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## **UX Evaluation and Best Practices for Social Research Data-Collection Tools: The Case of iMedius FormBuilder: A streamlined methodology for evaluating the user experience of social research digital tools demonstrated through its application to the iMedius FormBuilder platform.**

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# UX Evaluation and Best Practices for Social Research Data-Collection Tools: The Case of iMedius FormBuilder

A streamlined methodology for evaluating the user experience of social research digital tools demonstrated through its application to the iMedius FormBuilder platform.

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## Abstract

Research in the field of social sciences has been greatly enhanced by digital technologies. From information extraction algorithms to interactive questionnaires, to attention tracking systems these tools allow social scientists to gain insight into the behavior of their research targets. The use of advanced digital tools may oftentimes become a complex process. In an effort to maximize efficiency and achieve a high standard of usability, these tools must undergo a thorough user experience (UX) evaluation process that will ensure their development focuses on the needs of the researchers but can also navigate resource limitations. In this study, we present a UX evaluation process applied at the iMedius FormBuilder, an expert digital tool from the field of social research. This tool is a questionnaire composer that allows use of a wide range of feedback elements including eye-tracking technology and is being developed within the framework of the iMedius research project, which aims at the integration of multidisciplinary media impact assessment instruments. During the UX evaluation process, which consisted of established techniques, input from both experts and stakeholders was collected. Based on this input, conclusions were drawn regarding the importance of functionality and intuitive interaction, the value of attention tracking integration and the necessity of collaborative development. The proposed UX evaluation and the insights it provides can be valuable to social scientists and tool developers alike, leading to an overall upgraded data collection process in the field of social and media research.

## CCS Concepts

• Usability Testing; • User Interface Programming; • Applied Computing;

## Keywords

Social Research, Digital Tools, User Experience, UX Evaluation, Media, Social Sciences

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## 1 Introduction

Modern social science and media research focuses on the use of well-established tools and instruments [1] while simultaneously taking advantage of the advancement in digital technologies and the World Wide Web [2] in terms of participant engagement and data collection. Software tools have become an essential part of social scientists' toolbox in their efforts to provide trustworthy findings based on quantitative and qualitative analysis. Through these digital tools, advanced methodologies involving attention tracking may lead to important insights [3] in an era where visual information is becoming increasingly dominant. Tracking-derived data can be further enhanced through visualization techniques [4] aiding in both drawing conclusions and generating hypotheses.

Due to the nature of social research, it is essential to follow an interdisciplinary approach for the development of tools aiming to take advantage of modern technologies. Knowledge from both the



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field of human computer interaction (HCI) and the field of social research can form the basis upon which to design and develop tools that address real needs in an accessible manner. But the process of user experience (UX) evaluation often poses challenges with regard to resource limitations or the importance of continuous feedback during the development timeframe. These challenges are especially pronounced in the case of social research tools, where the stakeholders' needs are complex and resources may be scarce. This study aims to address these challenges by proposing and demonstrating the application of a practical and repeatable UX evaluation methodology catered to the needs of tailor-made digital research instruments. The proposed methodology's value is further supported by the useful insights it provided for the development of similar tools.

Specifically, we present a digital tool for social research, developed as part of iMedius, a project for integrating multidisciplinary impact assessment instruments, with emphasis on how the process of evaluating this system from a UX perspective may become an important part of the development cycle. The article presents a UX evaluation methodology and its application to the iMedius FormBuilder, a web-based platform for developing online questionnaires with the integration of attention tracking in a singular streamlined workflow. The evaluation process involves both HCI experts and social scientists and utilizes the well-established methodologies of heuristic evaluation and focus group interviews to acquire multifaceted feedback during the development process. The goal of this research is to propose a practical UX evaluation process as part of the iterative software development cycle and through its application to underline the challenges of addressing the needs of experts from the field of social science and media research. The proposed evaluation process may become a useful part of designing and implementing digital research instruments tailored to the UX needs of researchers, to the benefit of both social scientists and tool developers. Moreover, the results of this evaluation in the case of the iMedius FormBuilder lead to valuable insights for the development of tools with similar scope.

## 2 Literature Review

In social science and media research, surveys and questionnaires remain prominent due to their versatility, cost-effectiveness, and ability to collect extensive data across diverse populations [5]. Recent advancements suggest that online survey methodologies offer significant advantages, including reduced costs, ease of data management, and facilitate participant recruitment, and large-scale data collection [1]. The use of questionnaires in research is promoted for the ease of use and the access to easily analyzable data [6]. However, methodological concerns persist, particularly regarding sampling bias, ethical implications, and psychological aspects of participation that burden the researchers [7].

The integration of digital tools into social science methodologies and journalistic newsroom workflows [8] significantly broadens research opportunities, facilitating improved data collection and participant engagement, while also addressing several methodological challenges, by offering guided interfaces and automations. Digital technologies allow researchers to enhance the inclusivity

and representativeness of research findings, by recruiting participants from underrepresented populations, while most users respond positively to their use [9]. Online tools further expand the capability for content multimodality, including different data types, integrating a variety of analytical tools [2]. Heterogeneity of content raises of course ethical concerns in terms of data management [2]. Qualitative approaches are also facilitated with digital tools, where successful implementation requires strategic application, emphasizing digital literacy, accessibility, and ethical considerations in data collection [10].

Attention tracking mechanisms have become vital in understanding cognitive processes and interaction patterns in social science research. Eye-tracking technology, which measures gaze location and duration, is increasingly utilized to assess attention allocation, visual search behaviors, and cognitive load, thus offering precise insights into visual engagement with study stimuli [3]. Visualization methods for eye tracking data are an open and demanding field, that aims towards clearer interpretation of more complex visual behaviors [11]. Recent research shows that eye tracking can also be particularly insightful in research on attention in autism spectrum disorders [12]. Mouse tracking focuses on cursor trajectories, clicks, and reaction times which serve as proxies for attention and decision-making processes [13].

Visualization tools have evolved to significantly enhance the interpretation and communication of complex datasets in social studies. Recent visualization techniques, such as interactive dashboards and dynamic heatmaps, enable researchers to illustrate attention patterns and participant interactions more intuitively to extract perceptual conclusions [4]. Patterns of attention in data visualization have been critically analyzed, enhancing understanding of how visual designs can influence user perception and decision-making processes [14]. Interactive visualization tools further enable researchers to dynamically explore data, adjust parameters, and uncover hidden insights within large datasets, significantly enhancing exploratory analysis and hypothesis generation [15]. Attention-aware visualization tools, which dynamically adjust visual elements based on user engagement, offer promising enhancements for UX and data comprehension. Effective use of these tools demands careful selection and iterative design processes tailored to specific contexts and user capabilities [16].

UX evaluation methodologies in the design of digital tools are crucial for ensuring accessibility, usability, and satisfaction. Effective UX evaluation employs a combination of qualitative and quantitative methods, including surveys, interviews, psychophysiological measures, and observational techniques [17]. Psycho-physiological techniques remain underutilized despite their capacity to provide valuable insights into users' emotional and cognitive states during interaction and aid in the identification of critical UX risks [18]. There are several approaches that can vary in terms of the interaction time interval, which may not adequately capture dynamic user experiences over prolonged usage periods [19]. Recent research emphasizes the importance of real-time and continuous UX evaluations, accounting for evolving user interactions and experiences throughout iterative development cycles targeted at non-expert users [19]. Common approaches that can be found in literature include interviews, testing tasks, UX expert analysis, use of large

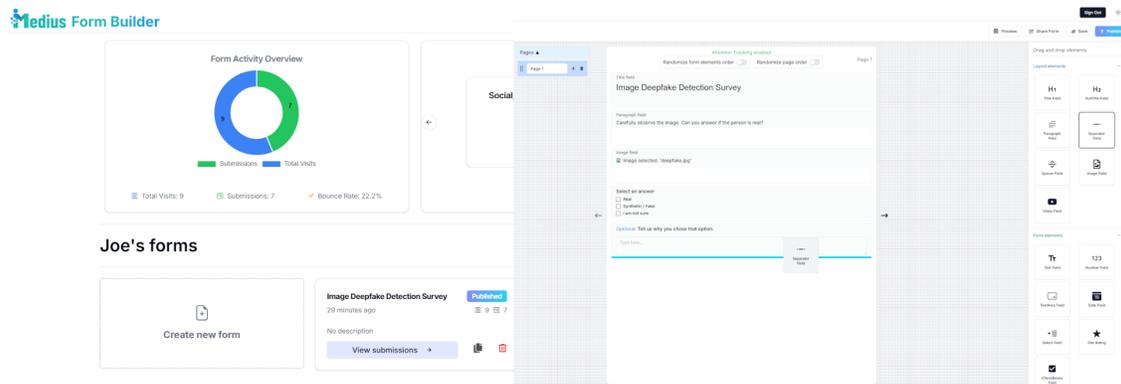


Figure 1: Dashboard and form building interface in the iMedius FormBuilder

models for scalability testing, considering language and functional issues, validating design heuristics, and triangulating multiple methods [20].

The vast array of existing evaluation methods with varying resource requirements [17] makes it hard for non-expert software developers to identify, plan, and carry out a comprehensive evaluation process. Moreover, the limitations in terms of monitoring UX over a period of time [19] create the need for the process to be easy to organize and repeat at various times within the development timeframe. Additionally, research tools have particular needs that must be considered in a manner equivalent to software modeling tools [20]. To address these difficulties, specifically in limited-scope tool development, which is often short in time and resources, an applied UX evaluation process needs to be practical, inexpensive and efficient, while considering both UX expertise and field-specific needs. In order to make continuous evaluation an attainable goal for purpose-build digital social research tools, our study proposes a methodology that combines low resource requirements and repeatability with feedback directly from both HCI experts and social scientists.

### 3 System Implementation

#### 3.1 UX Approach

The core objective in the development of the iMedius FormBuilder was to create a tool that enables social scientists to create complex studies without requiring programming knowledge. During development, focus was put on minimizing the effort to create surveys that incorporate attention tracking while maximizing usability and flexibility. Social scientists participating in the iMedius project actively used multiple versions of the tool and provided feedback based on their research needs. Exploiting this iterative, user-centered design approach, many features and interface adjustments were implemented. This collaborative feedback between developers and researchers enabled the creation of a form building system that aligns with the workflow and expectations of the targeted user base. The main benefit of this approach compared to established tools such as SurveyMonkey or Qualtrics is a simpler UI aimed for use by social scientists which may not be tech-savvy, as well as the implementation of field specific advanced features

such as attention tracking that are hard to find in general-purpose tools. As researchers continue to use the platform in real study scenarios and the system development evolves, feedback plays a crucial role in the refinement of the features and functionality of the finalized tool.

#### 3.2 Features and Capabilities

The form building process was designed to offer an intuitive and flexible drag and drop Elements Panel, serving as the main toolbox for researchers to customize their surveys as seen in Figure 1. The elements were organized into two primary categories: Layout elements and form elements. Layout elements consist of all elements that may be used to customize the appearance of the form, while form elements are interactive components, essential for collecting various types of data and were carefully implemented to include all possible interactions researchers require to capture a wide range of data types.

To support an iterative process, the system included a Preview Mode, allowing researchers to visualize how their form will appear to participants, adjusting as necessary as seen in Figure 2. This feature presented the experience from the respondent's perspective, rendering it essential for verifying the aesthetic structure and the interactive flow of the finalized form. Randomization is an essential feature in survey design, used to minimize order bias and improve response validity [21]. The system incorporated randomization by applying a twofold logic, which provided precise control over how the form is presented to participants. First, researchers can randomize the order of form elements on each page, while layout elements remain constant. This ensures that the content remains logically structured while presenting the response elements in a randomized manner. Secondly, researchers may choose whether individual pages should be presented in a randomized page order, allowing them to maintain consistent positioning for structurally important pages, while enabling other pages to appear in a randomized order. Overall, the integration of a comprehensive set of survey elements, preview functionality, and versatile randomization logic constitutes a platform suitable for creating high-quality custom surveys.

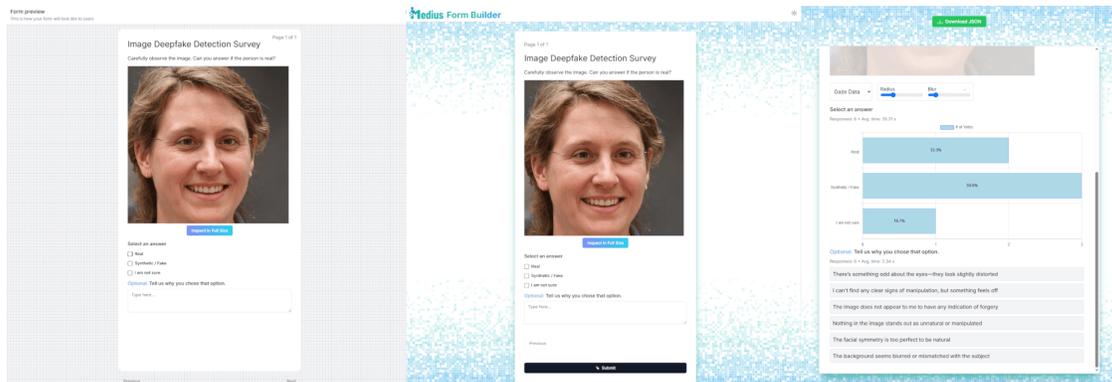


Figure 2: Form preview, actual survey submission, and question analysis in the iMedius FormBuilder

### 3.3 Attention Tracking

The term Attention Tracking describes the combined tracking of both eye and mouse data within surveys. The integration of tracking technologies into the form building system assists researchers in enriching their studies, by enabling the extraction of multiple types of behavioral data alongside traditional survey response fields [22]. Moreover, the system provides the capability for assessing the validity of the tracking data, as well as their compatibility with standard questionnaires. Mouse tracking was implemented using native JavaScript functionalities which trigger on cursor movements and click events on form fields marked as attention elements. Mouse movement was continuously logged, tracking mouse position with timestamps and hover durations.

WebGazer.js [23] was used to integrate eye tracking into the iMedius Form Builder system. As a lightweight library, it offers an optimal trade-off between computational costs and tracking effectiveness. WebGazer uses machine learning techniques based on linear and regularized regression models to estimate gaze locations. It combines pupil-based gaze estimation with high-dimensional eye feature vectors and leverages user interaction data (such as mouse movements and clicks) to enable self-calibration and improve prediction accuracy in real time. It is worth noting that as tracking technologies and deep learning methods for commercial webcam eye tracking evolve, the system’s modular architecture allows for future integration of more advanced, state-of-the-art models. In order to ensure high data precision, an eye-tracking calibration page was implemented. Without calibration, collected tracking data may be inaccurate, leading to incorrect interpretations of participant engagement. In the case of deep learning solutions, as WebGazer.js, calibration data are utilized as training data to fine-tune the algorithms, in order to properly function in the given test conditions.

Similar to mouse activity monitoring, eye tracking is enabled only on specific elements, labeled as attention elements. This feature is currently fully functional on image elements and is planned to be extended to a wider range of components. To protect participant privacy, attention tracking is only enabled on sections of the questionnaire where it is required, avoiding global or continuous tracking. Attention tracking data provides an additional layer of insight that enriches the interpretability of self-reported responses.

In situations where participants may unconsciously filter what they report in surveys, gaze and mouse monitoring offer a potential source of “candid” data that can reflect the natural engagement with the content. By incorporating this type of behavioral data alongside traditional responses, researchers can identify inconsistencies and explore deeper cognitive and emotional patterns that would otherwise remain hidden.

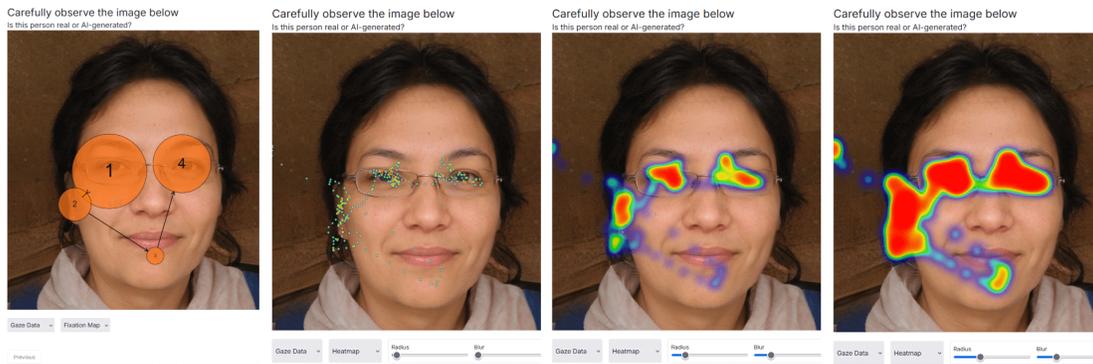
### 3.4 Data Visualization

One of the most important aspects of the iMedius FormBuilder is the analytics area of each survey, where researchers can review submissions and explore interactions. For traditional form response elements, standard visualizations were employed to aggregate responses as displayed in Figure 2. In order to display attention tracking fixation maps and heatmaps were implemented. Fixation maps visualize the interaction of participants with the content over time, by leveraging the timestamps associated with each data point. Moreover, to create a temporal and intensity-based representation the duration of each fixation was incorporated by adjusting the size of the circles. An example of fixation map is displayed in Figure 3.

Heatmaps are controllable through two adjustable sliders: *Radius* and *Blur*. When *Blur* is turned off and *Radius* is set to minimum, the visualization appears as raw data points, showing individual gaze fixations without smoothing. As the researcher increases the radius and applies blurring, data visualization transitions to a heatmap, highlighting the concentrated areas of attention while reducing noise. By fine-tuning the sliders and selecting the appropriate representations researchers may customize the way tracking data is visualized. An example of adjustment is shown in Figure 3.

### 3.5 Technical Specifications

The iMedius FormBuilder was developed using Next.js, a popular open-source React framework that enables server-side rendering, automatic code splitting and file-based routing. The decision to use Next.js was driven by the will to align with modern development standards and to take advantage of its features for building production-ready applications. Also, by using the framework’s utility to build reusable components a modular structure suited for scalability was ensured.



**Figure 3: Fixation map and Adjustable eye visualization of attention tracking data**

Eye tracking functionality, as mentioned above, is integrated using WebGazer.js. The system is hosted on a virtual machine, ensuring full control over the deployment environment and independence from third-party cloud tools and services. Data management uses PostgreSQL to structure a relational database capable of handling all data for the reliable and secure operation of the system. Each technology and tool that is a part of the iMedius FormBuilder system was carefully chosen to ensure an efficient, scalable and secure integrated web application.

#### 4 UX Evaluation Methodology

In order to evaluate the UX of the presented tool, it was essential to seek feedback from both HCI experts and social scientists. Feedback from experts addresses compliance with best practices, as well as usability and accessibility standards [24, 25]. Moreover, expert evaluation can be scheduled conveniently and be part of the development cycle [24]. At the same time, feedback from target users provides insight into their needs [19], while establishing operational parameters, scope and focus [26]. In that sense focus groups with stakeholders can be an integral part of the development process [26].

Methodologies for collecting information from UX experts include various forms of analysis and heuristic approaches [25, 27]. An established method for acquiring expert feedback is heuristic evaluation, which was introduced by Nielsen & Molich [28] and consists of an informal analysis aimed at identifying issues. The technique includes the involvement of 3 to 5 HCI experts [28], although to facilitate the process HCI students can also be used, under guidance [29, 30]. During heuristic evaluation, a series of usability heuristics are defined, and the experts grade the system for each one [31].

In this study, we propose a series of 12 UX heuristics based on Nielsen’s work [31, 32] as the basis for a streamlined heuristic evaluation. These heuristics focus on representing the important aspects of interactivity, specifically for web-based digital research tools, while at the same time remaining broad enough to be of use in most of the wide variety of use cases from the field of social research. Tailoring usability heuristics on the specific field

plays a significant part in collecting useful feedback [25]. The various heuristics including details are presented along the evaluation results in Table 3.

Three experts with different backgrounds and levels of expertise participated in the evaluation. They were asked to freely use the system and focus on UX. Table 1 presents an overview of the background of each expert.

The second pillar of the evaluation methodology focused on stakeholder feedback and consisted of a focus group interview which provided insight into user behavioral patterns and thought process [33] by allowing stakeholders to express themselves freely. The efficiency of focus group interviews is supported by their nature, which is less time consuming than individual interviews and by modern video conferencing technologies [24]. Specifically for digital tools, focus group interviews can be used in tandem with more candid behavioral data [34] allowing a better understanding of emotions stemming from the interaction with the evaluated digital application [35].

In this case several social scientists of various levels and fields were involved as presented in Table 2. The discussion was facilitated by the developers and UX experts. Each participant had previously used the tool to create research instruments. The researchers had different levels of research activities in a variety of subjects.

The focus group took place in spring 2025 and followed an open structure in terms of discussion. A series of questions were used to guide the conversation on UX evaluation. The questions were not direct but introduced to the discussion by the moderators and used to organize the qualitative feedback analysis. The combination of a summary heuristic evaluation with a target audience-based focus group establishes a methodology that incorporates wide feedback from various aspects of UX and is convenient from resource management perspective.

#### 5 Results

The heuristics were graded on a scale from 1 (poor) to 5 (excellent) by the UX experts. Table 3 lists the results.

At first glance the results signify an overall performance between good and very good with the total means of the evaluation reaching a score of 4.25. The standard deviation of 0.42 indicates strong consistency between the scoring of the experts. Figure 4 contains

**Table 1: UX expert backgrounds**

#	Background	Level
E1	Studies in Internet and Communication Technologies. Professional expertise in human-computer interaction and Web development. Research in the fields of accessibility, usability and SEO.	Professor
E2	Studies in Software Engineering and Audio & Visual Arts. Professional expertise in application development and UX/UI design. Research in the fields of user behavior, big data analytics and the Semantic Web.	Academic Fellow
E3	Studies in Software Engineering and Audio & Visual Arts. Professional expertise in UI development and website and graphic design. Research in digital aesthetics, Web archeology and information extraction.	PhD Candidate

**Table 2: Focus group stakeholder participants**

#	Gender	Research Fields	Attribute
P1	F	participatory journalism, user-generated content, online news	Teaching Staff in Journalism and Media Studies
P2	F	health communication, media literacy, social studies	Teaching Staff in Journalism and Media Studies
P3	F	journalism education, web radio and TV, media technologies	Assoc. Prof. in Digital Media & Communications
P4	F	fact-checking, AV communication, media authentication	Assoc. Prof. in Digital Media and Communications
P5	M	automated journalism, natural language generation, chatbots	PhD Candidate in Media Studies
P6	F	communication, sustainable development, climate crisis	PhD Candidate in Journalism and Media Studies

**Table 3: UX heuristic evaluation results**

#	Name	Evaluated Concept	Description	E1	E2	E3	AVG	STD
H1	Signal to noise ratio	Aesthetic and minimalist design	Low usage of aesthetic noise such as decorations or animation that offer no benefit	5	5	5	5.00	0.00
H2	Accessibility & responsiveness	Consistency and standards	Usage of best practices to make content available multiple screen sizes and to people with disabilities	3	3	4	3.33	0.58
H3	Warnings and constraints	Error prevention	Usage of warnings and UI constraints to avoid user errors	5	3	4	4.00	1.00
H4	Web performance	Flexibility and efficiency of use	General website performance as perceived by the users	5	5	5	5.00	0.00
H5	Functional simplicity	Flexibility and efficiency of use	Ease of use and immediacy when performing basic tasks	4	4	5	4.33	0.58
H6	High quality assistance	Help and documentation	Usage of contextual help and/or a help system that is searchable and offers concrete solutions	3	2	3	2.67	0.58
H7	Solutions or alternatives	Help users recognize, diagnose, and recover from errors	Prompts and links that offer solutions or alternative task flows when users are unable to achieve the result they are interested in	5	5	4	4.67	0.58
H8	Use of user language	Match between system and real world	Usage of understandable and non-ambiguous language and terms	4	4	5	4.33	0.58
H9	UI semiology conventions	Match between system and real world	Usage of commonplace icons, colors and imagery that conveys conventional understanding	5	5	5	5.00	0.00
H10	Visible functionality	Recognition rather than recall	Explicitly visible functionality through menus or other means	4	4	5	4.33	0.58
H11	Free UX flow	User control and freedom	General ability to move back and forth during a task through actions like “back”, “undo” or “cancel”	3	4	3	3.33	0.58
H12	Interaction feedback	Visibility of system status	General UI indicators of user actions and visual or other feedback to related interactions	5	5	5	5.00	0.00

a bar chart that presents an overview of the heuristic evaluation results.

Heuristics regarding aesthetic noise, application performance, intuitive semiology, and UI indicators display unanimously good

grades, indicating the successful implementation of minimal aesthetics and intuitive visual cues in terms of interactivity. In the same vein, utilization of constraints, immediacy at performing tasks, usage of proper language, and functionality visibility also

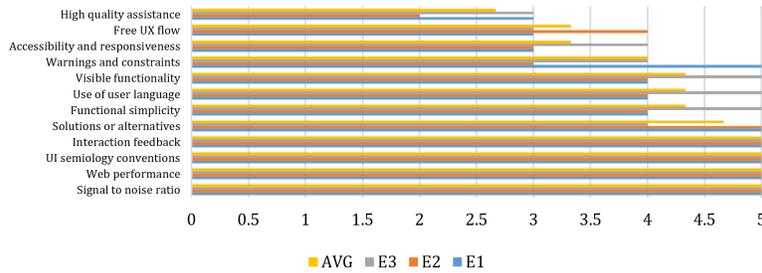


Figure 4: Bar chart of heuristic evaluation results

received high grades, while admittedly there is room for improvement. Areas that the heuristic evaluation has shown the need for improvement were compatibility with devices and adherence to accessibility standards, clear help system, and free UX flow during tasks. Since the digital tool’s main use was design and implementation of surveys, its development followed a desktop-first approach. At the time of the evaluation the platform was still undergoing development, hence documentation and in-app help were limited. It was deemed important, despite the tool’s intuitive interface, to also provide help in the form of context-based tooltips. Finally, the tool provided flow-related interactivity, but improvements could come in the form of various shortcuts. To assess the feedback obtained through the focus group the teleconference that lasted over one hour was transcribed using intelligent verbatim transcription. The statements were organized based on the guiding questions and the consensus, significant quotes, and differing opinions are presented below. Special attention was given to statements conferring the emotional response of the participants.

*What were your impressions of the tool’s interface design?* The consensus regarding the UI was that it provides a decent number of features while remaining simple and easy-of-use through intuitive interaction elements. P2 described it as “friendly”, while P1 mentioned that it allowed researchers to focus on their methodology without “graphical noise”. Both P1 and P6 suggested that the UI felt familiar. P2 compared the interface with LimeSurvey and mentioned feeling intimidated by the information overload and its complex UI.

*Does the tool cover important research needs? Is its customization sufficient?* The tool’s capabilities were highlighted positively. The consensus was that the form building functionality was sufficient, because it was based on the requirements of the researchers. P5 mentioned that social research related aspects were present in an effortless manner for the end user. P3 mentioned that by addressing the needs of social researchers the tool seemed almost tailor made. P6 was satisfied with the fact that advanced features like eye tracking did not require special skills. P4 found the tool capable of covering almost 85% of their needs, sidestepping more complex tools.

*What are your thoughts on how the attention-tracking feature is implemented?* The consensus among researchers was that the attention tracking features were an innovative aspect of the tool. Moreover, the visualization of attention data was praised. P4 commented that it comes as a stark contrast to both Google Forms and LimeSurvey that lack the tracking capabilities of the iMedius FormBuilder.

P1 stated that understanding how to easily implement attention-tracking through the tool has helped her get ideas on research options for future projects.

*How does attention-tracking fit in the social research methodological workflow?* The merging of attention-tracking and traditional questionnaires was exciting for the stakeholders. Special mention was made to how self-reported data from forms and candid data from mouse and eye tracking can be combined to deliver more sound results. P4 proposed applications in neuromarketing research, while P3 and P6 concurred that in an increasingly visual era, media research needs tools that can provide visualized data. P1 felt that attention span related research focusing on the younger generations is also an alternative research path.

*Does the tool support collaboration in a way that aligns with your research practices?* The participants’ consensus on collaborative features was deemed as an important one for further development. P5 mentioned that such features should include the ability to share the development of a questionnaire between multiple researchers, possibly under the supervision of a coordinator. P3 stated the importance of collaboration in research development and suggested that it would result in a fairer balance of the development effort.

*How do you feel about the tool’s privacy and data protection measures?* The consensus on matters of security was that for traditional tasks adherence to GDPR was straightforward. Questions were raised though about the tool’s advanced features like eye tracking that required use of the user system’s camera. Concerns were also voiced on features subject to future implementation like tracking of browsing data for specific questions. P1 suggested that for this type of data collection the tool should allow participants to withhold information.

*Did you experience any difficulties while using the tool?* The stakeholders commented on the vast improvement of the tool between earlier versions and the current one. They also expected the tool to be even more streamlined by the end of the development cycle and volunteered to provide further feedback. On specific issues P5 mentioned that large element texts could cause visual overflow, while P4 mentioned that forgetting to save their work was a problem for them and suggested an autosave feature.

*Are there key improvements that could make the tool more useful for social research?* There were various suggestions, which underlined the stakeholders’ interest in the tool. Some suggestions revolved around implementing more methods of collecting candid data in parallel with the questionnaire. P1 and P3 discussed the possibility of sending users to the web for a task and tracking their behavior.

P2 proposed that web scraping would allow the formulation of questions. The integration of GenAI was also discussed for data visualization or generating hypotheses.

## 6 Conclusions

This study presents a digital tool for media research and discusses how a streamlined method of UX evaluation became part of the development process and provided feedback for its development and insight into the needs of its users. The evaluation included insights from UX experts on usability and technical issues through heuristic evaluation, as well as feedback from the stakeholders through a focus group discussing all aspects of the tool.

An essential part of this research's contribution is to demonstrate how a practical UX evaluation may be integrated into the development process of digital research tools, aimed at social scientists. Using established evaluation building blocks that require limited resources, comprehensive feedback can be effectively collected leading to research tools built to address usability concerns and functionality necessities of advanced features such as attention tracking. This process may become an asset for the development of tools for social research.

Beyond that, the evaluation process led to a series of general practices to consider when developing software for media research. The importance of ease-of-use, simplicity and a clear UI was stressed by both experts and users. In the focus group, the ability to bridge subjective self-reported data collection through forms with objective data collection via attention tracking was underlined as a key capability for social science research. Designing the tool's functionality on the basis of specific requirements of social science research instruments was also considered important. In terms of improvements the UX experts focused on documentation, device compatibility and UX flow capabilities, while the stakeholders suggested collaborative features and further integration of modern technologies, including GenAI.

Despite the proposed methodology's effort to be practical the requirements for HCI experts and stakeholders might not be affordable for projects of smaller scope. Moreover, the methodology must be applied for more tools to better gauge both its feasibility and effectiveness. Iterating the process in future versions of the iMedius FormBuilder as well as expending it to other digital instruments are important aspects of the planned future work. Additionally in the future a version of the methodology including feedback from the subjects of social research through questionnaires would also be valuable.

The proposed evaluation methodology used simple and established methods to form an efficient procedure, without high resource requirements, that may be repeated as part of the process of software development. Especially when research tools are designed, it is important to understand the needs and challenges of the expert target audience, which may be more complex than generic ones. Using the combined feedback from UX experts and social scientists as the driving force behind development can lead to a successful user-centric purpose-built tool, like the iMedius FormBuilder, that has the capability to support modern research requirements in the field.

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## References

- [1] Wardropper, C. B., Dayer, A. A., Goebel, M. S., & Martin, V. Y. (2021). Conducting conservation social science surveys online. *Conservation Biology*, 35(5), 1650-1658.
- [2] Jackson, J. (2023). Expanding opportunities to maximise research recruitment and data collection using digital tools. *International Journal of Social Research Methodology*, 26(6), 721-731.
- [3] Carter, B. T., & Luke, S. G. (2020). Best practices in eye tracking research. *International Journal of Psychophysiology*, 155, 49-62.
- [4] Srinivasan, A., Ellemose, J., Butcher, P. W., Ritsos, P. D., & Elmqvist, N. (2024). Attention-Aware Visualization: Tracking and Responding to User Perception Over Time. *IEEE Transactions on Visualization and Computer Graphics*.
- [5] Bryman, A. (2016). *Social research methods*. Oxford university press.
- [6] Young, T. J. (2015). Questionnaires and surveys. *Research methods in intercultural communication: A practical guide*, 163-180.
- [7] Bradburn, N. M. (2016). Surveys as social interactions. *Journal of Survey Statistics and Methodology*, 4(1), 94-109.
- [8] Kostarella, I., Saridou, T., Dimoulas, C., & Veglis, A. (2025). Can Artificial Intelligence (AI) Spring an Oasis to the Local News Deserts?. *Journalism Practice*, 1-21.
- [9] Clohessy, S., Arvanitis, T. N., Rashid, U., Craddock, C., Evans, M., Toro, C. T., & Elliott, M. T. (2024). Using digital tools in clinical, health and social care research: a mixed-methods study of UK stakeholders. *BMJ open*, 14(4), e076613.
- [10] Braun, V., Clarke, V., Boulton, E., Davey, L., & McEvoy, C. (2021). The online survey as a qualitative research tool. *International journal of social research methodology*, 24(6), 641-654.
- [11] Blascheck, T., Kurzhals, K., Raschke, M., Burch, M., Weiskopf, D., & Ertl, T. (2017, December). Visualization of eye tracking data: A taxonomy and survey. In *Computer graphics forum* (Vol. 36, No. 8, pp. 260-284).
- [12] Chita-Tegmark, M. (2016). Social attention in ASD: A review and meta-analysis of eye-tracking studies. *Research in developmental disabilities*, 48, 79-93.
- [13] Kieslich, P. J., Schoemann, M., Grage, T., Hepp, J., & Scherbaum, S. (2020). Design factors in mouse-tracking: What makes a difference?. *Behavior Research Methods*, 52, 317-341.
- [14] Matzen, L. E., Haass, M. J., Divis, K. M., & Stites, M. C. (2017). Patterns of attention: How data visualizations are read. In *Augmented Cognition. Neurocognition and Machine Learning: 11th International Conference, AC 2017, Held as Part of HCI International 2017, Vancouver, BC, Canada, July 9-14, 2017, Proceedings, Part I 11* (pp. 176-191). Springer International Publishing.
- [15] Nguyen, T. H. D., El-Nasr, M. S., & Isaacowitz, D. M. (2017). Interactive visualization for understanding of attention patterns. In *Eye Tracking and Visualization: Foundations, Techniques, and Applications. ETVIS 2015 1* (pp. 23-39). Springer International Publishing.
- [16] Yoon, S., Cohen, B., Cato, K. D., Liu, J., & Larson, E. L. (2016). Visualization of data regarding infections using eye tracking techniques. *Journal of Nursing Scholarship*, 48(3), 244-253.
- [17] Lewis, J. R., & Sauro, J. (2021). Usability and user experience: Design and evaluation. *Handbook of human factors and ergonomics*, 972-1015.
- [18] Feng, L., & Wei, W. (2019). An empirical study on user experience evaluation and identification of critical UX issues. *Sustainability*, 11(8), 2432.
- [19] Maia, C. L. B., & Furtado, E. S. (2016). A systematic review about user experience evaluation. In *Design, User Experience, and Usability: Design Thinking and Methods: 5th International Conference, DUXU 2016, Held as Part of HCI International 2016, Toronto, Canada, July 17–22, 2016, Proceedings, Part I 5* (pp. 445-455). Springer International Publishing.
- [20] Kalantari, R., & Lethbridge, T. C. (2022). Characterizing ux evaluation in software modeling tools: A literature review. *IEEE Access*, 10, 131509-131527.
- [21] Stefkovics, Á., & Kmetty, Z. (2022). A comparison of question order effects on item-by-item and grid formats: visual layout matters. *Measurement Instruments for the Social Sciences*, 4(1), 8.
- [22] Simko, J., Hanakova, M., Racsko, P., Tomlein, M., Moro, R., & Bielikova, M. (2019, September). Fake news reading on social media: an eye-tracking study. In *Proceedings of the 30th ACM conference on hypertext and social media* (pp. 221-230).
- [23] Papoutsaki, A., Sangkloy, P., Laskey, J., Daskalova, N., Huang, J., & Hays, J. (2016). WebGazer: Scalable webcam eye tracking using user interactions. In *Proceedings of the 25th International Joint Conference on Artificial Intelligence (IJCAI)* (pp. 3839-3845). AAAI Press.

- [24] Ntoa, S., Margetis, G., Antona, M., & Stephanidis, C. (2021). User experience evaluation in intelligent environments: A comprehensive framework. *Technologies*, 9(2), 41.
- [25] Sivaji, A., Abdullah, A., & Downe, A. G. (2011, May). Usability testing methodology: Effectiveness of heuristic evaluation in E-government website development. In 2011 fifth Asia modelling symposium (pp. 68-72). IEEE.
- [26] Kraft, A., Scronce, G., & Jones, A. (2022). Virtual focus groups for improved AZ list user experience. *The Journal of Academic Librarianship*, 48(4), 102541.
- [27] Robert, J. M., & Lesage, A. (2017). Designing and evaluating user experience. In *The handbook of human-machine interaction* (pp. 321-338). CRC Press.
- [28] Nielsen, J., & Molich, R. (1990, March). Heuristic evaluation of user interfaces. In *Proceedings of the SIGCHI conference on Human factors in computing systems* (pp. 249-256).
- [29] Rajanen, M., & Iivari, N. (2015, April). Power, empowerment and open source usability. In Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (pp. 3413-3422).
- [30] Llerena, L., Castro, J. W., Llerena, R., & Rodríguez, N. (2025, January). How to Improve Usability in Open-Source Software Projects? An Analysis of Evaluation Techniques Through a Multiple Case Study. In *Informatics* (Vol. 12, No. 1, p. 12). MDPI.
- [31] Nielsen, J. (1994, April). Enhancing the explanatory power of usability heuristics. In Proceedings of the SIGCHI conference on Human Factors in Computing Systems (pp. 152-158).
- [32] Nielsen, J. (2005). Ten usability heuristics.
- [33] Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of the nutrition society*, 63(4), 655-660.
- [34] Kontio, J., Lehtola, L., & Bragge, J. (2004, August). Using the focus group method in software engineering: obtaining practitioner and user experiences. In *Proceedings. 2004 International Symposium on Empirical Software Engineering. 2004. ISESE'04.* (pp. 271-280). IEEE.
- [35] Nakamura, W.T.; Ahmed, I.; Redmiles, D.; Oliveira, E.; Fernandes, D.; de Oliveira, E.H.; Conte, T. Are ux evaluation methods providing the same big picture? *Sensors* 2021, 21, 3480.