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for a new Generation of European Libraries****D4.3 Survey Results**

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Executive Summary

This report provides survey results on the innovation and co-creation activities of university libraries in 25 European countries (21 EU and 4 non-EU) and results for main public libraries and branch public libraries in nine EU countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, the Netherlands, and Spain. The surveys collected data for producing metrics on library innovation and co-creation activities (presented in the update of project deliverable 4.1) and data for research on innovation and the use of co-creation activities, presented in this report.

Discussions with members of the LibrarIN stakeholder panel and research for the conceptual framework and for WP4 identified large differences in innovation activities and decision-making processes between university, main public libraries, and branch libraries. As a result, the same questionnaire could not be used for all libraries. Separate partially comparable questionnaires were therefore used for 1) university libraries, 2) main public (usually municipal) libraries, and 3) public branch libraries.

To ensure that all questions were understood as intended by all respondents, draft versions of the questionnaires in national languages were cognitively tested through a total of 36 in four countries: Denmark, France, the Netherlands and Spain.

The surveys were implemented in May 2024 and September 2024, with the last responses received by the end of March 2025. Useable responses were obtained for up to 718 main public libraries, 372 university libraries, and 143 branch public libraries. The survey response rates decline over the questionnaire, but the rates for section A on general innovation activities are 63% for main public libraries, 62% for university libraries, and 39% for branch public libraries. Section B asks respondents to describe a **single high priority innovation** with all further questions limited to this **focal innovation**: how it was developed, the use of different methods of obtaining input from library users and other stakeholders, the importance of knowledge obtained from different groups, and outcomes. Survey response rates for Section B are 55% for main public libraries and university libraries and 34% for branch public libraries.

The conceptual framework D2.1 summarized several main research questions for the LibrarIN project, some of which were investigated in the surveys. The topics covered in this report include:

1. Main descriptive results on innovation and co-creation.
2. Factors that hinder or support the use of co-creation to develop library innovations.
3. The combination of different factors to create multiple 'styles' of innovating in libraries.
4. Differences between innovation activities in small stand-alone public libraries, small networked public libraries, and large public libraries.
5. The effects of co-creation and user involvement in main public libraries on the usefulness of knowledge for developing innovations obtained from library users and other stakeholders.

6. The effects of co-creation and user involvement in university libraries on the usefulness of knowledge obtained from library users (faculty and students).
7. Effects of user input (suggestions for innovations, consulting, co-creation, and the usefulness of knowledge obtained from users) on the outcomes of library innovations.

Main descriptive results (chapter 3)

Innovation is defined as the implementation of a new or improved service. Almost all responding libraries report one or more innovations in the previous three years: 94% of main public libraries, 92% of university libraries, and 97% of branch libraries.

The library literature identifies a shift in library strategies from "collection" (curating and providing access to stocks of books, journals, DVDs, etc.) to "connection" (health and wellbeing, social creativity and entertainment services) (Rasmussen, 2016). The surveys find that connection is a more important goal for public than for university libraries, with 56% of main public libraries assigning high importance to community or cultural events versus 31% of university libraries.

For main public and university libraries, there are many significant differences between small/medium (less than 50 employees) and large libraries (50+ employees) for general library conditions of relevance to innovation (drivers, obstacles, management support for innovation, goals), as covered in Section A of each questionnaire, but few differences for section B questions on a single focal innovation selected by the respondents. These results suggest that there are important size effects that could influence the decision to innovate (affected by skills, drivers and obstacles etc.), as captured by the section A questions, but far fewer differences once the decision to innovate is made, as shown by the high priority innovations covered in section B.

Co-creation with library users and other stakeholders has substantial benefits, in terms of the usefulness of knowledge obtained from different sources, for both public and university libraries. The use of co-creation, compared to its absence, approximately doubles the share of public and university libraries obtaining highly useful knowledge from library users. For instance, the use of co-creation by main public libraries increases the share of respondents reporting that they obtained 'very useful' knowledge from library users from 17% to 49%.

Even though co-creation has substantial benefits, only a small share of main public libraries (23.5%) and branch public libraries (24.4%) involve library users in co-creation. For university libraries co-creation with faculty is almost twice as common as co-creation with students (48% versus 25%).

Factors that hinder or support the use of co-creation (chapter 4)

For main public libraries, dedicated funding and skills (either change/innovation management or design thinking capabilities) consistently support the use of co-creation with library users and other stakeholders, while two conditions decrease its use: when the service innovation has digital characteristics and when the library is a small, stand-alone library that is not part of a library network. For universities, design thinking capabilities and the number of digital characteristics increase the use



of co-creation. For branch public libraries, general innovation drivers and partnership in a regional library network increase the use of co-creation while the sum of high importance obstacles decreases it. This contrasts with a lack of effect for the number of obstacles for main public and university libraries. In addition, the policies of the main library as a high importance driver for innovation has a negative effect on the use of co-creation by branch public libraries, possibly because the innovation is developed by the main library.

Styles of innovation (chapter 5)

This chapter uses principal component analysis (PCA) to identify six different innovation "styles" used by public libraries. In the first style, innovation thrives in a supportive environment where management and staff work collaboratively, drawing on user input and creative methods such as design thinking and brainstorming. In the second style, suggestions from NGOs and users act as key drivers, yet obstacles such as time pressure, insufficient staff, and lack of municipal support hinder progress. A third style is characterized by motivated staff and openness to change, but engagement with users and staff in idea generation is minimal. In contrast, in a fourth style libraries exhibit strong management support, but user input is rarely considered, suggesting a hierarchical setting. Libraries in a fifth style innovate under constraints. Despite limited budgets, staff remain open to change, developing innovations with modest resources.

Innovation, skill gaps and co-creation in small public libraries (Chapter 6)

The chapter examines the ability of 145 small stand-alone main public libraries and 129 small networked main libraries to co-create innovations in comparison with 333 large main public libraries. An important question is if small networked libraries perform better than small stand-alone libraries. The results find that innovation capacity in public libraries varies by both institutional size (as expected) and organizational connectedness (networked) in small libraries. Small stand-alone libraries face a cumulative set of disadvantages, with fewer resources and lower use of co-creation. These factors constrain the diversity of innovation types that they implement.

At the same time, the findings highlight potential pathways for addressing these disparities. Network membership is an effective mechanism for compensating for skill deficits. Encouraging smaller libraries to participate in (or lower barriers to participation) regional or national networks may therefore enhance innovation capacity by facilitating more knowledge exchange, for instance by providing access to shared training resources and enabling joint innovative activities.

Usefulness of user and stakeholder knowledge for innovation in public libraries (Chapter 7)

The chapter measures the effect of input from users and other stakeholders on the usefulness of knowledge for developing the focal innovation and identifies complementary effects (two sources separately increase the usefulness of knowledge) and substitution effects (a second source decreases the usefulness of knowledge from a first source). Both consulting users and co-creation with library users increases the usefulness of knowledge for developing the focal innovation, but co-creation with users has a bigger effect. The results also find that knowledge obtained from consulting users is complementary to that obtained from co-creation. In contrast, co-creation with non-management



staff decreases the effect of co-creation with library users, suggesting the knowledge obtained from non-management staff is a partial substitute for that obtained from co-creation with users.

The results also show that non-management staff play a key role, providing a source of knowledge that partially substitutes for knowledge obtained through co-creation with non-profits and businesses. The analyses also find strong synergistic effects from the number of highly useful sources, which increases the usefulness of knowledge obtained from library users, non-management staff, non-profits, and businesses. This implies that drawing on multiple sources of knowledge is beneficial, which each source improving the usefulness of knowledge from other sources.

Usefulness of user knowledge for innovation in university libraries (Chapter 8)

This chapter uses the same methods as described in Chapter 7 but applied to university libraries. University library staff or users were consulted by 85% of the libraries and co-creation with staff or users (faculty or students) was used by 64.7% of the libraries. This is a much higher co-creation rate than observed for public libraries. However, most of the co-creation is with university faculty/researchers (48.6%), with considerably fewer university libraries involving students in co-creation (26.0%).

Consulting (with non-management staff, faculty/researchers or students) has a complementary positive effect on the usefulness of knowledge from faculty/researchers. There are large substitution effects from co-creation with other groups, particularly for faculty and researchers, where the combined effect of co-creation with non-management staff and students substantially reduces the usefulness of knowledge from faculty/researchers. The strong substitution effects observed for co-creation indicates that university libraries could reduce costs by eliminating one of the two user groups, which may explain the low use of co-creation with students.

Innovation outcomes (Chapter 9)

The chapter evaluates the influence of library users and other groups (depending on the survey) on positive effects on outcomes from the library's focal innovation. The outcomes vary by the type of library but include the use or design of library space, simplicity or ease of use of processes, library user experiences, library user skills, access to information, outreach to new library users, networking among library users, social interactions between library users, and community building among users. Outcomes are measured as not relevant/too soon to tell, negative effect, minor positive effect, moderate positive effect, and strong positive effect. The analyses exclude the 'not relevant/too soon to tell' option. The influence of library users is measured through consulting, co-creation, user suggestions or needs as a high importance innovation driver, and (for universities only) library users as a source of the idea for the focal innovation.

For main public libraries, users almost always have a beneficial role on outcomes, either through suggestions from library users as a driver for innovation or obtaining very useful knowledge from users for the development of the focal innovation. However, the benefits to outcomes from co-creation with users is never direct - it is always mediated by the value of knowledge obtained from users. For



university libraries co-creation with students directly increases positive outcomes for the use or design of library spaces and co-creation with faculty increases positive outcomes for community building. For universities the most common beneficial factor for outcomes is user needs as an innovation driver, which has a positive effect on four out of five outcomes. Only two outcomes could be tested for branch libraries: use or design of library space and social interactions or networking between library users. Co-creation with library users is associated with positive effects for both outcomes. The results for all three types of libraries points to a consistent positive influence of library users on the use or design of library space.

Conclusions and recommendations (Chapter 10)

The LibrarIN survey data show that co-creation with the users of European libraries is still infrequent, reported by only 24% of surveyed main public libraries. Co-creation with the users of university libraries is more common, but this is entirely due to co-creation with faculty and researchers, with students involved in co-creation at the same rate as for main public libraries. The lowest observed rates of co-creation are found in small stand-alone public libraries, at 14%.

Although libraries face obstacles to co-creation, none of the obstacles are consistent across library size or library type. Conversely, three factors consistently support the use of co-creation: skills in innovation management or design thinking, dedicated external funding, and user suggestions as innovation drivers or a source of ideas for innovation.

For both public and university libraries, both consulting users and co-creation with library users increases the usefulness of knowledge for developing the focal innovation, a key resource, but co-creation with users has a bigger and substantial positive effect. Substitution effects also occur for different groups involved in co-creation. For example, the usefulness of knowledge obtained from library users declines when non-management staff are also involved in co-creation. Awareness of the existence of substitution effects could be used to improve the efficiency of co-creation, particularly in university libraries.

The notable benefits of co-creation for obtaining useful knowledge for developing innovations suggests that co-creation, particularly with library users, should be used far more frequently, although the value of co-creation will vary by contextual factors such as the type of innovation or the level of expertise held by different participating groups.

The survey results support the following recommendations:

1. Raise awareness of the value of co-creation to counter its low use, particularly in public libraries.
2. Orient policies to support factors that encourage co-creation instead of obstacles.
3. Address systemic resource constraints.
4. Invest in skills that support library innovation.
5. Re-think funding models for library innovation to support collaborative innovation.
6. Increase access to skills by small libraries.



7. Pay attention to context - some types of innovation can be developed and implemented without the use of co-creation.

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List of Terms and Abbreviations

Abbreviation	Definition
EU	European Union
LIBER	(Ligue des Bibliothèques Européennes de Recherche – Association of European Research Libraries)
NGO	Non-governmental organization
PCA	Principle component analysis
RQ	Research question



1. Introduction

The survey results for main public, university and branch public libraries covered in this final report for WP4 are part of the LibrarIN project "Value Co-creation and Social Innovation for a new Generation of European Libraries". The rationale for the LibrarIN project is to evaluate the role of innovation and user engagement in innovation activities in the shift in libraries from "collection to connection" (Desmarchalier et al, 2025). This shift was driven by the existential challenge to libraries posed by the internet and by a social mission, supported by policy recommendations in many countries, for libraries to enhance social inclusion, democracy and education through community engagement, social interaction, and user participation in a range of library activities (Council of Europe, 2023; Hider et al, 2024; van Kempen et al, 2021). An important aspect of the shift towards connection is the involvement of library users and other stakeholders in the development of new or improved services.

The surveys are divided into two sections. Section A of the main public and university library surveys ask about library goals, available skills, the types of new or improved services or processes developed by the library in the previous three years, and drivers and obstacles to their development. New or improved services or processes is also the broad definition of an innovation, covering a wide range of minor to major changes that can be developed in-house or adopted from external sources (OECD/Eurostat, 2018), although the questionnaires never include the term 'innovation'. Section B of the main public and university questionnaires asks respondents to answer all subsequent questions for a single new or improved service (or process). Respondents are instructed to select "an example that was of high priority to your library". The survey for main public libraries also states that this innovation could be of "high expected value for your library users", while the survey for universities states that it could require "substantial effort to develop and implement". These limitations are added to restrict section B results to important innovations that are more likely to involve users and other stakeholders in their development.

User involvement (also referred to as engagement in the library literature) in the design of service innovations can take many forms and occur at different levels of intensity. At its simplest and least demanding level, knowledge about user needs can be obtained through one-way 'consulting' with users such as through online surveys. Interactive or participatory methods of involving users include focus groups, design thinking, brainstorming sessions and workshops that actively involve library users or other stakeholders in two-way communication with library staff or service designers in developing the innovation. These activities are defined as co-creation, which can be used at different stages in the development of an innovation, from ideation to identify challenges to identifying solutions to a problem. A drawback to the survey questionnaires is that they do not include questions on the intensity of co-creation, such as the length of time library users or other stakeholders were involved in co-



creation activities, although both the main public and university questionnaires identify the use of co-creation to identify challenges and to generate solutions.

The term 'co-creation' is prominent within the mission statements of prestigious new libraries such as the Dokk1 library in Aarhus (Bech-Petersen, 2016), the Oodi Library in Helsinki (Nicholson, 2019), and the De Krook library in Ghent (Brabandere, 2020), but case studies have also researched the use of co-creation by other libraries to develop service innovations (Dogunke, 2020; Huvila, 2020; Islam et al., 2015; Lee et al, 2025; Loh et al, 2021; Luca and Ulyannikova, 2020; Nicholson, 2019).

The value of co-creation with library users is supported by public service and service dominant logics that identify the central role of service users in creating 'value-in-use', which is always uniquely and phenomenologically determined by the service user during the consumption of the service (Vargo and Lusch, 2016). The act of using a service, for instance an automated process for borrowing and returning items from a library, gives the user direct knowledge of the advantages and disadvantages of the service (Osborne et al, 2016; Torfing et al, 2019, Trischler and Trischler, 2021) that library staff may not know about. This knowledge can be a valuable input into the design of improvements or new methods of achieving similar tasks. The broader views and experiences of library users can also provide input into entirely new services, although user knowledge could be of less values for new services than for service improvements.

However, library users are not the only source of knowledge on user needs and experiences. Through discussions with users as part of their work activities, non-management library staff and the employees of non-profits such as community organizations can act as alternative sources of knowledge on user needs (Gesierich et al, 2024).

The development of innovations through co-creation with users is in tune with a move away from an emphasis – notably in New Public Management - on cost efficiency and its treatment of users as largely passive recipients (customers), towards more engaged notions of active user co-creation. In addition, co-creation is supported by new governance models (Sørensen and Torfing, 2015) for public sector innovation that recognize the benefits of an innovation ecosystem approach that draws on tangible and intangible knowledge from multiple stakeholders (Adner, 2017; Dias et al., 2020; Osborne et al., 2022; Trischler and Charles, 2019). From this perspective, co-creation activities can include non-management library staff and non-profits, both of which can be alternative sources of knowledge on user needs, businesses that provide technical knowledge, and municipal governments that set the general goals for library innovation. Furthermore, drawing on multiple knowledge sources could lead to complementary, substitution, or synergistic effects that can either enhance (complementary and



synergistic effects) or reduce (substitution) the usefulness of knowledge obtained from specific sources.

1.1 Purpose and Scope of this report

Most of the LibrarIN research on innovation and co-creation in European libraries is based on a small number of case studies. In contrast, the three LibrarIN surveys serve a different purpose by providing statistically representative data for a sample of library managers. While case studies provide in-depth insights into how library users are involved (or not) in innovation, a survey provides comparatively superficial data, but for a large sample. The quantitative survey data are used to estimate the prevalence of how users are involved in the development of library innovation and the association between various factors or contexts and user involvement, in line with the call by Acar et al (2025) for more quantitative research that can link contexts with co-creation and co-creation outcomes.

1.2 Approach for WP4 and Relation to other WPs and Deliverables

The design of survey questions drew extensively on the conceptual framework in WP2, a WP1 review of existing survey questionnaires of innovation activities in libraries, and previous non-library surveys of innovation in public sector organizations. In addition, discussions with the LibrarIN stakeholder panel resulted in several changes to the planned design of the questionnaires, such as the decision to design a separate questionnaire for branch libraries and to include questions in the main public library survey to differentiate small 'stand-alone' public libraries from small-networked libraries.

The eco-system approach predicts that the characteristics of innovations are developed through interactions with multiple actors that can vary depending on the type of innovation and the expertise that is required to develop it (Trischler et al, 2019; Osborne et al, 2022). For libraries, relevant actors include local policymakers, library users, library administrators and managers, and stakeholders such as businesses, NGOs or community groups. The implication of an eco-system model is that a questionnaire on library innovation needs to include questions on internal (within government) and external actors that may contribute to the development of innovations, questions on how specific actors contribute, and questions on the usefulness of inputs from various actors.

The questionnaire addresses several of the project research questions that are summarized in the conceptual framework (deliverable 2.1) and provided below in Table 1.1. Due to length limitations for a questionnaire, not all research questions identified in the conceptual framework could be covered in the questionnaires. In addition, some of the research questions were too complex, requiring case studies instead of a questionnaire survey. Table 1.1 summarizes three general research questions that were addressed by the surveys.

Table 1.1: LibrarIN project research questions (RQs) and questions covered by one or more of the WP4 questionnaires

Project RQs	Questions covered by the survey
RQ1: Identification of innovation and co-creation, the loci where they happen, and the ecosystems	1. Types of innovations in libraries, including services 2. Types of libraries active in innovation and co-creation 3. Loci of innovation (subset, through exploring linkages between branch and main public libraries)
RQ2: Innovation drivers, barriers, and impacts	1. Effect of co-creation and other methods of obtaining knowledge on the usefulness of knowledge obtained from different sources. 2. Outcomes (impacts) of library innovation 3. Drivers, facilitators, determinants, and barriers to innovations
RQ3: Co-creation drivers, barriers, & impacts	1. Process of value co-creation in libraries in collaboration with multiple stakeholders and through co-creation activities

The descriptive and econometric analyses of the survey questions supplement the case-study oriented research in LibrarIN work packages 3.1 (digital transformation and ICT), 3.2 (social entrepreneurship, public-private networks and social innovation, and 3.3 (Living labs for co-creation and co-innovation) by providing prevalence data on the frequency of co-creation, digital skills and innovation, and other activities to develop library innovations. In addition, the survey data are used to evaluate the effects of multiple factors on the use of co-creation and the benefits of co-creation.

1.3 Structure of this Deliverable

The remainder of this document provides descriptive results, preliminary analyses for future papers, plus summaries of research papers that have been submitted for publication or are in preparation.

As none of the papers have received final acceptance for publication, we are unable to provide the full text of each paper or even short excerpts, since papers submitted to publication by peer reviewed journals must 1) not be already publicly available nor 2) include identical text from a previous publicly available document. The second requirement excludes plagiarism, even if the text was written by the same authors. Links to each paper will be provided on the LibrarIN website once each paper is published.

Chapter 2 provides the survey methodology (more details are available in deliverable D4.2 "Questionnaire design, cognitive testing and respondent identification"). Chapter 3 provides basic descriptive results from each of the three surveys. Chapter 4 identifies factors that hinder or support



the use of co-creation by main public, university, and branch public libraries. Chapters 5 to 9 are summaries of papers on the following topics: chapter 5 covers different approaches (styles) to innovation in public libraries; chapter 6 evaluates innovation in small public libraries; Chapter 7 evaluates the usefulness of knowledge obtained through co-creation from different sources for main public libraries; chapter 8 covers similar issues as chapter 7 but for university libraries; and chapter 9 evaluates the effect of co-creation on innovation outcomes in main public, university, and branch public libraries. Chapter 10 provides general conclusions and policy recommendations.

The Annexes provide the English versions of each of three questionnaires for university, main public, and branch public libraries. All questionnaires were also translated into the national languages of the countries where the surveys were implemented (German, Dutch, Danish, Finnish, French, Greek and Spanish).



2 Methodology¹

A literature review for the conceptual framework for the LibrarIN project, a series of interviews with library managers for WP4.2, and discussions with members of the LibrarIN stakeholder panel showed that there are substantial differences between university and public libraries and emphasized the need to collect data by library size, possible discontent among librarians with co-creation, and to collect data on the use of co-creation to identify challenges and solutions. Within public libraries there were differences between central or main libraries and branch libraries. Consequently, separate questionnaires were developed for each of these three library types. Where possible, identical questions were used in all questionnaires, with comparability greatest between the questionnaire for universities and main public libraries.

All questionnaires for this study do not use of the term 'co-creation' to avoid confusion with other definitions of the term "co-creation" (Grönroos, 2019; Osborne et al, 2021) and because many librarians may be unfamiliar with the term. Instead, respondents are asked about activities that are part of co-creation. In this report, we use the term 'co-creation' to refer to intensive, participatory methods of user involvement in developing a library service innovation.

The WP2.1 report noted that the word 'innovation' was seldom used in the literature for public libraries, though it was more widely used for research libraries. Instead of the term 'innovation', public library managers referred to 'change' (Axonidi et al., 2020) or new 'programs' or 'projects' (Windrum et al. 2025). Consequently, the survey questionnaires never use the term 'innovation', referring to 'new or improved services or processes'. Services are further defined as "for your library's users" and processes as "administrative and other types of processes". Library users are defined in the questionnaires as "anyone who may access your library (either online or in person), including previous, current or potential (future) library users".

Three separate surveys covered main public, university, and branch public libraries. The questionnaires for main public and university libraries were divided into two sections, with Section A including questions that cover general strategies and activities of relevance to all innovation activities, such as library goals, management and staff support for innovation, staff capabilities, types of innovations introduced in the previous three years, innovation drivers, and innovation obstacles. Section B asks respondents to describe a single high priority innovation with all further questions limited to this innovation and covering how it was developed, including different methods of obtaining input from

¹ For more details, see deliverable 4.2 "Questionnaire design, cognitive testing and respondent identification".



library users and other stakeholders and the importance of knowledge obtained from different groups. The purpose of focusing on a single, most important innovation is to increase the probability that co-creation was used and to improve the validity and reliability of the data. Respondents are more likely to be able to provide valid and reliable answers to questions on a single important innovation than for all their library's innovations combined (Arundel, 2023; OECD/Eurostat, 2018). In addition, data for a single innovation avoids problems of averaged responses, whereby respondents must estimate the average importance of specific activities or innovation obstacles. All questionnaires include a very short Section C requesting background information such as library employment and the respondent's number of years working in the library sector.

The branch library questionnaire does not ask respondents to provide answers for a single focal innovation. Section A asks general questions on management and staff support for innovation, different types of innovation, and obstacles to innovation. Section B, limited to innovators only, asks about innovation activities and outcomes.

All three questionnaires were translated from English into the seven national languages of the nine countries. The questions underwent cognitive testing in the national language in four countries (Denmark, France, the Netherlands and Spain), with a total of 17 interviews with public library managers, 17 interviews with university library managers, and 2 interviews with branch managers. The purpose of cognitive testing is to ensure that all respondents could understand the questions as intended and provide reasonably accurate answers (Arundel, 2023b, chapter 4). Questions were extensively revised, as needed, after cognitive testing.

Almost all questions consist of a main question (for instance "how important are the following activities to your library?" and a set of one or more sub-questions (for instance 'providing information or access to publications', 'holding community or cultural activities', etc.). The total number of sub-questions is highest for university libraries (103) and intentionally lowest for branch libraries to reduce respondent burden (62) and to take into consideration the results of a study of responsibilities across main and branch public libraries. These results indicated that decision making over many technical and process innovations are taken by the main library. In comparison to university libraries, the slightly lower number of sub-questions for main public libraries was due to removing a few questions (such as external sources of assistance) to reduce the questionnaire length and thereby increase response rates.

With some exceptions, correspondence by email and post were addressed to a named senior manager at each library. All surveys used a combined online/postal survey method with multiple follow-up contacts to increase response rates and followed good practice recommendations for surveys of organizations (Arundel, 2023). The cover letter informed recipients that returning the questionnaire

would constitute informed consent and described how respondents could revoke consent after submitting their questionnaire. In total, 1,983 libraries across the three library types were contacted and asked to participate in the survey.

The treatment of incomplete or missing values from respondents skipping questions requires particular care to conserve cases. The default is to exclude cases with a missing value for a variable of interest. However, this is likely to decrease accuracy if the pattern of responses shows that a respondent has selectively skipped questions, for instance by only answering questions that they find relevant. Several rules of thumb are used to reassign missing values when one or more sub-questions are completed (Arundel et al, 2015). Furthermore, respondents that used a “don’t know” response category to a sub-question measured on an importance scale are assumed to assign low or no importance to the activity covered by the question, otherwise they would be aware of the activity.

2.1 Survey of main public libraries

The survey of main public libraries was conducted between September 2024 and March 2025 in nine member states of the European Union (Austria, Belgium, Denmark, Finland, France, Germany, Greece, the Netherlands, and Spain) for which there was a LibrarIN partner institution. The survey is a census, with the survey questionnaire sent to all main libraries in cities with more than approximately 20,000 inhabitants.

Questionnaires were sent to 1,110 main public libraries, with responses from 761, giving an initial response rate of 68.6%. However, response rates declined over the questionnaire. The relevant response rate for completing all of Section A is 63.0% (718 libraries). The response rate for all of Section B is 54.9% (588 libraries) after excluding 39 ineligible libraries that reported that they did not innovate in Section A. A summary of response rates for each library type is given in Table 2.1.

Table 2.1: Response rates (percent) by type of library and by section of survey

Library type	Sample	Total	Response rates		
			Section A	Section B	Section C
Main public libraries	1,110	68.6	63.0	54.9	57.8
Branch public libraries	365	48.8	39.2	34.2	36.2
University libraries	508	69.5	62.0	54.5	55.1

Notes: The response rates by section are calculated based on frequencies for the last question in that section. The response rate in Section C is higher compared to Section B as respondents that completed Section A and reported no innovations in the previous three years were not eligible to answer Section B, but were directed to Section C.



2.2 Survey of university libraries

In the nine project partner countries, all universities that conducted research, defined by whether they had a PhD program, were identified. LIBER, the Association of European Research Libraries, provided contact information for member university libraries in the nine partner countries and for LIBER members in other European countries. Contact details for non-LIBER library managers were obtained for all countries except for France, where the questionnaire was distributed through a list serve of the French association of university librarians. The survey of university libraries was conducted in two stages. The non-LIBER sample began in June 2024 while the LIBER survey was delayed until September 2024. Both sections of the survey ended in March 2025.

Questionnaires were sent to an identified 508 university libraries (343 LIBER and 165 non-LIBER members), with responses from 353 libraries, giving an initial response rate of 69.5%. However, response rates declined over the questionnaire. The relevant response rate for completing all of Section A is 62.0% (315 libraries). The response rate for all of Section B is 54.5% (277 libraries) after excluding 8 ineligible libraries that reported that they did not innovate in Section A. Response rates for non-LIBER libraries in France could not be calculated, but the French non-LIBER universities add another 34 libraries that completed section B.

2.3 Survey of branch public libraries

The survey of branch public libraries was conducted between September 2024 and March 2025 in nine member states of the European Union (Austria, Belgium, Denmark, Finland, France, Germany, Greece, the Netherlands, and Spain) for which there was a LibrarIN partner institution. The survey is a targeted sample, with the survey questionnaire sent to a sample of mid-size and large branches in larger cities. Section A of the questionnaire asks about management and staff support for innovation, different types of new or improved services or processes in the previous three years, and obstacles to implementing new or improved services or processes. Section B is only completed by respondents that reported one or more types of new or improved services or processes, with the questions referring to all of the branch library's innovations. This contrasts with Section B in the questionnaires for main public s and university libraries, which is limited to a single focal innovation.

Questionnaires were sent to 365 branch public libraries, with responses from 178, giving an initial response rate of 48.8%. However, response rates declined over the questionnaire. The relevant response rate for completing all of Section A is 39.2% (143 libraries). The response rate for all of Section B is 34.2% (125 libraries) after excluding 5 ineligible libraries that reported that they did not innovate in Section A.



3 Main Descriptive Results

Descriptive results are given for key questions for main public sector libraries and for university libraries by the size of the library, measured by the number of employees: small and medium size libraries with less than 50 employees and large libraries with 50 or more employees. Results for branch libraries are given for small branches with less than 10 employees and larger branches with 10 or more employees. No breakdowns are provided in this report by country, but some country results are provided in indicators for Deliverable 4.1 "Mapping of Existing Studies and Metrics". For variables measured on an importance scale, the results give the percent of respondents that report the variable as of 'high' importance. Section A results apply to all innovation-related innovations of the library, while Section B results are limited to a single innovation selected by the respondent (except for branch libraries). The number of respondents varies across the tables due to respondents who did not answer specific questions.

3.1 Main public libraries

3.1.1 Section A results

Respondents were asked if they had introduced any of seven types of innovation in the previous three years: collections, educational programs, cultural or community programs, methods of delivering or communicating services to library users, changes to the building design or space, administrative or other work processes, and 'other'. Almost all main public libraries, 94.4%, reported one or more types of innovations. The mean number of seven possible types of innovations reported is 3.32 for small/medium sized libraries and 4.5 ($p < .001$) for large libraries.

Recent theories suggest a shift from a focus in libraries on "collections" of books and other artifacts such as music to "connection", or activities to connect different user groups through community or cultural activities, spaces and facilities for supporting the creative projects of library users, and a place where people can develop their own activities to address their needs. Table 3.1 provides results for the share of libraries giving high importance to three connection activities. Larger libraries are more likely to give a high importance to each connection activity, while both small/medium and large libraries are least likely to provide facilities for library users' own creative projects, possibly because of their cost.



Table 3.1: Percent public libraries giving high importance to three connection activities as a library goal

Activity	< 50 employees		50+ employees	Total
	<i>N</i>	532	108	640
Community or cultural activities (exhibitions, public debates, etc.)		52.8*	73.1	56.3
Place where people can collaborate to develop or provide activities to address their own needs (cross-cultural activities, writing groups, entrepreneurship, etc.)		38.2*	50.0	50.0
Place where people can use library facilities (makerspace, fablab, etc.) for their own creative projects		25.6*	43.5	28.6

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Table 3.2 gives results for a high level of support of the library's management and non-management staff for innovation. Over 40% of libraries report that management always strongly supports innovation (new or improved services or processes), compared to less than 23% who report that non-managerial staff were always 'highly motivated to think of ideas for innovation.

Table 3.2: Percent public libraries reporting that each statement 'always' applies to management or non-management staff

Statement	< 50 employees		50+ employees	Total
	<i>N</i>	532	108	640
Management strongly supported developing new or improved services or processes		41.9*	53.7*	43.9
Non-managerial staff were highly motivated to think of ideas for new or improved services or processes.		22.9	18.5	22.2

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Table 3.3 gives results for the presence of one or more staff with competencies in four areas. All skills are more frequent for large libraries, but over 50% of both small/medium and large libraries have staff with competencies in digital literacy. The least prevalent competence is artificial intelligence, found in only 18.5% of small/medium libraries. Of note, 31.0% of small/medium libraries have internal competences in none of the four areas, compared to only 3.7% of large libraries.

Table 3.3: Percent public libraries reporting one or more staff with competencies in four areas

Area		< 50 employees	50+ employees	Total
	<i>N</i>	525	108	633
Digital literacy (knowing which digital technology to use to solve a problem or information request)		54.9*	88.9	60.7
Change or innovation management		32.8*	63.9	38.8
Design thinking or other methods for involving library users in developing service innovations		28.2*	54.6	32.7
Artificial intelligence (natural language processing, large language models, optical character or handwritten text recognition, etc.)		18.5*	32.4	20.9
None of the above		31.0*	3.7	26.4

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Table 3.4 gives results for the high importance of five factors as drivers of the library's new or improved services or processes. Three drivers are more prevalent as high importance for large libraries, but there is no difference by size for two drivers: suggestions from library users and suggestions from non-profits. The most common high importance driver for all libraries is societal changes or expectations, which will depend on what citizens and residents expect from their libraries and opportunities provided by technologies such as the internet.

Table 3.4: Percent public libraries giving high importance to five drivers of innovation

Area		< 50 employees	50+ employees	Total
	<i>N</i>	493	107	600
Societal changes or expectations		36.0*	69.4	41.6
New media and technologies (digitalization, artificial intelligence, etc.)		26.4*	50.5	30.7
Suggestions from library users		23.7	28.0	24.5
Municipal or regional legislation or policies		17.0*	29.9	19.3
Suggestions from non-profits (NGOs, schools, providers of health, social, educational services, etc.)		12.6	14.0	12.8

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

High importance obstacles are given in Table 3.5. The most frequently cited high importance obstacles are due to a lack of staff or financial resources. The least important obstacle is a lack of staff interest in change or resistance to change. In contrast to other questions, small/medium size libraries are more likely than large libraries to cite each obstacle as of high importance, except for a lack of staff interest / resistance to change.

Table 3.5: Percent public libraries giving high importance to six innovation obstacles

Obstacle		< 50 employees	50+ employees	Total
	<i>N</i>	522	106	628
Insufficient staff to take on new work		57.1*	40.6	54.3
Insufficient financial resources		46.6*	26.4	43.2
Insufficient staff with experience on how to develop new or improved services or processes		45.0*	29.2	42.4
Unrealistic time pressures		15.3*	21.7	16.4
Lack of support by municipal or regional government		15.1*	7.5	13.9
Library staff uninterested or resistant to change		7.9	7.5	7.8

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

3.1.2 Section B results

Section B is limited to a single innovation "of high priority to your library or high expected value for your library users".

Several questions ask about the characteristics of the single innovation. The type of innovation did not vary significantly between small/medium and large libraries (a table is not provided). On average, 57.8% were service only innovations, 39.3% were combined service-process innovations, and 2.7% were process only innovations. More than half of the innovations (57.5%) involved "digital technologies, automated systems, apps or artificial intelligence", with no significant difference between small/medium libraries (56.7%) and large libraries (61.0%).

A significantly higher percentage of large versus small/medium libraries had evaluated the effects of the innovation after implementation (61.5% versus 47.3%). In total, 97.1% of large libraries had already evaluated the innovation or had plans to do so, versus 68.6% of small/medium libraries.

Table 3.6 provides the distribution of small/medium and large libraries by how the innovation was developed. The most frequent method of developing the innovation, cited by 37.1% of respondents, is

to develop the innovation in-house with little assistance from other organizations. The next common method for small/medium libraries (28.1%) is to adopt innovations already in use, with few or no additional changes. Approximately equal shares of small/medium and large libraries either modify existing innovations or collaboratively develop it with other organizations. Based on other analyses, collaborative develop is more likely to be used for more novel innovations.

Table 3.6: How the innovation was developed, percent public libraries

Method	<i>N</i>	< 50 employees	50+ employees	Total
	477	105	582	
By developing this new or improved service primarily in-house, or with your branch libraries, with little assistance from external organizations	37.1	37.1	37.1	
By adopting a service or process already in use by other libraries or organizations, with few or no additional changes	28.1	17.1	26.1	
By modifying a service or process already in use by other libraries or organizations	17.6	22.9	18.6	
By collaboratively developing this new or improved service or process with other libraries or organizations	17.2	22.9	18.2	
	100%	100%	100%	

No significant differences between small/medium and large university libraries.

Table 3.7 gives the percentage of libraries that used four methods to obtain ideas from library staff or library users for developing new or improved services or processes. There are no significant differences by library size. Internal discussions and conversations between library staff and library users are very common, reported by an average of 75.4% of libraries. Surveys of users are reported by 31.4%, while the use of a suggestion box is the least common method, reported by 19.9%.

The second half of Table 3.7 gives the percentage of libraries that used focus groups, design thinking exercises, brainstorming sessions, or workshops to identify challenges on unmet user needs to be addressed by the new or improved service or process, or to generate solutions to these challenges or unmet needs. These are co-creation methods that involve greater expertise and effort than the methods listed in the upper part of Table 3.6. Both co-creation methods are more likely to be used by large than small libraries, although both methods are more common than surveys or suggestion boxes.

Table 3.7: Methods for obtaining ideas from library staff and users for innovation, percent public libraries

Method		< 50 employees	50+ employees	Total
	<i>N</i>	477	105	582
Internal discussions among library staff		88.5	94.3	88.5
Informal conversations between library staff and library users		74.2	81.0	75.4
Surveys on the experiences of library users with previous or similar services or processes		29.4	41.0	31.4
Suggestion box (online or in the library) for new ideas from library staff or library users		19.9	22.9	19.9
	<i>N</i>	473	105	578
Identify challenges		47.1*	67.6	50.9
Identify solutions		49.0*	70.5	52.9

*Differences between small/medium and large libraries are statistically significant ($p < 0.001$)

Different types of individuals can be involved in the co-creation activities identified above. Table 3.8 gives the percentage of five groups that participated in co-creation methods to identify challenges or solutions. There are large differences by library size, particularly for library users, where participation is almost twice as high for large libraries (39.1%) versus small/medium libraries (20.5%).

Table 3.8: Participation of five groups in co-creation activities, percent public libraries

Group		< 50 employees	50+ employees	Total
	<i>N</i>	473	105	578
Library managers at your main library/ library branches		48.4*	65.7	51.6
Non-managerial staff at your main library/library branches		49.1*	69.5	52.8
Current or potential library users		20.5*	39.1	23.9
Representatives from non-profits		16.1*	25.7	17.8
Representatives from businesses or consultants		14.6	17.1	15.1

*Differences between small/medium and large libraries are statistically significant ($p < 0.001$)

Table 3.9 gives the percent of libraries that gave a 'very useful' assessment of the usefulness of input obtained, through any means, from eight groups for the development of the new or improved service or process. Sources internal to the library (managers and non-management staff) are the most

common source of 'very useful' inputs, followed by managers or staff from other libraries and then current or potential users. Knowledge from all other sources are reported as very useful by less than 15% of libraries. there is only one difference by library size. Non-profits are a very useful source of inputs for 21.9% of large libraries versus 12.7% of small/medium libraries.

Table 3.9: Percent public libraries obtaining 'very useful' knowledge for innovation from eight groups

Group		< 50 employees	50+ employees	Total
	<i>N</i>	473	105	578
Non-managerial staff at your main or branch libraries		67.2	69.5	67.6
Library managers at your main or branch libraries		66.8	64.8	66.4
Managers or staff from other libraries		30.7	23.8	29.4
Current or potential library users		23.3	30.5	24.6
Businesses or consultants		15.4	10.5	14.5
Non-profits (local NGOs, schools, health or educ. providers, etc.)		12.7*	21.9	14.4
Regional, national or international library associations		13.7	15.2	14.0
Municipal governments or politicians		12.1	14.3	12.5

No significant differences between small/medium and large university libraries.

Table 3.10 is limited to libraries that reported obtaining input from each of four important sources and compares the effect of co-creation activities on the percent reporting that knowledge was very useful. The use of co-creation methods has a substantial impact on the percent reporting very useful knowledge. For example, when no co-creation methods are used, 17% of the libraries report obtaining very useful knowledge from library users. However, when co-creation methods are used the percentage obtaining very useful knowledge from users more than doubles to 49%.

Table 3.10: Percent public libraries finding knowledge from each source (with and without co-creation) 'very useful'

	N ¹	No co-creation	With co-creation
Library non-management staff	527	30%	52%
Library users	382	17%	49%
Non-profits	225	32%	56%
Businesses	183	47%	40%

1. The number of cases varies due to limiting cases to respondents who obtained some knowledge from each group.

3.2 University libraries

Almost all university libraries, 98%, reported one or more types of innovations. The mean number of seven possible innovations reported is 4.4 for small/medium sized libraries and 5.1 ($p < .001$) for large libraries.

3.2.1 Section A results

Table 3.11 give results for two 'connection' activities for university libraries. For both activities, small libraries are significantly less likely to give a high importance to each connection activity. A possible explanation is that all university libraries must first meet core information functions, with 'connection' activities an extra for which smaller libraries may lack sufficient resources.

Table 3.11: Percent university libraries giving high importance to connection activities as a library goal

Activity		< 50 employees	50+ employees	Total
	<i>N</i>	144	171	315
Community or cultural activities (seminars, exhibits etc.)		22.9*	42.1	31.4
Providing space and equipment for user projects (makerspace, fablabs, podcast studios, 3D printers, video rooms etc.)		18.8*	30.4	23.0

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Table 3.12 provides results for management and staff support for innovation.

Table 3.12: Percent university libraries reporting that each statement 'always' applies to management or non-management staff

Statement		< 50 employees	50+ employees	Total
	<i>N</i>	144	171	315
Senior management strongly supported developing new or improved services or processes		38.9*	58.5	49.5
Senior management gave high priority to new ideas or new ways of working		31.3*	42.1	37.9
Library staff were highly motivated to think of ideas for new or improved services or processes.		19.4	18.5	19.4

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Management support is higher for large than for small/medium libraries, with 58.5% of large libraries reporting that senior management always strongly supported developing innovations (new or improved services or processes), versus 38.9% for small/medium libraries. The respondents thought that library staff were less supportive of innovation, with only 19.4% reporting that staff were always highly motivated to think of ideas for innovations.

The percent of libraries reporting staff with competences in five technical and management skills of relevance to library innovations, particularly those with a digital component, is given in Table 3.13. All skills were less frequent in small/medium libraries than in large libraries. For all skills combined, 41.4% of small/medium libraries reported no staff with competencies in all skills, versus only 17.0% of large libraries.

Table 3.13: Percent university libraries reporting one or more staff with competencies in four technical areas

Technical area		< 50 employees	50+ employees	Total
	<i>N</i>	140	171	311
Digital literacy (knowing which digital technology to use to solve a problem or information request)		32.1*	59.1	46.9
Design thinking or other methods for involving library users in developing service innovations		20.7*	35.7	28.9
Change or innovation management		19.3*	29.8	25.1
Artificial intelligence (natural language processing, large language models, optical character or handwritten text recognition, etc.)		12.9*	28.7	21.5
None of the above		41.4*	17.0	28.0

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Results for five 'high' importance drivers are given in Table 3.14. The most frequent high importance driver is to 'improve experiences' of library users, cited by 44.0% of the libraries. New university policies or priorities is a high importance driver for only 20.1% of the libraries. There is no significant difference by library size for the two drivers related to library users, but the three other drivers are less frequently cited as high importance drivers by the smaller libraries.

Table 3.14: Percent university libraries giving high importance to five innovation drivers

Driver		< 50 employees	50+ employees	Total
	<i>N</i>	139	170	309
Improve experiences of your new or current users		40.3	47.1	44.0
New demands or needs of library users		33.3	37.2	35.4
New technologies (digitalization, AI, etc.)		23.7*	32.9	28.8
Public funding (European, national, regional, local) or other external funding for your library		16.5*	27.1	22.3
New university policies or priorities		15.1*	24.1	20.1

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

High importance obstacles for all innovation activities are given in Table 3.15. There are no significant differences by library size. The two leading obstacles are insufficient funding (42.1% of libraries) and insufficient staff with expertise on innovating (35.4%).

Table 3.15: Percent university libraries giving high importance to six innovation obstacles

Obstacle		< 50 employees	50+ employees	Total
	<i>N</i>	129	152	281
Insufficient financial resources		43.6	40.9	42.1
Insufficient staff with expertise on developing new or improved services or processes		40.0	31.6	35.4
Limited digital skills of library staff		12.1	16.4	14.5
University regulations or requirements		10.0	9.9	10.0
Unrealistic time pressures		7.9	11.1	9.6
Resistance of library staff to change		6.4	11.7	9.3

No significant differences between small/medium and large university libraries.

3.2.2 Section B results

In respect to the characteristics of the focal innovation, 79.5% involved digital technology, with no significant difference by library size (78.0% for small/medium versus 82.0% for large university libraries). There was no significant difference in the percent of libraries by size that had evaluated the

effects of the focal innovation after implementation: 45.1% of small/medium and 48.2% of large libraries. Of note, fewer large university than large main public libraries (61.5%) had evaluated their focal innovation.

Table 3.16 gives results for how the focal innovation was developed. The most common method is in-house development (43.3%), followed by modification (23.1%). Adoption is slightly more frequent at 17.9% versus collaboration at 15.7%. There are no significant differences by library size.

Table 3.16: How the innovation was developed, percent university libraries

Method		< 50 employees	50+ employees	Total
	<i>N</i>	142	170	312
By developing the innovation primarily in-house or with branch libraries, with little assistance from external organizations		43.0	43.5	43.3
By modifying a service or process already in use by other libraries or organizations		24.6	21.8	23.1
By adopting a service or process already in use by other libraries or organizations, with few or no additional changes		18.3	17.6	17.9
By collaboratively developing this new or improved service or process with other libraries or organizations		14.1	17.1	15.7
		100%	100%	100%

No significant differences between small/medium and large university libraries.

Table 3.17 gives the share of libraries that used different methods to obtain input from library staff or users. Large firms are more likely to use focus groups to identify challenges and use the services of design firms. The most common method is conversations between library staff and users.

Table 3.17: Methods for obtaining useful input from library staff or library users for innovation, percent university libraries

Method		< 50 employees	50+ employees	Total
	<i>N</i>	141	170	311
One-on-one conversations between library staff and users		73.0	72.9	73.0
Focus groups/workshops to identify challenges or unmet needs		41.8*	60.6	52.1
Surveys on experiences with previous or similar services/ processes		50.4	44.1	46.9
Focus groups/workshops to generate solutions to challenges		41.8	49.4	46.0

Method	< 50 employees	50+ employees	Total
Crowdsourcing methods to collect ideas or solutions	12.8	13.5	13.2
Services of design firms, innovation labs or living labs	9.9*	17.1	13.8

Table 3.18 gives results for the use of external sources (outside the library) for collaboration partners, technical knowledge or assistance for developing the innovation. The most frequently cited source of external assistance is the IT or other departments of the library's university, which is also more frequently cited by large universities, as are businesses. NGOs or non-profits are rarely used, drawn upon by only 1.6% of university libraries.

Table 3.18: Percent university libraries giving high importance to seven external sources for assistance for developing the innovation

Source		< 50 employees	50+ employees	Total
	<i>N</i>	141	168	309
IT or other departments of your university		36.2*	47.6	42.4
Other university, national or municipal libraires		22.0	28.0	25.2
Providers of specialised software or ICT equipment		25.5	19.6	22.3
Library associations		14.9	9.5	12.0
Government agencies or departments		7.8	7.7	7.8
Businesses including consultants		10.6*	4.8	7.4
NGOs or non-profits		1.4	1.8	1.6

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Questions on co-creation are limited to library staff and users, with the percent of libraries drawing on these sources given in Table 3.19. Management and non-management library staff are almost equally involved in co-creation activities: 63.1% of non-management staff and 61.2% of managers. For library users, faculty/researchers are involved in co-creation at almost twice the rate of students: 46.3% versus 24.6%. There are no significant differences between small/medium and large libraries.

Table 3.19: Participation of four groups in co-creation activities, percent university libraries

Group		< 50 employees	50+ employees	Total
	<i>N</i>	140	169	309
Administrative or front-line library staff		62.1	63.9	63.1
Library managers		56.4	65.1	61.2
Faculty or researchers as library users		44.3	47.9	46.3
Students as library users		24.3	24.9	24.6

No significant differences between small/medium and large university libraries.

Table 3.20 gives results for the percent of libraries that obtained 'highly useful' knowledge for innovation from library staff and users for identifying challenges and developing solutions. Managers are the most cited source, closely followed by non-management staff for both challenges and solutions. For both challenges and solutions, a higher percentage of libraries obtain highly useful knowledge from faculty/researchers compared to students. This could be due to innovations that are more relevant to faculty than students or because it is easier to induce faculty to participate, since faculty participate in many library committees. There are few differences by library size, but faculty/researchers are less likely to produce highly useful knowledge for challenges in smaller libraries. Although not significant, a higher percentage of small libraries report obtaining highly useful knowledge from students for both challenges and solutions.

Table 3.20: Percent university libraries obtaining 'highly useful' knowledge for innovation from four sources

Source		< 50 employees	50+ employees	Total
	<i>N</i>	142	170	312
Challenges				
Library managers		57.7	62.9	60.6
Administrative or front-line library staff		57.7	48.8	52.9
Faculty or researchers as library users		33.1*	43.5	38.8
Students as library users		24.6	18.8	21.5
Solutions				
Library managers		54.6	56.7	55.7

Source	< 50 employees	50+ employees	Total
Administrative or front-line library staff	59.6*	48.2	53.4
Faculty or researchers as library users	26.2	32.3	29.5
Students as library users	21.2	14.7	17.7

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Table 3.21 compares the percentage of university libraries that obtained useful knowledge with and without the use of co-creation. As for public libraries (Table 3.10), co-creation has a substantial effect, with 25% of libraries reporting 'highly useful' knowledge from students when students were not involved in co-creation activities compared to 60% when students were involved in co-creation. The results for faculty/researchers also show a substantial difference, at 30% without co-creation and 68% with co-creation.

Table 3.21: Percent university libraries reporting that knowledge from each source (with and without cocreation) was 'very useful'

	N ¹	No co-creation	With co-creation
Library non-management staff	287	46%	77%
Faculty/researchers	261	30%	68%
Students	209	25%	60%

1. Number varies because the analysis is limited to respondents who obtained some knowledge from each group.

Table 3.22 gives results for high importance obstacles for involving library users in co-creation activities. The two most frequently cited high importance obstacles are insufficient resources (17.9%) and difficulties finding library users to participate in co-creation activities (17.2%). A lack of experience in involving users or staff reluctance to include them are rarely of high importance. These obstacles for user involvement in co-creation are considerably less of a problem than the general obstacles, relevant to all innovations, covered in Table 3.15, where 42.1% of respondents cited insufficient funding as of high importance.



Table 3.22: High importance obstacles to involving library users in co-creation activities to develop the new or improved service or process, percent university libraries

Obstacle	<i>N</i>	< 50 employees	50+ employees	Total
		140	169	309
Insufficient time or financial resources for including library users		21.3	15.1	17.9
Difficulties finding potential or current library users willing to participate		20.7	14.1	17.2
Lack of experience involving library users		10.4	6.7	8.3
Reluctance of library staff to include library users		4.4	2.4	3.3

No significant differences between small/medium and large university libraries.

3.3 Public branch libraries

The branch library questionnaire does not contain separate sections for all innovations and for a single focal innovation. Instead, all questions cover the general innovation activities of the branch over the previous three years. The branch library questionnaire has many differences with the questionnaire for main public libraries, but one of the most important differences that reduces comparability is that the section B questions for main public libraries is for a single, high priority innovation. This affects importance scales (results are generally stronger for main libraries because the question refers to high priority innovations), but the order of importance of similar sets of variables can be compared.

3.3.1 Section A results

Table 3.23 gives results for a statement on senior management providing 'strong' support for "developing new ideas for services or processes (new ways of working" in your branch library" and for non-management staff at the branch being 'highly motivated to think of ideas for new or improved services or processes'. Both questions are interpreted as measuring support for innovation. For branches with more than 10 employees there is no difference in management and staff support for innovation, but the results differ for larger branches with over 10 employees. First, management is more supportive than staff (34.5% versus 10.3%). Second, staff support is significantly greater for small than large branches (41.4% versus 10.3%). The result for management support for small branches is very similar to that of small main public libraries at 41.9%, but the result for staff support is higher than that of small public libraries at 22.9%.

Table 3.23: Percent branch libraries reporting that each statement 'almost always' applies to management or non-management staff

Statement		< 10 employees	10+ employees	Total
	<i>N</i>	99	29	128
Management strongly supported developing new or improved services or processes		43.4	34.5	41.4
Non-managerial staff were highly motivated to think of ideas for new or improved services or processes.		41.4*	10.3*	34.4

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Table 3.24 gives results for the introduction of seven types of "new or improved services or processes", listed in declining order of frequency for all branches combined. There are no significant differences between small and large branches. The most reported innovations are for services, with new or improved cultural or community programs reported by 59.8% of branches. Process innovations are reported by only 31.5%. Only 3.2% (all small branches) reported no innovations.

Table 3.24: Percent branch libraries reporting different types of innovations

Statement		< 10 employees	10+ employees	Total
	<i>N</i>	98	29	127
Cultural or community programs		57.1	69.0	59.8
Collections		59.2	58.6	59.1
Building design or use of space		56.1	69.0	59.1
Educational programs		53.1	62.1	55.1
Communication or delivery methods		39.8	48.3	41.7
Programs to serve disadvantaged groups		37.8	48.3	40.2
Process innovations		30.6	34.5	31.5
No innovations		4.1	0.0	3.2

No significant differences between small/medium and large branch libraries.

Table 3.25 gives the percent of libraries giving high importance to innovation obstacles. Two of the options were only asked of branch libraries (lack of autonomy and lack of support by senior management) while the other four were also asked of main public libraries. There are only two high



frequency major obstacles (insufficient staff and insufficient funding), reported by 49.2% and 45.3% of respondents. These are also the top two obstacles for main public libraries. Only 4.7% of branches assign 'high' importance to a lack of expertise on how to innovate, compared to 42.4% of main public libraries. This is probably because the types of innovations developed by branches are less challenging.

Table 3.25: Percent public libraries giving 'high' importance to five obstacles of innovation

Area	< 10 employees	10+ employees	Total
	99	29	128
Insufficient branch staff to take on new work	47.5	55.2	49.2
Insufficient financial resources for your branch	46.5	51.4	45.3
Lack of support by senior management	6.1	10.3	7.0
Lack of autonomy to implement ideas proposed by branch staff	5.1	10.3	6.3
Branch staff uninterested or resistant to change	5.1*	6.9*	5.5
Branch staff lack expertise on how to innovate	4.0*	6.9*	4.7

*Differences between small/medium and large libraries are statistically significant and calculated on full distribution of responses to this question ($p < 0.05$), varying from 'none', 'low', 'medium' and 'high' importance.

The branch questionnaire asked about autonomy to make decisions on innovation because decision making could be controlled by the main public library. However, only 6.3% give a lack of autonomy a high importance rating as an obstacle to innovation.

3.3.2 Section B results

Section B was only completed by branches with one or more reported innovations. The first question asked about the importance of five innovation drivers, with Table 3.26 giving results for the share assigning 'high' importance to each driver. There are no significant differences between small and larger branch libraries. The most frequent high importance driver is the policies of the main library, reported by 40.8%, followed by societal expectations for better library services. The least frequent high importance driver is suggestions from library users, at 21.6%. The same questions on societal drivers and suggestions from library users were asked of main public libraries. There is very little difference, with 41.6% of main public libraries citing societal expectations and 24.5% citing suggestions from library users.

Table 3.26: Percent branch libraries giving high importance to five drivers of innovation

Area		< 10 employees	10+ employees	Total
	<i>N</i>	96	29	125
Main library policies		42.7	34.5	40.8
Societal expectations for better library services		35.4	51.7	39.2
Municipal policies		34.4	31.0	33.6
Community needs		31.3	37.9	32.8
Suggestions from library users		20.8	24.1	21.6

No significant differences between small/medium and large branch libraries.

The autonomy of the branch library is also investigated in a question on how the innovation was developed, with results given in Table 3.27. The question is dissimilar to the 'how developed' question for main libraries (see Table 3.6) because branch respondents could answer all three options to cover different innovations and the options differ from the main library question. Over a third, 44.7%, reported that the branch was required to implement an innovation that was developed outside the branch. This is likely to be due to a decision by management at the main public library and reflect a lack of autonomy. However, the branches still had considerable autonomy, with 78.1% of branches developing an innovation through collaboration with other municipal libraries and 53.7% reporting that the branch developed innovations in-house without input from other libraries.

Table 3.27: How any of the branch innovations were developed, percent branch libraries

Method		< 10 employees	10+ employees	Total
	<i>N</i>	95	28	123
Worked collaboratively with other libraries within municipal library system		77.9	78.6	78.1
Staff at branch largely developed an innovation in-house without input from other libraries		53.7	53.6	53.7
Senior management required the branch to implement an innovation that was developed elsewhere		46.3	39.3	44.7

No significant differences between small/medium and large branch libraries.

The high rate of collaborative development of innovations by branch libraries is also reflected in a question on where innovations were implemented, with results in Table 3.28. Over 60% reported that one or more of their innovations were implemented in both the branch library and in other branches (64.5%), or in the branch and main public library (61.3%). Considerably fewer (36.3%) reported that one or more innovations were only implemented by their library branch. This was also significantly more common in small branch than larger branch libraries, possibly reflecting innovations that were only relevant to the community served by the branch.

Table 3.28: Implementation of innovations, percent branch libraries

	< 10 employees	10+ employees	Total
<i>N</i>	95	29	124
In respondents' branch library and other branch libraries	68.4	51.7	64.5
In respondents' branch library and in the main library	64.2	51.7	61.3
Only in respondents' branch library	41.1*	20.7*	36.3

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

As shown in Table 3.29, the most frequent method for obtaining ideas for innovation from library staff or library users is through informal conversations, cited by 82.4% of branches, followed by a suggestion box or social networks (51.2%) and surveys on user experiences (45.6%). Costlier interactive activities such as focus groups, brainstorming sessions, or workshops with branch library users to identify challenges or solutions are only cited by 22.4% and 14.4% of branches respectively. Except for library user surveys, there are significant differences in the methods used between smaller and larger branch libraries. Small branches are more likely to use informal conversations, whereas larger branch libraries are more likely to use suggestion boxes and interactive (co-creation) methods.

Table 3.29: Methods for obtaining ideas from library staff and users for innovation, percent branch libraries

Method	< 10 employees	10+ employees	Total
<i>N</i>	96	29	125
Informal conversations between library staff and library users	84.4*	75.9*	82.4
Suggestion box or social networks for new ideas from library staff or library users	47.9*	62.1*	51.2

Method	< 10 employees	10+ employees	Total
Surveys on the experiences of library users with previous or similar services or processes	41.7	58.6	45.6
Co-creation activities with library users to identify challenges	20.8*	27.6*	22.4
Co-creation activities with library users to generate solutions	11.5*	24.1*	14.4

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Table 3.30 gives results for high importance obstacles to including users in developing innovations, covering resource shortages, staff related obstacles (lack of experience and reluctance to include library users) and one user related obstacle (difficulties finding users willing to participate). A lack of resources in terms of staff or finance is cited by almost half (47.2%) of the branches as a high importance obstacle. All other obstacles are substantially less frequent, with staff reluctance to including library uses only cited by 5.6% of branch libraries.

Table 3.30: High importance obstacles to involving library users to develop innovations, percent branch libraries

Obstacle		< 10 employees	10+ employees	Total
	<i>N</i>	96	29	125
Insufficient staff, time or financial resources for including library users		45.8	51.7	47.2
Lack of experience involving library users		12.5	24.1	15.2
Difficulties finding potential or current library users willing to participate		8.3	10.3	8.8
Reluctance of library staff to include library users		6.3	3.5	5.6

No significant differences between small/medium and large university libraries.

The purpose of involving different groups in developing an innovation is to obtain useful knowledge for its development. Table 3.31 gives the percent of branches that report knowledge obtained from six groups to be 'very' useful. Library managers or staff at either the branch library (48%) or main library (45.6%) are the most frequently cited 'very' useful sources. Only 16.8% cite the branch library's users as a 'very' useful source of knowledge and only 2.4% cite businesses or consultants. Main public libraries also find staff (cited by 67.6%) or managers (66.4%) to be the most frequent sources of useful knowledge for their focal innovation, with library users cited by 24.6%.

Table 3.31: Percent branch libraries obtaining 'very useful' knowledge for innovation from six groups

Group		< 10 employees	10+ employees	Total
	<i>N</i>	97	28	125
Managers or staff at your branch library		48.5	46.4	48.0
Library managers or other staff at your main library		46.4	42.9	45.6
Library managers or other staff at other branch libraries		32.0	46.4	35.2
Non-profits (local NGOs, schools, health or educ. providers, etc.)		19.6*	21.4*	20.0
Your branch library's users		18.6	10.7	16.8
Businesses or consultants		2.1	3.6	2.4

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

Table 3.32 gives the percent of branch libraries reporting a 'strong positive effect' from the innovation for eight outcomes. (Outcomes for main public libraries are given in Table 9.1). The most common strong positive effect is on the design or use of library space (30.4%) followed by the satisfaction of library staff (26.4%) and user experience (22.4%). Improvements to processes are only cited by 10.4%, probably because of the low percentage of respondents that report process innovations. There is only one significant difference between small and large branch libraries, for the satisfaction of library staff, which is considerably higher for small (32.0%) than for large branch libraries (7.1%).

Table 3.32: Percent branch libraries reporting 'strong positive effect' from innovation for 8 outcomes

Outcome		< 10 employees	10+ employees	Total
	<i>N</i>	97	28	125
Design or use of library space		27.8	39.3	30.4
Satisfaction of library staff		32.0*	7.1*	26.4
Library user experiences		22.7	21.4	22.4
Ease of access to information		19.6	14.3	18.4
Outreach to new library users		19.6	14.3	18.4
Social interactions or networking between library users		14.4	25.0	16.8
Simplicity or ease of processes		11.3	7.1	10.4
Library user skills (literacy, digital, etc.)		5.2	17.9	8.0

*Differences between small/medium and large libraries are statistically significant ($p < 0.05$)

3.4 Discussion of descriptive results

Almost all responding libraries report one or more innovations in the previous three years: 94.4% of main public libraries, 92.0% of university libraries, and 96.8% of branch libraries. The real innovation rate is likely to be lower, as non-respondent libraries could be more likely not to innovate and consequently not complete section A of the questionnaire. A minimum estimate of innovative libraries can be estimated by assuming that all non-respondents did not innovate. This method estimates a minimum innovation rate of 63% for main public libraries, 62% for university libraries, and 38% for branch public libraries.

There are several notable results from the descriptive analyses, many of which are explored further in other chapters. For many of these results, comparable data are available for both public and university libraries. Comparability between main public libraries and branch public libraries is possible for Section A questions, but the data are less comparable for section B questions, both because of differences in the questions and because section B for branch public libraries refers to all innovations instead of to a single 'high priority' innovation.

First, connection is a more important goal for main public libraries than for university libraries (questions on connection were not included in the questionnaire for branch public libraries). For example, 56.3% of main public libraries give a high importance to community or cultural events, versus 31.4% of university libraries. This is probably because universities attach much greater importance to providing information and resource materials to faculty and students - both traditional roles of the university library.

Second, there is little difference between public and university libraries in the perceived support of management and non-managerial staff for innovation. For example, 53.7% of respondents for large public libraries and 58.5% of large university libraries report that management 'always' strongly supported developing new or improved services or processes. For staff, 18.5% of public and 18.5% of university respondents report that non-management staff were 'always' highly motivated to think of ideas for innovations. The survey of branch public libraries found slightly less support for innovation, with 41.4% of respondents finding that management 'almost always' supports developing new or improved services or processes, but considerably more support from staff, with 34.4% of branch respondents reporting that non-managerial staff were highly motivated to think of ideas for innovation. This was largely due to smaller branches with less than 10 employees and is possibly because the responding managers had very good knowledge of the views of all their staff.

Third, for all three library types the most frequently cited 'high' importance obstacles are due to a lack of resources, either insufficient staff to take on new work or insufficient funding. An unsupportive



organizational culture is seldom a high importance obstacle, with staff resistance to change only cited by 9.3% of university libraries, 7.8% of branch public libraries, and 4.7% of main public libraries.

Fourth, for main public and university libraries, there are many significant differences between small/medium (less than 50 employees) and large libraries (50+ employees) for general library conditions and innovation activities, as covered in Section A of each questionnaire, but few differences for section B questions on a single focal innovation selected by the respondents. For example, all skills and most high importance drivers are significantly less frequent for small/medium sized public libraries than for large public libraries, while most obstacles are of higher importance for small/medium libraries than for large libraries. The same pattern applies to university libraries except for obstacles, for which there is no difference between small/medium and large libraries. In contrast, for the focal innovation, there are no significant differences by size for how the innovation was developed for both public and university libraries and only a few differences between small/medium and large libraries for very useful sources of knowledge (Tables 3.9 and 3.20). These differences could be explained by important size effects for the decision to innovate (affected by skills, drivers and obstacles etc.), as captured by the section A questions, but far fewer differences once the decision to innovate is made, as shown by the high priority innovations covered in section B. The implication is that policies to encourage innovation by small/medium libraries should focus on factors such as skills and drivers that support innovation. For branch public libraries there is very little difference in obstacles between small (less than 10 employees) and large (10 or more employees) for obstacles and drivers.

Fifth, co-creation has substantial benefits, in terms of the usefulness of knowledge obtained from different sources, for both public and university libraries. The use of co-creation, compared to its absence, approximately doubles the share of public and university libraries reporting highly useful knowledge from library users (Tables 3.10 and 3.21).

Sixth, even though co-creation has substantial benefits, only a small share of main public libraries (23.5%) and branch public libraries (24.4%) involve users in co-creation, although the share is much higher for large main public libraries than small/medium main public libraries (39.1% versus 20.5%), pointing to a resource problem for small/medium libraries. The same effect is observed for branches, with higher shares of co-creation in larger versus smaller branches (see Table 3.29). The situation in university libraries is more complex because there are two types of users, faculty/researchers and students. Faculty/researchers are involved in co-creation for 46.3% of the high priority innovations by university libraries, whereas students are only involved in co-creation for 24.6% of these innovations. One explanation for the lower rate for students is obstacles in finding potential or current library users willing to participate, but this is only a high importance obstacle for 17.2% of university libraries, so it does not fully explain the 'underuse' of students in co-creation.



The branch public library questionnaire included several questions to evaluate the ability of the branch to autonomously develop innovations. As expected, the innovation activities of branch libraries are strongly influenced by the actions of their main library. The policies of the main library are the most frequent high importance innovation driver (cited by 40.8%), versus 32.8% that cite community needs and 21.6% that cite suggestions from library users. Furthermore, 44.7% of branch respondents reported that senior management (for instance from the main branch) required the branch to implement an innovation that was developed elsewhere and over 60% reported that one or more innovations were implemented in both the branch and the main library or other branch libraries. The multi-branch innovations were likely coordinated with the main branch. However, branches also had some autonomy. Slightly over half reported developing one or more innovations "in-house without input from other libraries" and 36.3% implemented one or more innovations only in their branch library. These innovations probably served unique characteristics of the branch's local community.



4 Factors that hinder or support the co-creation of library innovations

This chapter is not part of a current draft publication, though parts of this chapter may be included in a future publication. It is provided because some of the information in this chapter for main public and university libraries was part of the fourth LibrarIN policy brief "Next generation libraries: bottom-up, people-first and purpose-driven".

4.1 Introduction

Consulting occurs when organizations obtain information for innovation through one-way methods such as ethnographic research, surveys, or informal discussions between library staff and library users that provide innovation designers or library staff information on the knowledge, needs or experiences of stakeholders or users (IAP²). Co-creation, on the other hand, requires a two-way dialogue with library users, such that ideas for innovation are considered by both partners and can be adapted and reconsidered. Co-creation therefore tends to occur in structured events such as design thinking exercises, workshops, and brainstorming sessions and often addresses two issues: identifying challenges and unmet needs; and generating solutions to these challenges (Gago and Rubalcaba, 2024).

Multiple factors could affect the use of consulting and co-creation by libraries to develop innovations. Obstacles such as a lack of skills for co-creation, insufficient funding, or staff resistance to change could reduce the use of co-creation, while inhouse skills, previous innovation experience, and goals to support 'connection' activities for library users could increase the use of co-creation. As consulting is usually cheaper, it could provide an alternative to co-creation, but the knowledge provided by consulting users differs from the knowledge obtained through co-creation (see chapter 7).

This chapter first identifies factors that are correlated with the use of consulting and co-creation methods in public libraries to develop a high priority innovation. Second, the chapter includes a section on the use of co-creation by university libraries to develop a high priority innovation, with only a few factors consistently influencing co-creation. The third section covers branch public libraries, where the use of co-creation is not linked to a focal innovation, but instead can occur for any of the branch library's innovations.

4.2 Methods

Although we expect skills and funding to increase the use of co-creation and obstacles to decrease its use, there is insufficient literature on the use of co-creation by libraries to predict the effect of many other factors. Consequently, the analyses in this chapter are exploratory. All analyses are limited to



libraries that reported one or more innovations with a service component. This excludes a small number of non-innovative libraries and libraries that only reported a process innovation.

4.2.1 Main public libraries

Starting from the literature, we compiled a list of factors covered in the main public library questionnaire that might increase or reduce the use of consulting with users or co-creation with one or more of four groups to develop the single high priority innovation selected by the respondent: library users, non-management staff, non-profits, and businesses. The factors are as follows:

1. *Standalone* libraries in small municipalities: These libraries lack networks with other libraries and the resources available to libraries in larger municipalities. These characteristics could reduce the skills available to these libraries, awareness of the benefits of co-creation, and staff and financial resources to undertake co-creation. The variable 'standalone' equals 1 when the library is the only library serving a municipality or region with a population of less than 50,000, and zero otherwise.
2. *Connection* strategies: Connection strategies can be an important strategic goal for libraries and involve support for three types of activities that can form connections between library users: 1) community and cultural activities, 2) facilities such as makerspaces or Fablabs, and 3) providing space for people to collaborate on their social projects such as cross-cultural activities, writing groups, social entrepreneurship, etc. The variable connection equals the sum of importance scales (1 to 4) for the three connection activities.
3. *Management support for innovation* is measured as a response of 'always' to the statement "management strongly supported developing new or improved services or processes".
4. *Non-management support for innovation* is measured as a response of 'always' to the statement "non-managerial staff were highly motivated to think of ideas for new or improved services or processes".
5. Four inhouse *skills* such as one or more staff with competences in innovation or change management to support the use of innovation, skills in design thinking or similar methods for involving library users in developing library services, digital literacy, and Artificial intelligence.
6. *Assistance* from regional, national or international library associations for help with skills.
7. Five *drivers* as high importance factors for new or improved services, including municipal or regional legislation or policies, new media or technologies, suggestions from non-profits, suggestions from library users, and societal changes or expectations.
8. Six *obstacles* as high importance factors that hinder developing new or improved services.

There are two types, a lack of resources and other obstacles. A lack of resources includes



insufficient staff with experience on how to develop new or improved services, insufficient staff to take on new work, and insufficient financial resources. Other obstacles include unrealistic time pressures, library staff uninterested or resistant to change, and lack of support by municipal or regional government.

9. The *number of high importance obstacles*, as a count variable ranging from zero to 6.
10. *External or dedicated funding* that are not part of the standard annual library budget. These include special government funding and funding from other sources such as from philanthropists or crowdfunding.
11. The *diversity of innovation experience* measured as the number of six types of innovations introduced by the library in the previous three years (innovations in collections, educational programs, cultural or community programs, methods for delivering or communicating services to library users, changes to building design or use of space to better meet library user needs, and administrative or other work processes).
12. *Digital* characteristics of the high priority innovation, measured as yes (present) versus no.
13. *Size*, measured as either the number of employees (head count, below 50 versus 50 or more) and the population of the municipality where the library is based measured by 5 size categories (<25k, 25k to less than 50k, 50k to less than 100k, 100k to less than 249k, 250k).
14. *Combined service and process* innovation. Process innovations are excluded from the analyses, but a variable identifies service only innovations versus combined service and process innovations.

There are five dependent variables consisting of the use of 1) consulting, 2) cocreation with library users, 3) co-creation with library non-management staff, 4) co-creation with non-profits, and 5) co-creation with businesses. Each variable = 1 when the activity occurs and zero otherwise.

The regressions are conducted in two steps. The first step includes all variables in a forward step model. Only variables that are significant at the $p < .10$ level are retained. All variables that are significant in at least one of the five regressions for (consulting and the four groups involved in co-creation) are retained and included in the second step logit regressions, which also include a few variables that are of interest even though they are never significant, such as connection and the sum of obstacles.

4.2.2 University libraries

The questionnaire for university libraries differs from that for public libraries, but most of the 14 variables identified for public libraries could be approximated for universities. In addition, the university questionnaire includes three variables that are not available for public universities: if the



university library is a member of LIBER, the source of the original idea for the high priority innovation, and the technical intensity of the high priority innovation. The latter is based on the sum of the use of four technologies: digitalization of data, automated systems, apps, and artificial intelligence. There is no equivalent of the consult variable for universities and data on co-creation is only available for three groups: non-management library employees, faculty as library users, and students as library users. The same method as for public libraries is used, with Fstep methods used to identify factors that are significantly correlated ($p < .10$) with co-creation for each of these three groups. The subsequent logit models include variables that are significant for at least one of the three groups plus a few variables of interest for comparability with the main public library results.

4.2.3 Branch public libraries

Of the 14 factors listed for main public libraries, five are not available for branch libraries: standalone status (not relevant, because all branch libraries are linked to a main library), connection strategies (not asked as these strategies are likely to be set by the main library), assistance from library associations (not relevant as assistance can be obtained from the main library), inhouse skills, and if the innovation had digital characteristics. The last two questions were not included to reduce the length of the branch library questionnaire. The branch library questionnaire also included questions on if the branch was required by the main library to implement a new service or process, if its new service or process innovations were only implemented in the branch, if a lack of autonomy to implement ideas proposed by branch staff was an obstacle to developing new or improved services, and four obstacles specifically for the involvement of library users in developing innovations.

The questionnaire for branch libraries only collected data on co-creation with its library users. An Fstep logit method was used to identify factors that are significantly correlated ($p < .10$) with the use of co-creation. Several additional variables of interest are also included.

4.3 Results

4.3.1 Main public libraries

Table 4.1 provides the logit model results for four dependent variables. No results are provided for non-profits as the regression models were not significant. The first result is that five types of variables are never significant in the Fstep regressions and therefore were not included in the logit models: management support for innovation, staff support for innovation, specific obstacles, the two measures of library size, and whether the high priority innovation is a service or combined service and process innovation.

Second, several variables that were significant in at least one of the forward step analyses are no longer significant in any of the logit models in Table 4.1:

- Assistance from library associations (in the Fstep model significant for co-creation with users)
- Number of obstacles (in the Fstep models this is significant and negative for co-creation with users, non-management staff and businesses)
- Connection (in the Fstep models significant for co-creation with businesses)
- Suggestions from non-profits as a driver (in the Fstep models significant for co-creation with businesses)
- Suggestions from users as a driver (in the Fstep models significant for co-creation with non-management staff)

Table 4.1: Logit regression results for factors correlated with consulting with users and co-creation (CC) with three groups, Main public libraries

Variable	Consult with users	CC library users	CC non-mgmt staff	CC businesses
Stand-alone library	.154	-.845***	-.622**	-.817**
Assistance from library associations	.248	.345	.203	.089
Driver: new media / technologies ¹	.005	.323	.628***	.053
Driver: non-profit suggestions ¹	.182	.416	.091	.837
Driver: library user suggestions ¹	.601	-.018	.335	-.082
Skills: innovation mgmt / change	.498*	.730***	.102	.451
Skills: Design thinking / similar methods	.192	.854***	.583***	.461*
Number of high importance obstacles	-.034	-.119	-.118	-.133
External /dedicated funding	.045	.668***	.193	1.070***
Diversity of innovation experience	.222***	.130	.088	.104
Digital characteristics	-.578**	-.506**	-.044**	-.551**
Connection as a library strategy	-.076	-.065	-.012	.060
Constant	1.049***	-1.951***	-.480**	-3.144***
Number of cases	572	560	560	560
Model chi-square	38.829	95.498	61.306	71.740
Model p value	<.001	<.001	<.001	<.001
Nagelkerke R ²	.101	.236	.138	.199

*** $p < .01$, ** $p < .05$, * $p < .1$

1: High importance drivers versus no, low or medium importance.

The loss of significance for these factors is due to the initial effect being captured by other variables, suggesting that the initial effect is lost in the presence of other variables. For instance, the significant effect for the number of obstacles for users could have disappeared once the model included the effect of both funding and skills for innovation, neither of which, on their own, were significant in the Fstep regression for library users. From this, we can conclude that the number of obstacles as a hindrance to innovation can be overcome with the addition of two or more other factors, such as additional funding and skills.

The significant variables in Table 4.1 retain significance after controlling for the effect of all other variables. The discussion below covers variables that influence the use of co-creation or consulting with two or more of the four groups.

1. Stand-alone libraries are less likely than other libraries to cocreate with library users, non-management staff, and businesses. The lack of networking between stand-alone libraries and other libraries could be the cause, as other possible causes such as a lack of skills or funding are not significant.
2. External or dedicated funding increases the likelihood of co-creation with library users and businesses, possibly to overcome the additional costs of co-creation compared to other methods.
3. Digital characteristics of the innovation decrease the likelihood of consulting with users and co-creation with library users, non-management staff, and businesses. This could be because digital innovations require specialized knowledge obtaining by contracting out or other methods.
4. Design thinking competences or similar capabilities for involving users increases the probability of co-creation with all three co-creation partners.
5. Skills in change or innovation management increase the probability of consulting or co-creation with library users.

4.3.2 University libraries

Results for universities are given in Table 4.2. Only three variables have a significant effect on co-creation. Universities that are LIBER members are more likely to use co-creation with faculty, a high technical intensity increases co-creation with non-management staff and students, and the presence of design thinking and other skills for involving users in developing innovations is correlated with co-creation for all three groups. The strong correlation with design thinking is as expected and LIBER members could have ongoing arrangements to involve faculty. However, it is not clear why technical intensity increases co-creation with students but not faculty, unless these innovations are designed to

serve student needs, such as apps, powered by AI, to access digitized data of greater interest to students than faculty.

Table 4.2: Factors correlated with co-creation in university libraries

	CC non-mgmt staff	CC Faculty	CC Students
LIBER members	-.170	.578*	.046
Connection	.048	-.017	.137
Number of high importance obstacles	-.099	.033	.087
Technical intensity	.391**	.219	.497**
Library staff highly motivated for innovation	.430**	.172	.326
Skill: change / innovation management	.493	.278	.143
Skill: design thinking	.807**	1.001***	.693**
Driver to improve user experience ¹	.145	-.135	.102
Driver to respond to user needs/demands ¹	-.138	.189	-.237
Constant	-1.492*	-1.695***	-3.288***
Number of cases	304	304	304
Model chi-square	33.226	34.929	21.861
Model p value	<.001	<.001	.009
Nagelkerke R ²	.141	.145	.103

*** $p < .01$, ** $p < .05$, * $p < .1$

1: High importance drivers versus low or medium importance or not relevant.

4.3.3 Branch public libraries

Results for branch public libraries are given in Table 4.3. The size of the library, experience with a diversity of innovations, and dedicated funding have no effect on the involvement of branch library users in co-creation to develop innovations. High importance drivers for innovation have a large positive effect on the use of co-creation, with municipal policies and suggestions from library users increasing the likelihood of co-creation with users. In contrast, main public library policies as a driver for innovation has a negative effect, possibly because relevant innovations are developed by the main branch and then assigned to the branch. Conversely, branches that are part of a regional library network (which can occur within a municipality) have an increased likelihood of involving users in co-creation, possibly through sharing innovation development with other libraries.

The number of six high importance general obstacles to innovation also has a negative effect on the use of co-creation (the number of four high importance obstacles to user involvement in developing innovations has no effect in the Fstep regression). The obstacles include three resource factors plus a

lack of autonomy at the branch level, a lack of staff interest in or resistance to change, and a lack of support for innovation by senior management. The resource factors are a lack of expertise on developing innovations, insufficient staff to take on new work, and insufficient financial resources. Each single obstacle has no effect, indicating that branch library managers can manage single obstacles, but are overwhelmed when the number of obstacles increases.

Table 4.3: Factors correlated with co-creation with library users in branch public libraries

Branch has 10 or more employees	1.011
Part of a regional library network	1.381*
Experience with a diversity of innovations	0.043
Dedicated funding	0.540
Driver: municipal policies ¹	1.572***
Driver: main library policies ¹	-1.331**
Driver: suggestions from branch library users ¹	1.437**
Driver: social expectations for better library services ¹	0.921
Number of high importance general innovation obstacles	-0.769***
Constant	-0.415
Number of cases	116
Model chi-square	37.90
Model p value	<.001
Nagelkerke R ²	.413

*** $p < .01$, ** $p < .05$, * $p < .1$

1: High importance drivers versus low, medium importance, or not relevant.

4.4 Conclusions

The results for main public libraries point to two factors that provide strong support for the use of co-creation: dedicated funding and skills (either change/ innovation management or design thinking capabilities). In contrast, two conditions decrease the use of co-creation: when the service innovation has digital characteristics and stand-alone libraries. Other factors only apply to one type of co-creation partner or to consulting with users. The comparison of the Fstep and Table 4.1 results point to factors that can reduce the effect of obstacles to co-creation. For co-creation with users, funding and skills with change / innovation management appear to overcome the negative effects of obstacles.

The results for universities confirm the importance of design thinking capabilities. In contrast to the consistent negative effect of digital innovation characteristics on co-creation for public libraries, the technical intensity of the innovation increases the likelihood of co-creation with non-management



staff and students. This could be explained by higher technical competences among university library staff and student users in comparison to the users of public libraries.

The results for branch public libraries highlight the positive role of general innovation drivers and the negative effect of the sum of high importance obstacles. This contrasts with a lack of effect for the number of obstacles for main public and university libraries. In addition, main library policy as a high importance driver has a negative effect on the use of co-creation, possibly because the innovation is developed by the main library. In contrast, partnership in a regional library network increases the use of co-creation.

5 Summary: Styles of innovation in public libraries

This chapter provides a brief overview of a paper in development.

5.1 Introduction

Empirical research on innovation in libraries remains limited, particularly regarding typologies grounded in library science literature (Potnis et al., 2020). The diversity of library types has hindered the development of a widely accepted classification of innovation (Pellack, 2022), particularly for public libraries (Potnis et al., 2021). The existing literature provides evidence on new and improved services offered by libraries, but classifications remain limited to traditional categories. Given the evolution of services, methodologies, spatial configurations, and institutional roles, there is a need to develop typologies not only of innovative services but also of innovative libraries. Stapley et al. (2022) emphasize the importance of defining key dimensions when constructing typologies in any research field.

Building on these insights, this study proposes a dimensional framework to analyze innovation styles in libraries. The research question guiding this work is: What styles of innovation exist in libraries, and do these styles lead to similar outcomes?

The LibrarIN Project defines innovative libraries as those that complement traditional services with interactive offerings and actively engage in the development of new or improved economic, social, and cultural services (LibrarIN Proposal, 2022). These innovations vary in dimension and character, reflecting the multifaceted needs they address. Understanding these dimensions is essential for analyzing innovation in public sector organizations (Cinar et al., 2022), including libraries.

Innovation styles refer to recurring and distinctive approaches to developing, adopting, and implementing new services, shaped by organizational resources, governance, knowledge bases, and external relationships (Cinar et al., 2022; Doloreux et al., 2024). Recent studies highlight that innovation processes are heterogeneous, occurring through different modes such as knowledge-driven versus practice-driven (Doloreux et al., 2024), or bottom-up versus management-led (Arundel et al., 2015; Harel et al., 2021). Identifying these styles requires examining the core dimensions and attributes that characterize innovative libraries.

5.2 Methods

Using empirical data from the WP4 survey on public libraries, a principal components analysis was conducted to identify underlying dimensions of innovation strategies. The analysis included variables related to drivers, barriers, organizational support, and innovation practices. The motivation for using Principal Component Analysis (PCA) lies in the complexity of innovation processes in public libraries.



With numerous interrelated variables, dimensionality reduction was necessary to uncover latent structures that explain patterns in the data. PCA served to assess variance distribution, ensuring that the most informative components were retained. These components were used for further analysis, offering insights into how libraries navigate drivers, barriers, and development practices.

5.3 Results

The PCA analysis revealed a range of approaches. In some libraries, innovation thrives in a supportive environment where management and staff work collaboratively, drawing on user input and creative methods such as design thinking and brainstorming. Other libraries aspire to innovate but face significant barriers. For them, suggestions from NGOs and users act as key drivers, yet obstacles such as time pressure, insufficient staff, and lack of municipal support hinder progress. A third group is characterized by motivated staff and openness to change, but engagement with users and staff in idea generation is minimal. In contrast, some libraries exhibit strong management support, but user input is rarely considered, suggesting a hierarchical setting. Finally, there are libraries that innovate under constraints. Despite limited budgets, staff remain open to change, developing innovations with modest resources.

Using the principal component results for each 'style' in multivariate regressions, we analyse how public libraries innovate and how those innovation approaches relate to perceived outcomes for users, staff, and services. Key predictors are the PCA factor scores, alongside controls for library goals, staff skills, and respondent and library characteristics. The regression results showed that libraries with a supportive environment have several positive associations with outcomes related to users and staff. Libraries that face significant barriers have a negative association with outcomes. Libraries with a hierarchical setting lean toward tangible outcomes such as increased activities. Lastly, libraries that innovate under constraints are associated with outcomes related to efficiency and standardization gains.

5.4 Conclusions

This study offers a preliminary exploration into the innovation styles of public libraries, drawing on dimensional analysis and multivariate regression techniques to identify distinct strategic orientations. The findings suggest that innovation in libraries is shaped by a complex interplay of organizational support, participatory practices, and resource constraints.

The regression results reveal that different library innovation approaches have positive associations with several perceived outcomes, showing that a supportive environment generally predicts positive staff and user results, whereas approaches focused on efficiency or driven by constraints lead to more tangible service and standardization gains.



However, the research is still in progress, and these insights should be considered provisional. Further analysis is needed to validate the robustness of the principal components based on descriptions of the key innovation and to deepen understanding of the causal relationships between innovation styles and outcomes. The next phases of the study will incorporate additional research and refine the analytical framework to better capture the nuances of innovation in public libraries.



6 Summary: Innovation, skill gaps and co-creation in small public libraries: A matter of size or connectedness?

This chapter is a summary of a paper under preparation for a library management journal.

6.1 Introduction

Libraries are increasingly expected to provide innovative services for community engagement (Huysmans & Oomes, 2018). To date, research on library innovation has largely focused on large libraries, with only a few studies on innovation by small libraries. This study uses the LibrarIN survey data to examine whether small libraries co-create innovations with library users or stakeholders, if a lack of innovation-related skills hinders co-creation, and if small libraries draw on assistance from library associations to compensate for a lack of skills.

While innovation within libraries has received considerable attention, the relationship between innovation and the specific competencies required to develop and implement innovation remains insufficiently explored (Hanson & Collao, 2025). Core competencies in design thinking, change management, and digital technologies; as well as the use of methods such as collaboration and co-creation to develop innovations (Boisvenue-Fox and Meyer, 2019; Wandt, 2019; CILIP, 2025) appear to be increasingly important (Asiri & Finlay, 2025) for library innovation. However, these competencies and methods are less available to small libraries, due to resource constraints, compared to large libraries (Kuelker, 2024; Ferro et al., 2025). These constraints could hinder the ability of small libraries to innovate, thereby widening the performance gap between smaller and larger libraries.

The effect of size on skills and innovative capabilities isn't a surprise, since small libraries have fewer staff. By itself, this reduces the likelihood that staff cover the diverse range of skills that support innovation, in addition to the many other skills required for a library to function. Furthermore, small libraries can't afford to hire staff with fully developed specialized skills, such as for design thinking or change management. An alternative for small libraries is to use regional or municipal library networks to access expertise, training, and collaborative innovation projects (Lipparini & Sobrero, 1994).

In this paper we compare skills and innovation methods between small and large libraries, which unsurprisingly verifies the disadvantages that small libraries face. In addition, we compare small stand-alone and small networked libraries to identify differences in innovation activities and capabilities. Our hypothesis is that small-networked libraries have several advantages, compared to small stand-alone libraries, in innovation capabilities and outputs. The first set of research questions, listed below, compare small main public libraries (both stand-alone and networked) with large libraries. We then compare small stand-alone and networked libraries.



1. Are small libraries less innovation intensive than large libraries?
2. Do small libraries have fewer in-house skills for innovation?
3. Are small libraries more likely to draw on library associations for assistance with skills for innovation?
4. Are small libraries more likely to co-create innovations with library users or other stakeholders, perhaps as an alternative to a skills deficit?

6.2 Methods

The analyses use data from the LibrarIN survey of main public libraries, with responses from 145 small stand-alone, 129 small networked, and 333 other libraries.

The small stand-alone libraries meet three requirements:

1. The only library serving a municipality or region.
2. Serving a municipality with 50,000 or fewer inhabitants.
3. Having less than 50 staff.

The small networked libraries meet requirements 2 and 3 above but are not the only library serving a municipality or region, nor a branch library. This requirement means that they are linked to other libraries, for instance through regional networks. The remaining main libraries are classified into two groups: those serving mid-sized municipalities with 50000-250000 inhabitants (276 libraries), and those serving populations of more than 250000 inhabitants (57 libraries).

The data includes variables measuring both innovation activity (defined as the introduction of new or improved services or processes within the previous three years); innovation-related skills such as design thinking and change management, plus digital competences such as digital literacy and artificial intelligence (AI), and the use of co-creation methods to obtain relevant knowledge for innovation from library users and other stakeholders. Most of the analyses are descriptive, but a regression model is used to determine differences by library type in the use of library associations.

6.3 Results

The results reveal a consistent and statistically significant skills disparity across library types. Small, stand-alone libraries exhibit the most pronounced deficits in the skills that underpin innovative capacity, with the average number of skills for stand-alone libraries at 1.08, versus 1.47 for small networked libraries. There are greater differences with large libraries, with competencies such as change management, design thinking, digital literacy, and AI considerably less prevalent in smaller versus large libraries. Approximately 38% of small, stand-alone libraries lack all four competencies. Small networked libraries have more access to these skills, with only 27% lacking all competencies. In contrast, only 22% of libraries serving populations between 50,000 and 250000 inhabitants lack all



competences and 11% of large libraries serving populations over 250000 inhabitants. These results show that both size and the organizational connectedness of small networked libraries influence access to innovation-enabling resources.

Innovation intensity, measured as the number of types of innovations implemented in the previous three years, also varies by size. Larger libraries (both categories combined) introduced a significantly larger average of 3.86 types of innovations compared to 3.20 for small networked and 3.14 for small stand-alone libraries. The difference between small stand-alone and small networked libraries is not significant.

Engagement with library associations differs very little by library size, with 47.6% of small stand-alone libraries and small networked libraries obtaining assistance on competencies from library associations, versus 44.5% of large libraries. However, regression analysis that controls for other variables such as skill availability, innovation experience and obstacles finds that small stand-alone libraries are significantly less likely to obtain assistance from library associations than large libraries ($p = .026$). There is no difference between large and small networked libraries, suggesting that they are equally capable of obtaining assistance from library associations.

The analyses of the use of co-creation find that large libraries are substantially more likely than small stand alone and small networked libraries to involve library users, non-profits, and businesses in co-creation activities to develop their high priority innovation. Small stand-alone libraries demonstrate minimal use of co-creation: only 11% involve library users and 8% involve non-profits in co-creation. These percentages are considerably higher for small networked libraries, at 22% and 16% respectively.

6.4 Conclusions and implications

The results of this study demonstrate that innovation capacity in public libraries varies by both institutional size (as expected) and organizational connectedness in small libraries. Small stand-alone libraries face a cumulative set of disadvantages, with fewer resources and lower use of co-creation. These factors constrain the diversity of innovation types that they implement.

At the same time, the findings highlight potential pathways for addressing these disparities. Network membership is an effective mechanism for compensating for skill deficits. Encouraging smaller libraries to participate in (or lower barriers to such participation) regional or national networks may therefore enhance innovation capacity by facilitating more efficient knowledge exchange, for instance by providing access to shared training resources and enabling joint innovative activities.



The study underscores the importance of addressing structural inequalities within the public library sector. If left unaddressed, the current divide between small stand-alone libraries, their networked counterparts, and large urban libraries risks perpetuating unequal access of library users to innovations. Ensuring that all communities, regardless of size or location, can benefit from modern library services requires deliberate policy attention to capacity building, resource distribution, and network collaboration.



7 Summary: Effects of consulting and co-creation on the usefulness of knowledge for innovation: empirical results for public libraries

This chapter provides a brief overview of a paper that has been submitted for publication in a public management journal. In it is currently being revised to address reviewer comments.

7.1 Introduction

Theories of a public service logic and service dominant logic support the co-creation of innovations with service users. Co-creation involves the interactive (two-way) involvement of library users or other stakeholders. Theories of public service logic or service dominant logic posit that the users of an innovation should be included in its development because they hold unique experiential knowledge obtained from the use of similar services (Osborne, 2018). For instance, users with direct experience of library facilities should have a deep understanding of how the facilities support (or fail) their needs that are of relevance to plans to redesign library spaces. In addition, other stakeholders such as front-line library staff, non-profits (community groups, schools, health providers, etc.) or businesses can possess knowledge that can be accessed through co-creation. The knowledge held by other stakeholders can approximate that of users, providing an alternative source of information on user needs or experiences, or provide different information that complements knowledge from users. Alternative knowledge may substitute for knowledge from users while complementary knowledge may synergistically improve the relevance of knowledge from users. The involvement of external stakeholders other than users in activities to develop an innovation is supported by theories of innovation eco-systems, whereby the development of innovations benefits from using knowledge inputs from multiple sources (Osborne et al., 2022; Trischler and Charles, 2019).

These theories suggest that co-creation with users and other stakeholders should have a strong, beneficial effect on the usefulness of knowledge obtained from them, indicating that the use of co-creation with users to develop library innovations should be widespread. However, there are no data on the prevalence of co-creation with different groups in European libraries, with data limited to case studies of a small number of libraries, many of which are selected because of their use of co-creation and hence are of no value for estimating prevalence. In addition, there are non-interactive methods of obtaining knowledge from users that are cheaper and require fewer skills of library staff or don't conflict with the professional ethos of librarians (Fuglsang and Hansen, 2022). A common example is consulting library users, either through informal conversations between library staff and users, ethnographic research, or through surveys (Wakeling et al, 2022). Consulting and the existence of alternative sources of knowledge that could substitute for knowledge from library users, particularly non-management library staff, adds a complication: can co-creation with users be replaced (substituted) by consulting and co-creation with library staff? Or, does co-creation with users provide unique knowledge of high usefulness to innovation that cannot be substituted by other sources?



7.2 Methods

These questions are addressed through both descriptive analyses for the prevalence of co-creation and through ordered regression models of the relative usefulness of knowledge for innovation from consulting and co-creation with library users. Obtaining useful knowledge is the main purpose of consulting and co-creation and consequently is an appropriate measure for evaluating the benefits of co-creation, substitution and complementary effects. An ordered model is required because usefulness is measured on an ordinal scale ranging from 'not used' to slightly, moderately and highly useful. All analyses use data for a single, focal service innovation reported by the respondent that was of "high priority to your library or of high expected value for your library users". This limitation ensures that measures of knowledge usefulness and other factors refer to a single innovation. In addition, the regression models permit an evaluation of the effects of alternative sources of knowledge and if they substitute or complement the usefulness of knowledge from library users. The analyses are repeated for three other knowledge sources: non-management staff, non-profits, and businesses. All analyses are limited to 543 main public libraries that answered all relevant questions included in the ordered regressions.

The regression models include variables for other factors that could influence the usefulness of knowledge obtained from different groups plus control variables for the size of the library (number of employees) and country dummies to account for national differences. This summary only discusses high-interest results for other factors.

7.3 Results

The analyses find that only 23.5% of main public libraries used co-creation to involve library users in the development of a high-priority service innovation. Consulting methods were considerably more common, with 57.5% of libraries only using consulting methods with no co-creation with users. In contrast, 52.9% of libraries involved library non-management staff in co-creation activities. The wider use of library staff could be due to their ready availability and their knowledge of not only user needs, but many other relevant factors, such as processes to produce library services. Non-management staff are also the most common source of 'very useful' knowledge, reported by 68.1% of libraries, whereas only 25.6% of libraries viewed library users as providing 'very useful' knowledge.

The ordered logit regressions for the usefulness of knowledge from library users finds that both consulting and co-creation with users increases the usefulness of knowledge obtained from library users, but co-creation with users has a bigger effect. These results also indicate that the knowledge obtained from consulting users is complementary to that obtained from co-creation. In contrast, co-creation with non-management staff decreases the effect of co-creation with library users, suggesting the knowledge obtained from non-management staff is a partial substitute for that obtained from co-



creation with users. This makes sense, since non-management staff should have knowledge on user needs and experiences, but this knowledge should not cover all user perspectives.

The results for the ordered models for the usefulness of knowledge from non-profits and businesses show that non-management staff play a key role, providing a source of knowledge that partially substitutes for knowledge obtained through co-creation with non-profits and businesses. Yet non-management staff are less of a substitute for non-profits and businesses than they are for library users. The analyses also find strong synergistic effects from the number of highly useful sources, which increases the usefulness of knowledge obtained from library users, non-management staff, non-profits, and businesses. This implies that drawing on multiple sources of knowledge is beneficial, which each source improving the usefulness of knowledge from other sources.

A few other factors affect the usefulness of knowledge from library users: which increases with the importance of 'connection' activities as a goal for the library, increases for service only innovations versus combined service-process innovation, and decreases for service innovations with a digital characteristic.

7.4 Conclusions and implications

The results of this paper point to the strong benefits of co-creation as a method for obtaining useful knowledge for the development of innovation. These benefits do not decline when alternative methods are used such as consulting, although library non-management can partly compensate for user involvement in activities to develop innovations. Given these benefits, it is surprising that users are only involved in the development of 23.5% of high priority library innovations. Possible explanations include a lack of awareness of co-creation benefits outside of leading libraries or the higher costs in terms of staff effort of co-creation with users.

8 Summary: Effects of consulting and co-creation on the usefulness of knowledge for innovation: empirical results for university libraries

This chapter provides an overview of a paper under preparation for submission to a library management journal.

8.1 Introduction

This chapter is a companion to chapter 7, covering the usefulness of knowledge obtained from consulting and co-creation in university libraries, while chapter 7 addresses the same topic for public libraries. Consequently, the relevant theories that underly the analyses are the same (Public Service Logic and innovation ecosystem theories) and much of the cited literature is similar, though this version prioritizes the literature for university libraries.

The main research questions are 1) how frequently university libraries use consult and co-creation with library users, 2) the usefulness of knowledge for innovation from co-creation, and 3) factors that influence usefulness.

There are several differences in the LibrarIN questionnaire for university libraries versus public libraries that permit an evaluation of the effect of additional independent variables on the usefulness of knowledge obtained for innovation. These include the number of high importance external sources of assistance and the source of the original idea from library employees or library users. The dependent variable is also disaggregated into two variables: the usefulness of knowledge for identifying challenges and for identifying solutions.

8.2 Methods

The survey is limited to main libraries that serve PhD granting universities. This excludes tertiary education institutes such as colleges. In the nine LibrarIN partner countries, all eligible main university libraries were surveyed. In non LibrarIN partner countries, only university libraries that were LIBER members were surveyed. The total sample was 508 libraries, with both sections of the questionnaire mostly completed by 326 respondents (61.2% response rate), though not all questions in each section were answered.

As for Chapter 7, this paper uses ordered regression analyses to identify factors that are correlated with the usefulness of knowledge obtained from different sources. Many of the variables, such as for innovation drivers, obstacles, skills, how the innovation was developed, library size, and country dummies, are identical to the variables used in the public sector paper. Other variables differ slightly (connection, management support for innovation, the dependent variables), while several variables



were not included in the public library analyses. The ordered logit models include 292 cases that answered all questions included in the regressions.

The different independent variables include 1) the source of the original idea for the high priority innovation (library staff, library users), 2) the sum of seven high importance "external sources for collaboration partners, technical knowledge or assistance for developing your selected new or improved service", if the library was a LIBER member, and the number of years the responding manager was employed in the library sector (a measure of respondent experience).

Ordered logit regressions are conducted for three groups: non-management staff, faculty/researchers as library users, and students as library users.

8.3 Results

In total, library staff or users were consulted by 85% of the libraries and co-creation with staff or users was used by 64.7% of the libraries. This is a much higher co-creation rate than observed for public libraries. However, most of the co-creation is with university faculty/researchers (48.6%), with considerably fewer university libraries involving students in co-creation (26.0%). There are no significant differences in the use of co-creation by library size, measured by employment headcounts.

Except for non-managerial staff, the average value of knowledge is higher for challenges than for solutions. This is as expected, as both faculty and students should be better informed about challenges due to their experience with existing services. The average value of knowledge is also highest for staff, slightly lower for faculty, and substantially lower for students.

Consulting with staff, faculty or students has a complementary positive effect on the usefulness of knowledge from faculty/researchers. Co-creation with the group always increases the usefulness of knowledge (for instance co-creation with students increases the usefulness of knowledge obtained from students), while there is always a negative substitution effect from co-creation with a separate group. For example, co-creation with faculty/researchers reduces the usefulness of knowledge obtained from non-management staff, co-creation with non-management staff and students reduces the usefulness of knowledge from faculty/researchers, and co-creation with faculty/researchers reduces the usefulness of knowledge from students. However, the substitution effects are never sufficiently large to eliminate the benefits of co-creation. The largest substitution effect is for faculty researchers, where the combined effect of co-creation with non-management staff and students reduces the coefficient for faculty/researchers from 3.043 to 0.688. No complementary effects are observed from co-creation.



The number of other 'high usefulness' sources only has a positive effect for the usefulness of knowledge for faculty/researchers, indicating low synergies among the three groups of non-management staff, faculty/researchers, and students. In contrast, the number of high importance external sources of assistance is always positive for challenges, but only positive for the usefulness of non-management staff for solutions. When the source of the idea for the innovation is from library staff, the usefulness of knowledge from staff increases, but there is no effect for challenges. For both faculty/researchers and students, ideas from library users increase the usefulness of knowledge for challenges.

For other variables, connection (the importance of activities to connect users, such as cultural and community activities and spaces for user projects) has a significant positive effect on the usefulness of knowledge from students, but no effect for non-management staff or faculty/researchers. The driver to improve user experiences has a moderate and significant effect on the usefulness of knowledge for challenges and solutions for non-management staff, but surprisingly no effect for faculty/researchers and students. How the innovation was developed, with 'adoption' the reference category, has no effect on the usefulness of knowledge from non-managerial staff, but innovations developed by modifying an existing innovation, in-house, or through collaboration all increase the value of knowledge from faculty/researchers for both challenges and solutions. Only collaboration has an effect for students and only for solutions. The use of design firms/living labs reduces the value of knowledge obtained from non-management staff for both challenges and solutions, but has a positive effect for faculty/researchers and students for solutions. This could be because design firms are focused on user involvement in innovation, thereby decreasing the involvement of staff while increasing the involvement of users.

8.4 Conclusions and implications

The strong substitution effects observed for co-creation indicates that university libraries could reduce costs by eliminating one of the two user groups, which may explain the low use of co-creation with students. The average low value of knowledge from students may also be another reason, though this could be affected by negative perceptions of managers about student involvement, which could be more difficult to attain than involving faculty/researchers who already sit on library committees. The effects of external sources is synergistic, but surprisingly limited to challenges for both types of library users, whereas one would expect external sources to have greater benefits for solutions.

The limited number of significant effects for other variables and the absence of consistent factors across all three groups suggests that each group brings different experiences to the table and consequently is affected by different factors.



For most variables, there are similarities between challenges and solutions. For instance, how the innovation was developed has similar effects for both challenges and solutions for faculty/researchers and connection has a similar effect for both for students. Other variables differ, but these are not consistent across groups. The results therefore do not point to systematic similarities and differences between the usefulness of knowledge for challenges and solutions.



9 Innovation outcomes in public, university and branch libraries

This chapter is not based on a paper in progress but will be revised for a future publication. To prevent future issues with journal submission, the regression tables have been reduced to only display statistically significant results for key variables.

9.1 Introduction

For main public and university libraries this chapter looks at the effect of co-creation, consulting, and the acquisition of very useful knowledge for developing the focal innovation from different groups on the outcomes of the respondents' self-selected service innovation of "high priority or high expected value for your library users" (the focal innovation). For branch libraries, the effect of knowledge sources on outcomes is evaluated for all innovations. There is very little quantitative research on the outcomes of public sector innovations (Acar et al, 2025) and only a few studies of the effects of user involvement on outcomes (Burgers et al, 2024; Nordli et al, 2025). Major challenges include the lack of outcome measures that apply to all innovations, a lack of sufficient time to pass for respondents to be able to assess outcomes, and insufficient knowledge on what and how to measure outcomes.

9.2 Methods

The LibrarIN questionnaires ask about "the effect of your selected new or improved service or process" on a list of outcomes. The main public library questionnaire includes 10 questions on outcomes, the questionnaire for university libraries includes 7 questions on outcomes, and the branch library questionnaire includes 8 outcomes. All use a Likert scale of a 'strong positive effect', 'moderate positive effect', 'minor positive effect' 'negative effect', and "Not relevant/too soon to know". In addition, the university questionnaire includes the option of 'no effect'. For analysis, the results for the main public and university library surveys are combined into three categories: major positive effect, moderate positive effect, and minor or other effect, which includes negative effects and no effect. The last category is combined to increase the number of cases for this category. The analyses for branch libraries compares a 'strong positive' effect against all other outcomes combined. Users that selected the option "Not relevant/too soon to know" are excluded from all analyses for the relevant outcome.

The first two major challenges to measuring outcomes are addressed by asking about specific outcomes that should be relevant to libraries, limiting the responses to a single focal innovation for main public and university libraries, and by excluding "not relevant / too soon to know" results for an outcome. Respondents from main public and university libraries are expected to give high ratings to the outcomes because they are asked to report the effects of a single 'high priority' innovation. Nevertheless, there is substantial variation among the responses except for a 'negative effect', which is seldom selected.



The analyses are limited to service innovations, with up to 566 cases available for main public libraries and 306 cases for university libraries, though actual numbers for the regression models are much lower due to excluding 'not relevant/too soon to tell' responses. An ordered logit model is used for the analyses for main public and university libraries because the dependent variable (the effect of the service innovation on each outcome) is ordered. A logit model was also used to evaluate the effect of a 'strong effect' versus a 'moderate' or 'minor' effect, but the ordered results attain higher levels of statistical significance and are consequently presented below.

The analyses for public libraries include variables for several ways that library users can contribute to the innovation and hence to innovation outcomes: users as a driver of ideas for innovation, users as a source of very useful knowledge for innovation, consulting with users (a non-interactive method of gaining user knowledge), and co-creation with users (interactive methods of acquiring knowledge from users). Non-management library staff and non-profits can also provide supplementary knowledge on user needs and experiences (see Chapter 7). Two variables for non-management library staff include co-creation and obtaining very useful knowledge. For non-profits, the analyses include non-profits as a driver and a source of very useful knowledge for developing the innovation.

Three variables control for other effects, including library size (50 or more employees with 49 or less the reference category), service only innovations with combined service-process innovations as the reference category, and innovations with one or more digital characteristics, with zero digital characteristics as the reference category.

The analyses for university libraries use two similar control variables (size and digital characteristics) and a user driver variable and variables for very useful knowledge and co-creation for two types of library users (faculty/researchers and students). In addition, the university analyses include a variable for the importance of 'new university policies or priorities' as a driver of innovations and a binary (yes or no) variable for library users (faculty, students, researchers) as a source of the original idea for the focal innovation. Variables for consulting with library users and for co-creation and high value knowledge from non-profits are not available for university libraries. The control variable to identify service only innovations from service-process innovations is not included due to poor model fit.

9.3 Results for main public libraries

No results are provided for two outcomes: the 'variety of services' and 'satisfaction of library employees'. The former question obtains poor model results while the latter is of low relevance to library users.

Table 9.1 provides the percentage of respondents that selected each of the response options for the other eight questions. Negative effects range from 0% to 2.7%. The 'not relevant/too soon to tell' option was selected by a low of 11.7% for library user experiences to a high of 44.9% for networking among library users. On average, a third of respondents (33.2%) selected a 'strong positive effect'.

Table 9.1: Effect of focal innovation on outcomes in 566 main public libraries, percent

Outcome	Not relevant /too soon	Nega- tive effect	Minor positive effect	Moderate positive effect	Strong positive effect
Design or use of library space	27.7	1.1	10.4	23.1	37.6
Simplicity or ease of processes	29.7	2.7	11.0	23.7	33.0
Library user experiences	11.7	1.1	6.9	27.4	53.0
Library user skills (literacy, digital, etc.)	32.7	0.4	17.7	27.2	22.1
Ease of access to information	20.8	0.5	13.3	29.5	35.9
Outreach to new library users	15.5	0.0	10.2	30.9	43.3
Networking among library users	44.9	0.9	19.6	18.2	16.4
Social interactions between library users	36.9	1.2	15.4	21.9	24.6
Average	27.5	1.0	13.0	25.2	33.2

Table 9.2 gives the ordered logit model results. Of note, this model gives reverse results for categorical independent variables, which are the two driver variables in Table 9.2. This means that the reference category is 'high importance'. instead of 'low importance'. As a result, a negative and significant coefficient of -0.752 for low importance drivers for users for the design or use of library space means that low importance drivers *reduce* effectiveness compared to high importance drivers. Alternatively, this means that an increase in the value of the driver variable increases the outcome effects of the innovation.

The results for library users find that consulting users to obtain information increases the outcome effects for the 'design or use of library space' and decreases outcome effects for social interactions. The latter could be because consulting does not obtain the type of information that is helpful for improving social interactions. Co-creation with users either has no effect (7 outcomes) or a negative effect, the latter observed for simplicity/ease of use of processes. The lack of an effect for processes is likely due to user information lacking relevance while diverting resources from more useful sources. In contrast, obtaining very useful knowledge from users has a significant positive effect for six of the eight outcomes, with the effect greatest for networking and social interactions. Suggestions from library users as a driver of innovation has a large positive effect for the design of library space and moderate

effects on six other outcomes. The only outcome that is not affected by users as a driver is the simplicity or ease of processes, where user involvement is not relevant.

Table 9.2: Effects on outcomes of public library innovations: ordinal model for minor, moderate and strong positive effects

	Design or use of library space		Simplicity or ease of processes		Library user experience		Library user skills	
	B	sig	B	sig	B	sig	B	sig
Control variables								
Service only innovation			-1.022	<.001	0.498	0.010	0.451	0.030
Influence of library users: consult, co-creation, very useful knowledge, as an innovation driver								
Consulted users	0.592	0.027						
Co-creation with users			-0.979	<.001				
Very useful knowledge: library users			0.483	0.055	0.571	0.019	0.074	
Driver users: low	-0.753	0.012						
Driver users: mid	-0.921	<.001			-0.449	0.068	-0.688	0.006
Driver users: high	0 ^a	.	0 ^a	.	0 ^a	.	0 ^a	.
Influence of library non-management staff: co-creation, very useful knowledge								
Co-creation with staff	0.595	0.017			0.463	0.047		
Very useful knowledge: library staff	0.719	0.002			0.398	0.060	0.505	0.031
Influence of non-profits: co-creation, very useful knowledge, as an innovation driver								
Very useful knowledge: non-profits							1.406	<.001
Driver non-profits: low							-0.786	0.017
Driver non-profits: mid							-0.555	0.086
Driver non-profits high	0 ^a	.	0 ^a	.	0 ^a	.	0 ^a	.
Threshold = 1	-1.467	<.001	-2.044	<.001	-1.563	<.001	-0.849	0.052
Threshold = 2							1.117	0.011
N	403		392		489		361	
Chisquare	56.62	<.001	64.08	<.001	45.55	<.001	66.29	<.001

a: Reference category

Table 9.2: Effects on outcomes: ordinal model for low, moderate and strong positive effects (cont.)

	Access to information		Outreach to new library users		Networking among library users		Social interactions between library users	
	B	sig	B	sig	B	sig	B	sig
Control variables								
Service only innovation							0.479	0.031
Digital characteristics	0.530	0.006						
Influence of library users: consult, co-creation, very useful knowledge, as an innovation driver								
Consulted users							-0.583	0.052
Co-creation with users								
Very usefully knowledge	0.435	0.060	0.523	0.025	0.873	<.001	0.810	0.001
Driver low importance					-0.575	0.065	-0.692	0.018
Driver mid importance	-0.417	0.072	-0.535	0.025	-0.483	0.075	-0.589	0.024
Driver high importance	0 ^a	.	0 ^a	.	0 ^a	.	0 ^a	.
Influence of library non-management staff: co-creation, very useful knowledge								
Co-creation with staff								
Very useful knowledge								
Influence of non-profits: very useful knowledge, as an innovation driver								
Very useful knowledge			1.094	<.001			1.349	<.001
Driver low importance					-0.684			
Driver mid importance								
Driver high importance	0 ^a	.	0 ^a	.	0 ^a	.	0 ^a	.
Threshold = 1	-1.855	<.001	-2.030	<.001	-1.507	0.003	-1.655	<.001
Threshold = 2	-0.027		0.008		0.002		0.057	
N	437		466		303		350	
Chisquare	27.73	.015	43.17	<.001	36.17	<.001	66.10	<.001

a: Reference category

Co-creation with library non-management staff has a positive effect on the design of library space and for improving the experiences of library users, but no effect on the six other outcomes. Very useful knowledge obtained from library staff for developing the innovation improves outcomes for design of library space, the library user experience and library user skills, but has no effect on the other outcomes. For non-profits, very useful knowledge improves outcomes for library user skills and social interactions. Suggestions from non-profits as an innovation driver also improves library user skills and networking among library users.

We can compare the potential benefits of different groups by only looking at the effects of co-creation and very useful knowledge, two variables that are available for library users and for library staff. User contributions to innovation have a positive effect on six outcomes, while library staff have a positive effect on three outcomes. If we include all available variables, library users have a positive effect on all eight outcomes, library staff on three, and non-profits on three. The implication is that obtaining input from library users is the most important source of information for improving library innovation outcomes.

9.4 Results for university libraries

As for public libraries, no results are presented for 'satisfaction of library staff'. In addition, descriptive results are given for the outcome 'outreach to new types of library users' (see Table 9.3), but this outcome is excluded from the ordered logit model because of poor model fit.

On average, 18.6% of respondents report that the outcome is not relevant or it is too soon to determine the outcomes. This is considerably lower than for public libraries at 27.5%. Negative effects are rarely reported, while 'no effect' (an option that was not provided in the public library questionnaire) is reported by 13.8%, varying from 4.2% for 'improve user experience' to 36.9% for use or design of library spaces'. Strong positive effects range from 17.6% for the use or design of library spaces to 50.0% for 'improve access to information', with an average of 35.6%, very similar to the 33.2% reported for main public libraries.

Table 9.3: Effect of focal innovation on six outcomes in 306 university libraries, percent

	Not relevant / too soon	Negative effect	No effect	Minor positive effect	Moderate positive effect	Strong positive effect
Improve access to information	14.7	0.0	4.6	6.9	23.9	50.0
Use/design of library spaces	27.8	0.0	36.9	6.9	10.8	17.6
Ease of use of processes	13.4	0.3	9.8	7.2	28.8	40.5
Improve user experience	11.8	0.0	4.2	6.9	23.9	53.3
Outreach to new library users	19.9	0.3	14.7	12.7	19.6	32.7
Community building among users	24.2	0.0	12.4	12.4	20.6	19.3
Average	18.6	0.1	13.8	8.8	21.3	35.6



Table 9.4 provides the ordered logit regressions for five outcomes. As for the results for main public libraries, a negative result for the categorical variables (user needs as an innovation driver and university policies as an innovation driver) indicates a positive effect on outcomes. User needs as a driver have a positive effect on four of the five outcomes, except for the use or design of library space. For access to innovation, co-creation with faculty has a negative effect on outcomes while obtaining very useful knowledge has a positive effect. This may reflect a preference for obtaining knowledge from faculty without the use of co-creation, although this is unexpected since co-creation with faculty has a very strong positive effect on the usefulness of knowledge from faculty for developing the focal innovation.

For the use or design of library spaces, three variables for student contributions are positive and significant: library users contributed to the original idea for the innovation (though this can also include faculty), co-creation with students, and obtaining very useful knowledge from students for the development of the innovation. Co-creation and obtaining very useful knowledge from non-management staff and faculty have no effect on the use or design of library spaces, suggesting that positive benefits from this type of innovation derive from student input along with university policies. For ease of processes, only user needs as a driver of innovation are relevant. This might be more reflective of support for innovation rather than a direct link, since student and faculty input to the process aspects of combined service-process innovations could be limited. Finally, co-creation with faculty has a positive effect on community building among users, possibly because this outcome is oriented to communities of faculty and researchers and not to students.

Table 9.4: Effects on outcomes of university library innovations: ordinal model for minor, moderate and strong positive effects¹

	Access to information		Use or design of library spaces		Ease of use of processes		User experiences		Community building among users	
	B	sig	B	sig	B	sig	B	sig	B	sig
innodigital	0.866	0.003	-0.044		0.634	0.023	0.211		-0.730	0.018
<i>Influence of library staff, faculty and students through co-creation, very useful knowledge, drivers and idea sources</i>										
Library users contributed to the idea			0.810	0.011						
Co-creation with non-management staff							-0.554	0.098		
Co-creation with faculty	-0.625	0.082							1.161	0.002
Co-creation with students			0.820	0.042						
Very useful knowledge from staff										
Very useful knowledge from faculty	0.859	0.011								
Very useful knowledge from students			1.282	<.001						
User needs as a driver (low)	-0.811	0.024			-1.712	<.001	-1.773	<.001	-1.083	0.004
User needs as a driver (moderate)	-0.85	0.005			-0.760		-1.122	<.001	-0.547	0.069
User needs as a driver (high)	0 ^a	.	0 ^a	.	0 ^a	.	0 ^a	.	0 ^a	.
University policies as a driver (low)			-0.749	0.053						
University policies as a driver (mod.)										
University policies as a driver (high)	0 ^a	.	0 ^a	.	0 ^a	.	0 ^a	.	0 ^a	.
Threshold 1	-1.785	0.006	-0.883		-1.191	0.053	-2.46	<.001	0.766	
Threshold 2	-0.120		0.468		0.538		-0.709		2.169	0.002
Number of cases	256		216		258		263		226	
Model Chisquare	29.86	0.005	54.38	<.001	39.97	<.001	44.80	<.001	45.38	<.001

1: The model for use or design of library spaces based on no effect, low-moderate positive effect, and strong positive effect

9.5 Results for branch libraries

The results for branch libraries, given in Table 9.5, are not fully comparable to the results for main public libraries because the questions for the branch refer to all innovations instead of to a single high priority innovation. This may partly explain why the 'not relevant/too soon to tell' option is selected on average by 21.5% of branch library respondents versus 27.5% of main library respondents, since the responses are likely to refer to more than one innovation. Conversely, the average for a 'strong positive effect' is lower for branch respondents at 19.7% versus 33.2% for main libraries, as the latter is limited to a 'high priority' innovation where better effects would be expected.

Table 9.5: Effect of focal innovation on outcomes in 119 branch public libraries, percent

Outcome	Not relevant /too soon	Negative effect	Minor positive effect	Moderate positive effect	Strong positive effect
Design or use of library space	23.5	1.7	11.8	31.1	31.9
Simplicity or ease of processes	29.4	3.4	19.3	37.8	10.1
Library user experiences	16.8	0.8	16.0	42.9	23.5
Library user skills (literacy, digital, etc.)	29.4	0.8	21.8	39.5	8.4
Ease of access to information	23.5	0.0	21.0	36.1	19.3
Satisfaction of library employees	9.2	5.0	10.9	47.1	27.7
Outreach to new library users	13.4	0.8	24.4	42.0	19.3
Social interactions between library users	26.9	1.7	26.9	26.9	17.6
Average	21.5	1.8	19.0	37.9	19.7

Table 9.6 provides logit model results (the ordered models were unsatisfactory) for two outcomes: 'design or use of library space' and 'social interactions or networking between library users'. For all other outcomes the statistical model did not fit the data. The logit model compares a strong positive effect (set equal to 1) to a combined moderate, minor and negative effect (set equal to 0). Respondents that reported that an outcome was 'not relevant' or it was 'too soon to know' the effect are excluded. The best effects are observed for the design or use of library space, where both co-creation and obtaining very useful knowledge from branch library users has a positive effect on the outcome. Conversely, municipal policies as a high importance driver and obtaining knowledge from users through a suggestion box or social media have negative effects. This suggests that municipal policy requirements and the knowledge obtained from suggestion boxes and social networks is either misguided or not appropriate. This contrasts sharply with the benefits of co-creation with users. For

the second outcome of social interactions, only co-creation is statistically significant, with a positive effect on outcomes.

Table 9.6: Effects on outcomes of branch public library innovations, logit model for strong positive effects versus other effects (negative, minor, moderate)

	Design or use of library space		Social interactions or networking between library users	
	B	p	B	p
Management support for innovation	1.154	.024		
Municipal policy as a high importance driver	-.982	.082		
Co-creation with branch library users	1.519	.020	1.708	.021
Suggestion box or social networks to obtain library user ideas	-1.389	.012		
High usefulness knowledge obtained from library users	1.583	.039		
Constant	-.816	.108		
Number of cases	89		86	
Nagelkerke R ²	.271		.230	
Model Chisquare	19.97	.006	14.40	.044

9.6 Conclusions

For main public libraries, users almost always have a beneficial role on outcomes, either through suggestions from library users as a driver for innovation or obtaining very useful knowledge from users for the development of the focal innovation. However, the benefits to outcomes from co-creation with users is mediated by the value of knowledge obtained from users. As shown in chapters 7 and 8, co-creation has a substantial effect on the usefulness of knowledge from library users and from other stakeholders. However, co-creation with users has no independent effect on outcomes for main public libraries.

The situation in university libraries is different. Very useful knowledge is considerably less likely to increase positive outcomes for university libraries. Conversely, co-creation with students increases positive effects for the use or design of library spaces and co-creation with faculty increases positive effects for community building. The most common factor for outcomes is user needs as an innovation driver, which has a positive effect on four of the five outcomes.



The results for all three types of libraries points to a consistent positive influence of library users on the use or design of library space. For universities, the main role of students, other than the university responding to user needs as a driver, is assisting with innovations that affect the use or design of library space, with co-creation with students, very useful knowledge from students, and responding to library user needs all having a positive effect on library space. The same positive association between co-creation and very useful knowledge from library users with library space is also observed for branch libraries. For main public libraries, consulting users has a positive effect on library space, although not co-creation. In addition, the positive effect on library space by non-management staff could be due to their role as an alternative source of knowledge on user needs (see chapter 7).

As part of preparing a paper for publication, future research on outcomes will use the text description of the focal innovation to determine if users are more involved in some types of innovations than for other types. Co-creation with users is reported by only 23.5% of libraries for their focal innovation, so the above analyses that do not differentiate between innovations where co-creation is used versus not used could fail to identify co-creation benefits on outcomes. Limiting the analyses to innovation types where user co-creation is frequently used should provide more accurate results for the effect of user co-creation on outcomes. We expect, for example, that users are more active in innovations for the use or design of library space than for administrative processes.



10 Conclusions and policy recommendations

Innovation is defined as the implementation of a new or improved service or process. The LibrarIN survey finds that innovation in libraries is very common, with only 6% of main public, 2% of university, and 3% of branch public libraries failing to innovate in the previous three years.

The LibrarIN survey data show that co-creation in European libraries is still infrequent, especially when it comes to involving library users. Co-creation most often involves non-managerial staff, largely because they are readily available to take part in innovation activities. Library users are only involved in co-creation for 24% of the surveyed main public libraries while non-profits and businesses are used less frequently. A similar percentage of branch libraries report using co-creation, but this is not limited to a single focal innovation. University libraries report higher overall user involvement in co-creation (52%), but this is mostly due to the involvement of faculty or researchers, with only 25% of students involved. The high rate of co-creation with faculty or researchers is probably due to their availability and high interest in library innovations that affect them. Small public libraries that are the only library serving a municipality or region (stand-alone libraries) are the least likely to co-create with users (11%). This is partly because stand-alone libraries are smaller and have fewer employees, but other factors include a lack of resources including competencies in innovation. For universities, the number of employees has no effect on the use of co-creation.

10.1 Factors supporting or hindering the use of co-creation

In public libraries, support factors outweigh obstacles. Individual barriers tend to have little impact on the use of co-creation, likely because library managers can work around them, as observed in both the public and private sectors (D'Este et al., 2012; Torugsa & Arundel, 2016). For branch libraries single obstacles have little effect, but the use of co-creation is less likely when several obstacles occur together, such as a lack of resources combined with limited government support. Co-creation can also be hindered by weak connections between libraries, an issue for smaller, stand-alone libraries in small, rural municipalities. The main factors supporting the use of co-creation in main public libraries are skills in innovation management or design thinking and dedicated external funding. For branch libraries the main factors are municipal policies and suggestions from branch library users as innovation drivers.

Compared to public libraries, university libraries present a more complex picture of co-creation. Their diversity, from large research-focused LIBER members to smaller non-LIBER institutions, means that the factors supporting or hindering co-creation vary significantly. Understanding these differences is crucial, since universities are both hubs of knowledge production and important service providers for students, researchers, and staff. The main factor supporting co-creation is skills in design thinking.



10.2 Obtaining useful knowledge for innovation from library staff and stakeholders

Methods to obtain knowledge from library users and other stakeholders can be complementary (two sources separately increase the usefulness of knowledge) or substitutes (a second source decreases the usefulness of knowledge from a first source). For main public libraries both consulting users and co-creation with library users increases the usefulness of knowledge for developing the focal innovation, but co-creation with users has a bigger effect. Knowledge obtained from consulting users is complementary to that obtained from co-creation. In contrast, co-creation with non-management staff decreases the effect of co-creation with library users, suggesting the knowledge obtained from non-management staff is a partial substitute for that obtained from co-creation with users. For university libraries, consulting (with non-management staff, faculty/researchers or students) has a complementary positive effect on the usefulness of knowledge from faculty/researchers. There are large substitution effects from co-creation with other groups, particularly for faculty and researchers, where the combined effect of co-creation with non-management staff and students substantially reduces the usefulness of knowledge from faculty/researchers.

For public libraries, these results point to the strong benefits of co-creation as a method for obtaining useful knowledge for the development of innovation. These benefits do not decline when alternative methods are used such as consulting, although library non-management staff can partly compensate for user involvement in activities to develop innovations. Given these benefits, it is surprising that users are only involved in the development of 23.5% of high priority public library innovations. Possible explanations include a lack of awareness of co-creation benefits outside of leading libraries or the higher costs in terms of staff effort of co-creation with users.

For university libraries, the strong substitution effects for co-creation from different groups of library users (faculty/researchers and students) indicates that university libraries could reduce costs by eliminating one of the two user groups, which may explain the low use of co-creation with students. The average low value of knowledge from students may also be another reason, though this could be affected by negative perceptions of managers about student involvement, which could be more difficult to attain than involving faculty/researchers who already sit on library committees.

10.3 Validation with the LibrarIN stakeholder panel

As noted in the methodology section, the LibrarIN stakeholders made several useful suggestions for the questionnaire design, such as the inclusion of questions to identify small libraries, examine staff resistance, and collect evidence for separate phases (solutions and challenges). Preliminary results from analyses of the LibrarIN survey data were presented for validation at a Stakeholder panel meeting in Brussels on September 30, 2025. The stakeholders were surprised at the low rate of use for co-cocreation, likely because they were partly selected because their own libraries were active users



of co-creation. They did note that co-creation was one of several possible methods of innovation, a perspective that is captured by Chapter 5 on different 'styles' of innovation in public libraries. The stakeholders were interested in seeing if styles were linked to outcomes, but this information was not yet available for the Brussels meeting but will be included in a forthcoming paper. Several stakeholders were also interested in different phases of innovation, which is captured in the research in chapters 7, 8 and 9 on the use of co-creation to identify challenges that need to be addressed and solutions to these challenges. The stakeholders also strongly believed that many librarians were exhausted by the extra work created by co-creation, although they recognized that co-creation is a good innovation method and appreciated the impartial empirical evidence from the survey on the prevalence of co-creation. In respect to dissatisfaction with co-creation, the survey data showed low rates staff resistance to including library users, but this question clearly did not adequately cover the issue of dissatisfaction due to extra work.

10.4 Policy recommendations

The following recommendations are based on the analyses of the LibrarIN surveys.

Recommendation 1: Raise awareness of the value of co-creation

Co-creation substantially increases the usefulness of knowledge obtained from different groups for developing an innovation. The low rates of co-creation with library users and other stakeholders (non-profits, businesses) in public libraries and with students in university libraries suggests that library managers are either unaware or not convinced of the value of co-creation. The first recommendation is therefore to raise awareness of the value of co-creation with library users and other stakeholders, particularly in public libraries.

Recommendation 2: Focus on supporting 'success' factors

Obstacles can matter in reducing the use of co-creation, but factors that support co-creation are substantially more valuable. Specific obstacles are rarely of concern - managers can work around them. For branch public libraries, the problem is when multiple obstacles occur, which decreases the ability of managers to use co-creation methods.. Support factors are usually the opposite of obstacles, for example a lack of skills becomes the availability of skills. This is one reason why it is more effective for policy to stress support factors rather than fixate on obstacles.

Recommendation 3: Address Systemic Resource Constraints

To improve innovation and interactive user involvement through co-creation, policy must focus on support that addresses the root cause: resource scarcity. For both public and university libraries, the most effective way to foster co-creation and other best practices is to support the development of in-library skills of relevance to innovation and provide adequate funding to cover the costs of co-creation



and collaborative innovation. Efforts to encourage user involvement will have limited impact if staff do not have the time or resources to implement new ideas.

Recommendation 4: Invest in a Modern Skills Agenda

Libraries need access to a modern skill set that supports best practices in developing innovations, from co-creation to digital transformation. Training and recruitment must focus on a diversity of competencies. This includes a diversity of technical skills including AI, data science, and digital literacy as well as methodological skills such as change management and design thinking. A diverse skill set supports experience with a broad variety of innovation types, which in turn supports co-creation activities. Crucially, these must be paired with relational competencies that enable staff to better understand and respond to user needs, facilitate user-led activities, and manage community collaborations.

Recommendation 5: Rethink Funding Models to Foster Innovation

Current funding models often fail to provide dedicated support for resource-intensive innovation, creating a gap between ambition and reality. Funding mechanisms must evolve to specifically support innovative and collaborative projects, which are more costly than simply adopting existing services. A lack of dedicated innovation funding is directly linked to a reduced ability to collaborate and develop novel services.

Recommendation 6: Address the gap between capabilities in small and large libraries

The need for a skills agenda and for dedicated funding is universal, but the urgency is greatest for smaller libraries. Both small public and small university libraries report significantly lower access to essential innovation skills and funding, making them a priority for targeted support programs. For university libraries, funding mechanisms should prioritize external grants and dedicated staffing support to enable more ambitious, resource-intensive collaborative innovations. For public libraries, policy should focus on making special government innovation funds more accessible to small libraries and those that currently lack in-house innovation skills, thereby breaking the cycle where only the most well-resourced institutions can secure project funding.

Recommendation 7: Context matters

The policy approach should be tailored to the unique environments of different libraries and consider the characteristics of the innovation. For public libraries, knowledge from users and non-profits is less useful for innovations with a digital component, while knowledge from users, non-managerial staff, and non-profits are more useful for service-only innovations than for combined service-process innovations. And, not surprisingly, user co-creation is less relevant when innovations are adapted from innovations already in use elsewhere and for which knowledge on their characteristics and outcomes



is available to library staff. Awareness of context is an important reason for leadership that can effectively balance top-down and bottom-up innovation activities.

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12 Annex A: English versions of the three questionnaires

12.1 University Questionnaire

This survey is about how your library develops new or improved services for your library's users and new or improved administrative and other types of processes. Services include any type of service offered by the university library such as providing access to information both digitally and physically, and support services for library users.

Library users include anyone who may access your library (**either online or in person**). This mostly includes academics, researchers, students, and university staff.

Section A asks general questions on your library and how all new or improved services or processes are developed. Section B asks you to identify a single new or improved service or process and to answer questions on how it was developed. Section C asks for basic background information.

A. General questions on your library

A.1 How important are the following activities to your library?

	Low or not at all	Moderate	High
a) Providing information or access to publications	☐	☐	☐
b) Holding community or cultural activities (seminars, exhibits, etc.)	☐	☐	☐
c) Providing space and equipment for user projects, such as makerspaces, fablabs, podcast studios, 3D printers, video rooms, etc.	☐	☐	☐

A.2 In the last three years, how frequently did the following statements apply to your library?

	Almost always	Mostly	Some- times	Almost never	Not relevant
a) Senior management gave high priority to new ideas or new ways of working	☐	☐	☐	☐	☐
b) Senior management strongly supported developing new or improved services or processes	☐	☐	☐	☐	☐
c) Library staff were highly motivated to think of ideas for new or improved services or processes	☐	☐	☐	☐	☐
d) Sufficient financial resources were available to develop new or improved services or processes	☐	☐	☐	☐	☐
e) A major goal for all changes to services or processes was to reduce costs	☐	☐	☐	☐	☐



A.3 In the last three years, did your library employ one or more staff who were highly skilled in the following areas?

(Tick **all** that apply)

- a) Change or innovation management ☐
- b) Design thinking or user experience (UX) to involve users in plans for library improvements ☐
- c) Digital literacy (knowing which digital technology to use to solve a problem or information request) ☐
- d) Information technology (data science, data security, automation, etc.) ☐
- e) Artificial Intelligence (natural language processing, large language models, optical character or handwritten text recognition, etc.) ☐
- f) **None of the above** ☐

A.4 In the last three years, did your library **introduce** any of the following types of **new or improved** services or processes:

(Tick **all** that apply)

- a) Services to support research..... ☐
- b) Services to support students ☐
- c) Processes for delivering services to new or current library users..... ☐
- d) Methods for communicating with new or current library users..... ☐
- e) Administrative or back-office processes (IT, maintenance, purchasing, accounting, human resources, etc.) ☐
- f) Digitization of collections or access to collections ☐
- g) Changes to the building design or use of library space ☐
- h) Other (please describe)..... ☐

- i) **None of the above**: no new or improved services or processes ☐

Go to question A.5 if you responded ‘**yes**’ to any new or improved services or processes in question A.4.

If you answered ‘none of the above’ in A.4, go to question A.6.



A.5 In the last three years, how important were the following factors as drivers of your library's new or improved services or processes?

	Low	Medium	High	Very high	Not relevant / Don't know
a) Public funding (European, national, regional, local) or other external funding for your library	☐	☐	☐	☐	☐
b) New university policies or priorities	☐	☐	☐	☐	☐
c) Goal to improve the experiences of your new or current users	☐	☐	☐	☐	☐
d) New technologies (digitization, artificial intelligence, etc.)	☐	☐	☐	☐	☐
e) Respond to new demands or needs of your library's users	☐	☐	☐	☐	☐
f) Other (please describe)	☐	☐	☐	☐	☐

A.6 In the last three years, how important were the following factors as **obstacles** to developing new or improved services or processes in your library? (include both ongoing and occasional obstacles)

	None	Low	Medium	High
a) Unrealistic time pressures	☐	☐	☐	☐
b) Insufficient library staff with expertise on developing new or improved services or processes	☐	☐	☐	☐
c) Limited digital skills of library staff	☐	☐	☐	☐
d) Insufficient financial resources	☐	☐	☐	☐
e) Resistance of library staff to change	☐	☐	☐	☐
f) University regulations or requirements	☐	☐	☐	☐
g) Other (please describe)	☐	☐	☐	☐

Go to question B.1 if you reported new or improved services or processes in question A.4.

If you answered 'none of the above' in A.4, go to question C.1.



B: A single new or improved service (or process) in your library

All questions in this section refer to a **single** new or improved service (or process) that you are asked to select and briefly describe. Please select an example that was of **high priority** to your library or required **substantial effort** to develop and implement.

- B.1** In a few sentences, please describe one of your library's **new or improved services** that was implemented within the last three years. If no services come to mind, please describe a new or improved administrative or other process.

Please answer all remaining questions in section B only for your selected new or improved service or process

- B.2** Does your selected new or improved service or process have any of the following characteristics?

(New or improved services or processes can have multiple characteristics. For example, a new service can require improvements to administrative processes or involve a new delivery method.)

(Tick **all** that apply)

- a) A new or improved service for supporting research or students..... ☐
- b) A new or improved process for delivering services to library users..... ☐
- c) A new or improved communication method for library users..... ☐
- d) A new or improved administrative or other process ☐
- e) A new or improved building design or use of library space ☐
- f) Other (please describe)..... ☐



B.3 Did your selected new or improved service or process involve **developing** or **applying** technologies such as:

(Tick **all** that apply)

- a) Digitization of data (photos, text, collections, administrative records, etc.) ☐
- b) Automated systems..... ☐
- c) Apps for mobile phones, tablets, or personal computers ☐
- d) Artificial intelligence (AI) (*includes natural language processing, large language models, optical character recognition, handwritten text recognition, etc.*) ☐
- e) Other (please describe)..... ☐

- f) **None of the above** ☐

B.4 Who contributed to the **original idea** for your selected new or improved service or process? (*Exclude assistance obtained during the development of this new or improved service or process*)

(Tick **all** that apply)

- a) Government (national, regional, local policy makers, politicians, policy documents, etc.)..... ☐
- b) Your university (Executive board / council, IT department, etc.) ☐
- c) Yourself or other library employees..... ☐
- d) Library users (faculty, students, researchers, etc.)..... ☐
- e) Other university, national, or municipal libraries (good practice examples, etc.)* ☐
- f) Library associations* ☐
- g) Other (please describe)..... ☐

* For both e and f, **include international** libraries or library organisations

B.4a Which of the above was the most important contributor to the original idea for your selected new or improved service or process?

_____ (insert letter from question B.4 above)

Methods for developing your selected new or improved service or process

B.5 Which of the following sentences **best** describes how your library developed your selected new or improved service or process:

(Tick **one** box only)

- a) By **adopting** a service or process already in use by other libraries or organisations*,
with very few or no additional changes ☐
- b) By **modifying** a service or process already in use by other libraries or organisations* ☐
- c) By **collaborating** with other libraries or organisations* ☐
- d) By **developing this service or process primarily in-house** or with your university
(little or no assistance from other libraries or organisations) ☐

*'Other organisations' include businesses, NGOs, consultants, governments, etc.

B.6 Did your library conduct any of the following activities as part of developing your selected new or improved service or process?

	Yes	No	Don't know
a) Evaluate good practices of other university, national or public libraries	☐	☐	☐
b) Research to identify different types of users for this service or process*	☐	☐	☐
c) Pilot a prototype of this service or process with potential users	☐	☐	☐

* The users of administrative or other processes are library staff.

B.7 How important were the following external sources for collaboration partners, technical knowledge, or assistance for developing your selected new or improved service or process?

	None / Don't know	Low	Medium	High
a) IT or other departments of your university	☐	☐	☐	☐
b) Other university, national or municipal libraries	☐	☐	☐	☐
c) Library associations	☐	☐	☐	☐
d) Government agencies or departments	☐	☐	☐	☐
e) NGOs (non-government organizations) or non-profits	☐	☐	☐	☐
f) Businesses including consultants	☐	☐	☐	☐
g) Providers of specialised software or ICT equipment	☐	☐	☐	☐

Involvement of library staff and library users

B.8 Did your library use any of the following methods to obtain useful input from library staff or library users for developing your selected new or improved service or process?

	Yes	No	Don't know
a) Focus groups or workshops to identify challenges or unmet needs	☐	☐	☐
b) Focus groups or workshops to generate solutions to challenges	☐	☐	☐
c) One-on-one conversations between library staff and users	☐	☐	☐
d) Surveys on experiences with previous or similar services or processes	☐	☐	☐
e) Crowdsourcing methods to collect ideas or solutions	☐	☐	☐
f) Services of design firms, innovation labs or living labs	☐	☐	☐
g) Other (please describe)	☐	☐	☐

B.9 How useful was input from the following groups on the **challenges** to be addressed by your selected new or improved service or process?

	None (not asked for input)	Low	Medium	High
a) Library managers	☐	☐	☐	☐
b) Administrative or front-line library staff	☐	☐	☐	☐
c) Faculty or researchers as library users	☐	☐	☐	☐
d) Students as library users	☐	☐	☐	☐
e) Other (please describe)	☐	☐	☐	☐

B.10 How useful was input from the following groups on the **solutions** (final characteristics) of your selected new or improved service or process?

	None (not asked for input)	Low	Medium	High
a) Library managers	☐	☐	☐	☐
b) Administrative or front-line library staff	☐	☐	☐	☐
c) Faculty or researchers as library users	☐	☐	☐	☐
d) Students as library users	☐	☐	☐	☐
e) Other (please describe)	☐	☐	☐	☐



B.11 Were any of the following groups involved in focus groups or workshops to identify challenges or solutions for your selected new or improved service or process?

	Yes	No	Don't know
a) Library management	☐	☐	☐
b) Administrative or front-line library staff	☐	☐	☐
c) Faculty or researchers as library users	☐	☐	☐
d) Students as library users	☐	☐	☐
e) Other (please describe)	☐	☐	☐

f) None (no focus groups or workshops conducted) ☐ ☐ ☐

B.12 How important were the following factors as obstacles to involving **library users** in focus groups or workshops as part of developing your selected new or improved service or process?

	None	Low	Medium	High	Not relevant
a) Reluctance of library staff to include library users	☐	☐	☐	☐	☐
b) Lack of experience in involving library users	☐	☐	☐	☐	☐
c) Difficulties in finding potential or current library users willing to participate	☐	☐	☐	☐	☐
d) Insufficient time or financial resources for including library users	☐	☐	☐	☐	☐
e) Other (please describe)	☐	☐	☐	☐	☐

Evaluation and resources

B.13 Was your selected new or improved service or process evaluated after implementation?

(Tick **one** box only)

- a) Yes..... ☐
- b) No, and no plans for an evaluation..... ☐
- c) No, but it will be evaluated in the future..... ☐

B.14 Did your library receive **dedicated resources** to develop or implement your selected new or improved service or process? (*exclude funding or staff to operate this service or process after its introduction*)

- | | Yes | No |
|--|--------------------------|--------------------------|
| a) University or library funding | ☐ | ☐ |
| b) External funding (government, philanthropists, crowdfunding, etc.) | ☐ | ☐ |
| c) Additional library staff (redeployed, temporary or new hires, etc.) | ☐ | ☐ |

Outcomes

B.15 What were the effects of your selected new or improved service or process on the following outcomes?

- | | Strong positive effect | Moderate positive effect | Minor positive effect | No effect | Negative effect | Too soon to tell /not relevant |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------------|
| a) Improve access to information | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| b) Use or design of library space | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| c) Ease of use of processes | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| d) Improve user experience | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| e) Satisfaction of library staff | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| f) Outreach to new types of library users | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| g) Community building among users | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| h) Other (please describe) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |



C. Background information

C.1 How many employees (head count) work at your library?

(Tick **one** box only)

- a) Less than 49..... ☐
- b) 50 to 249..... ☐
- c) 250 or more..... ☐
- d) Don't know ☐

C.2 How long have you worked in the library sector?

(Tick **one** box only)

- a) Less than five years ☐
- b) Five years to less than ten years..... ☐
- c) Ten years or more..... ☐

C.3 What is your job title? _____

Do you have any comments to add?

12.2 Main Public Library Questionnaire

This survey is about how your library develops new or improved services for your library's users and new or improved administrative and other types of processes.

Library users include anyone who may access your library (either online or in person), including previous, current or potential (future) library users.

Section A asks general questions on your library and how all new or improved services or processes are developed. Section B asks you to identify a single new or improved service or process and to answer questions on how it was developed. Section C asks for basic background information.

A. General questions on your library

A1 Which of the following best describes your library?

- a) The only library serving a municipality or region ☐
- b) The main library in a municipality or region with branch libraries or other small libraries ☐
- c) Other (please describe)..... ☐

Please answer all further questions for your library only unless requested otherwise.

A2 How important to your library's goals are the following activities or functions? *(This list excludes core functions such as book loans, providing a place for reading or studying etc.)*

	Not at all	Low	Moderate	High
a) Educational classes or lectures provided by the library or other organizations (e.g. language, fitness, health classes etc.)	☐	☐	☐	☐
b) Community or cultural activities (exhibitions, public debates, etc.)	☐	☐	☐	☐
c) A place where people can use library facilities (Makerspace, Fablab, etc.) for their own creative projects	☐	☐	☐	☐
d) A place where people can collaborate to develop or provide activities to address their own needs, such as cross-cultural activities, writing groups, social entrepreneurship, etc.	☐	☐	☐	☐

A3 In the last three years, how frequently did the following statements apply to your library?

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	Always	Often	Rarely	Don't know
a) Management strongly supported developing new or improved services or processes	☐	☐	☐	☐
b) Non-managerial staff were highly motivated to think of ideas for new or improved services or processes	☐	☐	☐	☐

A4 In the last three years, did your library have one or more staff with competencies in the following areas?

(Tick **all** that apply)

- a) Change or innovation management☐
- b) Design thinking or other methods for involving library users in developing library services.....☐
- c) Digital literacy (knowing which digital technology to use to solve a problem or information request).....☐
- d) Artificial Intelligence (natural language processing, large language models, optical character or handwritten text recognition, etc.)☐
- e) **None of the above**☐

A4a In the last three years, did your library obtain assistance for any of the above competencies through a regional, national, or international library association?

- Yes ☐
- No ☐
- Don't know ☐

A5 In the last three years, did your library **introduce** any **new or improved services or processes** for:

(Tick **all** that apply)

- a) Collections (e-books, printed books, music, DVDs, etc.).....☐
- b) Educational programs (literacy, health or language courses, etc.).....☐
- c) Cultural or community programs☐
- d) Methods for delivering or communicating services to library users☐
- e) Changes to the building design or use of library space to better meet library user needs ☐
- f) Administrative or other work processes (purchasing, accounting, human resources, building maintenance, etc.)☐
- g) Other (please describe).....☐

- h) **None of the above:** no new or improved services or processes☐

Go to Question A6 if you responded '**yes**' to any



new or improved services or processes in question A5.

If you answered 'none of the above' in A5, go to question A7.

A6 In the last three years, how important were the following factors as **drivers** of your library's new or improved services or processes?

	Not at all	Low	Medium	High
a) Municipal or regional legislation or policies	☐	☐	☐	☐
b) New media and technologies (digitalization, artificial intelligence (AI), etc.)	☐	☐	☐	☐
c) Suggestions from non-profit organizations (NGOs, schools, providers of health, social, educational services, etc.)	☐	☐	☐	☐
d) Suggestions from library users	☐	☐	☐	☐
e) Societal changes or expectations	☐	☐	☐	☐
f) Other (please describe)	☐	☐	☐	☐

A7 In the last three years, how important were the following factors as **obstacles** to developing new or improved services or processes in your library?

	Not at all	Low	Medium	High
a) Unrealistic time pressures	☐	☐	☐	☐
b) Insufficient staff with experience on how to develop new or improved services or processes	☐	☐	☐	☐
c) Insufficient staff to take on new work	☐	☐	☐	☐
d) Insufficient financial resources	☐	☐	☐	☐
e) Library staff uninterested or resistant to change	☐	☐	☐	☐
f) Lack of support by municipal or regional government	☐	☐	☐	☐
g) Other (please describe)	☐	☐	☐	☐

Go to Question B1 if you reported new or improved services or processes in Question A5.

If you answered 'none of the above' in A5, go to question C1.

B. This section asks questions about a single new or improved service or



process in your library

- B1** Briefly describe a new or improved service that your library **introduced within the last three years**. Select an example that was of high priority to your library or of high expected value for your library users. If no services come to mind, describe a new or improved process.

Please note that all remaining questions in section B only ask about this single new or improved service or process.

- B2** Was the purpose of this new or improved service or process to benefit:

(Tick **one** only)

- a) Your library's users ☐
- b) Administrative or other processes ☐
- c) Both your library's users and processes ☐
- d) Other (please describe)..... ☐

- B3** Was this new or improved service or process:

(Tick **one** only)

- a) Only implemented in your main library ☐
- b) Only implemented in your branch libraries or other libraries* ☐
- c) Implemented in both your main library and in one or more branch or other libraries..... ☐
- d) Other (please describe)..... ☐

**Other libraries include school and unaffiliated libraries within your municipality or region, and libraries outside your municipality or region, etc.*

- B4** Did this new or improved service or process involve **digital technologies, automated systems, apps, or artificial intelligence (AI)**?

Yes ☐
No ☐
Don't know ☐

B5 Where did the **funding** to develop this new or improved service or process come from? (*exclude funding to operate this service or process after its introduction*)

	Yes	No	Don't know
a) From the annual library budget	☐	☐	☐
b) From special government funding (municipal, regional, national, EU) in addition to the annual library budget	☐	☐	☐
c) From other sources (philanthropists, crowdfunding, etc.)	☐	☐	☐

B6 Were the effects of this new or improved service or process **evaluated** after implementation?

(Tick **one** box only)

a) Yes ☐
b) No, and no plans for an evaluation ☐
c) No, but it will be evaluated in the future ☐

Development of this new or improved service or process

B7 Which of the following sentences **best** describes how your library developed this new or improved service or process:

(Tick **one** box only)

a) By **adopting** a service or process already in use by other libraries or organizations, with few or no additional changes ☐
b) By **modifying** a service or process already in use by other libraries or organizations ☐
c) By **collaboratively** developing this new or improved service or process with other libraries or organizations* (exclude your branch libraries) ☐
d) By **developing this new or improved service or process primarily in-house** or with your branch libraries, with little assistance from external organizations ☐

*Organizations can include municipal governments, other governments, businesses, consultants; health, social services or educational organizations, community groups, etc.

health, social

B8 Did your library use any of the following methods to **obtain ideas** from your library staff or library users for **developing** this new or improved service or process?



	Yes	No	Don't know
a) Informal conversations between library staff and library users	☐	☐	☐
b) Internal discussions among library staff	☐	☐	☐
c) 'Suggestion box' (online or in the library) for new ideas from library staff or library users	☐	☐	☐
d) Surveys on the experiences of library users with previous or similar services or processes	☐	☐	☐
e) Other (please describe)	☐		

B9 As part of developing this new or improved service or process, did your library conduct **focus groups, design thinking exercises, brainstorming sessions, or workshops** to:

	Yes	No	Don't know
a) Identify challenges or unmet needs to be addressed	☐	☐	☐
b) Generate solutions to these challenges or unmet needs	☐	☐	☐
c) Other reasons (please describe)	☐		

If you ticked yes to any option in B9 go to B10, otherwise go to B12

B10 Were the following types of individuals involved in any of these **focus groups, design thinking exercises, brainstorming sessions, or workshops** to develop this new or improved service or process?

	Yes	No	Don't know
a) Library managers at your main library or library branches	☐	☐	☐
b) Non-managerial library staff at your main library or library branches	☐	☐	☐
c) Current or potential library users	☐	☐	☐
d) Representatives from non-profit organizations (local NGOs, schools, health or education providers, etc)	☐	☐	☐
e) Representatives from businesses or consultants	☐	☐	☐
f) Other (please describe)	☐		



B.11 How important were the following factors as **obstacles to involving** current or potential **library users** in these focus groups, design thinking exercises, brainstorming sessions, or workshops?

	Not at all	Low	Medium	High
f) Reluctance of library staff to include library users	☐	☐	☐	☐
g) Library staff lacked experience in involving library users	☐	☐	☐	☐
h) Difficulties in finding library users willing to participate	☐	☐	☐	☐
i) Insufficient time or funding to include library users	☐	☐	☐	☐
j) Other (please describe)	☐	☐	☐	☐

B.12 Overall, how useful was input obtained, through any means, from the following groups to the development of this new or improved service or process?

	Not used (no input from this group)	Slightly useful	Moderately useful	Very useful
a) Library managers at your main or branch libraries	☐	☐	☐	☐
b) Non-managerial staff at your main or branch libraries	☐	☐	☐	☐
c) Managers or staff from other libraries	☐	☐	☐	☐
d) Current or potential library users	☐	☐	☐	☐
e) Non-profit organizations (local NGOs, schools, health or education providers, etc)	☐	☐	☐	☐
f) Businesses or consultants	☐	☐	☐	☐
g) Regional, national or international library associations	☐	☐	☐	☐
h) Municipal government or politicians	☐	☐	☐	☐
i) Other (please describe)	☐	☐	☐	☐



Outcomes from this new or improved service or process

B.13 What were the **effects** of this new or improved service or process on the following outcomes?

	Strong positive effect	Moderate positive effect	Minor positive effect	Negative effect	Not relevant / too soon to know
i) Design or use of library space	☐	☐	☐	☐	☐
j) Simplicity or ease of processes	☐	☐	☐	☐	☐
k) Variety of services	☐	☐	☐	☐	☐
l) Library user experiences	☐	☐	☐	☐	☐
m) Library user skills (literacy, digital, etc.)	☐	☐	☐	☐	☐
n) Ease of access to information	☐	☐	☐	☐	☐
o) Satisfaction of library employees	☐	☐	☐	☐	☐
p) Outreach to new library users	☐	☐	☐	☐	☐
q) Networking among library users	☐	☐	☐	☐	☐
r) Social interactions between library users	☐	☐	☐	☐	☐
s) Other (please describe)	☐	☐	☐	☐	☐

C: Background information

C.1 How many employees (head count) work at your library (exclude branch libraries)?

(Tick **one** box only)

- a) Less than 49..... ☐
- b) 50 to 249 ☐
- c) 250 or more..... ☐
- d) Don't know ☐

C.2 How long have you worked in the library sector?

(Tick **one** box only)

- a) Less than five years ☐
- b) Five years to less than ten years..... ☐
- c) Ten years or more..... ☐

C.3 What is your job title? _____



Do you have any comments to add?



12.3 Branch Public Library Questionnaire

This survey is about how your branch library develops new or improved services for your library's users and new or improved administrative and other types of processes.

Library users include anyone who may access your library (either online or in person), including previous or current library users, and potential non-users who might use your library in the future.

Senior management refers to the main decision makers for all libraries within your municipal library system. They may be employed in your municipality's main library or elsewhere.

A. General questions on your library

A.1 In the last three years, how frequently did the following statements apply to your branch library?

	Almost always	Mostly	Some- times	Almost never	Not relevant
a) Senior management strongly supported developing new ideas for services or processes (new ways of working) in your branch library	☐	☐	☐	☐	☐
b) Library staff at your branch were highly motivated to think of ideas for new or improved services or processes	☐	☐	☐	☐	☐

A2 In the last three years, did your library **introduce** any **new or improved services** or **processes** for:

(Tick **all** that apply)

- b) Collections (e-books, printed books, music, DVDs, etc.).....☐
- b) Educational programs (literacy, health or language courses, etc.).....☐
- c) Cultural or community programs☐
- d) New or improved programs to serve disadvantaged groups☐
- e) Methods for delivering or communicating services to library users☐
- f) Changes to the building design or use of library space to better meet library user needs ☐
- g) Administrative or other work processes (purchasing, accounting, human resources, building maintenance, etc.)☐
- h) Other (please describe).....☐

- i) **None of the above:** no new or improved services or processes☐



A3 In the last three years, how important were the following factors as obstacles to developing new or improved services or processes for your branch library?

	None	Low	Medium	High
h) Lack of autonomy to implement new ideas proposed by staff at your branch	☐	☐	☐	☐
i) Library staff at your branch lack expertise on how to develop new or improved services or processes	☐	☐	☐	☐
j) Insufficient staff at your branch to take on new work	☐	☐	☐	☐
k) Insufficient financial resources for your branch	☐	☐	☐	☐
l) Staff at your branch uninterested or resistant to change	☐	☐	☐	☐
m) Lack of support by senior management	☐	☐	☐	☐
n) Other (please describe)	☐	☐	☐	☐

Go to Question B1 if you responded **‘yes’** to any new or improved services or processes in questions A2.

Otherwise go to question C1

B. This section asks questions about new or improved services or processes in your library

B1 In the last three years, how important were the following drivers for your branch library’s new or improved services or processes?

	Low	Medium	High	Not relevant
a) Municipal policies	☐	☐	☐	☐
b) Main library policies	☐	☐	☐	☐
c) Suggestions from your branch library’s users	☐	☐	☐	☐
d) Needs (health, social, educational, etc.) of the community served by your branch	☐	☐	☐	☐
e) Societal expectations for better library services	☐	☐	☐	☐
f) Other (please describe)	☐	☐	☐	☐

B2 In the last three years, did your branch library develop or implement any of your new or improved services or processes in the following ways:

	Yes	No	Don't know
a) Staff at your branch worked collaboratively with other libraries within your municipal library system to develop a new or improved service or process	☐	☐	☐
b) Senior management required your branch to implement a new or improved service or process that was developed elsewhere	☐	☐	☐
c) Staff at your branch largely developed a new or improved service or process without input from other libraries	☐	☐	☐

B3 In the last three years, were any of the new or improved services or processes in your branch library:

Tick **all that apply**

- | | |
|---|--------------------------|
| a) Only implemented in your branch | ☐ |
| b) Implemented in your branch and in other branch libraries | ☐ |
| c) Implemented in your branch and in your municipality's main library | ☐ |

B4 Where did **funding** to develop or implement any of your branch library's new or improved services or processes come from? (*exclude funding to operate this service or process after its introduction*)

	Yes	No	Don't know
d) From the annual library budget for your branch or municipal library system	☐	☐	☐
e) From special government funding (municipal, regional, national, EU) in addition to the annual library budget	☐	☐	☐
f) From other sources (philanthropists, crowdfunding, etc.)	☐	☐	☐

B5 In the last three years, did your branch library **use any of the following methods** to obtain ideas from your branch library's users for developing new or improved services or processes?

	Yes	No	Don't know
a) Informal conversations between your branch library staff and library users	☐	☐	☐
b) 'Suggestion box' or social networks to get new ideas from library users	☐	☐	☐
c) Surveys on the experiences of your branch library's users with previous or similar services or processes	☐	☐	☐
d) Focus groups, brainstorming sessions or workshops with your branch library's users to identify challenges or unmet user needs	☐	☐	☐
e) Focus groups, brainstorming sessions or workshops with your branch library's users to generate solutions to challenges	☐	☐	☐
f) Other (please describe)	☐		



B.6 In the last three years, how important were the following factors as **obstacles** to involving your branch library's users in developing new or improved services or processes?

	None	Low	Medium	High	Not relevant
a) Reluctance of your branch library staff to include library users	☐	☐	☐	☐	☐
b) Your branch library staff lacked experience in involving library users	☐	☐	☐	☐	☐
c) Difficulties in finding branch library users willing to participate	☐	☐	☐	☐	☐
d) Insufficient staff, time or funding to include branch library users	☐	☐	☐	☐	☐
e) Other (please describe)	☐	☐	☐	☐	☐

B7 In the last three years, **how useful was input**, obtained through any means, from the following groups for developing your branch library's new or improved services or processes?

	Not used (no input from this group)	Slightly useful	Moderately useful	Very useful
b) Senior management or other staff at your municipality's main library	☐	☐	☐	☐
b) Managers or other staff from other branch libraries	☐	☐	☐	☐
c) Managers or other staff at your branch library	☐	☐	☐	☐
d) Your branch library's users	☐	☐	☐	☐
e) Non-profit organizations (local NGOs, schools, health or education providers, etc)	☐	☐	☐	☐
f) Businesses or consultants	☐	☐	☐	☐
g) Other (please describe)	☐	☐	☐	☐

B8 In the last three years, were any of your branch library's new or improved services or processes evaluated after implementation?

(Tick **one** box only)

- a) Yes ☐
- b) No, and no plans for an evaluation ☐
- c) No, but it will be evaluated in the future ☐



B9 In the last three years, what were the **effects** of your branch library's new or improved services or processes on the following outcomes?

	Strong positive effect	Moderate positive effect	Minor positive effect	Negative effect	Not relevant / too soon to know
t) Design or use of library space	☐	☐	☐	☐	☐
u) Simplicity or ease of processes	☐	☐	☐	☐	☐
v) Library user experiences	☐	☐	☐	☐	☐
w) Library user skills (literacy, digital, etc.)	☐	☐	☐	☐	☐
x) Ease of access to information	☐	☐	☐	☐	☐
y) Satisfaction of library employees	☐	☐	☐	☐	☐
z) Outreach to new library users	☐	☐	☐	☐	☐
aa) Social interactions or networking between library users	☐	☐	☐	☐	☐
bb) Other (please describe)	☐	☐	☐	☐	☐

C: Background information

C.1 How many employees (head count) work at your branch library?

(Tick **one** box only)

- a) Less than 10..... ☐
- b) 11 to 49..... ☐
- c) 50 or more..... ☐
- d) Don't know ☐

C.2 Is your branch part of a regional network of libraries?

Yes ☐

No ☐

C.3 How long have you worked in the library sector?

(Tick **one** box only)

- a) Less than five years ☐
- b) Five years to less than ten years..... ☐
- c) Ten years or more..... ☐



Do you have any comments to add?