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European Network for Digital Building Permit

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## PROCEEDINGS

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## Analyzing Building Permit Processes Across Europe

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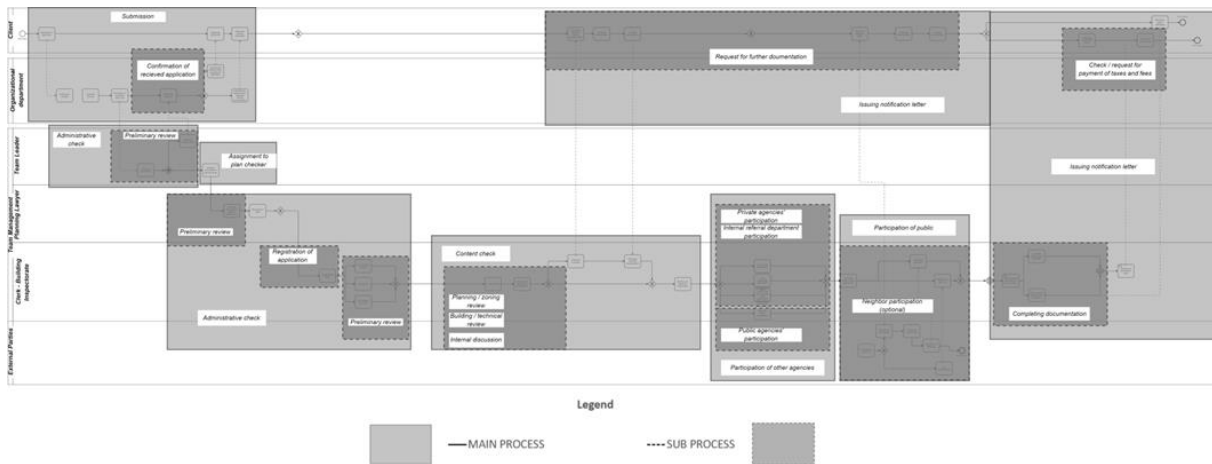
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The issuance of building permits is a critical process for urban development, ensuring compliance with legal standards and sustainability goals. This process presents a complex web of processes, regulations, and methodologies in Europe. Despite its importance in shaping urban landscapes, detailed investigations into the building permitting process have yet to be limited [1,2]. This knowledge gap obstructs optimizing these processes and curtails the potential for digital transformation, a crucial step in updating administrative functions. A study conducted by members of EU4DBP aims to address this deficiency by conducting a comparative analysis of building permitting processes in 19 European countries.

The goal is to lay a foundation for enhancing process efficiency and fostering a comprehensive European perspective. The insights from this study are expected to contribute to developing more effective policies and encourage the creation of improved solutions and practices in building permits. Our study adopts a multifaceted methodological approach to conduct a comparative analysis of the building permitting processes. The primary objective is to unearth commonalities and variations across different regions, thereby providing a comprehensive understanding of the intricacies involved in the permitting process. The methodology comprises several key phases: data collection, data preparation, data analysis, and validation processes.

The data collection phase is centered around conducting interviews with individuals who are experts in the field of building permits, primarily employed in municipalities across Europe. These interviews are designed to extract detailed, qualitative data regarding the various processes, regulations, and practices of issuing building permits. A standardized guideline was developed based on prior research and studies to maintain consistency and quality across all interviews. This ensured that the data collected was reliable and comparable across different municipalities. Once the data was collected, it entered the data preparation phase. Here, the focus was transcribing the interviews and organizing the information to facilitate efficient analysis. The transcription process is meticulous, ensuring the qualitative data is accurately captured and ready for analysis. This phase is crucial as it lays the groundwork for the subsequent analysis, forming the backbone of the research.

In the data analysis phase, a qualitative approach is adopted. The transcribed texts are scrutinized using a shared coding scheme. This coding scheme is designed to identify key themes, patterns, and variations within the data. One of the unique aspects of our analysis is the use of the Business Process Model and Notation (BPMN) 2.0 standard, as seen in Figure 1. This standard allows us to create generalized maps for each municipality's process, visually representing the building permitting processes and highlighting the similarities and differences across various regions.



**Fig. 1: Example of a BPMN diagram based on interviews from Germany.**

A comprehensive validation process is implemented to ensure the validity and reliability of our findings. This includes several components, such as consistent interview guidelines, the engagement of multiple interviewers to avoid bias, a unified coding system to ensure consistency in data analysis, peer debriefing, and member checking. Furthermore, collaborative efforts within the research team are emphasized to ensure a thorough and unbiased interpretation of the data. This methodology provides a robust framework for understanding the complexities of European building permit processes. By employing a systematic approach to data collection, preparation, analysis, and validation, the study aims to offer valuable insights into the current state of building permitting processes and pave the way for future advancements in digital transformation and process optimization.

The study seeks to contribute significantly to the field by uniformly modeling building permitting processes and offering a detailed understanding of these systems. This foundational work is poised to guide future studies to optimize these processes and develop solutions that more effectively meet the needs of municipalities across Europe. The study underscores the potential benefits of digital transformation in this sector, paving the way for a more streamlined and technologically advanced approach to urban development processes.

One of the most notable findings is the sheer diversity of regulatory frameworks governing building permits. Each country exhibits a unique regulatory landscape molded by its historical, cultural, and socio-political background. This diversity reflects the uniqueness of each country's approach to urban planning and development and poses significant challenges for harmonizing practices across Europe. Despite the variability in regulatory frameworks, common challenges resonate across the board. Bureaucratic complexities are a ubiquitous issue, often leading to significant delays in the processing of permits.

A key trend observed in several countries is the shift towards digitalizing the building permit process. Adopting digital tools and platforms is potentially enhancing efficiency, expediting processes, and fostering transparency. For instance, countries like Estonia and Denmark have made significant strides in digitalizing their building permit processes using comprehensive e-submission systems. Yet, the use of BIM in the permit processes is limited. However, the extent and effectiveness of digital adoption vary widely, with some countries still in the nascent stages of implementing digital solutions.

The study also highlighted several practices and innovations in certain countries, ranging from streamlined application procedures to integrated platforms that allow for multi-agency

coordination through e-submission systems. For example, a few countries have implemented such systems where applicants can complete all necessary procedures in a single platform, significantly reducing the complexity and duration of the permit process. These best practices offer valuable insights and models that other countries could adapt to enhance their building permit systems.

The findings from this study have significant policy implications. They highlight the need for policies adaptable to the specific contexts of different countries and conducive to adopting best practices. Policymakers are encouraged to consider both the unique challenges and the shared experiences of different countries in formulating building permit policies. Moreover, there is a clear indication that policies should support and facilitate digital transformation in the building permit process, as this has been shown to enhance efficiency and transparency. Additionally, the study underscores the importance of stakeholder engagement in policy development, suggesting that inclusive and collaborative approaches can lead to more effective and widely accepted building permit systems.

In conclusion, the comparative analysis of building permit processes in 19 European countries reveals a complex landscape marked by diversity in regulatory frameworks, common challenges, varying degrees of digital transformation, innovative best practices, the significance of stakeholder engagement, and far-reaching policy implications. These findings contribute to a deeper understanding of the building permit processes in Europe and provide a foundation for future reforms and improvements in this critical aspect of urban development.

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