjoyment and learning, and being guided yet flexible in using theoretical frameworks. Future directions for this IL game and general educational game design are also discussed.</p>
23	<p>Hamed Pirialam et al. (2019) The importance of public libraries in education for health literacy: A case study on diabetic patients. <i>International Federation of Library Associations and Institutions</i> 2019, Vol. 45(3) 216–223. DOI: 10.1177/0340035219857445</p>	<p>Public libraries can play a major role in improving health literacy of clients by offering special services. Educating diabetic patients through public libraries can improve the dissemination of health information. The objective of the study was to evaluate the effect of education on the level of health literacy among diabetic patients referring to a public library, and the relationship between health literacy level, age and gender of patients. This research is a quasi-experimental study with pre-test and post-test. The study population included 48 diabetic patients referring to the public library. The research tool is a nationalized adult health literacy questionnaire in Iran. Results showed that 14.5% of samples had the maximum access to the required information</p>



		<p>in terms of accessibility. In terms of reading skill, 20% of samples had the maximum skill needed to read the information resources. In terms of information comprehension, 27% of samples had a maximum comprehending of the information they needed. In terms of evaluation, 13.5% of samples had completely correct evaluation of the information they needed. In terms of decision making, 24.5% of the people made decisive decisions about their information demands. The mean health literacy of diabetic patients before and after education showed a significant difference. In addition, no significant relationship was found between the level of health literacy and the age of diabetic patients referring to the public library before and after education ($r < 0.05$). The health literacy level of diabetic patients increased before and after education in both males and females. It was concluded that as one of the tasks of public libraries is teaching citizens, the use of educational capacities in public libraries in the health sector can improve community health.</p>
24	<p>Hill, T., & Tamminen, K. A. (2020). Examining the Library as a Site for Intervention: A Mixed-Methods Case Study Evaluation of the “Innovative Solutions to Homelessness” Project. <i>Journal of Library Administration</i>, 60(5), 470–492. https://doi.org/10.1080/01930826.2020.1729626</p>	<p>This study examined a project that delivered social work services to homeless individuals. A mixed-methods case study was conducted using quantitative and qualitative data from 93 library employees and the project’s Homelessness Prevention Outreach Worker (HPOW). There was an increase in the number of clients accessing community supports during the project, and the HPOW was integral to the provision of support and resources to homeless individuals. Staff training was associated with significantly greater knowledge, comfort, and skills in working with homeless individuals. These findings can inform the delivery and implementation of similar programs for homeless individuals.</p>
25	<p>Julien, H., Gerstle, D., Detlor, B., Rose, T. Ia, & Serenko, A. (2021). Digital Literacy Training for Canadians, Part 1: “It’s ... Just Core Public Works.” https://doi.org/10.1086/715918, 91(4), 437–456.</p>	<p>In the first of two articles, interviews with administrators of digital literacy programs in Canadian public libraries and other community organizations revealed a sector working to address the digital divide, focusing on marginalized people. Programs narrowly defined digital literacy as skillful use of a range of basic and more advanced technologies. Funding from corporate or other external sources and community interest are key to establishing programs. Challenges arise from lack of resources, including staff time, and limited staff expertise, as well as competition for learners’ time.</p>
26	<p>Katz, S. (2017). Publishing a Literary Magazine in the Library. <i>Journal of Library Administration</i>, 57(8), 901–910. https://doi.org/10.1080/01930826.2017.1374112</p>	<p>805 Lit + Art is a literary and art journal published online at www.805lit.org and in print by the Manatee County Public Library. Founded in 2015, 805 has six online issues, an annual dedicated teen issue, and an annual print anthology. 805 publishes original art, poetry, fiction, and nonfiction from emerging artists and writers internationally. Subscriptions and submissions are free, and 805 has spurred successful programming, outreach, internships, and community partnerships for the library. The editors of 805 grapple with running a creative journal based on library values versus potential censorship from the public and parent organizations.</p>
27	<p>Kiszl, Péter, Radó, Rita and Hubay, Miklós Péter. "From Divergence to Convergence in Hungarian Librarianship: Towards a Common Digital Platform "</p>	<p>Abstract: Hungarian librarianship and related research are sadly underrepresented in international literature. With this article we intend to fill this gap and inform the experts of library and information science of some of the most recent Hungarian innovations. After showcasing the international professional connections of Hungarian librarianship, we present the structure of the Hungarian public library network and its mode of operation. We also analyse current and future main digital development plans, projects and the most important related professional activities of Hungarian libraries. Emphasis is placed on information systems promoting cooperation between libraries and the issues of the National Library System Project, which is a large-scale modernisation programme carried out between 2016 and 2018, designed to develop the IT system of the National Széchényi Library. After introducing the information systems of academic and specialised libraries and the access models of scientific databases provided by multinational and Hungarian content services, we also discuss the endeavours of public libraries aiming for multifunctionality and community organisation. The paper ends by providing insights into how the</p>



		outcomes of the recent initiatives have been fed back into Hungarian LIS training courses offered in higher education.
28	Kitzie, V., Floegel, D., Barriage, S., & Oltmann, S. M. (2022). How Visibility, Hypervisibility, and Invisibility Shape Library Staff and Drag Performer Perceptions of and Experiences with Drag Storytimes in Public Libraries. <i>Library Quarterly</i> , 92(3), 215–240. https://doi.org/10.1086/719915	This article uses data from interviews with public library staff and drag performers to understand how discourses surrounding queer visibility, hypervisibility, and invisibility affect library staff members' and performers' perceptions of drag storytimes. Informed by interviews with library staff and drag performers, we argue that hypervisibility and invisibility narratives mark drag storytimes as dangerous and trendy and may unduly influence how some library staff members view these events. Conversely, other staff members and drag performers engage in significant tactical emotional and physical labor to recognize these events as inherently queer and powerful critical literacy programs. Understanding how varying degrees of visibility mediate library staff and performer perceptions of and experiences with drag storytimes lends insights into larger narratives centered on queerness and belonging within libraries. Drag performers' narrative accounts also offer paths by which library staff may work with performers to promote authentic queer visibility.
29	Laine, T. and Laitinen, M.A. (2019), "The Finna service: meeting the new measurement challenges in libraries", <i>Library Management</i> , Vol. 40 No. 1/2, pp. 2-11. https://doi.org/nottingham.idm.oclc.org/10.1108/LM-02-2018-0007	Purpose – In the transformed information environment, the impact and value of the services are not adequately shown using the traditional library metrics. It needs to be supplemented with user-centered ways of measurement. The paper aims to discuss these issues. Design/methodology/approach – The paper is a case study of the new Finna service and the measurement challenges it presents. Findings – The standards guiding the measurement and evaluation of libraries cannot offer a “cook-book” for the organizations to follow. The paper suggests that as a one possible response to this, the Net Promoter Score can be used as one indicator in measuring the impact of new services. Research limitations/implications – The findings of the paper are preliminary, because so far there is not a wide experience of the use of NPS in libraries. This calls for further study. The results are encouraging, but more testing is needed with different services. Originality/value – NPS has not been widely used in libraries before.
30	Laubersheimer, J., Ryan, D., & Champaign, J. (2016). InfoSkills2Go: Using Badges and Gamification to Teach Information Literacy Skills and Concepts to College-Bound High School Students. <i>Journal of Library Administration</i> , 56(8), 924–938. https://doi.org/10.1080/01930826.2015.1123588	In an effort to improve the information literacy skills in high school students, a group of librarians created InfoSkills2Go, a Web-accessible series of tutorials, games, and assessments for students to learn and practice information literacy skills and concepts. The group added a gamification layer that awards points and badges to students for completing tasks. This article details the planning and construction of the Web site and makes recommendations for similar projects. A pilot study shows learning gains for some students who engaged with the Web site.
31	Lenstra, N. (2017). Yoga at the Public Library: An Exploratory Survey of Canadian and American Librarians. <i>Journal of Library Administration</i> , 57(7), 758–775. https://doi.org/10.1080/01930826.2017.1360121	Results of a 2017 survey of 983 public librarians in the U.S. and Canada show that libraries increasingly provide opportunities for both youth and adults to practice yoga at the library. This article examines how these public library yoga programs work and what impacts they have. Most libraries have limited means to assess the impact of these programs. Nonetheless, over 80% of responding librarians said participation in yoga programs had met or exceeded their expectations, and 60% said yoga programs have brought new users into their libraries. These results suggest that yoga programs in public libraries are having significant effects.
32	Lenstra, N. (2018). The experiences of public library staff developing programs with physical activities: An exploratory study in North Carolina. <i>Library Quarterly</i> , 88(2), 142–159. https://doi.org/10.1086/696580	Public libraries increasingly provide programs focused around moving the body and being physically active: everything from bike rodeos to chair-based yoga to music-and-movement programs. Although common, these programs have received little assessment in the scholarly literature. This article reports on an exploratory qualitative study of the experiences of staff in public libraries in the state of North Carolina that have developed and implemented these types of programs. Across the state, staff report developing a variety of programs that include physical activities for



		multiple audiences. The diversity associated with this programming area testifies to the creativity of library staff working in and with their communities. This study adds to the limited understanding of programs involving physical activity in libraries by identifying and articulating several key aspects that need attention, including how this programming relates to the overall mission of the library.
33	Lenstra, N. and Mathiasson, M.H. (2020), "Free and for all? A comparative study of programs with user fees in North American and Danish public libraries", <i>Library Management</i> , Vol. 41 No. 2/3, pp. 103-115. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-08-2019-0053	<p>Purpose – As a research topic within the field of LIS, programs in public libraries are underexplored, and the question of user fees for programs has not previously been addressed. Design/methodology/approach – This article compares data collected from two individually conducted studies of public library programs in North America and Denmark to enrich our understanding of user fees in relation to programs. Findings – The comparative analysis shows both similarities and deviations regarding the levying of fees for library programs. While paying a fee to attend a program is rather normal in Denmark, it is more of a fringe idea in North America. Research limitations/implications – By exploring a previously understudied facet of contemporary public librarianship, this article opens up new avenues for inquiry regarding how the relative accessibility and availability of programs relate to theoretical discussions about programs as public library services Practical implications – This article provides library managers with needed information about how to conceptualize the roles of programs as public library services. Social implications – As programming surges to the fore in contemporary public librarianship, the levying of user fees has social implications in terms of social equity and the public library ethos of free and equal access for all Originality/value – This article is the first study of user fees for public library programs, as well as among the first cross-national comparisons of programming as a dimension of public librarianship.</p>
34	Lenstra, N., & Campana, K. (2022). The Emerging Role of Outdoor Public Librarianship: Understanding the Need for Strengthened Infrastructure. <i>Journal of Library Administration</i> , 62(5), 602–620. https://doi.org/10.1080/01930826.2022.2083439	This study provides initial insight into the infrastructure surrounding outdoor public librarianship, a term introduced in this article. Data from a Fall 2021 survey revealed many libraries moved programs and services outside during Summer 2021. Library workers predominantly used local infrastructure, supplemented by some extralocal infrastructure (primarily their peers within the profession), to develop and implement these programs and services. Data reveal these services are expected to continue, and possibly expand. Given this potential growth, future research to uncover effective practices is needed so that libraries can effectively help their communities benefit from being outside in nature.
35	Lenstra, N., Oguz, F., D’arpa, C., & Wilson, L. S. (2022). Exercising at the Library: Small and Rural Public Libraries in the Lives of Older Adults. https://doi.org/10.1086/717232 , 92(1), 5–23.	Public libraries are often regarded as having the potential to support healthy aging. Past work has shown that public librarians increasingly endeavor to offer programs and services for those aging in place. However, research about the effects that public library services and spaces have on the lives of older adults and the affordances they bring is limited. This article presents the results of a nationwide study in which 49 public libraries participated—most from rural and small towns across the United States. More than 535 older adults engaged in a 12-week strength-training program in these libraries. Results of the study indicate that health outcomes for participants can be grouped into three interconnected categories: physical health, mental health, and social health. Results also suggest that the program influenced the participants’ perception of the public library as a social space. Implications for research on aging in place and public librarianship are highlighted and discussed.
36	Li, X., & Todd, R. J. (2019). Makerspace opportunities and desired outcomes: Voices from young people. <i>Library Quarterly</i> , 89(4), 316–332. https://doi.org/10.1086/704964	The purpose of this qualitative study was to understand the opportunities and desired outcomes of makerspaces in libraries from young people’s perspectives. A total of 21 young people at two library makerspaces were recruited. Data collection methods included field observations, individual interviews, photovoice, and focus groups. Findings showed that young people were driven to participate in makerspace activities for the opportunities to make, to learn, to hang out, and to engage in personal interests. Through makerspace participation, desired outcomes included producing tangible objects, developing STEM (science, technology, engineering, and



		<p>mathematics) knowledge, gaining real-life skills, preparing for careers, having fun, working in teams, developing friendships, and generating new interests. This study provides a youth-centered understanding of makerspace participation. Practical implications for information professionals working in library makerspaces are included.</p>
37	<p>Mackenzie, C. (2021), "It will all be over by Christmas", <i>Library Management</i>, Vol. 42 No. 4/5, pp. 277-281. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-07-2020-0106</p>	<p>Purpose –We can slip into a dystopic future and despair, or we can show how libraries can help create a better, more sustainable world. The United Nations 2030 Agenda and Sustainable Development Goals are just as relevant as ever and provide a framework for action. Design/methodology/approach – This article considers the events shaping the world in 2020 and explores the impact on libraries. Findings – Three examples of new libraries in The Netherlands show to the world what libraries are and can be. They reinterpret the mission of public libraries and encourage us to hold to and champion our values of access to information and knowledge, literacy, learning and innovation Originality/value – The views are my own and do not represent an official IFLA view.</p>
38	<p>Mehra, Bharat, Bishop, Bradley Wade and Partee II, Robert P.. "How Do Public Libraries Assist Small Businesses in Rural Communities? An Exploratory Qualitative Study in Tennessee "</p>	<p>Abstract: The purpose of this qualitative study is to explore how public libraries assist small businesses in rural communities in the state of Tennessee in the United States. Tennessee’s rural residents, especially in its Appalachian counties, face debilitating economic and social challenges such as inadequate financial prospects, information poverty, unemployment and low degrees of information literacy and educational attainment. The article presents findings from interviews and focus groups with 25 public library small business liaison representatives gathering input about their needs, expectations and experiences with rural public libraries. The foci are the existing and proposed ways rural public libraries provide small business assistance and identify components of a Public Library Small Business Toolkit, an ideal resource that Tennessee’s rural public libraries can implement for small businesses in the future, with the end goal to further ways for rural public libraries to contribute towards economic development in Tennessee. Findings reveal existing roles of rural public libraries in providing physical space and resource assistance for categorized information on government, finance, insurance, taxes and rules/requirements while proposed roles extend to development of tailored skill trainings, start-up services and local information coordination. Future research considerations for public library small business liaisons are also discussed so they can extend assistance to small businesses in Tennessee and other parts of the country.</p>
39	<p>Mhlongo, M. "Harnessing Indigenous Knowledge through Community Involvement in Public Libraries in South Africa" 2020</p>	<p>Abstract: Public libraries exist to serve the information needs of communities, meaning their services need to be reflective of those served communities. However, the literature points to under-usage of libraries among indigenous communities in South Africa, and suggests that the perceived irrelevance of libraries could be a contributing factor. The argument made in this article is for the involvement of communities in planning and implementing services, to enhance awareness, relevance and use of libraries. Such involvement would also provide a space for communities to contribute content based on their indigenous knowledge. In this qualitative multiple case study of purposively selected provincial library services in South Africa, data were collected using semi-structured interviews with library heads. The data were coded and categorised according to themes derived from the stated research questions. The findings show a disjuncture between the interpretation and application of the concept of community involvement – a misalignment that has a negative impact on the ability of libraries to provide inclusive services. A framework for community involvement is suggested as a way of enhancing the synergy between community information needs and public library service provision. The proposed framework identifies indigenous communities, libraries and archival institutions as key stakeholders in harnessing indigenous knowledge. It is recommended that a</p>



		<p>similar study be conducted with community librarians where the nuances of communities can be unveiled, given that the current participants were heads of library services.</p>
40	<p>Mose, P. (2020), "Public libraries and public primary school literacy: a Kenyan case study", Library Management, Vol. 41 No. 8/9, pp. 689-701. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-04-2020-0068</p>	<p>Purpose – The purpose of this paper is to explain how public libraries have been instrumental in early child school literacy teaching and learning. Most African public schools do not usually afford enough core textbooks and supplementary readers. Design/methodology/approach – This was a qualitative case study in Western Kenya amongst public library staff members, public primary school teachers and parents of library children clients. The following questions were addressed: What is the book situation in public primary schools in the study site? What schooltype literacy-related services are offered by the sampled public library? and What are library staff members', teachers' and parents' feelings about the public library services offered? Observations, interviews and document studies were used to collect data. Data were analysed thematically. Findings – Public schools do not have enough core textbooks and the situation is worse for supplementary readers; the public library branch studied offers critical school-type literacies to school children both at the library building as well as at public schools registered with it; and library staff members, teachers, and parents express positive feelings about the services offered. Research limitations/implications – This was a case study whose findings might not apply to the larger situation and the study did not confirm actual literacy benefits of the library services amongst school children by, for instance, conducting literacy tests. The findings are, however, an index to the possible situation in the macro context. Practical implications – The relevant stakeholders should find ways of co-opting public libraries as associates of public schools in literacy teaching. This relationship is not straight forward in Kenya. Originality/value – The findings reported are from original research.</p>
41	<p>Mose, P. and Kaschula, R. (2019), "International book donors and public libraries as partners in primary school literacy development in Kenya: Literacy prospects and obstacles", Library Management, Vol. 40 No. 6/7, pp. 392-401. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-05-2018-0046</p>	<p>Purpose – The purpose of this paper is to explore the impact of international library materials aid in primary schools and to outline obstacles to effective utilization for maximum literacy benefits among primary school children. Design/methodology/approach – Data were gathered via interviews, observation, focus group discussions and document analyses. Findings – Findings indicate that teachers were trained by Kenya National Library Services Kisii Branch staff on basics of library materials management before literacy materials were sent to the schools; teachers and pupils reported that development of vocabulary and better essay writing are some of the benefits of the donated materials; and culturally distanced materials and school dynamics impact negatively on the effective utilization of the donated library resources. Practical implications – The authors recommend that donors work hand in hand with the Ministry of Education and other local stakeholders that it may be possible to address obstacles to proper and highly effective implementation of literacy empowerment projects. Originality/value – The findings of this study are from original research and the implications must be treated as such.</p>



42	Moulaison Sandy, H. (2016). The Role of Public Libraries in Self-Publishing: Investigating Author and Librarian Perspectives. <i>Journal of Library Administration</i> , 56(8), 893–912. https://doi.org/10.1080/01930826.2015.1130541	Little is known about self-publishing authors and about the concerns of public librarians regarding how best to support library self-publishing initiatives. This article presents and analyzes a survey of authors participating in programming at the Woodneath Library Center/Woodneath Press. It also presents and analyzes the results of a survey of public librarians. Findings suggest that self-publishing authors in this case study would benefit from author services support, and that librarians require targeted training to provide such support. As libraries explore this potential new role, more needs to be done to support author services in public libraries appropriately.
43	Ngozi P. Osuchukwu & Ngozi B. Ukachi (2019). Health information services: Engaging women in cervical cancer screening awareness in Nigeria. <i>International Federation of Library Associations and Institutions 2019</i> , Vol. 45(3) 224–232. DOI: 10.1177/0340035219861400	Around the world, a woman dies of cervical cancer every two minutes. In Nigeria, it is the second leading cause of cancer deaths, which could be avoided with proper access to health information. This mixed methods study, which employs a questionnaire, interviews, observations and discussion, examined women’s awareness on cervical cancer, screening status, sources, attitude and willingness, factors deterring them from being screened, and lessons learnt. Screening was done using visual inspection with acetic acid (VIA). The study involved two librarians, two medical doctors, a pharmacist and a laboratory scientist: 90 women participated in the cervical screening exercise in non-standard settings – an e-library and a cathedral. It was discovered that 90% of the women had never been screened. Thus, if the women are not sensitized on cervical cancer they may never go for screening and more casualties will be recorded. The paper concludes with recommendations and a call to action for all, especially librarians.
44	Noh, Younghee. "A Study on the Library's Cultural Value Based on the Perceptions of Users and Librarians in Korea "	Abstract: This study was conducted to assess the cultural value of the library by performing a perception survey for public library librarians and users. We have undertaken the processes of deriving a preliminary evaluation index based on domestic and foreign research results, determining the final evaluation index, and assessing the library’s cultural value within the scope of librarians and users, among others. As a result of conducting this research, we have divided the evaluation areas around cultural values into four areas of development: local culture, succession and promotion of cultural heritage, contribution to local residents’ cultural enjoyment, and formation of community culture in general. As a result of analyzing by evaluation area, the area of the formation of community culture turned out to have the highest average of 3.92, followed by an average of 3.84 for the area of contribution to the local residents’ cultural enjoyment, 3.82 for the area of development of local culture, and 3.53 for the area of the formation of community culture. Furthermore, respondents demonstrated the highest level of agreement to the evaluation item, stating that libraries contribute to resolving the cultural gap, within the area of formation of community culture.
45	Otolo, P.U. (2016), "Globalization, modernization and functionality of the public library system in Nigeria", <i>Library Management</i> , Vol. 37 No. 8/9, pp. 426-440. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-01-2016-0008	Purposive sampling technique was used to select 185 respondents. A well-structured questionnaire was used to collect data from the respondents. The instrument was validated by research experts in the area of test and measurement and in library and information science research. A reliability test was carried out using 25 academic library users in Delta State University, Abraka, to establish a coefficient of 0.87 using Cronbach’s α . The data obtained were analyzed using descriptive and inferential statistics for research questions while the Pearson product moment correlation coefficient analysis and linear regression analysis were used to test hypotheses. Findings – Public libraries in Nigeria are functional and accessible. There is inadequacy in modern information and communication technology devices that aid information provision and dissemination, Globalization and modernization has negatively impacted the patronage of public libraries. The influence of deterritorialization has influenced the user attitude toward regular use. Globalization has made time and space much more closer, thereby reducing contact and interaction between library staff and users in the public library system. Globalization and/or modernization has brought not only challenges to public libraries, but also opportunities to exploit.



		<p>Research limitations/implications – The findings of the study were drawn from one sampled area to represent the entirety of the country. The respondents were public library users who were found using public libraries; therefore, less time was allocated to answering research instrument, thereby potentially and probably not responded to with utmost concern. Practical implications – Public library functionality will be deterred if necessary actions are taken to improve the quality of service provision. There will likely be a reduced patronage of public libraries if users do not get the most recent information as supposed. There is already a negative effect of globalization and modernization on the functionality of public libraries. There is an urgent need to update and modernize public libraries across the nation for effective and efficient service delivery. Social implications – Globalization has led to the reduction of interpersonal and social interaction which is supposed to promote friendliness between public library users and the staff. It also promoted the use of modern technologies such as telecommunication devices, information disseminating gadgets in homes while inhibiting public library patronage time and space is now been maximized for the benefit of library users who are distant from the public library location in as much as information has become accessible at their fingertips. Originality/value – This research was carried out by the author (Dr (Mrs) P.U. Otolo) and is fully individual. All authors cited are duly acknowledged.</p>
46	<p>Palumbo, R. (2022), "Thriving in the post-Covid-19 era: a new normality for libraries' service offering", <i>Library Management</i>, Vol. 43 No. 8-9, pp. 536-562. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-05-2022-0051</p>	<p>Purpose – Social distancing and physical closure triggered by the Covid-19 pandemic put the libraries' viability under stress. Although the spread of the pandemic enacted a new normality for library management, little is known about the ingredients that are needed in the recipe for increased libraries' attractiveness. The article addresses the current gap in the scientific knowledge, unveiling what libraries can do to thrive in the post-Covid-19 era. Design/methodology/approach – Secondary data were collected from the census study accomplished in 2020 by the Italian Institute of Statistics on a large sample (n53,531) of libraries operating across Italy. Three regression models were run to obtain evidence of the factors affecting the capability of small-, medium- and large-sized libraries to attract users amidst the Covid-19 pandemic. Findings – Digitization did not significantly add to the attractiveness of libraries. Users appreciated the enrichment of loan services: more specifically, enabling people to access loan services online boosted the libraries' attractiveness. Furthermore, virtual reading groups, online laboratories and social networking improved the libraries' ability to attract users. Medium-sized libraries involved in literacy promotion reported a larger number of users. Practical implications – Libraries should reframe their encounter with the audience sticking to a cyberphysical perspective, exploiting digital tools to establish a continuous exchange with users and engage them in a service experience which is aimed at individual and collective empowerment. Originality/value – The article advances the understanding of the new normality heralded by the Covid-19 pandemic. Moreover, it illuminates avenues for further development to shed light on the libraries' ability to thrive in the post-pandemic era.</p>
47	<p>Pazooki, F. and Saboori, F. (2021), "Public libraries in crisis time: empirigraphy of Iranian public libraries in the 2019 Iran massive flood", <i>Library Management</i>, Vol. 42 No. 3, pp. 233-244. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-12-2019-0091</p>	<p>Purpose – One of the largest floods in Iran happened in Nowruz in 2019, during which torrents of rain, flooding of rivers, landslides and the destruction of dams caused floods and led to financial losses and loss of life in 25 provinces of Iran. During and after the flood, 39 public libraries were closed, three libraries were evacuated and one was completely destroyed. Design/methodology/approach – Despite the damage that occurred in the libraries, the preventive measures had been taken by many of them to reduce the whole damage. In addition, after the flood, responsible organizations including Iran Public Libraries Institution, the Institute for the Intellectual Development of Children and Young Adults and the Cultural and Art Organization of Municipality and the Mosques and Cultural Center, as well as other relief and social teams, and even people performed activities to reduce the negative impacts caused by the flood. Findings – This article reviews these activities and their</p>



		effectiveness. In the end, “the development of a plan for public libraries in natural and social crises” is proposed and the reasons for its necessity are discussed. Originality/value – This article reviews these activities and their effectiveness. In the end, “the development of a plan for public libraries in natural and social crises” is proposed and the reasons for its necessity are discussed.
48	Peekhaus, W. (2018). Seed libraries: Sowing the seeds for community and public library resilience. <i>Library Quarterly</i> , 88(3), 271–285. https://doi.org/10.1086/697706	This article reports the results from an exploratory study of seed libraries. Based on interviews with librarians working on seed library projects in their institutions, this study investigated why such libraries have been created, what processes and resources are required for their establishment and continued sustainability, how they function, what populations they serve, how their activities relate to more traditional library processes and functions, and how seed libraries offer a novel way for public libraries to engage with and serve the local community. Seed libraries provide an innovative mechanism for community service that is closely aligned with many of the traditional core values of public librarianship, including facilitating access, equity, lifelong learning, social justice, preservation and heritage, and community engagement.
49	Peng, Yu-Ping and Chuang, Po-Han. "A Competency Model for Volunteer Storytellers in Public Libraries "	Abstract: In recent years, public library administrators have actively promoted children’s reading services. Storytelling activities have a significantly positive effect on enhancing children’s interest and ability in reading. Due to the shortage of human resources in some public libraries, volunteers are required to provide storytelling activities. Public libraries should enhance the competencies of volunteer storytellers and provide appropriate training for maintaining as well as improving the effectiveness of storytelling activities. The study conducted interviews in order to build a multidimensional and theoretically grounded competency model for volunteer storytellers in public libraries. Interviews were designed based on the relevant literature. The study used in-depth interviews to obtain information on the experiences, ideas, and suggestions of 15 volunteer storytellers at Taipei Public Library. The results indicate ten facets of the competency model for volunteer storytellers: knowledge about readers; knowledge about story material; assisting in planning and organizing storytelling; expressing and interpreting story skills; children resource utilization instruction skills; information technology skills; oral and writing communication; volunteer team administration and management skills; professional literacy and development; and personal attitude and characteristics. These findings can be helpful in developing competency models and practices related to competency development among volunteer storytellers for public libraries. Finally, the results can serve as a reference for administrators of public libraries and other children’s reading education institutions to implement human resources strategies and practices concerning volunteer storytellers, including planning, recruitment, education, management, and performance evaluation.
50	Pisanski, Jan and Švab, Katarina. "Evaluating Public Library Events using a Combination of Methods"	Abstract: Public libraries hold an increasing number of events, where they face the very important, but often neglected, challenge of evaluation. This paper presents various studies performed to evaluate events for adults at the largest public library in Slovenia, Mestna knjižnica Ljubljana (Ljubljana City Library). A combination of methods was used: content analysis of library website and promotional brochures, interviews with both attendees and librarians, observation of events and a relatively large survey. Additionally, based on this research, seven personas representing typical user groups of events for adults were developed. While attendees were generally highly satisfied with the existing events, our research found room for improvement, especially regarding planning for particular user groups, scheduling and topical diversity of events and promotion aimed at both existing and potential visitors. Based on this research, Ljubljana City Library prepared guidelines for their future events for adults. Additionally, the general outline of the evaluation should be of benefit to any library regardless of type, size or location.



51	<p>Potnis, D., & Gala, B. (2022). "Unified Mobile, Financial, and Information Literacy Toolkit": A Social Innovation for Public Libraries to Alleviate Poverty in Developing Countries. <i>The Library Quarterly</i>, 92(1) https://doi.org/10.1086/717230, 92(1), 68–86.</p>	<p>Social innovations implemented by public libraries rarely alleviate poverty. Mobile payments (i.e., financial transactions over mobile phones) represent the most widely used solution to alleviate poverty in developing countries, provided that people living in poverty have mobile, financial, and information literacy. This article reports a 3-year-plus study of proposing, testing, customizing, and disseminating a practice-based, outcome-driven, and community-oriented social innovation in the form of a "unified mobile, financial, and information literacy toolkit" to public librarians in India, who can assess mobile, financial, and information literacy of the poor at once and enhance their mobile payment readiness. Public libraries can be a strategic partner of the United Nations and governments in developing countries for addressing the grand challenge of poverty in society.</p>
52	<p>Provence, M. A. (2020). Encouraging the Humanization of Patrons Experiencing Homelessness: A Case Study of the Role of the US Public Library Social Worker. <i>The Library Quarterly</i> https://doi.org/10.1086/710258, 90(4), 431–446.</p>	<p>At times, public library staff are overwhelmed with the needs of patrons experiencing homelessness that may go beyond the scope of their training. As a response, some libraries are hiring social workers. However, little is known about the role of the public library social worker. To address this gap, open-ended interviews and brief quantitative surveys of five public library social workers were conducted to explore the role of the public library social worker in its broad context as well as the specific context of patrons experiencing homelessness. Using a holistic and multiple case study design, a cross-case analysis was conducted. Findings include the conditions of social work practice within a library, the social worker's tools of engagement, the types of social work practice within a library, and their role in equipping library staff to have increasingly humanizing interactions with patrons experiencing homelessness.</p>
53	<p>Rafique, Hamaad, Anwer, Fozia, Shamim, Azra, Minaei-Bidgoli, Behrouz, Qureshi, Muhammad Ahsan and Shamshirband, Shahaboddin. "Factors Affecting Acceptance of Mobile Library Applications: Structural Equation Model"</p>	<p>Abstract: Acceptance and intention to use mobile applications in a library context is attracting a great deal of interest in education field. A sparse amount of research was conducted in mobile library applications (MLA) previously, investigating the influential factors of intention to use MLA. Research here aims to provide empirical support on acceptance of MLA, library access through mobile applications, with the model developed by taking a technology acceptance model (TAM) in MLA context by adding perceived mobility value, system accessibility and satisfaction for investigating the influence on behavioural intention to use MLA. A self-administrated cross-sectional survey was conducted to collect data from 321 users of MLA in the COMSATS Institute of Information Technology (CIIT) in Islamabad, while a structural equation model (SEM) using analysis of moment structure (AMOS) software was used for examining quantitative data. Results revealed that satisfaction and perceived ease of use are direct significant predictors of intention to use MLA, whereas system accessibility was influenced by the perceived ease of use. However, the perceived mobility value shows a weak effect on intention to use MLA in terms of perceived usefulness. Results serve as a guide for effective decision-making in development and resource allocation to ensure the success of the library's vision and mission.</p>
54	<p>Richter, S., Bell, J., Jackson, M. K., Lee, L. D., Dashora, P., & Surette, S. (2019). Public Library Users: Perspectives of Socially Vulnerable Populations. <i>Journal of Library Administration</i>, 59(4), 431–441. https://doi.org/10.1080/01930826.2019.1593711</p>	<p>Modern public libraries strive for inclusivity. Part of this effort involves enhancing staff capacity for engaging with socially vulnerable populations. This paper presents the outcomes of a study on library use by homeless adults, one of the most vulnerable of populations. The study employed a mix of methods. Part one was quantitative: a survey of library patrons. A second, qualitative phase involved focus groups – two of which were comprised of homeless patrons. Several areas of concern and need emerged, including physical space, safety, library services, and interactions with the library staff.</p>



55	Shtivelband, A., Spahr, K. S., Jakubowski, R., LaConte, K., & Holland, A. (2019). Exploring “STEM-Readiness” in Public Libraries. <i>Journal of Library Administration</i> , 59(8), 854–872. https://doi.org/10.1080/01930826.2019.1661744	Many public libraries are offering Science, Technology, Engineering, and Mathematics (STEM) programming to their patrons. Using data from a national survey of public library professionals, the current study examined the growing STEM movement by measuring “STEM-readiness” and through the lens of Diffusion of Innovations Theory. Results indicate that most libraries are ready to implement STEM programming. Characteristics of STEM-ready libraries included serving more patrons, having more space, and engaging more often with STEM programming. Such findings suggest that public libraries that have access to resources are more likely to be STEM-ready; whereas, those with fewer resources may need additional support.
56	Smith, C. (2019), "An evaluation of community-managed libraries in Liverpool", <i>Library Management</i> , Vol. 40 No. 5, pp. 327-337. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-09-2018-0072	Purpose – Community libraries now constitute a significant proportion of library provision in the UK; however, there is relatively little research on how the transfer to this model has affected those libraries and the wider balance of provision. The purpose of this paper is to broaden the discourse and understanding about the impact of changing libraries to community models. Design/methodology/approach – The paper provides a qualitative evaluation of all the libraries transferred to community-managed models within a large city council region in the UK. Structured research visits were made to appraise each library. These are discussed in the context of published literature and data, both specific to the study area and nationally. Findings – Transferring the management of libraries to community organisations is often reactive and perceived with negative associations. This study uncovers increases in use and diversification of services following transfer; however, support from the local authority and the previous experience of managing organisations are significant factors. The paper also reveals how the successful transfer of a library to a community organisation led to more being moved out of local authority control, but that the support they receive from the local authority can be inconsistent between them. Originality/value – The paper provides a study of community-managed libraries across a large city council area, affording an in-depth understanding of their impact on overall provision over one region. It will be of value to those involved in library management and service provision at both local and strategic levels, including local authorities and community groups considering library transfer.
57	Subramaniam, M., Scaff, L., Kawas, S., Hoffman, K. M., & Davis, K. (2018). Using technology to support equity and inclusion in youth library programming: Current practices and future opportunities. <i>Library Quarterly</i> , 88(4), 315–331. https://doi.org/10.1086/699267	This article extends prior work investigating public youth librarians’ efforts to incorporate digital media technologies into youth programming. We conducted interviews and focus groups with 92 youth-serving library staff working in public libraries across the United States. Using connected learning as a theoretical framework, our analysis revealed various ways that technology is used in youth-focused library programming, providing youth with opportunities to collaborate with peers and adults, to pursue their interests, and to exercise creativity through production-centered activities. Our analysis also revealed specific challenges facing public youth librarians in their efforts to leverage digital and networked technologies to create equitable, inclusive learning environments. This article contributes new empirical evidence demonstrating the specific roles that librarians can play in creating rich, technology-enabled environments for diverse youth patrons and the resources and supports librarians need to succeed in their efforts.
58	Tanner, A., Owens, O. L., Sisson, D., Kornegay, V., Bergeron, C. D., Friedman, D. B., Weis, M., & Patterson, L. (2016). Dodging the debate and dealing with the facts: Using research and the public library to promote understanding of the affordable care act. <i>Library Quarterly</i> , 86(2), 172–192. https://doi.org/10.1086/685401	This study reports on an innovative, community-based effort to promote awareness and understanding of the Affordable Care Act (ACA) through a public library system in one southeastern county. Specifically, this study assesses the current knowledge, perceptions, and communication sources and needs regarding the ACA among adults in one southeastern county in an effort to determine the feasibility of establishing the public library as a trusted and nonpartisan source of ACA-related information. Results of formative research are discussed, and campaign development activities are chronicled. Findings indicate that public libraries can serve as a hub of information on important health-related issues through their efforts to communicate with, educate, and engage with the communities they serve.



59	<p>Valadi-khorram, S., Amiri, M.R. and Saberi, M.K. (2021), "Evaluating the quality of health information services in public libraries: an experience from Iran", <i>Library Management</i>, Vol. 42 No. 3, pp. 197-213. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-01-2020-0001</p>	<p>Purpose – Considering the important role of public libraries in providing health information service as well as user feedback in improving the quality of health information services, the purpose of this study is to evaluate the quality of health information service in public libraries of Hamadan, Iran, on the basis of the modified LibQUAL model Design/methodology/approach – This practical research was conducted in an analytic-survey method. The statistical population consists of all members of public libraries of Hamadan over 18 years old (12,237 people), and the sample size is calculated to be 373 people. The stratified sampling method was used, and within each class, a convenience sampling method was used. The modified LibQUAL questionnaire was used to gather data. For checking normality of data distribution, the Kolmogorov–Smirnov test and for analyzing date, descriptive statistics and also Chi-square and Wilcoxon tests were applied using SPSS 25. Findings – The users’ minimum level of public libraries in all three dimensions is an average level. The users’ desired level of “information control” is higher than other dimensions. The users’ perceived level in dimensions of “human resources” and “information control” is high level, while users’ perceived level in “educational service” is an “average” level. There is a superiority gap between desired and perceived level in all dimensions, but the adequacy gap was seen only in the dimension of “educational service.” Research limitations/implications – In this study, the quality of health information services provided in public libraries is evaluated by the LibQUAL model. Practical implications – The results of this research can help managers and librarians of public libraries in measuring the quality of health information services and improving the quality of services provided by libraries. Besides, they can take a more accurate planning and pathologic approach, to eliminate the gap between minimum and desired expectations of users and libraries’ real services. Originality/value – In this study, the quality of health information services provided in public libraries is evaluated by LibQUAL tool.</p>
60	<p>van Kempen, S., van den Dool, A., Lindberg, P. and Parviainen, L. (2021), "Trends in the Dutch and Finnish library landscape", <i>Library Management</i>, Vol. 42 No. 3, pp. 167-183. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-03-2020-0040</p>	<p>Purpose – This paper aims to provide an overview of the current situation as it relates to library acts and prominent usage trends in public libraries in The Netherlands and Finland. Design/methodology/approach – The approach takes the form of a review of the relevant legislation, as well as statistical analysis from national library data in The Netherlands and Finland. Findings – The findings suggest that while we can see a decrease in physical lending and literacy, we also see an increase in the number of visitors, digital lending as well as activities and events. In addition, in The Netherlands, financial support is decreasing, while in Finland, expenditures of public libraries are growing. Originality/value – The paper draws upon various viewpoints from public libraries in The Netherlands and Scandinavia, focusing on Finland.</p>
61	<p>Wakeling, S et al. (2022) ‘The challenge now is for us to remain relevant’: Australian public libraries and the COVID-19 crisis. <i>International Federation of Library Associations and Institutions</i>. DOI: 10.1177/03400352211054115 2022, Vol. 48(1) 138–154</p>	<p>The COVID-19 crisis has had a significant impact on public libraries around the world. In Australia, almost all public libraries experienced some period of building closure, requiring libraries to adapt their services and delivery models. This article reports findings from a large-scale survey of public library managers in Australia, which was conducted in August 2020. In particular, it presents the results of a thematic analysis of the participants’ free-text responses to open questions asked as part of the survey. This analysis reveals important insights relating to responses to library closures, staffing issues, new and expanded services and programmes, relationships with parent bodies, and the role of public libraries during the crisis and beyond. While public libraries are perceived by managers to have been agile and adaptable, and to have utilised technology effectively, the findings clearly demonstrate the value to users of library buildings, with important consequences for understanding the role of public libraries.</p>
62	<p>Wanyan, Dengdeng and Dai, Yanqing. "Promoting Equal Access to Public Digital Cultural Services in China: Efforts and Challenges "</p>	<p>Abstract: With the development of information technology and the advent of the digital era, the digitization of cultural heritage and the internet-based equal access to the digitized heritage have received worldwide attention. Taking China as a case study, this paper reviews its efforts and challenges to promote equal access to public</p>



		<p>digital cultural services (PDCS). It starts by introducing the efforts, including PDCS-related legislations, policies and standards issued by the government, and major government-initiated PDCS projects. They are followed by an analysis of its challenges, including deficiencies in government funding, internet penetration, broadband access rates in the Central and Western regions and rural areas, and the limited digital literacy, cultural knowledge, and income levels of certain population groups. This study concludes with the suggestion that promoting equal access to PDCS in less developed regions, rural areas, and vulnerable groups is still an important task in China, and the government needs to work with private sector partners to overcome the challenges.</p>
63	<p>Xie, J. and Sun, L. (2021), "Public views on a new library project: a content analysis 2014–2019", <i>Library Management</i>, Vol. 42 No. 6/7, pp. 395–408. https://doi-org.nottingham.idm.oclc.org/10.1108/LM-10-2020-0137</p>	<p>Purpose – This study aims to investigate how the local residents viewed a new public library project in Macao through the analysis of newspaper articles published in 2014–2019 and how these views have changed the decision-makers in selecting a different site for the new library. Design/methodology/approach – Content analysis was used to analyze public views. 569 newspaper articles on the new library project published in local major newspapers from January 2014 to August 2019 were coded and analyzed. Percentage agreement for the two coders and Cohen’s Kappa were used to calculate the inter-rater reliability. Findings – The top 5 factors discussed in the newspaper articles were the general decision-making process (38.65%), location (18.20%), selection of the Old Court Building as the new library site (15.07%), budget (13.5%) and new library services (6.85%). The local residents tended to raise questions on the high cost, the appropriateness of the selected library site, the preservation of the local heritage buildings, and the role that the government should play in this project. Research limitations/implications – This study only collected and analyzed the data from the articles published in the major newspapers in Macao. Other types of media from sources such as Facebook were not included in this study. Articles containing similar information but from different newspapers were all counted as individual entries for data collection. The voices/options were not divided by groups. For further analysis, the articles could be separated by voices from politicians, librarians and other special interest groups. The chosen categories in this study were based on Voyant Tools and the authors’ interpretation/focus of the research question. The categories could be subdivided for further study. For example, the overall support of the project could be broken into full support, support with some minor reservations, support with major reservations, etc. And some articles currently in the neutral category with some degrees of support might fit into one of the above new sub-categories.</p>
64	<p>Yuen, K., & Liew, C. L. (2022). Examining Public Library Collaborative Partnerships with School Makerspaces and “Making Programmes.” <i>Journal of Library Administration</i>, 62(6), 793–809. https://doi.org/10.1080/01930826.2022.2102381</p>	<p>Scholarly investigations into the extent and nature of schools and public libraries collaborating in the “maker/making” space are scant. This research sets out to address this knowledge gap, by investigating the perspectives of public libraries’ staff: How public libraries and schools have worked together on makerspaces and “making” programmes, the motivations for and the nature of collaborations, and challenges that need addressing for successful collaborations, and their perceived outcomes of such collaborations. This study shows how through collaborating with schools, public libraries can make meaningful contributions to social and digital inclusion in their communities, fulfilling their roles as social institutions. Our findings highlight the importance of contextual flexibility to be considered in such collaborations, with partnering organizations negotiating a suitable model for working together. The roles and contributions of each party involved could be considered across spectrums of engagement, planning, resource-sharing, and activities, depending on the contextual needs, priorities, and requirements of the partnering institutions. We discuss how these can be achieved through dialogic communication for sustained partnerships.</p>



65	Zawiyah Baba & A. Abrizah (2018). Transformation strategies in community engagement: Selected initiatives by Malaysian libraries. <i>International Federation of Library Associations and Institutions</i> 2018, Vol. 44(2) 90–105. DOI: 10.1177/0340035218778435	This paper examines initiatives developed in Malaysian libraries to enhance library roles in promoting knowledge and technology exchange as well as community wellbeing. It explores how libraries in Malaysia are transforming society through community engagement and highlights initiatives undertaken by libraries that promote community access to collections, services, and events. The success of the initiatives is demonstrated in seven transformation strategy themes, namely; (i) embedded services; (ii) bridges and web technology; (iii) strategic and institutional partnering; (iv) rural libraries; (v) community libraries; (vi) asset-based community development; and (vii) international librarianship. While it is often cited that public libraries are those that serve the community at large, this paper provides the perspective from other types of library viewpoints, emphasizing that such community outreach services should not be limited to public libraries. The library science community at large, and especially academic libraries, must play a role in community engagement.
66	Zhang, Y., Chiu, D. K. W., Jiang, T., & Ho, K. K. W. (2022). Patrons' Satisfaction with Self-Service Public Libraries: A Demographic Study. https://doi.org/10.1086/718604 , 92(2), 188–206.	The physical role of public libraries as providers of cultural services in support of leisure and entertainment has been diminished due to the rapid development of internet technology and mobile web access. Modern self-service libraries in the form of reading spaces have become important practical innovations and responses by public libraries; however, few studies focus on patron satisfaction with these self-service libraries, especially in Asia. In this article, we discuss the results of a quantitative survey exploring patron satisfaction with the “City’s Study”—a form of self-service public library venue in Wenzhou, China. We also probe current problems with these self-service libraries and make suggestions to guide other public libraries that might create similar reading spaces in the future.
67	Zhao, Yuan, Wan, Yi and Chun, Jiao. "An Unbalanced and Inadequate Development of the Chinese Public Libraries' Public Culture Services: An Investigation of 31 Senior Library Specialists" <i>Libri</i> , vol. 71, no. 3, 2021, pp. 293-306. https://doi.org/nottingham.idm.oclc.org/10.1515/libri-2019-0188	Abstract: In response to the new principal contradiction between people’s growing needs for a better life and the inadequate and imbalanced development in different social fields in China, Chinese public libraries have fast developed Public Cultural Services (PCS) to meet users’ needs. This study investigates senior library specialists’ perspectives on unbalanced and inadequate development of Chinese public libraries’ PCS. The study collected data from 31 senior library specialists from 10 provinces or municipalities through online survey. In addition, eight experts from public libraries were also interviewed. The data reveals that the main roles of public libraries providing PCS include ensuring equal access to cultural resources, protecting cultural heritage, developing unique cultural products or service, and promoting public cultural products to ensure cultural diversity. Provincial and prefectural libraries take most of the PCS’ responsibilities while county, township, and village libraries’ responsibilities are less. Moreover, there is unbalanced development and inadequate development of library PCS in China. External factors such as economy development, government expenditure on cultural activities, and education development, and internal factors such as internal management weakness and libraries’ investment on cultural service are the top factors. This means that if Chinese public libraries want to better improve PCS, they should try to seek financial resource support and improve their internal management. This study is valuable for public library management and policymakers at different bureaucratic levels to understand issues of PCS in China. It also helps public libraries better learn their strengths and weaknesses in PCS.
68	Zhou, Lihong, Cui, Cheng and Luo, Ligu. "Multicultural Services in China’s Public Libraries for the Protection and Promotion of Ethnic Minorities’ Cultures: A Case Study "	Abstract: Despite the increasing focus on the protection and promotion of the cultures of ethnic minority groups in China, the multicultural services in China’s public libraries have not yet been strengthened. This paper reports on a research study that aimed to develop a framework of library multicultural services to serve as a conceptual basis for the development of these types of services in China’s public libraries and in particular for those libraries located in China’s ethnic minority regions. Yanbian Library, the regional central library of China’s Yanbian Korean Autonomous Prefecture, was selected as a case study, with 10 library professionals approached and interviewed using a semi-structured interview script. All interviews were digitally



		recorded, transcribed, and analysed using a thematic analysis approach. The analysis pointed to 21 multicultural services in five main themes: multicultural user services, multilingual collection development, development of multicultural service teams, marketing of multicultural services and management of multicultural services. Although this study is situated in China, the research findings are of potential interest to library and information professionals, educators and researchers worldwide.
69	Crawford Barniskis, Shannon (2016) Access and Express: Professional Perspectives on Public Library Makerspaces and Intellectual Freedom, Public Library Quarterly, 35:2, 103-125, DOI: 10.1080/01616846.2016.1198644	This study examines the roles of makerspaces and librarians in public libraries, as defined by nine librarians instituting makerspace services. It explores their understanding of creative spaces and library policy, specifically the foundational principles of intellectual freedom and access. Using constructivist discourse analysis tools, this study analyzes interview data to illuminate a concept of access grounded in expression, incorporating hands-on activities, tools, and social connections. This study has implications for practitioners and policymakers in reconsidering access as a positive liberty enabled by social contexts, and librarians' enzymatic roles in facilitating those contexts.
70	Bishop, Bradley Wade, Bharat Mehra & Robert P. Partee II (2016) The Role of Rural Public Libraries in Small Business Development, Public Library Quarterly, 35:1, 37-48, DOI: 10.1080/01616846.2016.1163971	ABSTRACT Like all public libraries, rural public libraries in the Appalachian region can play a significant role in the economic development of their communities. Economic development in rural communities potentially benefit from many of the same resources and services all enjoy at public libraries, including free and public Internet access, space, education, question answering, and materials on many business-related subjects. This article reports survey findings of current activities that rural public libraries perform in one state, namely the state of Tennessee, as a case study to apply the lessons and insights to other parts of the United States. The discussion includes assessment of activities and some recommendations to streamline and stimulate all public libraries in conducting this assistance efficiently.
71	Reid, Heather & Vivian Howard (2016) Connecting with Community: The Importance of Community Engagement in Rural Public Library Systems, Public Library Quarterly, 35:3, 188-202, DOI: 10.1080/01616846.2016.1210443	ABSTRACT While the topic of community engagement in public libraries has been researched in urban public library systems, little research explores community engagement in rural library systems. The Canadian province of Nova Scotia is largely rural and sparsely populated, with a dwindling and aging rural population. This report examines how community engagement can connect Nova Scotia's rural public libraries with their communities. Librarians from eight predominantly rural library systems across the province were interviewed regarding the community engagement practices currently being used within their libraries and how their patrons (particularly youth) were reacting and responding to these practices. This article synthesizes the information derived from these interviews and provides a summary of the community engagement efforts being made throughout Nova Scotia. This study ultimately determines that while librarians in rural communities face a number of challenges when attempting to implement community engagement (e.g., small budgets and low staffing numbers), they remain extremely passionate about the topic and dedicated to serving their communities in the most meaningful and relevant way possible.
72	Rubenstein, Ellen L. (2016) Health Information and Health Literacy: Public Library Practices, Challenges, and Opportunities, Public Library Quarterly, 35:1, 49-71, DOI:10.1080/01616846.2016.1163974	ABSTRACT This study investigated 18 libraries in two public library systems in Oklahoma to find out how they are addressing health literacy and facilitating access to consumer health information; how library staff members view their roles and responsibilities relative to health information and health literacy; what challenges libraries face; and what strategies are being used. Staff members recognized several challenges to providing health information and to developing programs, including staff and patron difficulties with reference interviews, and patron lack of awareness of library resources. Staff members often had only a partial understanding of health literacy, and were unaware of system strategies to address health literacy or provision of health information.



73	<p>Cole, Laura (2017) BiblioTech: Closing the Gap between Traditional and Digital Literacy, <i>Public Library Quarterly</i>, 36:3, 244-258, DOI:10.1080/01616846.2017.1339547</p>	<p>ABSTRACT In 2013, Bexar County launched BiblioTech, the first all digital public library in the United States. BiblioTech capitalizes on technology to reach beyond the library walls and integrate the public library in facets of everyday life previously unavailable through paper and print. At its core, BiblioTech changes the traditional understanding of how libraries operate. BiblioTech’s digital model prompts a paradigm shift and challenges the library to seek out new ways to serve otherwise disengaged patron populations. This article discusses the launch of BiblioTech—its impetus, mission, timeline, and challenges. The evolution of BiblioTech over its first four years of operation is presented, along with various community and intergovernmental partnerships that the library has forged in fulfillment of its mission. Finally, future opportunities and plans for development are also explored.</p>
74	<p>Goulding, Anne & Amanda Crump (2017) Developing Inquiring Minds: Public Library Programming for Babies in Aotearoa New Zealand, <i>Public Library Quarterly</i>, 36:1, 26-42, DOI: 10.1080/01616846.2017.1275600</p>	<p>ABSTRACT This article presents selected results of research exploring public library programming for very young children in Aotearoa New Zealand. We suggest that programming incorporating “active movement” principles and activities is expanding due to a growing understanding of the benefits that positive, interactive movement opportunities bring for babies’ development and future learning. A survey of public library services in Aotearoa New Zealand found that there is widespread provision of active movement programming for the 0–2 age group, and that respondents were aware of neuroscience research and how the public library service can support young children’s development through appropriate community-based programming</p>
75	<p>Johnson, Ted, Casey Van Haren & Michele Hjorting (2017) Sharing Our, Library Facility: Prescott Valley Arizona Public Library, <i>Public Library Quarterly</i>, 36:2, 154-166, DOI:10.1080/01616846.2017.1312198</p>	<p>ABSTRACT The present Prescott Valley Public Library facility was created in 2009 as a space that was meant to be shared. The building was designed to be aesthetically unique and people friendly. Key elements include an auditorium for Town Council, a multifunctional meeting room with a kitchen and multimedia projection capabilities, a roof top terrace, outside patios, PC lab, Digital Media Lab, and a variety of smaller gathering spaces. Additionally, we share our facility with a satellite campus of Northern Arizona University, which affords frequent opportunities to collaborate in novel ways to connect with our community. Sharing is a value we learn early in life and it is the hallmark of professional librarianship. It is challenging, sometimes frustrating work. But the rewards far outweigh the risks. Those rewards extend to every citizen in our shared, county network—Yavapai Library Network. Throughout this article, we present a variety of practical aspects related to our experience, which may guide and inspire others to share their library space within their community.</p>
76	<p>Lopez, M. Elena , Margaret Caspe & Christina Simpson (2017) Engaging Families in Public Libraries, <i>Public Library Quarterly</i>, 36:4, 318-333, DOI:10.1080/01616846.2017.1354364</p>	<p>ABSTRACT Public libraries today are undergoing significant transformations as well as interacting with patrons in new and different ways (Knight Foundation 2017). Part of this transformation is the way libraries are engaging entire families. Libraries are playing a stronger role than ever before in supporting families to promote children’s early literacy and reading skills (Celano and Neuman 2015; Nagle et al. 2016; Neuman and Celano 2010), stimulating adult learning (Boden and Tashijan 2015), creating initiatives to improve family health (Morgan et al. 2016), providing services to families with extreme challenges such as those experiencing poverty, homelessness, food insecurity, and incarceration (Holt and Holt 2010; Terille 2016), as well as becoming spaces for families, especially those who are recent immigrants, to build new relationships and social networks (Khoir et al. 2017; Vårheim 2014). Despite these efforts, few studies have specifically sought to understand the organizational dimensions that support family engagement within a library system and the potential that these efforts have in promoting children’s learning not only in the early years, but also into and throughout middle childhood and adolescence. Based on a yearlong study investigating the power of family engagement in public libraries, this article considers how libraries can begin to adopt a systemic approach to family engagement to further innovate the library space.</p>



77	Pressley, Tara (2017) Public Libraries, Serious Mental Illness, and Homelessness: A Survey of Public Librarians, <i>Public Library Quarterly</i> , 36:1, 61-76, DOI:10.1080/01616846.2017.1275772	ABSTRACT The purpose of this survey was to investigate the perceptions that public librarians have of their user populations with regard to serious mental illness and its relationship to homelessness. The results found that a large number of public librarians experience concerns about the impact of such users upon other users and about the potential violence in these populations. Public librarians who took the survey expressed an interest in learning more about serious mental illness and a wish to achieve greater awareness of serious mental illness that could help them in their interactions with users who are experiencing serious mental illness.
78	Bonnici, Laurie J. & Jinxuan Ma (2019) Public Library Engagement in Diffusing a Planned Community Health Initiative: A Dual Case Study, <i>Public Library Quarterly</i> , 38:2, 160-178, DOI:10.1080/01616846.2018.1559713	ABSTRACT Social determinants of health beckon partnerships to empower citizens to make healthy choices. This dual case study explores the roles of public library engagement in a planned community health initiative known as the Blue Zones (BZ) project. Two cases were examined through interviews, facility environmental scans, and passive footprinting. Results indicate a potential library role in promotion and support for community health initiatives. Findings reveal a need to increase librarians' awareness of social responsibilities beyond perceived professional boundaries, proactively collaborating with community agencies, and promoting community health initiatives through enhanced information access.
79	Wing, Kate (2019) Use of Self-Service Holds in Maine Public Libraries, <i>Public Library Quarterly</i> , 38:1, 85-102, DOI:10.1080/01616846.2018.1548895	ABSTRACT This study investigated self-service holds in Maine's public libraries. Survey data were collected to assess the trend, evaluate patron privacy, and associate implementation with the director's level of education. The results show that the four libraries with self-service holds breach patron privacy by connecting personally identifiable information with the item requested. This group was not large enough to correlate with the level of education. The results also reveal that some libraries considered implementation but did not because of privacy concerns. The findings invite further investigation into the connections among public library practice and ethics, professional education, and US law.
80	Real, B. (2021). Bridging Digital Divides during COVID-19: Findings from the 2020-2021 Connecticut State Library Digital Inclusion Survey. <i>Public Library Quarterly</i> , 40(4), 283–309. https://doi.org/10.1080/01616846.2021.1938918	This article presents findings from the 2020–2021 Connecticut State Library Digital Inclusion Survey. The primary purpose of this study was to determine what actions public libraries in Connecticut are already taking to meet the digital inclusion needs of their communities and what information and assistance they need to better meet these goals. However, since this study was launched during the COVID-19 pandemic, the author customized numerous questions to focus on how public libraries have adjusted their operations when patrons have had limited access to library buildings. Responses from public library representatives throughout the state show that libraries have used tactics such as delivering previously in-person public programs through video conferencing formats and shifting portions of their physical materials budget to support digital items.
81	Lenstra, N., & Campana, K. (2021). Spending Time in Nature: How Do Public Libraries Increase Access? <i>Public Library Quarterly</i> , 40(5), 425–443. https://doi.org/10.1080/01616846.2020.1805996	Research shows spending time in nature improves both physical and mental well-being. Practitioner-based resources reveal libraries offer programs to increase access to natural experiences. However, there is a lack of research that explores specifically how this works. This study begins to fill this gap by providing initial insight into what libraries offer. StoryWalk® and outdoor storytimes were the most common type of nature program, and programs offered for all ages and families were most frequently mentioned in resources analyzed. To support this trend, additional research on what is happening in public libraries to support access to nature is needed.
82	Garner, J., Mitchell, L., Bell, K., Lockwood, A., & Wardle, S. (2021). Social Work in Australian Public Libraries: An Interdisciplinary Approach to Social Justice. <i>Public Library Quarterly</i> , 40(6), 504–520. https://doi.org/10.1080/01616846.2020.1825917	Public library staff are increasingly required to work with members of the public with high social needs. Public libraries are places of sanctuary and connection for people experiencing challenges such as homelessness, poverty, mental illness, domestic violence and substance abuses. In recognizing their role to serve the needs of all people who enter their buildings, public library staff are often asked to work outside their areas of expertise to meet the needs of community members. Public library staff can experience feeling overwhelmed and anxious when working with this community, often wanting to help but not knowing where the boundary between providing support and undermining the self-determination of the individual lies, and



		<p>not knowing what resources and services would best meet the needs of these visitors. To assist patrons with high social needs and library staff, the City of Melbourne Libraries followed an approach now common in the United States of America, but largely untested in Australia by working with a local housing group to place a social worker in their City Library. This article explores the early work of the Library Social Worker as she engaged with library patrons and provided training to library staff. Using statistics and case notes that describe her activities and their outcomes, we can see that although this practice is new for the Australian public library system, the placement of a social worker into a busy urban library has significant benefits to both patrons in need and the staff who work with them.</p>
83	<p>Vardell, E., & Wang, T. (2022). Public librarians connecting communities to health insurance information. <i>Public Library Quarterly</i>, 41(2), 161–188. https://doi.org/10.1080/01616846.2020.1844535</p>	<p>This qualitative research study explored librarian experiences at libraries that received funding for Affordable Care Act outreach through the “Connecting You to Coverage” funding opportunity offered by the Public Library Association. The researchers conducted semi-structured interviews with 13 public library funding recipients to uncover more details about providing Affordable Care Act assistance, the specific services offered at participating libraries, approaches to connecting patrons with Navigators, and undertaking social media outreach efforts. The participants in this study shared creative approaches to using funding, outlined the benefits of partnering with local organizations, described the ways in which patrons engaged with librarians for assistance, and identified their strategies for evaluating these efforts. By identifying successful outreach strategies, the ideas presented in this study provide a springboard for other librarians hoping to undertake Affordable Care Act and health insurance information outreach.</p>
84	<p>Wilson, L. (2022). An Exploration of Ireland’s My Open Library Service. <i>Public Library Quarterly</i>, 41(4), 343–364. https://doi.org/10.1080/01616846.2021.1906614</p>	<p>Ireland’s recently implemented My Open Library (MOL) service is operating in 15 public libraries following initial trials in 2014. MOL consists of the provision of extended opening hours during which no library staff are present. In this study, semi-structured interviews were conducted with eight librarians from seven public libraries operating MOL to understand the uses and challenges of MOL. The findings show MOL’s popularity, user demographics, uses, staff absence, health and safety concerns, automated systems, increased workload, investment, expansion and improvements. This research has implications for key stakeholders of MOL as it provides an original contribution of practical value within the context of the government’s plans for expansion of the service. The findings also increase understandings of MOL and highlight recommendations as to how stakeholders may improve, expand and develop this socially significant public service. Future research can examine user demographics and preferences, the requirement for security guards during MOL hours and the concepts of equal access and expansion.</p>
85	<p>Hernández-Pérez, O., Vilariño, F., & Domènech, M. (2022). Public Libraries Engaging Communities through Technology and Innovation: Insights from the Library Living Lab. <i>Public Library Quarterly</i>, 41(1), 17–42. https://doi.org/10.1080/01616846.2020.1845047</p>	<p>Public libraries have proven for centuries to be infrastructures both stable enough as reference centers for access to knowledge yet plastic enough to respond to the social changes of the communities they serve. In these present times of transformation, during which digitalization and the intensive use of technologies are modifying the way in which knowledge is produced, public libraries are facing new and disruptive challenges. The emergence of certain innovation ecosystems within libraries, which place the community at the center of cocreation and codesign processes between different agents, has transformed some public libraries into encountering spaces. The Library Living Lab, in the Miquel Batllori Public Library of Sant Cugat del Vallès (Barcelona, Spain), is an expression of this systemic change. The following paper is a case study based on that sociotechnical infrastructure and analyzes, through two singular examples, how digital technologies can be drivers of social transformation when citizen engagement is placed at the center of innovation processes. The case study also provides insights into how public libraries may become key agents in fostering and strengthening social cohesion through situated, collective, and technology-based innovation practices.</p>



86	<p>Lenstra, N., Oguz, F., Winberry, J., & Wilson, L. S. (2022). Supporting Social Connectedness of Older Adults during the COVID-19 Pandemic: The Role of Small and Rural Public Libraries. <i>Public Library Quarterly</i>, 41(6), 596–616. https://doi.org/10.1080/01616846.2021.1970446</p>	<p>This article presents a national study of how small and rural public libraries supported social connectedness among older adults in the United States during the COVID-19 Pandemic. Results suggest that small and rural libraries employed five approaches to stay connected with older adults. Results further show that small and rural public libraries see establishing stronger inter-organizational partnerships with other institutions that serve older adults as a top priority. These results suggest a need for bolstering continuing education and professional opportunities focused on embedding public librarians more firmly into the broader field of practice of supporting aging in America</p>
87	<p>Vanessa Irvin & Wiebke Reile (2018) LINQing librarians for better practice: using slack to facilitate professional learning and development, <i>Public Library Quarterly</i>, 37:2, 166-179, DOI: 10.1080/01616846.2017.1396198</p>	<p>Public librarians face various factors that can affect professional practice: socio-cultural nuances of diverse information needs, isolation due to system-wide location and/or geography, and systemic disconnection from professional networking and learning opportunities. To address these factors, an inquiry-based professional development model called The Librarians' Inquiry Forum (LINQ) was devised and employed with a select group of Hawai'i-based public librarians via the cloud-based collaborative workspace platform, Slack, as a means of building a community-of-practice for professional learning and development. This article reports the evolution and early implementation of the LINQ model. Inquiry-based research often reveals data that raises more questions than answers. Questions raised from the reflective research performed with LINQ revealed ways in which the LINQ librarians learned "better" ways/approaches of practice. LINQ was found to be a viable method for enhancing public librarian professional development.</p>
88	<p>Jenny Bossaller & Kenneth Haggerty (2018) We Are Not Police: Public Librarians' Attitudes about Making and Intellectual Property, <i>Public Library Quarterly</i>, 37:1, 36-52, DOI: 10.1080/01616846.2017.1422173</p>	<p>This article presents findings from a survey and interviews with public librarians about intellectual property (IP) in makerspaces. The libraries had a variety of different makerspaces, including high-tech (3D printers and software), low-tech (Legos and craft supplies), and production spaces. Results found that librarians tend to show patrons where they can find information about IP, but that they are more concerned with patron privacy and take a hands' off approach to IP issues.</p>
89	<p>Mamathole Margaret Lediga & Madeleine C Fombad (2018) The use of information and communication technologies in public libraries in South Africa as tools for bridging the digital divide: the case of the Kempton Park public library, <i>Public Library Quarterly</i>, 37:3, 296-305, DOI: 10.1080/01616846.2018.1471964</p>	<p>The information and knowledge society has resulted in the exponential growth of information and communication technologies (ICTs), thus creating a gap between those who use ICTs and those who do not; hence the emergence of the term "digital divide" in the 1990s. One of the milestones of South Africa's National Development Plan, a policy that charts the country's development up until 2030, is to ensure that high-speed broadband internet is universally available at competitive prices. Notwithstanding the importance of ICTs in public libraries, the provision of such is still taking place on a limited scale in South Africa. This article investigates the use of ICTs in public libraries in South Africa as a tool in bridging the digital divide. It also examines the inequalities in access and use and suggests ways in which ICTs may be used to reduce the digital divide. A qualitative research methodology was adopted. In order for public libraries to function as an important tool in bridging the digital divide, there is a need to standardize the provision of public library services with regard to the digital divide.</p>
90	<p>Noah Lenstra (2018) Let's Move! Fitness Programming in Public Libraries, <i>Public Library Quarterly</i>, 37:1, 61-80, DOI: 10.1080/01616846.2017.1316150</p>	<p>Public libraries increasingly offer fitness programming, which includes yoga, running groups, and story times that involve exercise. This article assesses this trend by 1) analyzing the social forces that have led this programming to increase and 2) reviewing the literature about this programming. Fitness programming is being designed for all ages and abilities, and has benefits both for individuals and for communities. The article also reports on ongoing efforts to map the current state of fitness programming in North American public libraries, as well as to develop tools to better assess and develop this programming.</p>



91	Virve Miettinen (2018) Redefining the Library: Co-Designing for Our Future Selves and Cities, <i>Public Library Quarterly</i> , 37:1, 8-20, DOI: 10.1080/01616846.2017.1379348	Co-design approach gives us new possibilities to redefine libraries. Involvement of the community and users is an important avenue in creating an up-to-date library services that will be adaptable and flexible enough to meet the future. A well designed and user-friendly library can reflect a community's character back to itself, crystallizing who it is, in all its multiplicity, and what it stands for. Working together with the citizens around common goals is an important step in creating safer, healthier, happier and more inclusive communities and cities. Helsinki City Library has utilized customer-oriented methods for a long time already. However, in recent years, there has been a shift in thinking. Customer orientation used to mean examining citizens in panels and as targets of design, but nowadays library users themselves participate in planning and decision-making. The aim is to carry out true involvement processes, i.e., processes that have a direct impact on the services and organization. Codesign in library context means a process of collaborative knowledge sharing and solution creation, driven by a belief that everybody is creative and can contribute to planning when provided with knowledge and tools.
92	Tracey A. Overbey, Daniel S. Dotson & Molly Meyers LaBadie (2018) Public Libraries and Higher Education Combining Efforts to Create Quality Stem Children's Programs, <i>Public Library Quarterly</i> , 37:1, 21-35, DOI: 10.1080/01616846.2017.1391032	Science, Technology, Engineering, and Mathematics (STEM) fields are a major component of our society, and student success in STEM can lead to important opportunities and future careers. STEM education programs are important components to get children and youths interested in STEM fields and to instill in them STEM concepts. This article describes two successful Ohio urban STEM programs, produced as collaborations between public libraries and higher education institutions. Cleveland's Mean Green Science Machine focused on middle and high school-aged children while The Ohio State University (OSU) Science Café in Columbus focused on preschool and elementary school-aged children for its summer sessions. Recommendations for best practices for creating children's programming using STEM is provided.
93	Colin Rhinesmith & Christiana Lynne Urbano Stanton (2018) Developing Media Literacy in Public Libraries: Learning from Community Media Centers, <i>Public Library Quarterly</i> , 37:4, 420-440, DOI: 10.1080/01616846.2018.1525527	The rise of digital media labs and spaces for content creation in public libraries has been documented in the scholarly literature. However, fewer studies have investigated the outcomes of media literacy initiatives in community media centers (CMCs) and how they might inform similar programs and services in public libraries. This article reports findings from a study that used qualitative research to investigate the current goals and activities of CMCs across the United States. The findings show that the educational, social, and community benefits of these programs could be useful for public libraries to consider in developing or augmenting their own media literacy initiatives.
94	Ting Wang & Brady Lund (2020) Announcement Information Provided by United States' Public Libraries during the 2020 COVID-19 Pandemic, <i>Public Library Quarterly</i> , 39:4, 283-294, DOI: 10.1080/01616846.2020.1764325	This study synthesizes timely information about the COVID-19 virus and examines how public libraries have responded to the pandemic in real-time through their online announcements to the public. A content analysis of library announcements relating to the COVID-19 pandemic posted during the period of March 14– April 12, 2020, was performed. Over 90 percent of libraries announced a closure due to the pandemic and 98 percent libraries indicated programs were suspended. Over half of libraries posted about COVID-19 and general hygiene practices. Many announcements changed in terms of content from March 14 to April 12, demonstrating the rapidly evolving nature of the pandemic. This study suggests that libraries can and do play an important role in providing reliable information about pandemics like COVID-19 for patrons.
95	Ken Williment (2020) It Takes a Community to Create a Library, <i>Public Library Quarterly</i> , 39:5, 410-420, DOI: 10.1080/01616846.2019.1590757	Over the course of four years, Working Together Community Development Librarians in Vancouver, Regina, Toronto and Halifax worked in diverse urban neighborhoods and with diverse communities, traditionally considered marginalized or socially excluded. This practitioner-community-based project allowed community voice to drive the projects process, not librarian generated beliefs, literature or other professional discourse. The Working Together Project conceptualized and reviewed the traditional library service planning model and developed a new community-based service model: the Community-Led Service Planning Model. Community-led service



		<p>planning builds upon the traditional library service planning model and provides a new method that brings library staff together with community members in an effort to identify and meet community needs. Socially excluded community members are involved in each step of the community-led service development process, from needs assessment to evaluation. This non-prescriptive model is flexible and can be applied in all library settings, by all librarians, and to all program and service development.</p>
96	<p>Kathleen Campana, Jacqueline Kociubuk & J. Elizabeth Mills (2020) Making Space for Storytime: The Role of the Environment in the Production of Storytime, <i>Public Library Quarterly</i>, 39:2, 140-156, DOI: 10.1080/01616846.2019.1622396</p>	<p>This article reviews the findings from Project VIEWS2, a four-year IMLS-funded study that examined the early literacy impact of public library storytimes, and provides detail on a secondary analysis of storytime spaces that was done using the Project VIEWS2 dataset. The storytimes spaces were explored by looking at the spatial quality, physical literacy environment, and seating of attendees, as these characteristics have been identified as important aspects of early childhood learning environments. Findings across these three characteristics are presented as well as implications and recommendations for more effective storytime practice and space design.</p>
97	<p>Beth Crist, Courtney Vidacovich Donovan, Miranda Doran-Myers & Linda Hofschire (2020) Supporting Parents in Early Literacy through Libraries (SPELL): An Evaluation of a Multi-Site Library Project, <i>Public Library Quarterly</i>, 39:2, 89-101, DOI:10.1080/01616846.2019.1622070</p>	<p>The Supporting Parents in Early Literacy through Libraries (SPELL) project was initiated to evaluate the effectiveness of early literacy programs in libraries. Eight Colorado libraries developed and implemented year-long early literacy programs targeting parents of children ages zero to three. Pre- and postsurveys were conducted to determine the effect of these programs on the early literacy habits of participating parents. The survey results indicated that after participating in the SPELL prototype programs, respondents reported increased knowledge of and engagement in early literacy activities.</p>
98	<p>Pia Margaret Gahagan & Philip James Calvert (2020) Evaluating a Public Library Makerspace, <i>Public Library Quarterly</i>, 39:4, 320-345, DOI: 10.1080/01616846.2019.1662756</p>	<p>This study explores how one public library assesses the outcomes of a makerspace and examines whether the approaches taken can be justified as appropriate. An increasing number of public libraries throughout the world are establishing makerspaces, and to date there is little literature on how outcomes of these services are assessed. This study explores the methods that are being used, making comparisons to best practice revealed in the literature. The project is a case-study of the Central City Library makerspace (Auckland Libraries, New Zealand). The study collected evidence from documents, archival records, and interviewees. The findings revealed that while efforts are being made to assess the outcomes of makerspaces, methods and techniques are primarily informal. Current formal reporting relies upon quantitative measurement, such as visitor or participant numbers, which fails to capture the effects of the service on users. The implication is that staff may develop more structured and formalized approaches to assessing the outcomes of makerspaces. Further research could include the design of a prototypical outcomes assessment model that is then tested on a public library makerspace to determine the practicality of the approach.</p>
99	<p>Laura Kelly Clark Hunt (2020) Caregivers' Motivations for Attending Emergent Literacy Programming in Public Libraries: Qualitative Analysis of Three Case Studies, <i>Public Library Quarterly</i>, 39:5, 471-485, DOI: 10.1080/01616846.2019.1684784</p>	<p>Public libraries are an important resource for emergent literacy development. Emergent literacy is the behavior a child exhibits relative to books and reading before the child is able to decode words. A distinctive feature to public libraries is the free and equal access they offer to the public and specifically caregivers of very small children. Libraries house large quantities of print and electronic resources that give children the opportunity to have meaningful literacy experiences that are necessary for reading development. These experiences have a significant impact on emergent literacy development. While literature demonstrates the importance of public libraries for small children, caregivers may not know about the impact of print-rich environments on emergent literacy skills. These interviews with caregivers reveal that most of them attend public library-emergent literacy programming for many other reasons than developing emergent literacy skills and exposure to a print-rich environment.</p>



10 0	Scott Sikes (2020) Rural Public Library Outreach Services and Elder Users: A Case Study of the Washington County (VA) Public Library, <i>Public Library Quarterly</i> , 39:4, 363-388, DOI: 10.1080/01616846.2019.1659070	Outreach services provided by rural public libraries are crucial to fulfilling their mission to provide information access to the widest array of user groups. Particular socioeconomic and geographic factors in rural areas present challenges of access to information resources, yet there exists only a limited amount of published scholarly work examining outreach services provided specifically by rural public libraries. This case study of outreach services to elder users offers contextual evidence for the centrality of social equity and access to the larger work of rural public libraries. Primary data were collected through four semi-structured focus group meetings conducted with elder users of the agency's outreach services as well as through narrative interviews with six agency staff members. Principal findings showed that elder users had particular information needs related to entertainment and intellectual stimulation, challenges of transportation, and a limited access to technology and internet service. WCPL outreach services were found to positively impact the lives and general well-being of elder users by providing vital social and community connections and serving as a key link for elder users to an institution understood to be central to the life of the community in genera
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Appendix C. General papers addressing the role of public libraries and innovation

This appendix provides a list of general papers that are of interest for the LibrarIN project - This includes, for example, papers with a broad conceptual/theoretical focus (including theoretical typologies), review papers, and papers that provide a historical overview on the long-term development of public libraries.

No.	Article and reference	Topic / Key arguments
1	Arlitsch, K., & Newell, B. (2017). Thriving in the Age of Accelerations: A Brief Look at the Societal Effects of Artificial Intelligence and the Opportunities for Libraries. <i>Journal of Library Administration</i> , 57(7), 789–798. https://doi.org/10.1080/01930826.2017.1362912	Offers some thoughts on the effects of automation on employment, the social and political fallout, and the threats and opportunities for academic and public libraries.
2	Barchas-Lichtenstein, J., Norlander, R. J., Fraser, J., Fournier, M. D., Voiklis, J., Nock, K., & Danter, E. (2020). Categorizing library public programs. <i>Library Quarterly</i> , 90(4), 563–579. https://doi.org/10.1086/710259	Presents a framework to characterize public programs offered by US libraries. The resulting framework considers library profile, program characteristics, audience characteristics, and program administration to understand who programs affect, how those people are likely to be affected, and the institutional impact of library public programs.
3	Barniskis, S. C. (2016). Deconstructing the mission: A critical content analysis of public library mission statements. <i>Library Quarterly</i> , 86(2), 135–152. https://doi.org/10.1086/685403	Analyses how public libraries define themselves in their mission statements, revealing a range of benefits, values, roles, and institutional stand-points.
4	Bertot, J. C., Real, B., & Jaeger, P. T. (2016). Public Libraries Building Digital Inclusive Communities: Data and Findings from the 2013 Digital Inclusion Survey. <i>Library Quarterly</i> , 86(3), 270–289. https://doi.org/10.1086/686674	This article presents key data, findings, and analysis from the 2013 Digital Inclusion Survey, which is a national study of the ways in which public libraries promote digital inclusion in their communities
5	Bossaller, J. S. (2017). Alternatives to apathy and indifference: civic education in public libraries. <i>Library Quarterly</i> , 87(3), 195–210. https://doi.org/10.1086/692297	Discusses what public librarians can and should do to contribute to civic education



6	Buchanan, S., Gibb, F., Simmons, S., & McMenemy, D. (2012). Digital library collaboration: A service-oriented perspective. <i>Library Quarterly</i> , 82(3), 337–359. https://doi.org/10.1086/665930	Reports on UK public library collaboration, with a particular focus on emergent digital services (i.e., services or digital resources accessed and/or provided via digital transaction), and asks, what services, with whom, and how
7	Buschman, J. (2017). The library in the life of the public: Implications of a neoliberal age. <i>Library Quarterly</i> , 87(1), 55–70. https://doi.org/10.1086/689314	Discusses what, now, is the library in the life of its public(s)? Argues that in order to undertake this analysis, some practical definition of libraries' public(s) must be clarified, and how they might have changed in recent (neoliberal) times.
	Buschman, J. (2020). Education, the Public Sphere, and Neoliberalism: Libraries' Contexts. https://doi.org/10.1086/707671 , 90(2), 154–161.	
	Catherine Smith (2022). Automating intellectual freedom: Artificial intelligence, bias, and the information landscape. <i>International Federation of Library Associations and Institutions 2022</i> , Vol. 48(3) 422–431. DOI: 10.1177/03400352211057145	Analyses how the introduction of artificial intelligence into the resource description process creates an opportunity to reshape the digital information landscape—and loss of trust by library users.
	Chase, S. (2021). Innovative Lessons from Our Small and Rural Public Libraries. <i>Journal of Library Administration</i> , 61(2), 237–243.	Provides info about innovations in rural and public libraries from the perspective of librarians.
	Engström, L., & Dahlquist, L. O. (2020). The Will to Activate Library Users and the Making of Citizens: How Different Rationalities Influence the Notion of Participation in a Library Context. https://doi.org/10.1086/708960 . https://doi.org/10.1086/708960	How the notion of participation informs policy documents in a public library context
	Filar Williams, B., & Folkman, M. (2017). Librarians as Makers. <i>Journal of Library Administration</i> , 57(1), 17–35. https://doi.org/10.1080/01930826.2016.1215676	Summarises maker movement for libraries and suggests a route to success through a case study
	Gorham, U., & Bertot, J. C. (2018). Social Innovation in Public Libraries: Solving Community Challenges. https://doi.org/10.1086/697701 , 88(3), 203–207.	Editorial text: aims to frame and define the concept of social innovation in library context



<p>Gorichanaz, T., & Turner, D. (2017). All the community's a stage: The public library's part in community information provision. <i>Library Quarterly</i>, 87(2), 99–116. https://doi.org/10.1086/690737</p>	<p>Analyses the role and the value of the public library in community information provision (and how it has changed)</p>
<p>Hall, K., & McAlister, S. (2021). Library Services and Resources in Support of Mental Health: A Survey of Initiatives in Public and Academic Libraries. <i>Journal of Library Administration</i>, 61(8), 936–946. https://doi.org/10.1080/01930826.2021.1984137</p>	<p>Explores the types of resources and services put in place by academic and public libraries to address issues around mental health and emotional well-being. The findings show that public and academic libraries have established a wide range of activities to support the needs of the communities they serve.</p>
<p>Harsanto, Budi (2021) Innovation Management in the Library: A Bibliometric Analysis . <i>Library Philosophy and Practice</i> (e-journal). 5908. https://digitalcommons.unl.edu/libphilprac/5908</p>	<p>A bibliometric exercise on management practices.</p>
<p>Hider, P., Garner, J., Wakeling, S., & Jamali, H. R. (2022). Serving Their Communities: An Analysis of Australian Public Library Mission Statements. <i>Journal of Library Administration</i>, 62(2), 190–205. https://doi.org/10.1080/01930826.2022.2026120</p>	<p>Analyses the roles that Australian public libraries are aiming to play in their communities, via analysing mission statements from a sample of fifty public library networks.</p>
<p>Hernández-Pérez, O., Vilariño, F., & Domènech, M. (2022). Public Libraries Engaging Communities through Technology and Innovation: Insights from the Library Living Lab. <i>Public Library Quarterly</i>, 41(1), 17–42. https://doi.org/10.1080/01616846.2020.1845047</p>	
<p>Jaeger, P. T., Bertot, J. C., & Gorham, U. (2013). Wake up the nation: Public libraries, policy making, and political discourse. <i>Library Quarterly</i>, 83(1), 61–72. https://doi.org/10.1086/668582</p>	<p>Investigates how public libraries are heavily affected by political and policy-making processes - - with the explosion of information policy decisions in the past two decades significantly increasing the responsibilities of libraries while also increasing limitations on their activities. Argues that research has paid scant attention to these issues over time.</p>



<p>Jaeger, P. T., Gorham, U., Taylor, N. G., & Kettnich, K. (2020). Ninety Years On: Reflections on the Evolutions of Libraries. https://doi.org/10.1086/707668, 90(2), 105–107.</p>	<p>Editorial text: special issue dedicated to analyse the evolution of libraries</p>
<p>Jaeger, P. T., Shilton, K., & Koepfler, J. (2016). The Rise of Social Justice as a Guiding Principle in Library and Information Science Research. https://doi.org/10.1086/684142, 86(1), 1–9.</p>	<p>How the social roles and responsibilities of cultural heritage institutions such as public libraries has expanded.</p>
<p>Jaeger, P. T., Thompson, K. M., & Lazar, J. (2012). The Internet and the Evolution of Library Research: The Perspective of One Longitudinal Study. 82(1), 75–86. https://doi.org/10.1086/662944</p>	<p>Considers the coevolution of the Internet, public libraries, and public library research through the lens of the historical evolution of the methods of the Public Library Funding and Technology Access study</p>
<p>Jones, S. (2020). Optimizing Public Library Resources in a Post COVID-19 World. <i>Journal of Library Administration</i>, 60(8), 951–957. https://doi.org/10.1080/01930826.2020.1820281</p>	<p>Compares the impact on libraries and library services of the COVID-19 pandemic with past economic crises. Proposes a significant paradigm shifts for the role of public libraries.</p>
<p>Kranich, N. (2020). Libraries and Democracy Revisited. https://doi.org/10.1086/707670, 90(2), 121–153. https://doi.org/10.1086/707670</p>	<p>Reassess the relationship between libraries and democracy in the twenty-first century.</p>
<p>MacDonald, C. M. (2017). “It Takes a Village”: On UX Librarianship and Building UX Capacity in Libraries. <i>Journal of Library Administration</i>, 57(2), 194–214. https://doi.org/10.1080/01930826.2016.1232942</p>	<p>Analyses whether and how libraries should adopt a user-centered mindset.</p>
<p>Mathiasson, M. H., & Jochumsen, H. (2020). Between Collections and Connections: Analyzing Public Library Programs in Terms of Format, Content, and Role and Function. https://doi.org/10.1086/708963, 90(3), 364–379.</p>	<p>Presents an empirically based and textually grounded analytical model to assess programs offered by Danish public libraries</p>
<p>Merga, M. K. (2017). Meeting the Needs of Avid Book Readers: Access, Space, Concentration Support and Barrier Mitigation. <i>Journal of Library Administration</i>, 57(1), 49–68. https://doi.org/10.1080/01930826.2016.1185854</p>	<p>Discusses how to support those who want to come to libraries to just read? (An interesting take on the topic: libraries have changed so much that they need to defend the services for those who just want to read)</p>
<p>Otonicar, S. L. C., da Silva, R. C., & Barboza, E. L. (2018). The contributions of information and media literacy to public hybrid libraries. <i>Library</i></p>	<p>Examines how information literacy and media literacy contribute to the services offered by Brazilian and British public hybrid</p>



	<p>Quarterly, 88(3), 225–236. https://doi.org/10.1086/697703</p>	<p>libraries focused on citizenship and lifelong learning.</p>
	<p>Schlak, T. (2020). Libraries and Leaders as Creators of Authentic Community: Shifting Our Story from Isolation to Ownership. <i>Journal of Library Administration</i>, 60(6), 645–652. https://doi.org/10.1080/01930826.2020.1773714</p>	<p>Discusses how library leaders and workers can build on the authentic concern we hold for our community’s wellbeing by fostering libraries as places for community transformation, regardless of library type. Argues that the shift from a retributive agenda to a restorative one where citizens reclaim their power and leaders’ job is transformed from solving problems to convening powerful conversations becomes the work of libraries and leaders.</p>
	<p>Snead, J. T. (2014). Public libraries, evaluation, and E-Government. <i>Library Quarterly</i>, 84(4), 467–480. https://doi.org/10.1086/677782</p>	<p>Discusses how technology transformation and democratic self-governance, supported with e-government, creates the need for public libraries to reevaluate how they develop, manage, and deliver government information services, resources, and programming to the communities and organizations they serve.</p>
	<p>Subramaniam, M., & Braun, L. W. (2021). Crisis-Related Research in Service to Practice: Researchers Step Up. https://doi.org/10.1086/711630, 91(1), 5–18.</p>	<p>Editorial: how public libraries are responding to the present crises (Covid globally, and systemic racism/police brutality in US)</p>
	<p>Summers, S., & Buchanan, S. (2018). Public libraries as cultural hubs in disadvantaged communities: Developing and fostering cultural competencies and connections. <i>Library Quarterly</i>, 88(3), 286–302. https://doi.org/10.1086/697707</p>	<p>Addresses an understudied topic of the sociocultural role of public libraries in stimulating cultural consumption, participation, and engagement in disadvantaged communities.</p>
	<p>Todorinova, L. (2021). One Year In: A Survey of Public Services Librarians on the Effects of the COVID-19 Pandemic. <i>Journal of Library Administration</i>, 61(7), 776–792. https://doi.org/10.1080/01930826.2021.1972728</p>	<p>The author surveyed 145 librarians regarding the impact of the COVID-19 pandemic.</p>



	<p>Vårheim, A. (2014). Trust in libraries and trust in most people: Social capital creation in the public library. <i>Library Quarterly</i>, 84(3), 258–277. https://doi.org/10.1086/676487</p>	<p>Analyses how uncorrupt public institutions, such as libraries, have positive effects on trust and social capital. The mechanisms that generate trust, however, remain largely unspecified. Therefore, research describing micro-level processes is needed to uncover the mechanisms creating trust.</p>
	<p>Willett, R. (2016). Making, makers, and makerspaces: A discourse analysis of professional journal articles and blog posts about makerspaces in public libraries. <i>Library Quarterly</i>, 86(3), 313–329. https://doi.org/10.1086/686676</p>	<p>Focuses on current discussions about public library makerspaces, and reveals how common themes are being discursively constructed in relation to the future of public libraries, maker cultures, and informal learning.</p>
	<p>Winberry, J., & Potnis, D. (2021). Social innovations in public libraries: Types and challenges. <i>Library Quarterly</i>, 91(3), 337–365. https://doi.org/10.1086/714315</p>	<p>Identifies six types of means-related and goals-oriented social innovations by public libraries.</p>
	<p>Wojciechowska, M., & Topolska, K. (2021). Social and Cultural Capital in Public Libraries and Its Impact on the Organization of New Forms of Services and Implementation of Social Projects. <i>Journal of Library Administration</i>, 61(6), 627–643. https://doi.org/10.1080/01930826.2021.1947053</p>	<p>Argues that public libraries are institutions of culture that, apart from their basic tasks, may also perform various social functions. - -the research analyzed the attitudes of public librarians and compared them to the attitudes of librarians working in other types of libraries.</p>
	<p>Yatcilla, J. K., & Young, S. (2021). Library Responses During the Early Days of the Pandemic: A Bibliometric Study of the 2020 LIS Literature. <i>Journal of Library Administration</i>, 61(8), 964–977. https://doi.org/10.1080/01930826.2021.1984139</p>	<p>Provides an initial glimpse into the impacts of the pandemic on library operations, services, collections, and the workforce.</p>



Annex 2. Literature Review on Innovation in Academic Libraries



**HORIZON-CL2-2021
HORIZON-CL2-2021-HERITAGE-01-02**

**LibrarIN [101061516]: Value Co-creation and Social Innovation
for a new Generation of European Libraries**



**WP2 Task 2.1
Literature Review on Innovation
in Academic Libraries**

Ernesto Solano UAH
Luis Rubalcaba UAH





Background

As proposed by the LibrarIN project, the objective of the literature review in Task 2.1 is to “identify current frameworks for understanding and enacting academic library service reform and assess the strength of each of these frameworks against LibrarIN criteria” (p. 34). In this sense, a search has been carried out to understand the degree of research in innovation in academic libraries in recent years, identifying which are the main areas of transformation as well as the relevance of aspects such as co-creation, participation, collaboration and social innovation within innovation in academic libraries. The specific objectives of the search and the hypotheses raised in it will be explained in a following section (1.2).

This document is based on a description of the survey method that VTT has developed and applied to carry out Task 2.1. 'Baseline definition and mapping' to collect and review existing research on recent developments in libraries. These survey methods provided the data for the literature review. In this sense, this literature review follows the same structure and objectives as those proposed by VTT (2023). However, this work focuses its attention on a set of key findings on the literature on innovation in academic libraries, showing the interest that this has for the LibrarIN project and the great development of innovative elements that are rigorously studied, in some cases through complex models and statistical studies

The survey and subsequent literature review conducted focuses on academic libraries. Which are conceived as places where technology, collaboration, participation and co-creation can be fostered for the generation of service innovations (Evener 2015, Islam et al 2015, Fletcher 2020, Jadhav and Shonoy 2020, Yuan et al 2023). Thus, demonstrating their interest in the LibrarIN project.

This area of study has had a great development in the last 10 years, proof of this is that 77.41% of the papers selected in the final sample of the review (301 papers) have been written since 2013. The literature found in the survey is rich, there is a significant study of topics such as digital transformation, library 2.0, living labs or the importance of knowledge management within innovation in academic libraries. The presented survey findings and review are of great interest to other partners in the packages of Digitization, Social Networks, Living Labs, Metrics and to the project in general. To this end, the results are presented in such a way that they serve as insights for the members of the entire project.



Findings of an explorative search:

The review began with an exploratory search in January 2023 to meet the following tasks set by the VTT (2023) methodology:

- 1) Map the journals where innovation in academic libraries is discussed,
- 2) Define the main topics of interest within innovation research in academic libraries
- 3) identify a set of keywords for the review literature on innovation in academic libraries.

Following the VTT (2023) methodology, the explorative search involved two activities. First, two databases were defined in which there was access to impact publications in specialized magazines on the subject in question. These databases were: the Web of Science Core Collection and the Scimago Journal ranking database. Articles with the most citations as well as the most recent articles were examined to understand how innovation and its main topics are addressed within academic libraries, this allowed us to define which are the main topics that are dealt with, at the same time as establishing some keywords to better guide the searches. Second, a set of searches was carried out using the keywords "innovation in academic libraries", "knowledge management in academic libraries", "transformation in academic libraries", "digital transformation in academic libraries".

Likewise, VTT (2023) proposes to highlight the main insights obtained from the exploratory search, which in our case were: First, there is an important development of innovation theories within academic libraries (Storey 2015, Zaugg et al 2018, Otike et al 2022). When reading the titles, abstracts and keywords of the most important papers, words like "service innovation", "co-creation", "digital transformation", "collaboration" "partnerships" or in some cases "User experience" could be found, some studies on the barriers to innovation in academic libraries or innovation theories applied to academic libraries were also found. From here, the decision was made to take a broad base for the literature review, so that the possibility of carrying out a bibliometric in order to better understanding of the research carried out on the subject.

The second insight has to do with the importance of knowledge management in the services innovation in academic libraries (Islam et al 2017, Koloniari et al 2018, Xiao 2020). Some studies have determined a positive relationship between knowledge Management and innovation in academic libraries (Islam et al 2017), which has aroused interest in other topics such as knowledge innovation or knowledge creation within the research field. In addition, there is also research on how digital transformation and knowledge management feed each other. (Islam et al 2014, Rafi et al 2022)

A third insight refers to the large number of digitization and digital transformation issues that are handled within academic libraries (Okunlaya 2022, Kakhki 2022). There is a rich variety of digital transformation topics in academic library services: information technology, artificial intelligence, use of radio frequencies, Internet of Things, robots, BlockChain, e-services or Cloud Computing among



others. In addition, there are digital transformation issues that are conceptually related to collaboration and value creation through the joint and coordinated work of various actors, such as Library 2.0 and Smart Libraries. Thus, technological innovations in academic libraries tend to have a social and collaborative aspect.

Finally, interesting papers were found on the relevance of academic libraries with innovation hubs, learning spaces and favorable places to establish social networks (Restivo 2014, Leebaw and Tomlinson 2020, Garoufali and Garoufallou 2022). Academic and university libraries have often become meeting spaces for society, giving rise to concepts such as markerspaces, learning spaces, innovation communities or library living labs, which speaks of the importance of academic libraries for innovation. These insights, in addition to the fact that models, statistical studies and case studies were also found in the exploratory search, served as a foundation to better outline the research and define the core topic and keywords that would be used in the literature review.

Objectives and hypothesis of the literature review

Given the large number of items of interest found in the exploratory search, it was decided to elaborate of a database that would allow offering insights to different WP of the Librarin project. Said database had to meet the following objectives derived from VTT (2023)

1. Define which are the core topics in the literature of innovation in academic libraries in recent years
2. Set the WP of Librarin Project to which the articles found are related (digitalization, living labs, metrics, social networks)
3. Define what are the key elements of papers in terms of innovation

A literature review procedure was designed to help identify key elements of interest to the project. (see table 1). In this sense, the core innovation topics covered by the papers would be identified, as well as the WP of interest to the project, the specific topics of the papers, if the papers study the co-creation of value and in what space (physical, digital or social) innovation is taking place. At this point, it is expected to find a significant number of papers that have more than one core topic, more than one WP of interest or cover more than one space, so that it can be defined, for example, which innovative topics involve digital transformations with a social matter, understanding this scope of the project will be of great interest to the literature review.



Table 14: Elements collected in the database

Core Topic	LibrarIN WP	Specific topic	Co-creation Dimension	Method	Space
<ul style="list-style-type: none"> • Service Innovation • Social Innovation • Technological innovation • General Innovation 	<ul style="list-style-type: none"> • Digitalization • Social Networks • Living Labs • Metrics • General 	The specific topic the paper is about	<ul style="list-style-type: none"> • collaboration • participation • co-creation • cooperation 	<ul style="list-style-type: none"> • General • Conceptual • Statistics • Case study • Review 	<ul style="list-style-type: none"> • Physical • Social • Digital

Based on what was stated in the exploratory search, a search strategy has been proposed that is based on keywords that will allow obtaining the necessary information, the keywords are the following:

1. Innovation
2. Digital transformation
3. Smart Libraries
4. Library 2.0
5. Third places
6. Co-creation
7. Living labs
8. Social innovation

Finally, based on the first insights found, the following hypotheses have been proposed to verify in the literature review

1. Innovation and service innovation has an important theoretical and practical development in the field of academic libraries (Scupola and Nicolajsen 2010, Islam et al 2015, Bech-Petersen 2016, Mattke et al 2022)
2. Research on digital transformation and innovation in academic libraries contemplates an important element of collaboration, user participation and co-creation (Holmberg 2009, Bomhold, 2014, Jadhav and Shenoy 2020, Yuan and Yang 2023)
3. Research on innovations in academic libraries may have a social and associative element (Ferreiro and Muga 2008, Schopf et al 2014, Leebaw and Tomlinson 2020)



4. Innovations in academic libraries can involve social, physical and digital aspects at the same time. (Hyytinen et al 2022, VTT 2023),
5. Knowledge management plays a very important role in research on innovation in academic libraries (Islam et al 2017, Koloniari et al 2018, Xiao 2020)

Key decisions related to the selection criteria for the target data bases, papers, and timeframe are discussed below.

The selection of databases, papers and time period

Due to the large amount of literature found on innovation in academic libraries, the two databases of scientific articles with the greatest impact were selected: Web of Science Core Collection and the Scimago Journal ranking database. Using the keywords in these two databases, it has been possible to find the most relevant papers and journals on the subject investigated.

As VTT (2023), in this section we describe the criteria used for (a) papers and (b) time period selection

Papers

In order to find the elements established in Table 1. The titles, abstracts and keywords of the papers that yielded the search with keywords in the databases were read, this allowed selecting the research papers that were really related to innovation and transformation within academic libraries, at the same time that it was verified that there are concepts such as "digital libraries" that are not necessarily of interest to the LibrarIN project, since they belong to the world of computing, programming and informatics.

The search focused on the category 'Library and Information Sciences', this being the one with the most research present in the transformation of services in academic libraries, this allowed us to identify those journals that are most related to innovation in academic libraries (table 2). On the other hand, papers published in categories such as "management", "economics" or "public administration" were also searched, resulting in the fact that research on the subject in journals of this category is practically non-existent. In addition, this allowed us to verify the position and impact of the journals with the most publications within the JCR ranking.

Among the elements that can be found among the selected papers are:

- (a) general description of some kind of innovation or transformation of academic library services,
- (b) cases study about a specific academic library in which some innovation or transformation has been implemented,



- (c) a statistical or metric study that studies the impact or relevance of innovations or transformations within academic libraries, or
- (d) a theoretical and conceptual model on innovations in academic libraries.

Table 2: Main journals on innovation in academic libraries

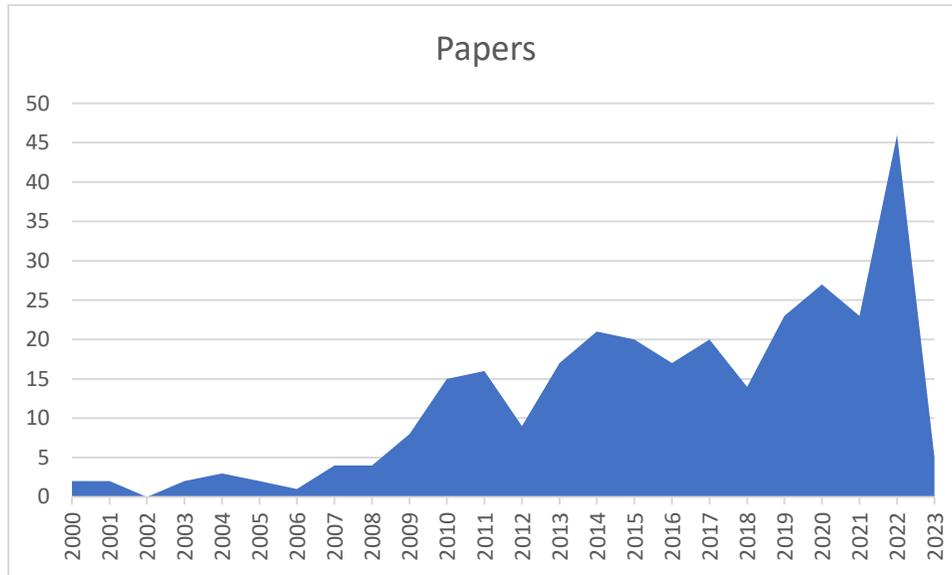
Journal	Number of papers between 2000 - 2023
LIBRARY MANAGEMENT	25
ELECTRONIC LIBRARY	21
LIBRARY HI TECH	20
Journal of Academic Librarianship	15
IFLA Journal	13
JOURNAL OF LIBRARIANSHIP AND INFORMATION SCIENCE	9
LIBRARY TRENDS	9
Journal of Library Administration	8
COLLEGE & RESEARCH LIBRARIES	7
LIBRI	7
DIGITAL LIBRARY PERSPECTIVES	6
NEW LIBRARY WORLD	6

Sample time period

In order to verify the relevance that research on innovation in academic libraries has gained in recent years, a long period of time has been taken in which the boom in research in recent years could be observed (Figure 1). When observing the papers selected in the review, more than 75% have been published in the last 10 years, which makes clear the interest that the subject has received lately.



Figure 1: Papers on innovation in academic libraries (2000- 2022)



Themes addressed within the literature review

The topics set out in the table were used and placed as separate columns in an Excel sheet. In this way it would be possible to analyze bibliographic information obtained from each paper, as VTT (2023) has done in his review.

Table 3 lists all the categories within the excel sheet and provides an explanation for each category. Some categories provide basic information on the individual paper. Additionally, Table 3 provides information collected from one paper (Tanner et al., 2016). This illustrates the type of data collected and inputted within the excel sheet.

Table 15: First-order categories used to collect data

Column title (theme)	Explanation	Example
Paper	Citation information of the paper	Islam, M. A., Agarwal, N. K., & Ikeda, M. (2015). Conceptualizing value co-creation for service innovation in academic libraries. <i>Business Information Review</i> , 32(1), 45–52. https://doi.org/10.1177/0266382115573155
Core topic	It refers to the main theme of innovation to which the paper is	



	focused, (it can be social innovation, service innovation, technological innovation, general innovation)	Service innovation
Secondary topic	It is indicated if the paper covers two central themes. For example, many papers on technological innovations also cover service innovations.	No
Librarin WP	Indicates which are the WPs of the Librarin project to which the paper can serve as insight, On the other hand, it indicates the papers of general interest for the project (it could be Digitalization, Metrics, Social networks, living labs or general)	General
Secondary Librarin WP	Indicates whether the paper in question may be of interest to more than one work package. For example, some papers on general innovation are also interested in metrics.	no
Specific topic	indicates the specific point of the paper. For example: Smart Libraries, Library 2.0, artificial intelligence in academic libraries among many others	Value co-creation in academic libraries
Co-creation element of the paper	Indicates whether the paper's title, abstract or keywords contain some of the basic words or concepts of value co-creation. It can be (collaboration, participation, partnerships, co-construction, co-creation)	Co-creation
Method	Indicates if the article is general, statistical, conceptual or is a case study	Conceptual
Space of the innovation	In those papers that deal with specific innovations, it is indicated if the innovation in question has a digital, social or	no



physical dimension and if it combines several dimensions. Concept papers have not been taken into account in this regard.

as VTT (2023), we highlight some issues that arose during the reviewing process that required discussion and decision among the researchers:

- It has been decided to establish knowledge management as one of the secondary topics due to the publication of papers with important statistical and conceptual models that explain its impact on service innovation in academic libraries (Islam et al 2014, Islam et al 2017, Koloniari 2018, Pacios 2019, Rafi 2022). The combination of elements of digital transformation or social innovation with know-how make this a very interesting research topic for the coming years.
- There was a significant number of papers on the history of innovation in different regions or countries, these works have undeniable scientific value, however, they had a historical approach that has no interest for the project, so they have not been taken into account in the final database
- As expected, it was found that some categories overlapped and/or had elements from more than one core topic, such that assigning only one would have limited the analyzes that could be made from the database. In this sense, those papers dealing with "Knowledge innovation for service innovation in academic libraries" were identified with a "core topic" and a "secondary core topic". In the case of the work packages of the Librarin project, it has been worked in the same way, so that project participants can see which research areas are linked to more than one work package.
- The final database and the final results presented allow a clear distinction between the existing research on case studies and specific innovation as well as the theoretical developments of innovation in academic libraries, which makes the literature review presented more interesting for the Librarin project in General.

Findings

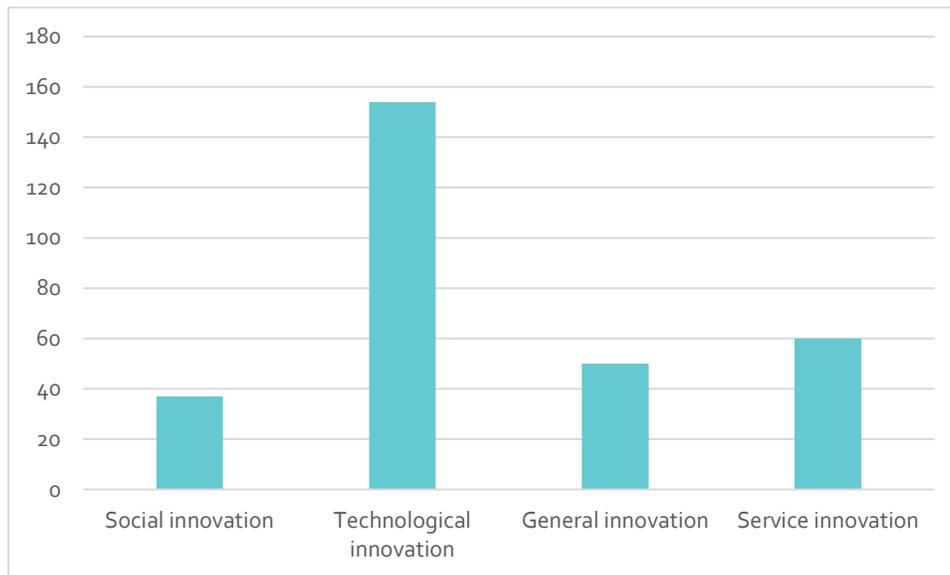
Using the sample of articles drawn from our literature review work, we address the objectives and hypotheses described above in order to generate insights for all the work packages of the LibrarIN project. In this way, a series of findings have been made that allow classifying the innovations and

transformations carried out in academic libraries at the same time as analyzing them to determine the importance that co-creation of value has in them.

Findings from innovation type

The main findings of the literature review are presented below. These show the transformations carried out by academic libraries to face the demands of today's world. As VTT (2023) did, "Attention was paid to the innovation/novelty identified and the value it generates for the different actors" (p. 10). As conclusions, the 301 articles in our sample can be classified into the following core topics (see Figure 2)

Figure 2. Number of papers by clusters (N = 301)



Analyzing the specific topics of the papers included in the database has allowed them to be grouped according to the type of innovation they study or develop. From here, after interpreting all the article titles, abstracts and keywords within the database, we came to the following cluster labels based on their main content: 1.) Technological innovations; 2.) Social innovation; 3.) Service innovation and 4.) General innovation. The key metrics of the clusters could be presented in an additional bibliometric analysis. For now we will present the main characteristics of the papers of each cluster, the topics they study and common characteristics that exist in them, likewise, the possible relationships between each cluster will be analyzed.



- **Cluster 1: Technological innovations**

As can be seen in Figure 2, most of the papers on innovation in academic libraries are focused on technological innovation. When observing the nature of these innovations and the specific topics treated within them, elements of great interest to the LibrarIN project are found. The specific topics "Library 2.0", "web 2.0", "smart library", "artificial intelligence" and "mobile services" add up to more than a half of the investigations within technological innovations (81 of 154). When looking for definitions of these topics we find that co-creation of value plays a fundamental role in them (Cao et al 2018, Jadhav 2020) this will be discussed in more depth later. Likewise, 24% of the papers are case studies with examples of digital transformations carried out in a specific academic library, while more than 10% of the papers have conceptual and statistical elements. Thus, it can be concluded that technological innovations play a fundamental role within innovations in academic libraries.

- **Cluster 2: Service innovations**

Service innovation is the second most studied topic within the sample. At this point, the study of the services promoted by academic libraries during the Covid-19 pandemic (12% of the cluster papers) stands out. Likewise, the most studied aspect in the cluster is the impact of knowledge management on service innovation in academic libraries (33% of the cluster papers). The issue of knowledge management as a fundamental element to promote service innovation within academic libraries is another highly relevant aspect found. More than a third of the papers found on this specific topic contain elaborate statistical and conceptual models that explain how Knowledge Management and Service Innovation are closely related within academic libraries. This represents one of the most relevant fields for research today. (Kim and Abbas 2010, Islam et al 2017, Koloniari et al 2018). The rest of the papers, which have been categorized with cluster "service innovation" can refer to research on specific innovation issues such as transformations, theoretical models to measure the level of innovation that libraries have, the response of the academic libraries in facing Covid-19 pandemic among some others.

- **Cluster 3: General innovations**

In the general innovations cluster there is a wide variety papers on topics that include studies on barriers to innovation, strategies to promote innovation, organizational innovations, reviews and models and frameworks to study innovation in academic libraries (Jantz 2012, Chuang et al 2019, Lembinem 2021, Pellack 2022). The papers from this cluster show that the vast majority of academic libraries are involved in innovative activities and that their leaders encourage innovation by empowering their staff, and that library directors consider innovation as part of their library's strategy. Likewise, the perspectives of libraries in the future and their role within the innovation system of the countries are studied.



- **Cluster 4: Social innovations**

Concepts such as "learning spaces", "markespaces", "Innovation hubs", "living labs" or "third places" appear in the papers of social innovation cluster. Here academic libraries are conceived as places of collaboration and co-creation, in this sense, academic libraries no longer only seek to satisfy the needs of a certain group of academics or students of a certain faculty, but are places where social networks should be fostered in order to generate partnerships between the different members of society. In this Cluster there are case studies that show how innovation in academic libraries can help facing problems such as racism or poverty, or how can academic libraries become a place to promote entrepreneurship. In addition, the impact that collaboration and partnerships between academic libraries and other entities can have is studied. This cluster is the one in which the co-creation of value has a greater presence and development, a point that will be developed in greater depth later.

The bibliographic information obtained will be very useful for a subsequent bibliometric study that allows us to understand the interactions between the different areas of study within the research on innovation in academic libraries. Likewise, the identification of the clusters as well as the specific topic touched on in each work supposes an important insight for the rest of the work packages of the project.

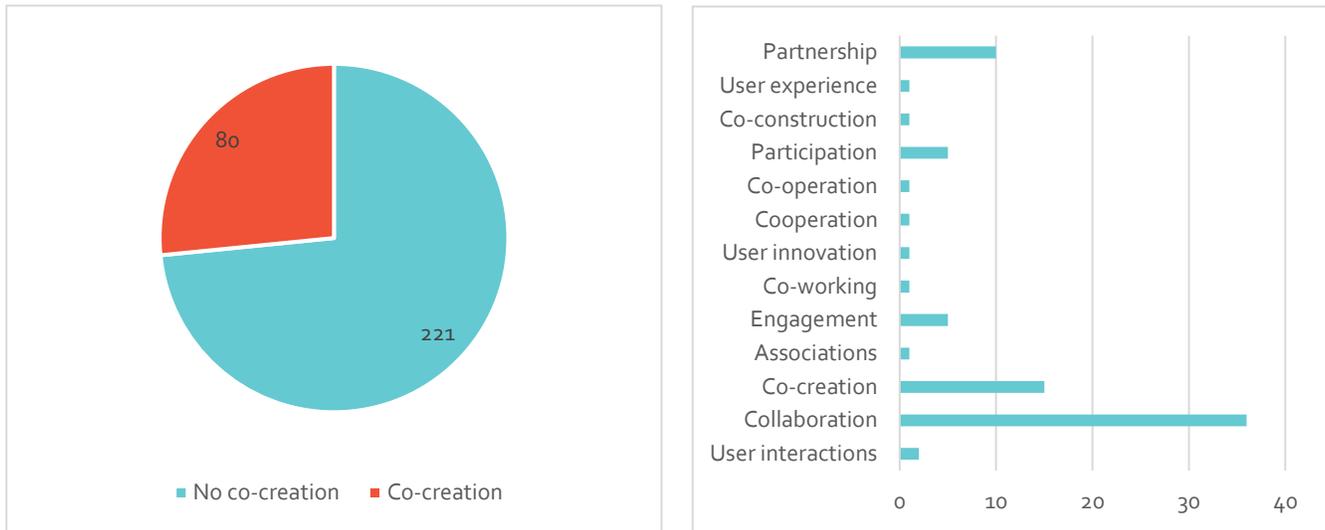
It has to be highlighted that these clusters are proxy categories since they may overlap each other and cover common concepts, nevertheless, they are useful for a first approach of the research on innovation in academic libraries. This clusters will be redefined in future research

Findings from co-creation dimension

The co-creation of value is a dimension with an important development in innovation research in academic libraries. When observing the selected database, it is found that more than a quarter of the selected papers include some dimension of co-creation of value: collaboration, participation, engagement, partnerships among others. Likewise, the most frequent dimension of co-creation is collaboration, which is the most repeated word in the titles, abstracts or keywords (see figure 3 and figure 4).

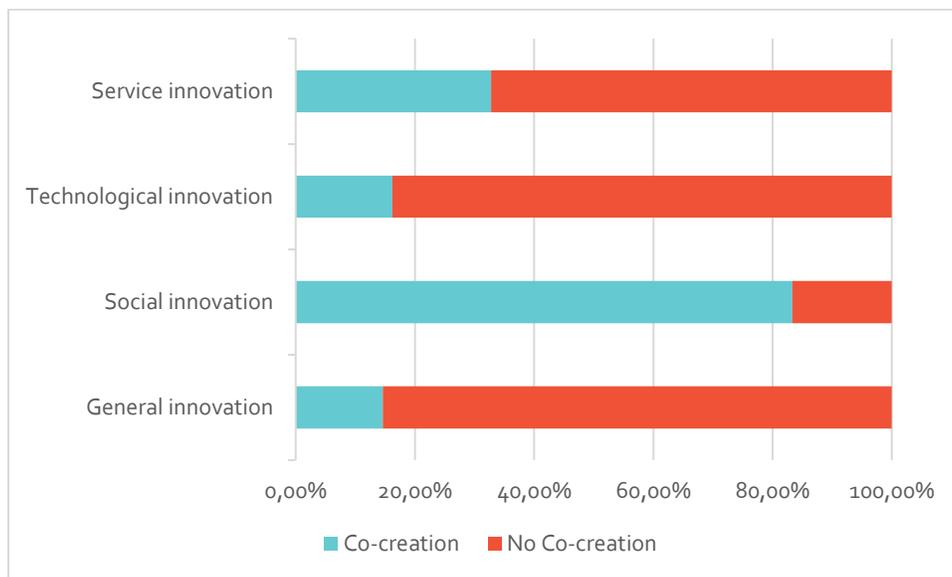
Figure 3: Papers with a co-creation word in title, abstract or keywords

Figure 4: co-creation words in papers



When analyzing the behavior of the dimensions of co-creation according to the defined clusters, we find that the cluster in which it is found the most is that of social innovation. More than 80% of the papers within this cluster include some of the dimensions of co-creation defined, which shows its importance and theoretical development. (see figure 5)

Figure 5: Co-creation words in papers on social innovations





When reading some of the papers from the social innovation cluster, we find quotes and concepts that make clear the importance of co-creating value in innovation in academic libraries. (see table 4)

Table 4: Co-creation and collaborative topics social innovations papers

Specif Topic	Cite
Makerspaces and innovation labs	“Academic libraries, and innovation labs within those libraries, can foster experimental scholarly communications, with students and others, by advancing key partnerships across campus and by providing a potent mixture of space, technology, and in-house digital literacy skills” (Fletcher 2020, p. 339)
Learning spaces	“Collaboration has been key to finding and establishing real change here at The University of Manchester Library. Having already taken a collaborative and consultative approach with our academic staff and students to establish service needs, we involved staff from across multiple Library divisions in its implementation” (Walsby 2020, p. 4)
Innovation communities	“Innovation community is a mode especially suitable for academic libraries, aimed at supporting the cultivation of innovation ability, encouraging user participation, joint construction, interaction and communication” (Xiaobin and Jing 2009, p. 258)
Learning centers	“the academic library can meet its social responsibility on the campus and in society by drawing on the model of the co-working spaces and communities, by the support of innovation and the transfer of knowledge to the world of work” (Schopfel et al 2015, p. 67)
Entrepreneurship	“This article presents a case study of the University of Minnesota (UMN) Libraries collaboration with the UMN Carlson School of Management’s (CSOM) Holmes Center for Entrepreneurship (HCE) to create an innovation hub in our most heavily trafficked undergraduate library” (Leebaw and Tomlison 2020, p. 1)
Partnerships	“The study revealed that the library-Science Techonolgy Parks (STP) relationship underpin links between parks and universities. The IASP members who receive services from related university libraries show the value of library-STP collaboration” (Aportela-Rodriguez and Pacios 2017, p. 235)

The element of co-creation is much less frequent in the rest of the clusters, however, when carefully reading the papers of the technological innovations cluster, there are some theoretical papers that define various concepts such as library 2.0, smart libraries or mobile services as collaborative practices in which the user actively participates in the creation of value in academic libraries. In this sense, it is observed how innovation theories begin to gain relevance in the digital transformation of academic libraries. (see figure 5)

Table 5: Co-creation and collaborative topics within technological innovations papers



Specif Topic	Cite
Library 2.0	“Library 2.0 is a change in interaction between users and libraries in a new culture of participation catalysed by social web technologies. Interactivity is the most important part of Library 2.0” (Holmberg et al 2009, p. 677)
Library 2.0	“Library 2.0 is a change in the way libraries interact with their users . Technological developments on the Web have had a major influence on these changes. The change also places new requirements on librarians’ competencies and skills.” (Huvila et al 2013, p. 198)
Library 2.0	“ a Library 2.0 library engages more in community development and invites participation with participation in community” (Huang 2015, p. 1121)
Smart Libraries	“ A smart library must, therefore, actively support users in cocreation and dissemination of new knowledge . Academic libraries are moving up the value chain.” (Jadhav and Shenoy 2020, p. 3)
Smart Libraries	“ Smart people will need smart libraries to learn , improve their skills, explore ideas and cocreate new knowledge and products.” (Jadhav and Shenoy 2020, p. 10)
Smart Libraries	“ a smart library can achieve high-level service through the following: becoming a learning space, a community centre and a place for citizens’ participation ; encouraging communication and cooperation among library users; and providing activities and services that promote community knowledge exchanges and improve community relations, such as workshops, book festivals and lectures.” (Cao et al 2018, p 817)
Mobile Services	“ Collaboration between organizations is important as it saves time. It is also important to ensure you’re aware of other mobile development work taking place at your institution as it may save you some work in terms of developing mobile-optimised Templates” (Keren and Hassan 2012, p. 11)

These bibliographic elements make it possible to confirm that co-creation of value is becoming an emerging fundamental element of vital importance within research on innovation in academic libraries.

Findings from social, physical and digital transformations

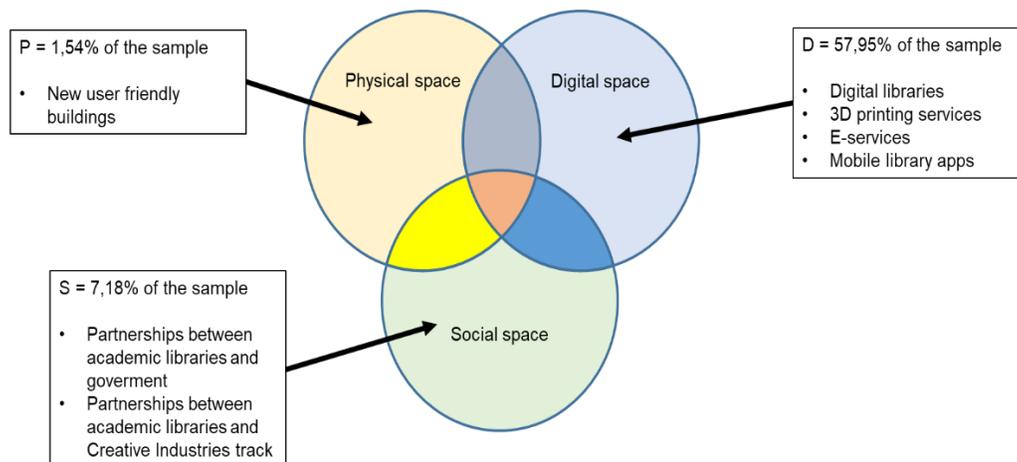
When examining the literature sample, we find it significant to assess in which space innovations occur in academic libraries, just as Hyytinen et al (2022) and VTT (2023) have done in public libraries. Following his methodology, we identify new services that are carried out within or through three types of space, and simultaneously these services renew all three spaces

- Social space
- Physical space
- Digital Space

As with public libraries, an academic library can be thought of as being situated within three different spaces: a physical building, a social space, and a digital space. On this VTT (2023) appoints that “The three dimensions space of a public library overlap and interact. The digitization of library catalogues, books, and other services is having an impact on the physical space of the library. As physical book collections are reduced, so more opportunities arise to repurpose the library as a physical space for other forms of social activity and interaction. There is also a very real issue of whether, and how, to bring together digital space and social space within the physical space of the library.” (p. 13)

in Figure 6 and figure 7 we map the service innovations discussed on to this social-physical-digital (or ‘S-P-D’) space. Figure 7 shows the percentage of sample papers that lie within just one spatial dimension.

Figure 6. Papers with service innovations in one spatial dimension only (as % of sample)

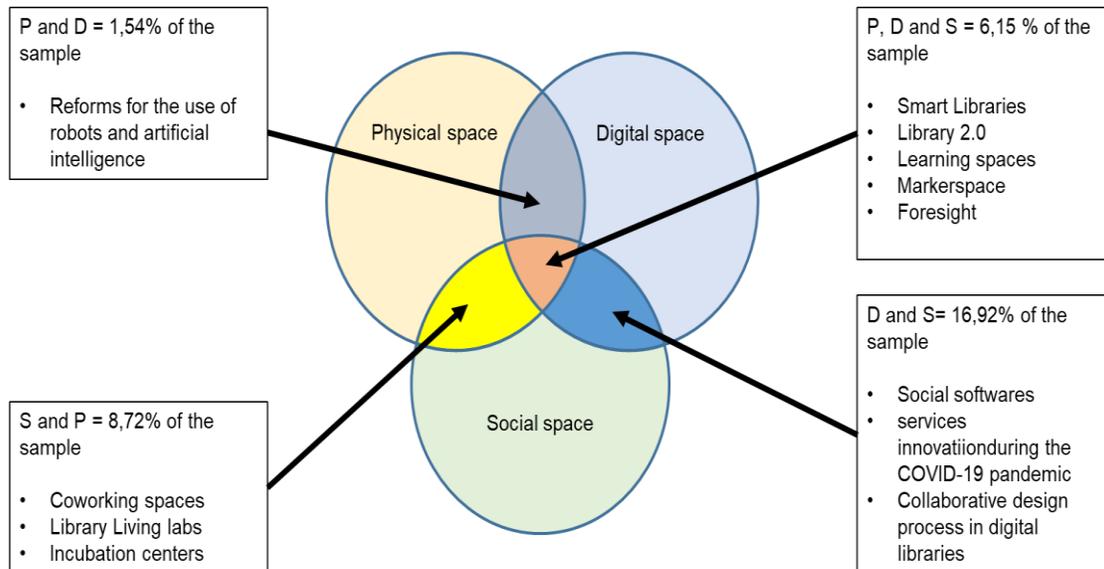


Source: VTT (2023)

For our case, the majority of journal articles in our sample (57%) discuss digital innovations that focus on digital transformation. This includes, for example, the study of digital libraries, that have had a great boom after the pandemic, or also the application of mobile services within academic libraries.

As in the VTT study (2023), some service innovations span more than one of the S-P-D spatial dimensions. Overall, we see a predominance of social space changes as a key aspect in the development of multi space innovations in academic libraries, the results regarding VTT (2023) are very similar. (figure 7)

Figure 7. Papers with innovations in two or three spatial dimensions (as % of sample)

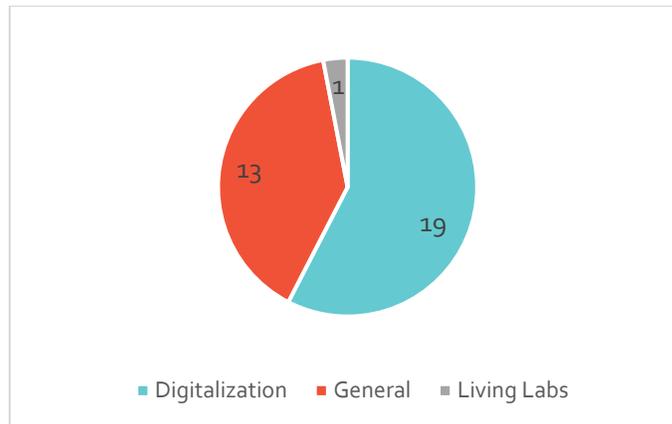


Source: VTT (2023)

Implications for WP

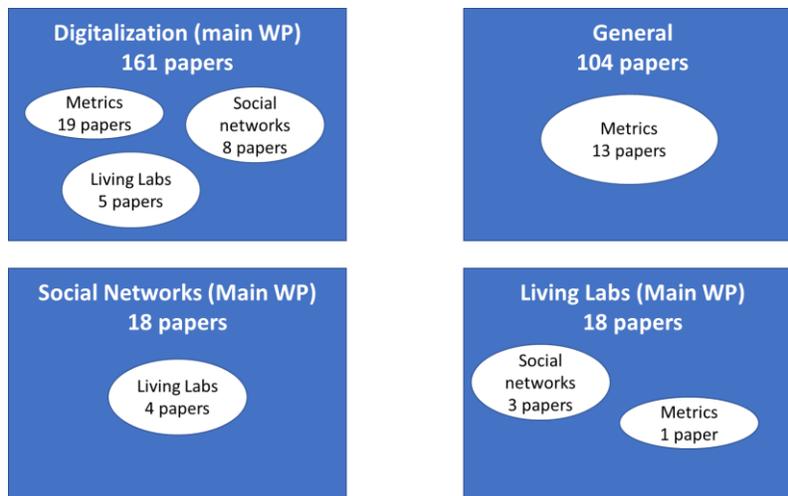
Below is a description of the work packages in which the papers found in the literature review can be used, indicating which of them can be used in two different work packages. Firstly, Figure 8 illustrates the papers of interest for the metrics work package (statistical or econometric studies) that also has interest for other work packages

Figure 8: Papers with metrics WP interest (N=33)



Following this scheme, figure 9 has been proposed in which all the roles and their WP of interest are represented. Digitalization, The WP with the most papers fundamentally addresses digital transformation issues such as e-services, the internet of things and changes in services due to technological advances, it also addresses issues such as library 2.0, smart libraries or the application of artificial intelligence in services, which explains that among these documents there are some of interest for the WP of social networks or that of living labs

Figure 9: Papers with metrics WP interest (N=33)





Future research

Despite the important findings on innovation in both academic and public libraries, the databases only include a limited number of papers (100 papers for the review of public libraries and 301 papers for the review of academic libraries). On the other hand, VTT (2023) found that “the language used by library scholars is different to that of innovation scholars” (p. 2), so “to determine what innovation means for and to libraries requires an examination of how the term is used, what it refers to, in what context it is used, to what effect it is used, and so on.” (Rubin et al 2011, p. 414). Thus, another search about innovation in academic libraries was done in Scopus, but this time not using the traditional words that academics and scholarships associate with innovation, but using the keywords and innovation categories founded in the literature review of innovation in public libraries, and the innovation and co-creation dimensions founded in the literature review of academic libraries. The search was made in the Scopus Database following the following parameters:

- Academic librar* within the title of the papers
- VTT and UAH inputs within title-abstract-keywords of the paper
- subject area: Social science
- Document type: Article
- Language: English

Table 6 shows the new keywords associated with the VTT and UAH inputs used in the search. The Keywords associated with each input were those searched in each title-abstract-keywords of the papers to enter them in the database. For example, if a paper has some of the keywords from the Academic Library input in the title and also has the keyword participation (which is a word associated with the co-creation dimension) said work will be counted as a paper on co-creation dimension in academic libraries. Likewise, it is important to highlight that the same paper can be located in two or more entries.

Table 16. Inputs and keywords of the new search on innovation in academic libraries

Input	Keywords
Academic library	Academic library, research library, university library
Keywords (VTT, 2023)	service, program, project, makerspace, transform, new
Categories of New Library Service (VTT, 2023)	'Reading and Education' services: education, training, classroom, reading 'Community' services: community, inclusive Integra*, youth, homeless, immigrants, social minorit* 'Health and wellbeing': health, wellbeing, care



	'Creativity' services: create*, living labs, workshops, design 'Business and finance': entrepreneurship, entrepreneur*, company, consultancy, advisory, start-ups,
Innovation dimension (UAH, 2023)	Words associated to innovation: innovat*, transform*, digital*, technology, AI, New, chang*
Co-creation dimension (UAH, 2023)	Co-creation dimension found on UAH review: Collaborat*, Participat*, Cooperat*, coproducti*, Cocreation, Co-operat*. co-producti*. Co-creation, Partnership. Networks
Research areas established by the LibrarIN proposal	Digitalization Living Labs Networks

This second search using these new parameters and keywords allowed the creation of a database of 11769 papers with the input "academic library*" in the title and one or more keywords, service category, or dimension of co-creation and innovation in the abstract. First, this enormous database confirmed the importance of language in the field of innovation; second, it showed that there is a substantial empirical development of research and investigations in transformations, changes, and innovations in academic libraries. These categories registered in the database are used to determine which categories of services are the most studied within the research field of innovation academic libraries.

The main descriptive results of this second search are shown in Table 7, which gives the inputs for selecting the new sample, innovation dimension, the services categories, and keywords which are included in significant percentage of the total sample.

Table 17. Descriptive results of second search on innovation in academic libraries

Category	Number of papers	% of the sample
TOTAL SAMPLE	11769	100.0%
Keywords (VTT 2023)	10781	91.6%
Service categories (VTT)		
education	4038	34.3%
health	1214	10.3%
community	4411	37.4%
creative	4192	35.6%
business	624	5.3%
innovation dimension	7218	61.3%



cocreation dimension	2838	24.1%
Digitalization	1917	16.2%
Living labs	442	3.7%
Network	955	8.1%

Finally, the most important element of the second database is the possibility of carrying out analyses, inferences, or correlations between the dimensions of co-creation and innovation for specific service categories and keywords. This would greatly contribute to identify what are the innovative and co-creative service categories offered by academic libraries with the most academic interest. Table 8 shows a preliminary result of this analysis by showing the papers that present one of the service categories (VTT 2023) and one co-creation dimension (UAH 2023), innovation dimension (UAH 2023) or any of the keywords proposed (VTT 2023). In total, around a quarter of papers on services also include the dimension of value co-creation. Likewise, the keywords proposed by VTT (2023) are present in about 90% of the papers about some of the service categories. The innovation dimension is present in about 60% of papers for some of the service categories. Finally, the main services offered by academic libraries are those associated with 'Reading and Education', 'Community', and 'Creativity' services, while they offer many fewer services associated with 'Health and wellbeing' and 'Business and finance' services. This kind of analysis might be done with all the categories.

Table 18. Papers of each service category vs keywords, innovation dimension co-creation

TOTAL NUMBER OF PAPERS	11769				
	Education	Community	Health	Business	Creative
Total	4038	4411	1214	624	4192
Any keyword/service categorie	3630	3990	1044	571	3842
Cover	89.9%	90.4%	86.0%	91.5%	91.6%
service /service categorie	2198	2529	643	360	2462
program/service categorie	1312	1061	363	133	948
project/service categorie	686	833	210	121	813
markerspace/service categorie	3	5	0	1	3
trasnform*/service categorie	194	240	41	51	228
new/service categorie	1133	1385	351	241	1372
Innovation/service categorie	2450	2862	682	451	2841
Cover	60.6%	64.8%	56.1%	72.2%	67.7%
Co-creation/service categorie	1055	1311	310	181	1137
Cover	26,1%	29,7%	25,5%	29,0%	27,1%



Digital/service categorie	625	811	124	105	866
Cover	15.4%	18.3%	10.2%	16.8%	20.6%
Living labs/service categorie	168	208	50	34	442
Cover	4.1%	4.7%	4.1%	5.4%	10.5%
Network/service categorie	315	520	89	58	377
Cover	7.8%	11.7%	7.3%	9.2%	8.9%

At the same time, this same search can be carried out in the innovation of public libraries, in order to make a review of the literature that integrates both types of libraries and allows us to compare how innovation is managed in both worlds. Thus, one of the next steps is the creation of an integrative literature review on innovation in public and academic libraries.

The identical search could be carried out for public libraries. This would allow us to compare how innovation is covered in both literatures. Thus, one of the next steps is to create an integrative literature review on innovation in public and academic libraries.

Reflection

Our findings show that, since 2013, Innovation and service innovation has had an important theoretical and practical development in the field of academic libraries, so it can be considered as an emerging research field in which statistical studies, conceptual models and a very significant number of case studies might be found. Likewise, this research field contemplates an important element of collaboration, user participation and co-creation as well as a social and associative element. All the information collected has allowed the proposition of 4 study clusters within innovation research in academic libraries that can guide future research.

The manual review of the most cited papers on innovation focused on academic libraries has generated a rich database of valuable information. Among the most noteworthy is the study of different dimensions of co-creation of value (collaboration, co-creation, partnerships, user participation, institutional cooperation) as a fundamental element within innovation in academic libraries, which in turn generates a reinvention of the social space of the academic library within the digital age. Thus, the main transformations in academic libraries in the last 10 years have not only to do with technological advances but also with the conception of the academic library as an open and ideal space for co-creation.

Academic library collections traditionally focus on supporting the curricular and research needs of the students and faculty who make up their patron base (Saunders and Jordan 2013). In this sense,



academic libraries are reaching levels of openness that are unprecedented in history, reaching, in some cases, promoting projects on various topics such as poverty, racism or social entrepreneurship and making alliances with other public and academic entities for the creation of innovation hubs, living labs, makerspaces and innovation communities-;

Another finding of interest, at a second order level, is the one made based on the framework proposed by Hyytinen et al (2022) and VTT (2023), which shows that certain innovations in academic libraries have a social, physical and digital dimension, such as makerspaces, smart libraries and or library 2.0. These provide support for creative activities and the development of new skills and knowledge. Although it is not necessarily an expected direct or immediate result, these types of innovations are among the most important within academic libraries.

Finally, the bibliographic information collected in the database of more than 300 papers proposes the realization of a bibliometric study that will allow me to better understand the behavior of research in this area of study and the relationship between the proposed clusters, said bibliographic study will be the next step from this study.

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