

Design and success factors of an online solution for cross-pillar pension information

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Abstract. As the European Commission notes, the importance of individual pension components is increasingly shifting from state provision to private provision, as most European states can only guarantee basic provision for retirement age instead of guaranteeing the continuation of a person's standard of living. This development requires transparent information for citizens on the composition of their pensions, as this is a prerequisite for taking responsibility for their old-age provision themselves. Digital solutions such as apps offer the possibility of bundling the various sources of an old-age provision in one system and showing them to the individual citizen at a glance to make individual pension needs and possibilities of influence understandable. This research-in-progress paper reflects the current state of research in a study that examines the success factors of digital retirement provision information in a pan-European context.

Keywords: Pension information, Digital Transformation, Financial Literacy, Pension Literacy

1 Introduction

Due to a pan-European decline in the level of statutory pension entitlements, the responsibility for adequate old-age provision is shifting from the state to the individual citizen [1-3]. Old-age provision in the member states of the European Union (EU) is based on the three pillars of statutory, company and private old-age provision and thus company and private pension provision become more important [1].

To be able to take on this responsibility, it is essential that individuals understand the development of their old-age provision, so they can find out about their pension needs and act accordingly [1-3]. In most EU Member States, however, there is a lack of an appropriate information medium to enable citizens to do so, as cross-pillar entitlements are difficult for non-professionals to understand due to complex information and effects like money illusion [2-4]. In consequence, this makes a significant contribution to the fact that many citizens are uncertain about their pension situation and do not pay enough attention to it [4-6].

The advantages over traditional media regarding data consolidation, simplification, and personalization offer potential for the digital transformation of pension information to solve this issue. Existing implementations, however, like in Denmark or Sweden,

focus strongly on country-specific issues and thus cannot be transferred to other countries [3]. Hence, the European Commission (EC) recommends the implementation of an overall digital solution for comprehensive pension information, which considers the different pillars as well as the free movement of workers [1], [7]. In this study, which is still in progress, the success factors of such a solution are evaluated.

2 General State of Research on Pension Information

At present, citizens are confronted with a wide variety of sources of pension information, like previous employers or different EU countries [8]. Figure 1 shows which individual service providers the user is currently facing and what added value is generated by a cross-pillar pension information medium.

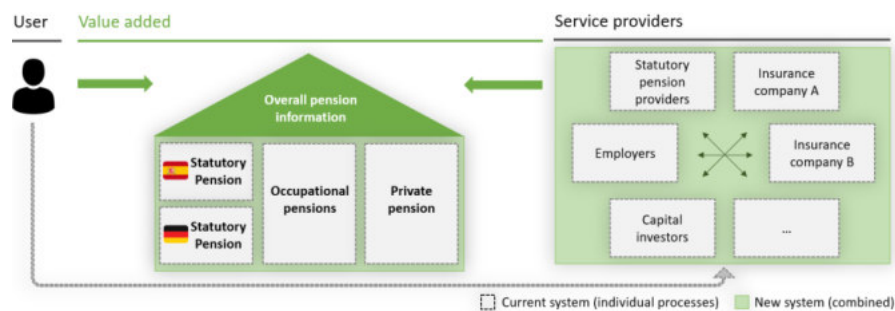


Figure 1. Pension information service system

Increasing the transparency of pension information and bringing together the various pillars is a highly contemporary topic, what is reflected in the number of current working papers and studies on the need for a cross-pillar retirement provision information medium [1], [4], [7-11]. However, the corresponding publications are regularly backed by private sponsors or public organizations. Current scientific research regarding the success factors of pension information, however, relates primarily to the individual pillars like, for example, the statutory pension [3], [12-16].

3 Research Approach

As outlined, the EC, among others, is proposing a digital solution for cross-pillar pension provision for its member states. This research work aims to determine the success factors of such an overall information medium, which is to be considered pan-European and inter-organizational.

In order to create the basis for achieving this objective, an application concept for a cross-pillar information solution has been developed. Since there is hardly any existing literature that specifically addresses the requirements of cross-pillar pension information, the concept is mainly derived by results of expert interviews, in addition to a literature review and a comparison of existing solutions in Denmark and Sweden.

To validate that the concept meets the requirements of the experts, it was prototypically implemented mainly via the application framework Angular and provided via a public domain, so the experts were able to evaluate the implemented solution in a second survey. Table 1 shows the framework data of both surveys.

Expert interviews	Phase 1 – Requirements	Phase 2 – Validation
Number of experts	12	7 (all of them also participated in phase 1)
Heterogeneity	High; experts from all three pension pillars as well as politics and science	Medium; experts from sciences and the second and third pension pillar
Structuring	Semi-structured	Structured
Cognitive interest	Attitudes and information	Information
Role of the interviewer	Active	Electronic, non-personal conduct of the survey
Interview situation	Symmetrical	Asymmetric (in favor of the interviewer)

Table 1. General data of the expert interviews

The second phase of expert interviews also serves as a pre-test before the conduct of end-user-focused experiments. According to the Design Science Research (DSR) approach of Hevner et al., the application design is broken down into several artifacts to strengthen the significance of this prospective end-user evaluation [17]. The findings of this evaluation will be analyzed and iteratively integrated into the concept.

In the first step of end-user evaluation, it is necessary to examine whether the basic application concept also meets the requirements of end users. Due to the complicated information situation and a high demand for a digital solution in Germany, German users are used for the first step. After a successful first evaluation and iterative revision of the concept, an end-user evaluation with other European users will take place. This evaluation is planned to be carried out in Spain and Italy, since the pension composition is different than in Germany, due to the lower relevance of the second pillar.

4 Current State of Results

The developed concept consists of a set of 12 functional, 11 non-functional requirements and a technical design. The functional requirements include: (1) registration & identification; (2) overview of pension claims; (3) interfaces to pension providers; (4) a detailed view of pension modules; (5) merging claims for planning purposes; (6) input of forecast variables; (7) insight into personal data; (8) input of personal data changes; (9) further information insight; (10) contact options; (11) monitoring; (12) demo access. The non-functional requirements mainly cover the framework conditions of the solution, such as access with as few barriers as possible and high usability. The technical design covers a first system design in the form of a web application with three-layer architecture and drafts for each of the layers. Specifically, these are a) an information architecture based on a mobile-first approach for the presentation layer, b) process designs for the application layer and c) a design for the data layer, including an entity relationship diagram for all pension-relevant data.

The expert interviews and the pretest carried out via a prototype implementation of the concept confirmed that the concept fulfils the experts' requirements. The prototype included all non-functional requirements as well as the functional requirements 1-10 on the presentation layer. Furthermore, basic functions were implemented on the application layer, e.g. for adding/changing/deleting pension entitlements. With regard to the interview results, it should be emphasized that the feasibility of cross-pillar information is supported by the providers of all pillars, with most of the experts taking the view that the respective other providers would be opposed to a cross-pillar solution. Also, the obstacle to data protection, for example, is assessed as solvable, insofar as data are only transferred on-demand and end-to-end to the respective user. Automatic data provision is identified as a first, decisive success factor, which requires a uniform identification of the users, e.g. via tax ID or social insurance number, as it exists in most European countries. When asked how the experts would assess the concept without fulfilling this success factor, it was judged to be less effective, but still an improvement over singular information media. This assessment supports the relevance of a cross-pillar information medium, which will be further deepened by the end-user evaluation.

5 Conclusion

This paper presents the basic methodology as well as the main results of the research work so far. Due to the focus of this research-in-progress-paper, the basics, in particular, represent only a small part of the research object, which opens up numerous further research fields. Thus, critical elements for pension information, such as the individual service providers will take on a more significant role in the final research.

The first evaluation showed that the requirements of experts from different pillars could largely be combined in one application, for which initial success factors and challenges could also be identified. In the next steps, these initial findings will be incorporated into the user-centred evaluation at a national and pan-European level as well as into the iterative development of the concept following the DSR approach.

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