
Replicating an International Survey on User Experience: Challenges, Successes and Limitations

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Abstract

In order to study how the notion of User Experience (UX) evolved over the last few years, an international survey originally conducted in 2008 by Law et al. [1] has been replicated. Its main goal was to get some insights on the points of view from practitioners on the notion of UX. After having slightly adapted the initial (English) survey and having translated it into French and German, more than 758 valid answers have been collected from all over the world. This experience report aims at illustrating some of the challenges involved in the replication of such a study as well as successes and limitations.

Author Keywords

User Experience; HCI Research; Replication; Survey; Experience Report

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms

Human Factors; Design; Measurement

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Introduction: a Tale of Two Studies

Some concepts in the field of HCI are widely spread and used by practitioners even if a lack of empirical research prevents the true understanding of their meaning and impacts [3, 1, 2]. This is the case for User Experience (UX). Despite many attempts to understand, define and scope UX, it is still not clear whether a consensus has been reached on this concept or not. In a willingness to address the complexity of the UX concept, to contribute to its further development and consolidation, we decided to replicate a previous survey entitled "Understanding, scoping and defining UX: a survey approach" [1].

The original study has been first spread during the main conference CHI'08 before being broadcast through several communication channels. Results have been published the following year in the proceedings of CHI'09, as a 10-pages long paper. 275 answers had been collected at that time from 25 countries.

In order to adapt to our project's multicultural context and to reach a wider audience within the French-speaking community of UX practitioners, all questionnaire items have been translated, from the English master version to French and German (both languages being commonly used in Luxembourg). A back translation process has been applied to ensure the quality and validity of the process.

Rationale for a Replication

Several reasons may explain the choice to replicate this UX survey. First of all, as User Experience is still a concept in maturation, it was worth taking stock of the situation four years after the initial study in order to see a possible evolution in the representations, points

of view and practices associated to UX. Replication acts here as a way to check whether the results still apply in a different context to the original study, especially in a different temporality.

Moreover, the translation into two others languages allowed us to reach a wider audience, especially in the multicultural context in which the present work was involved. As this study constituted an exploratory step within a wider Luxemburgish project focused on UX Design, gathering additional knowledge about the French- and German-speaking practitioners' community (not well represented in the initial study) seemed crucial to us. By trying to draw an accurate picture of the current situation of UX and building on that basis, we aim at achieving the best solutions possible to design for UX.

Form of Replication

This study may be considered as a direct replication, since differences between both studies are limited to:

- A minor extension through the translation in French and German languages. The original English version was kept as default language and still represented 58.4 % of the completed surveys.
- Additional sociodemographics items aimed at better categorizing participants and acting as control variables to analyze the data.

Summary of the Methodology

Structure of the Survey

The UX questionnaire encompasses 3 sections:

- *Background*: respondents were asked to first answer 13 questions about their job and educational background, their level of familiarity with UX or the importance of UX in their actual

work. Sociodemographic information (age, gender, country of residence) was also collected.

- *UX Statements*: respondents were asked to assess their agreement level with 23 UX statements on a 5-point Likert scale.
- *UX Definitions*: Five UX definitions were presented. For each of them, participants were asked to answer the following open-ended question "What do you think of this definition?". Finally, participants were asked to choose which definition suits them best and to freely comment on the reasoning for their choice.

The main differences between the initial study and the replication lay in additional sociodemographics to better categorize respondents. The following questions have therefore been added to the initial survey: current job position, level of familiarity with the concept of UX and collaboration with people working in the field of UX.

Sampling and Dissemination of the Survey

The survey was broadcast online from February to April 2012, on multiple communication channels. As for the original study, practitioners' forums, social networks and mailing lists were the main vector of dissemination. From a total of 898 returned questionnaires, 758 valid questionnaires have been retained to compute the data.

Results

Our results mainly confirmed the original findings on the understanding of UX. Our classification of UX statements sorted by mean-agreement is very similar to the original one. Uniqueness of an experience, importance of social and cultural context, and finally temporal dynamics remained highlighted as crucial by

the respondents. Interestingly, our larger sample size allowed us to identify some patterns describing how the differences in UX perception and choices of a UX definition significantly vary with background variables. Analyses of qualitative data (open-ended questions) are still ongoing and may show differences between the replication and the original study. These questions will indeed probably allow us to identify a range of issues that may be underlined by the respondents in 2012 but were not previously conceptualized through the UX statements defined in 2008.

Challenges, Successes and Limitations of the Replication

Volatility of concepts in the field of HCI

Repeating a conceptual survey presents inherent challenges due to the relative volatility of some concepts and notions developed in HCI, but also due to the volatility of the main object of HCI. Driven towards novelty and innovation some terms used in this research field tend to emerge as popular trends and fade away quickly without having been really analyzed through the lens of empirical research. Some authors in HCI suspect that it could have been the case for UX, which is often used as an umbrella term to designate a wide range of fuzzy and dynamic concepts such as affects, hedonism or aesthetics [2]. Moreover, after 4 years of intensive use by both practitioners and researchers, it was a bit of a challenge to dare repeat such a survey aimed at defining UX - going back to the basics in a way. We had e.g. the case of a group leader on LinkedIn who refused to broadcast the study claiming that it was now useless because every good practitioner knows what UX is, even though he was unable to provide an accurate definition of UX. Fortunately, beyond this single case, the replicated

survey has been received warmly by the community, which demonstrates the need to reflect and examine the concept of UX once again, in a new temporal context. Understanding and validating previous findings seemed nevertheless highly valuable and our approach truly succeeded at analyzing the maturational process of the concept of UX.

Language and Translation of Material

When working in a non-English speaking country, replication (or even partial use of existing tools only) generally involves the translation of those tools into the native language of the users composing the target population and sample. The administration of a questionnaire in the native language of respondents allows to give them a better understanding of the items and to decrease the rate of people being excluded or who abort due to language difficulties. However, translating a survey may become very complex when dealing with conceptual topics (as it is the case here), which already involve several ambiguous items (whether intended or not by their authors) in their original version. The present study was translated into German and French. Even if a back translation process has been used to verify the reliability of the translation, it is not yet sure that concepts were understood in the same way across different languages (and maybe even across different respondents for the same language). To overcome this difficulty when computing the data, note that we also compared the level of non-understandability of the items (respondents had the option to check "I don't understand"). Being almost similar for each language and similar to the level found in the original study, the translation was considered fairly reliable.

Comparability of the results

SAMPLING AND DIFFUSION OF THE SURVEY

Replicating a research work dealing with the definition of a concept implies reaching a comparable sample both in terms of sample size and characteristics. However, how should we deal with this kind of exploratory survey that did not involve a random and representative sample? As the whole population of practitioners working in a field related to UX is not clearly defined, it was decided to simply broadcast the survey on the web. We were aware that several biases may have impacted previous results (and may also impact ours), especially the fact that only self-motivated and careful respondents would answer the questionnaire. Moreover, it was impossible to know with accuracy neither the number of people touched by the survey (probably thousands of them), nor the coverage of the target population. However, every research design choice has strengths and weaknesses. The diffusion method chosen for the original study has clearly advantages in terms of reaching a wide audience, which fulfilled the primary exploratory goal of the study and provided us with information on what kind of practitioners declare working directly or indirectly on topics related to User Experience. We succeeded in reaching an international sample larger than the original one ($n=758$ in 2012 vs. $n=275$ in 2008) but still almost equivalent in characteristics. The larger sample size had two main advantages: first it allowed detecting more subtle differences in the understanding and perceptions of the notion of UX according to background variables; second it allowed detecting societal evolution related to the field of HCI (e.g. an increase in the number of UX practitioners coming from Asia, Middle-East or Africa).

LIMITATIONS HIGHLIGHTED IN THE ORIGINAL SURVEY DESIGN

Replicating research implies repeating a study exactly the way it has been conducted the first time. Unfortunately, it is close to impossible to design studies without any limitation and thus most studies present some limitations, highlighted by the authors or not, that need to be copied for the sake of replication. While this is not intended to depreciate previous work at all, it should highlight that repeating mistakes or inaccuracies may be hard to accept as researches always strive for progress. In the case of the UX Survey, we noticed some possibilities for improvement regarding the survey design (e.g. reduction of the number of items, rephrasing of ambiguous UX statements, rotation/counterbalancing of items or reflection on open-ended questions). These improvements could have been done quite easily with a new pre-testing phase involving a few users. Although we were aware of those limitations, replication forbids any major changes in the survey design (since it may bias the results) and we had to accept this as a matter of fact. The solution we found to overcome this issue was to extend our data collection. As some data cannot be easily quantified, and as this is especially the case here when dealing with a conceptual representation of User Experience, additional in-depth interviews with practitioners were conducted in order to better understand their representations of the concept and the way they made use of it. Concomitant with the diffusion of the UX Survey, 25 interviews were conducted during the first semester 2012. A semi-directive interview guide has been created, mainly based on the principal questions included in the UX Survey [1].

Conclusion

By replicating a previous UX survey, we intended to gain further insight into the maturational process the concept of UX undergoes. Further, we aimed at validating previous findings almost taken for granted by the HCI community (e.g. uniqueness of an experience, influence of the context, or temporal dynamics of UX). Despite some challenges and difficulties to overcome, replication of such a survey appeared valuable and highly interesting for the community. Every research design has strengths and weaknesses, requiring choices to be made with regard to the research objective. Replicating a research work therefore implies both benefits from the strengths and applying the limitations of the original study.

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