Towards a Catalogue of Mobile Elicitation Techniques
Supplementary Materials

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This document provides supplementary materials which have not been included in the submitted conference paper due to size restrictions.

1 Reviewed Papers

Table 1 and Table 2 present the list of papers considered for the literature review in the original work. The first column indicates the assigned identifier for the paper which we refer to throughout this document (S01, S02, ..., S60), while the second column represents the title of the corresponding study.

2 Extracted Data

In this section, we provide the corresponding data of which we used key values in the conference publication, *e.g.,* distribution of reviewed papers' publication year.

2.1 Year of publication

Table 3 presents all reviewed papers ordered accordingly to the year of publication. The first column shows the year of publication, the second column lists corresponding papers, and the last column concludes with the total. Figure 1 visualizes the very same information regarding the annual distibution. The y-axis represents the total number of published publications, whereas the x-axis indicates the corresponding year of publication.

2.2 Techniques

Table 4 relates all reviewed papers to the found techniques. The first column states the specific techniques, the second column lists the corresponding papers, and finally, the last column represents the total number of publications using a specific technique. Figure 2 illustrates the very same information regarding the distribution of used techniques. The y-axis shows the different techniques, whereas the x-axis reveals the total number of published publications.

2.3 Categories

Table 5 shows all reviewed papers in accordance to the categories of the proposed technique(s). The first column lists our four technique categories, the second column presents the corresponding papers, and the last column summarizes the number of publications using techniques of the corresponding category. Figure 3 illustrates the very same information regarding the prevalence of the different categories in literature. In more detail, the y-axis correlates with our categories, whereas the x-axis displays the corresponding total number of publications.

2.4 Evaluations

Table 6 lists all reviewed papers according to the type of evaluation they performed. The first column denotes the type of evaluation, *i.e., controlled experiment*, *case study*, *student evaluation*, or *not available* for the papers which did not perform any type of evaluation. The second column lists the corresponding papers, and ultimately, the remaining columns represent the (sub)totals. Figure 4 visualizes the very same information regarding the availability of different evaluation types in publications. The y-axis indicates the types of evaluation, whereas the x-axis shows the corresponding total number of publications.

#	Title
S01	Mining online product reviews to identify consumers' fine-grained concerns
S02	Mining customer requirement from helpful online reviews
S03	For user-driven software evolution: requirements elicitation derived from mining online reviews
S04	Approaches for prioritizing feature improvements extracted from app reviews
S05	Why people hate your app: Making sense of user feedback in a mobile app store
S06	Ar-miner: mining informative reviews for developers from mobile app marketplace
S07	Speech-acts based analysis for requirements discovery from online discussions
S08	A framework for requirements engineering for context-aware services
S09	Elicitation of delightful context-aware features: challenges and outlook
S10	M4remaip: Method for requirements elicitation based on mobile applications under an interaction perspective
S11	Improving the elicitation of delightful context-aware features: A data-based approach
S12	Requirements cybernetics: Elicitation based on user behavioral data
S13	Structured and unobtrusive observation of anonymous users and their context for requirements elicitation
S14	Optimized functionality for super mobile apps
S15	Involving users early on in the design process: closing the gap between mobile information services and their users
S16	On eliciting requirements from end-users in the ict4d domain
S17	A method for collaborative requirements elicitation and decision-supported requirements analysis
S18	Elicitation of user requirements for mobile interaction with visual and rfid tags: A prototype-based exploratory study
S19	From palaces to yurts: Why requirements engineering needs design thinking
S20	Using participatory activities with seniors to critique, build, and evaluate mobile phones
S21	Requirements elicitation using a combination of prototypes and scenarios
S22	Exploring how to use scenarios to discover requirements
S23	Prespe: Participatory requirements elicitation using scenarios and photo essays
S24	The crowd in requirements engineering: The landscape and challenges
S25	Towards crowdsourcing for requirements engineering
S26	Ucframe: A use case framework for crowd-centric requirement acquisition
S27	Using popular social network sites to support requirements elicitation, prioritization and negotiation
S28	Sre: A scenario-based requirement exploration process for end-user mobile-application development
S29	Scenario decomposition based analysis of next generation mobile services
S30	Persona-and-scenario based requirements engineering for software embedded in digital consumer products
S31	Appecho: a user-driven, in situ feedback approach for mobile platforms and applications
S32	Requirements engineering tools go mobile
S33	Determining stakeholder needs in the workplace: How mobile technologies can help
S34	irequire: Gathering end-user requirements for new apps
S35	Story based mobile application for requirements engineering process
S36	Using mobile devices for collaborative requirements engineering
S37	Non-formal techniques for requirements elicitation, modeling, and early assessment for services.
S38	Enhancing gss-based requirements negotiation with distributed and mobile tools
S39	The mobile oracle: a tool for early user involvement
S40	Towards automated capturing and processing of user feedback for optimizing mobile apps
S41	Requirements analysis of android application using activity theory: A case study
S42	Modelling mobile app requirements for semantic traceability
S43	Elicitation of profile attributes by transparent communication
S44	Developing requirements for a mobile app to support citizens in dealing with ticks and tick bites via end-user profiling
S45	Blind user requirements engineering for mobile services
S46	ithink: A game-based approach towards improving collaboration and participation in requirement elicitation
S47	Scenarios in the wild: Experiences with a contextual requirements discovery method
S48	Mining context-aware user requirements from crowd contributed mobile data
S49	Mobiq: A modular android application for collecting social interaction, repeated survey, gps and photographic data
S50	Using mobile re tools to give end-users their own voice

Table 1: Reviewed papers S01 to S50

#	Title
S51	Are smartphones better than crc cards?
S52	Mobile discovery of requirements for context-aware systems
S53	Mobility requirements engineering tool (more)
S54	Requirements engineering for pervasive services
S55	Learn more, pay less! lessons learned from applying the wizard-of-oz for exploring mobile app requirements
S56	Elicitation of requirements for the design of mobile financial advisory services–instantiation and validation of the requirement data model with a multi-method approach
S57	Requirements gathering for assistive technology that includes low vision and sighted users
S58	Crowd-centric requirements engineering
S59	Applying user-centered s to analyze and design a mobile application
S60	A method and tool for wide audience requirements elicitation and rapid prototyping for mobile systems

Table 2: Reviewed papers S51 to S60

Year	Papers	Total
2001	S8, S21	2
2003	S23	1
2004	S32, S60	2
2005	S30, S38, S54	3
2006	S17, S29	2
2007	S20, S33, S43, S45	4
2008	S35, S52	2
2009	S15, S18, S22, S39, S47	5
2010	S50	1
2011	S13, S16, S34, S37	4
2012	S36, S46, S57	3
2013	S5, S19, S28, S41	4
2014	S2, S3, S6, S10, S25, S31, S51, S58	8
2015	S1, S27, S44, S48, S56	5
2016	S4, S26, S53	3
2017	S9, S11, S12, S14, S24, S40, S42, S55	8
2018	S7, S49, S59	3

Table 3: Year of publication

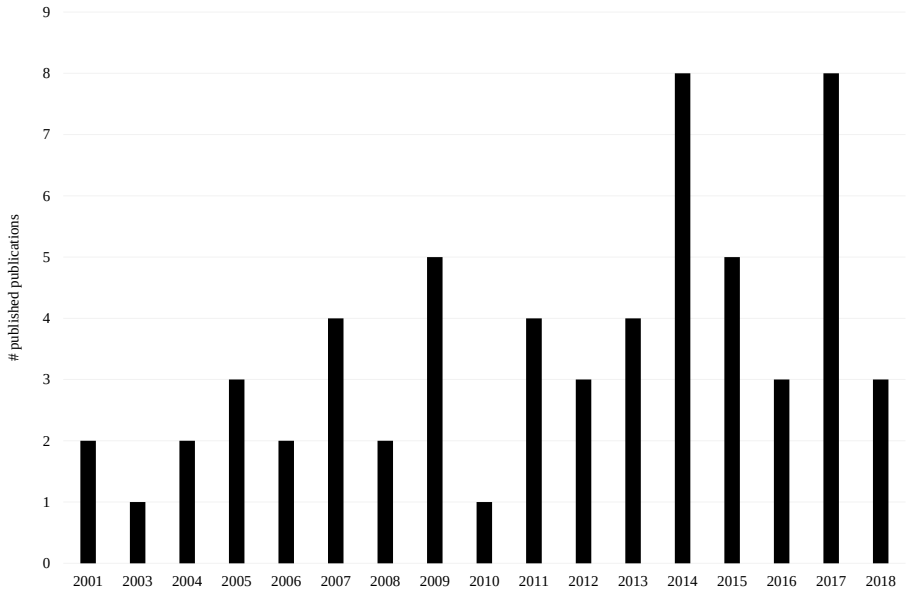

Fig. 1: Distribution of the release dates

Technique	# Paper	# Total
Gamification	S46, S54	2
Interview/Survey/Questionnaire	S15, S16, S39, S44, S45, S49, S54, S56, S57	9
Modeling/Ontology	S42, S60	2
Persona and user profiles	S30, S43, S44, S59	4
Wizard of Oz	S39, S55	2
Activity theory	S41	1
Brainstorming	S17, S38	2
CRC sessions	S36, S51	2
Crowdsourcing	S24, S25, S26, S48, S58	5
Focus groups/ workshops	S15, S44, S54, S56	4
Mobile RE app	S11, S22, S23, S32, S33, S34, S35, S36, S37, S38, S39, S46, S47, S49, S50, S51, S52, S57	18
Photo essays	S23	1
Prototyping	S18, S19, S20, S21, S55	5
Scenarios	S22, S21, S30, S23, S29, S28, S59, S47, S52, S53	10
Story telling	S16, S35	2
Using social network sites or wikis	S27	1
Viewpoint or six thinking hats	S30, S46	2
App description mining	S10	1
App log or app usage data mining	S12, S13, S48	6
App store mining for similar apps	S14	1
Observation/contextual data/reflection	S8, S9, S11, S13, S15, S40, S49	7
Opinion mining	S1, S2, S3, S4, S5, S6, S7, S55	8
Mobile feedback app	S31	1
User feedback on MVP	S40	1

Table 4: Techniques used in the reviewed publications

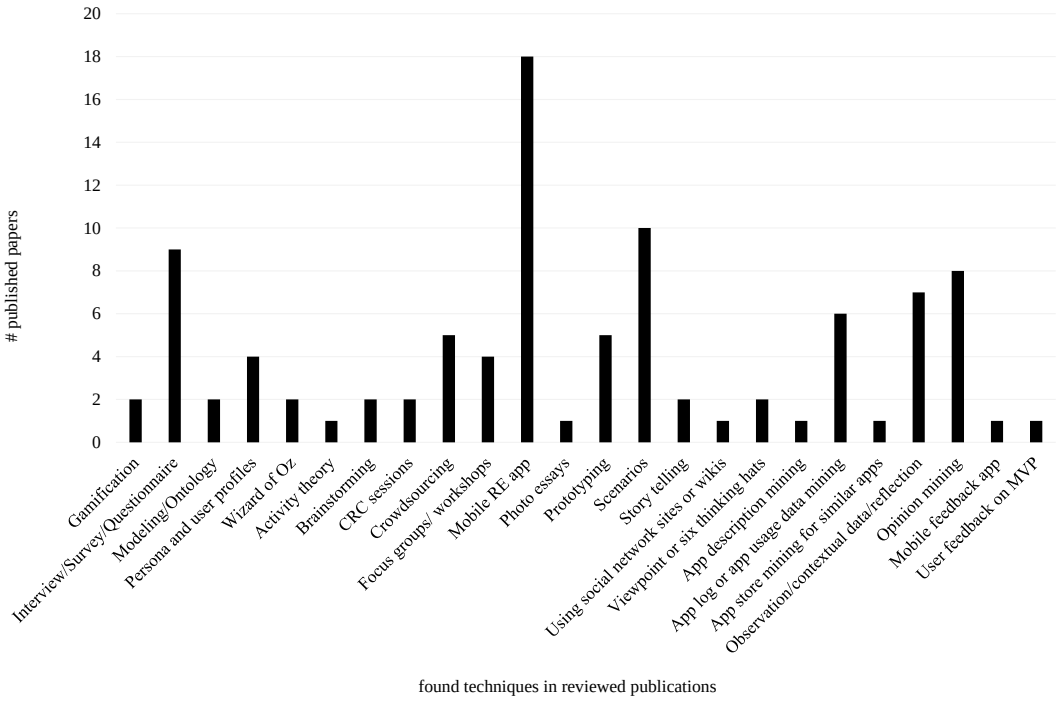

Fig. 2: Distribution of the used techniques

Category	# Paper	# Total
Analyst-centric	S15, S16, S30, S39, S42, S43, S44, S45, S46, S49, S54, S55, S56, S57, S59, S60	16
Collaboration-centric	S11, S15, S16, S17, S18, S19, S20, S21, S22, S23, S24, S25, S26, S27, S28, S29, S30, S32, S33, S34, S35, S36, S37, S38, S39, S41, S44, S46, S47, S48, S49, S50, S51, S52, S53, S54, S55, S56, S57, S58, S59	41
Data-centric	S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S40, S48, S49, S55	19
Stakeholder-centric	S31, S40	2

Table 5: Addressed categories in the reviewed publications

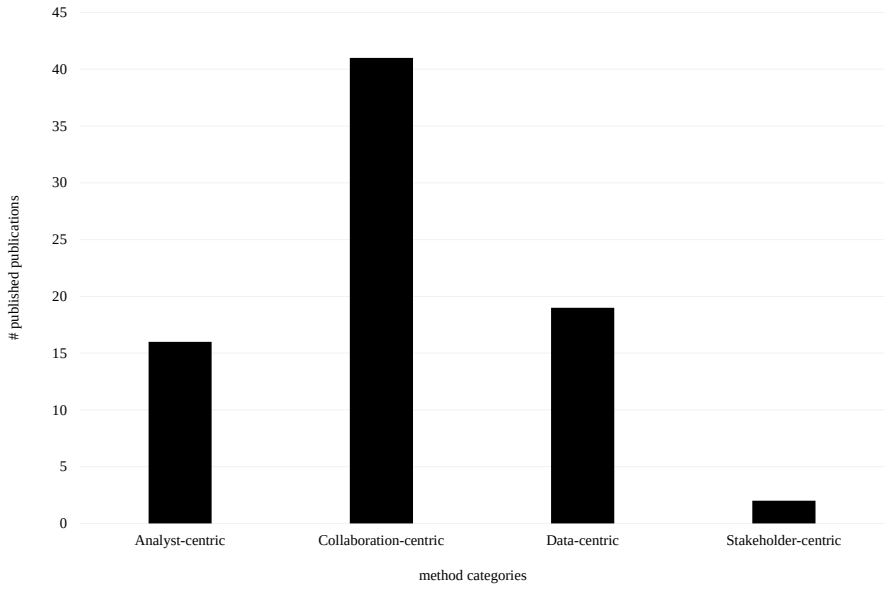

Fig. 3: Distribution of the addressed categories

Evaluation Type	Related Papers	# Papers	# Total
Controlled experiment	S3, S5, S7, S10, S13, S18, S20, S26, S38, S39, S45, S47, S48, S50, S52, S59	16	
Case study	S1, S4, S6, S12, S14, S15, S16, S23, S28, S30, S31, S42, S46	13	31
Student evaluation	S27, S51	2	
not available	S2, S8, S9, S11, S17, S19, S21, S22, S24, S25, S29, S32, S33, S34, S35, S36, S37, S40, S41, S43, S44, S49, S53, S54, S55, S56, S57, S58, S60	29	29

Table 6: Evaluation types performed in the reviewed publications

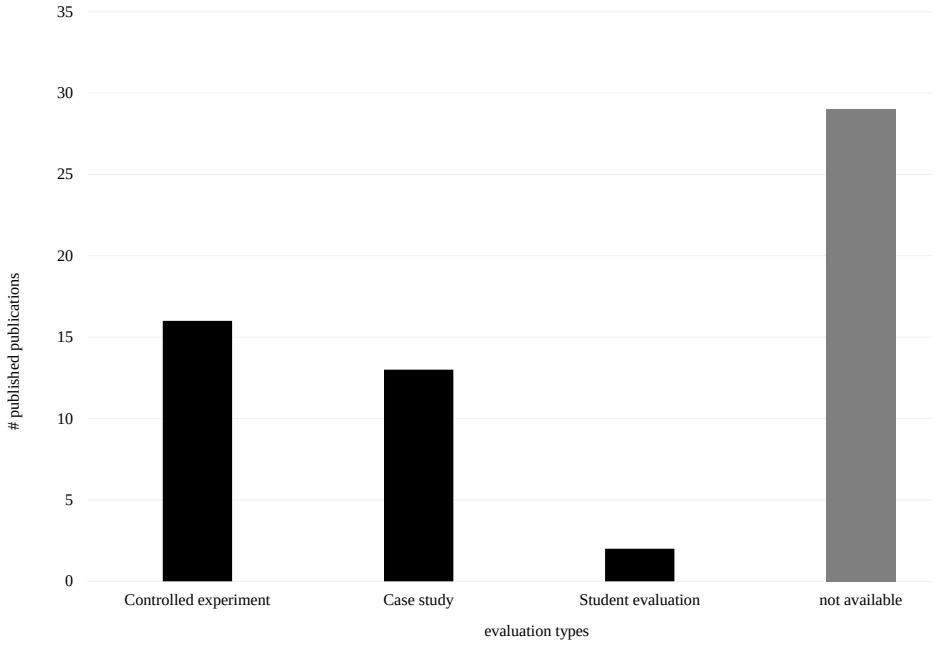

Fig. 4: Distribution of the evaluation types they performed