# IPA in UX Research

## Interpretative Phenomenological Analysis in a User Experience Design Practice

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## ABSTRACT

One approach to user experience (UX) is phenomenology, but there are no well-defined methods for how to conduct UX research using phenomenology, especially not in a professional design practice. One well-defined approach developed in psychology is Interpretative Phenomenological Analysis (IPA), which in this paper is adapted to professional UX research practice. The adaptation is put to test in the case of understanding how newly-arrived immigrants to Sweden experience a start-up service that introduce them to the job market. Contributions and shortcomings of the method in the views of professional UX researchers and designers are documented and discussed. It is concluded that IPA contributes to UX research by investigating both experience and meaning, and by providing holistic insights appropriate for service design and the fuzzy front-end of innovation.

## CCS CONCEPTS

• **Human-centered computing** → **Interaction design**; *Interaction design process and methods*; User centered design

## KEYWORDS

User experience, interpretative phenomenological analysis, user research methods

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## 1 INTRODUCTION

Imagine designing services for newly-arrived immigrants. To do it well, you would have to develop a thorough understanding for how they experience their current situation. We will in this paper describe how Interpretative Phenomenological Analysis (IPA) can be used to get that kind of deep understanding of user experience (UX). Designing for UX is however not an easy task. UX is shaped by individual users and depends on their thoughts, feelings, and habits, as well as the properties of the product or service, and the characteristics of the situation of use [14]. UX is also multifaceted and include many different aspects. The many facets and the complexity of UX makes it difficult to define, understand and design for [30, 9]. It is accordingly important to develop user research methods that produces a holistic understanding of the experiences people have with a product or service [3]. It is also important that these methods work for professional designers in their actual practices and not only work in academic settings [29].

Just like IPA, existing methods in UX research often build on interviews. One example is the research made to develop personas (user archetypes), based on identified goals and behavioral variables [12], or other qualitative analysis methods [22, 24]. Interviews are sometimes combined with observations, as in contextual inquiries. They are analyzed with affinity diagrams, which is a variant of thematic qualitative analysis [25].

Phenomenology is one approach to conceptualize UX [2, 8, 10]. However, concrete methods for using a phenomenological approach in design practice are lacking. One established phenomenological research method is IPA, and it has, to the extent of our knowledge, not been used for analyzing user. This study contributes therefore with an investigation of the applicability of IPA in a professional UX research practice by exploring:

- How IPA can be adapted to professional UX research practice. The adaptation is put to test in the case of understanding how newly arrived immigrants to Sweden experience a start-up service that introduce them to the job market.
- What IPA contributes with to UX research at the design agency where the case was conducted.

- What shortcomings IPA has in the UX research practice of that design agency.

### 1.1 Interpretative Phenomenological Analysis

Interpretative Phenomenological Analysis is an in-depth qualitative research method developed in psychology. It is used to study in detail how a person has experienced a situation [27]. The goal is to get as close to the participants' perspective as possible to get to know their emotional and social world [5, 16, 26, 27]. This allows the researcher to describe how an individual has experienced a phenomenon.

IPA has been used in a substantial number of studies where it has proved valuable for understanding the way people make sense of their own personal world and experiences [5]. Most studies have been in social psychology and health psychology. However, Brocki and Wearden [5] point out that IPA seems to be suitable for an ample amount of research topics, also outside social psychology and health. There have also been successful studies using IPA in other fields [6, 15, 20].

IPA is a phenomenological approach in its focus on personal experiences and detailed analysis of specific individuals' personal accounts of events [27]. The researchers' active role is necessary to understand the other's experience [28]. This dual interpretation, first by the participant trying to make sense of what their personal experience mean and what consequences it has for them, and then by the researcher trying to make sense of the participants' sense-making, marks IPA as part of not only the phenomenological but also the hermeneutic tradition [27].

### 1.2 Using IPA to Study UX

It has previously been suggested, but not shown in professional design practice, that IPA can be an appropriate method to analyze experience with a product or service and what that experience mean to the user [1]. In user experience research, the analysis would answer the following phenomenological questions (1–2) and hermeneutic questions (3–4):

1. What are the objects of care (e.g. relations, processes, places, events, material, documents, rules, values, principles) for the users in the situation of use?
2. How are the objects of care experienced in that situation?
3. What do the objects of care mean for the users, i.e. why they are important, and what the consequences are of the users' experiences of them?
4. What theoretical concepts that can be used to understand what the users' accounts mean.

### 1.2 Project Outline

We collaborated with a Swedish UX and service design agency to investigate the applicability of IPA method in a professional UX research practice. The project was done pro-bono for one of their clients, a social innovation start-up. The start-up connects newly-arrived immigrants with Swedish companies. Their digital platform enables companies to post simple tasks and services and match them with newcomers looking for work, thus enabling newly-arrived immigrants in Sweden to get their first job in their new country. The UX and service design agency has been a part of getting the start-up operating and is responsible for the larger part of their design and UX. One of the authors of this paper took the role of UX researcher, and a UX designer from the agency took the role of a supervisor together with the other author of this paper.

The goal for the project, was to gain an understanding about what kind of users the start-up had attracted in the few months they had been operating. The main questions for the project were how the newly-arrived immigrants experienced coming to Sweden and trying to gain access to the Swedish labor market; what challenges they had faced; what their goals were; how the process had effected their perception of themselves; and how they had experienced the service provided by the start-up.

## 2 THE IPA METHOD ADAPTED FOR UX

This section describes the adapted version of IPA that was deployed in the professional UX research project. The adaptations were made in response the context at the design agency, and to investigate how IPA could be used together with their current methods. The adapted method consists of five steps. Table 1. shows how it compares with traditional IPA as described by Smith, Flower and Larkin [27].

**Table 1: The adapted method and how it compares to traditional IPA**

| Activity | Trad. IPA | UX IPA |
|---|---|---|
| Time expenditure | 280–480 h. | 146 h. |
| Collection of data | Interviews, 40 h. | Interviews, 40 h. |
| Analysis of the first case | Bottom-up, 40–80 h. | Bottom-up and top-down, 16 h. |
| Analysis of remaining cases | 3 x 40–80 h. | 3 x 16 h. |
| Find connections between cases | Bottom-up, 40 h. | Bottom-up and top-down, 24 h. |
| Write-up | Writing, 40–60 h. | Visualization, 18 h. |

The table indicate that the overall time expenditure for four cases (i.e. participants) was cut in half in the adapted method. Considerably less time was spent on analysis, to some extent due to a combination of bottom-up and top-down analysis. The final write-up was more about visualizing than writing up key insights to drive further design work.

### 2.1 Step 1 – Collection of Data

The study was conducted with four participants. A small sample size, between three to five participants is recommended in IPA,

since it is a time-consuming and rigorous method [27]. The aim is to get in-depth understanding of every participant. The group of participants are preferably homogeneous, since the focus is a particular group's experience.

The four participants were all users of the start-up's service and this was also the only criteria for the selection. The service had a limited number of users and further delimitations would have reduced the number of potential participants.

They were interviewed by one of the authors in a semi-structured interview that allowed them to talk about the issues that were most important to them. An interview guide was used to set the different subject areas, but there was no requirement to ask all the questions or use a certain order. Interviews were 40–80 minutes.

The interviews were recorded to allow the interviewer to be mentally present in the situation. Recoding is also necessary to ensure the richness of the data necessary for an IPA [27]. The interviews were transcribed in whole.

## 2.2 Step 2 – Analysis of the First Case

The analysis was carried out one interview at a time. In this section, the analysis of the first interview is presented. These steps are then repeated for the remaining interviews.

*2.2.1 Reading, Re-reading, and Commenting.* The transcript was initially read carefully to familiarize with the material. Then it was read again and commented on things in the transcript that seemed important. The aim is to understand the meaning, complexity and importance of what is said [27]. This part of the analysis was bottom-up and aimed to allow for the uniqueness of the participant's perspective to emerge. The researcher can annotate the transcript with the following kind of comments [27]: (a) Descriptive comments: experiences, things, and emotional reactions. (b) Linguistic comments: how something is worded, repetitions, and hesitations. (c) Conceptual comments: interpretations of the participants understanding and perception of their experience.

Next, the transcript was read again, but this time with a top-down approach. That meant that there was a predefined idea of what to look for. In this case, it was needs, goals, and obstacles, since these categories were the ones used at the design agency in their UX research and development of personas.

This step shared a lot with the recommendations given for traditional IPA. The difference was that both a bottom-up and top-down approach were employed, instead of only using the bottom-up approach. There have however been IPA studies that successfully have used both bottom-up and top-down approaches [31].

The choice of adding a top-down approach was made for two reasons. Firstly, it assures that the researcher identifies the parts of the experience that are needed for the design activities that the research is meant to support. Secondly, it reduces the time it takes to comment, since the researcher have a preconceived idea of what to look for. Combining a bottom-up with a top-down strategy seem appropriate in many cases. It would allow a designer to be both prescriptive and sensitive to the uniqueness of the situation at hand [4].

*2.2.2 Develop Themes.* When all the relevant comments had been made, then they were expressed as concise phrases or themes. The aim of this is to capture the essence of the comment, and at the same time move the interpretation to a slightly more abstract level [27]. It is important to make sure that the theme still have a clear connection to the section of the transcript which it is based on and at the same time allow theoretical connections to be made within and across cases.

*2.2.3 Find Relations between Themes.* After the themes in the first interview had been identified they were inserted into a list. This list was then printed and cut into small notes with one theme on each note. This made it possible to move the themes around and explore relations between them. Some themes worked as magnets, drawing other themes towards them to form a super-ordinate theme. Some emerged as more important and other themes were similar and were therefore merged, while other. were removed if they were considered irrelevant.

This step differed from traditional IPA in the sense that both a bottom-up and a top-down approach was used. Needs, goals, and obstacles were used for top-down analysis. All other groups of themes were created with a bottom-up approach where their relationships emerged organically, by sorting themes into groups of affinities. The structure was then put into a table to facilitate the following steps of the analysis. Page and row numbers of where in the transcript the theme originated were noted.

## 2.3 Step 3 – Analysis of Remaining Cases

When the analysis of the first interview was completed, it the next one followed. It is important to be disciplined and discern recurring patterns, but at the same time allow issues unique to the new transcript to emerge [27]. The rest of the transcripts underwent the same analysis as the first one.

## 2.4 Step 4 – Find Connections between Cases

When all interviews were analyzed and put into tables, the analysis continued with a search for similarities between cases. Recurring themes were noted, as well as connections between themes in the different cases. Some themes from one case were applicable in other cases, and possibilities to say something in general about all the cases were sought.

Themes were prioritized as an understanding for relations between themes started to take form. Smith, Flower, and Larkin [27] describes this step as challenging since it requires the researcher to reduce the themes and decide what is most relevant. The themes were chosen based on the researchers understanding of what is most important in the data set. The most important themes were compiled in a table and the connections to the different cases were made clear. Quotes from the cases was added. This table then served as the foundation for the visualizations in the final step.

## 2.5 Step 5 – Visualize Insights

The fifth step was where the UX-adapted IPA deviated the most from the traditional IPA. The last step of a traditional IPA-study consists of an extensive textual narrative, but to be useful in

subsequent design work this step was more about visualization of insights.

At this phase, the analysis becomes expansive again and themes are explained, nuanced and illustrated with verbatim extracts from the transcripts to support the case that the researcher makes [27]. In the traditional write-up, there are also links to relevant literature, models, and theories which the themes are related to. In design-oriented research narrative accounts can be complemented or replaced by visualizations that aim towards getting everyone on the team to share the same vision and working towards the same goal [18, 19].

The visualizations chosen for this project were techniques already used by the design agency that were involved in the project. We wanted to investigate how the IPA method could be adapted to the methods that already where used in the design agency's regular workflow and design activities. A persona [12, 22, 24] (Fig. 1) and an experience map was therefore produced.

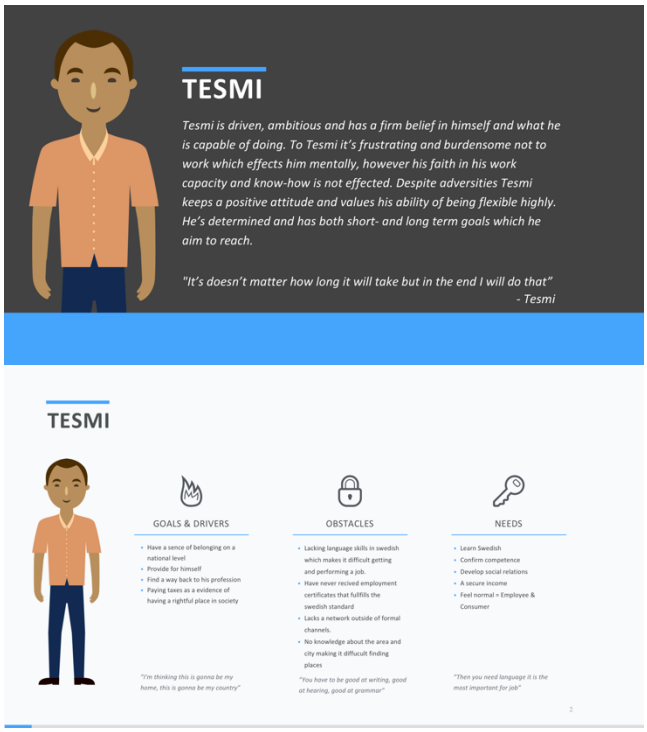


**Figure 1: The persona Tesmi.**

The persona had the following contents:

*TESMI*

Tesmi is driven, ambitious, and has a firm belief in himself and what he can do. To Tesmi, it is frustrating and burdensome not to work, which affects him mentally, however his faith in his work capacity and know-how is not affected. Despite adversities, Tesmi keeps a positive attitude and values his ability of being flexible highly. He is determined and has both short- and long-term goals that he aims to reach.
"It doesn't matter how long it will take but in the end, I will do that."

*Goals & Drivers*
Feel community and solidarity at a national level.
Provide for himself.
Find a way back to his profession.
Paying taxes as an evidence of having a rightful place in society.
"I'm thinking this is going to be my home, this is going to be my country."

*Obstacles*
Lacking language skills in Swedish makes it difficult to get and perform a job.
Have never received employment certificates that fulfils the Swedish standard.
Lacks a network outside formal channels.
No knowledge about the area and city, making it difficult finding places.
"You have to be good at writing, good at hearing, good at grammar."

*Needs*
Learn Swedish.
Confirm competence.
Develop social relations.
A secure income.
Feel normal = employee & consumer.
"Then you need language. It is the most important for job."

The experience map (Fig. 2.) displayed the persona's emotions before, during, and after getting a job.

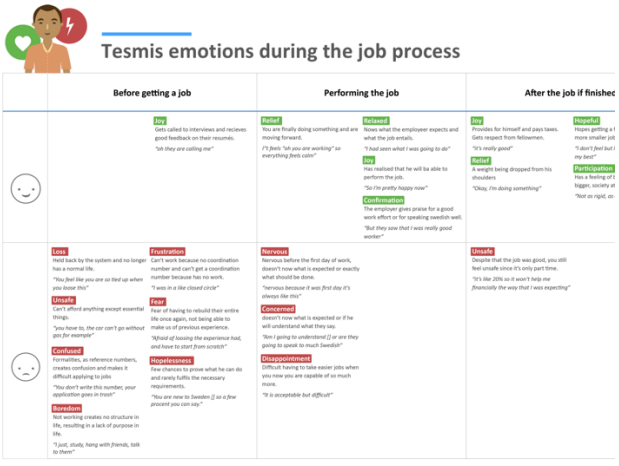


**Figure 2: Experience map for Tesmi's emotions before, during, and after getting a job.**

The experience map had the following contents:

*Positive Feelings Before Getting a Job*
*Joy*: Gets called to interviews and receives good feedback on their resumes. "Oh, they are calling me."

*Negative Feelings Before Getting a Job*
*Loss*: Held back by the system and no longer has a normal life. "You feel like you are so tied up when you lose this."
*Unsafe*: Cannot afford anything except essential things. "You have to, the car can't go without gas for example."
*Confused*: Formalities, as reference numbers, creates confusion and makes it difficult applying to jobs. "You don't write this number; your application goes in trash."
*Boredom*: Not working creates no structure in life, resulting in a lack of purpose in life. "I just study, hang with friends, talk to them."
*Frustration*: Cannot work without coordination number and cannot get a coordination without work. "I was in a like closed circle."
*Fear*: Fear of having to rebuild the entire life once again, not being able to make use of previous experience. "Afraid of losing the experience had, and have to start from scratch."
*Hopelessness*: Few chances to prove what he can do and rarely fulfils the necessary requirements. "You are new to Sweden [...], so a few percent you can say."

*Positive Feelings Performing the Job*
*Relief*: You are finally doing something and are moving forward. "It feels, 'oh, you are working', so everything feels calm."
*Relaxed*: Knows what the employer expects and what the job entails. "I had seen what I was going to do."
*Joy*: Has realized that he will be able to perform the job. "SO, I'm pretty happy now."
*Confirmation*: The employer gives praise for a good work effort or for speaking Swedish well. "But they saw that I was a really good worker."

*Negative Feelings Performing the Job*
*Nervous*: Nervous before the first day of work, doesn't know exactly what should be done. "Nervous because it was first day. It's always like this."
*Concerned*: Doesn't know what is expected or if he will understand what they say. "Am I going to understand [...] or are they going to speak too much Swedish?"
*Disappointment*: Difficult having to take easier jobs when you know you can do so much more. "It is acceptable, but difficult."

*Positive Feelings After the Job is Finished*
*Joy*: Provides for himself and pays taxes. Gets respect from fellowmen. "It's really good."
*Relief*: A weight being dropped from his shoulders. "Okay, I'm doing something."
*Hopeful*: Hopes to get a fulltime job or at least more smaller jobs. "I don't feel, but I hope, and I will try my best."
*Participation*: Has a feeling of being part of something bigger, society at large. "Not as rigid, as outside of society."

*Negative Feelings After the Job is Finished*
*Unsafe*: Despite that the job was good, you still feel unsafe since it is only part-time. "It's like 20% so it won't help me financially the way I was expecting."

## 3 EVALUATION OF IPA IN UX PRACTICE

In this section, the result of the evaluation of the adapted IPA will be presented. This research project has been a case study of IPA in UX research project at a design agency, and the collected data on how it would fit into the practice consisted of notes from a focus group with nine UX and service designers, an interview with two UX designers, feedback from the supervisor at the design agency during the project and the researchers own research notes from the project. The data was analyzed with the use of an affinity diagram [25].

The focus group consisted of two parts. First, the researcher presented both the method and the result from the UX research that had been done. Thereafter, the participants in the focus group had an open discussion based on, but not limited to, three problem areas:

1. Time expenditure and resources
2. The small sample size
3. The focus of insights in relation to information need in a UX design project.

The participants were free to talk about anything they wanted, but the facilitator steered the discussion back too these three problem areas when needed.

The interview with the two UX designers was semi-structured and revolved around the same three problem areas as the focus group. The UX designers had several years of experience from both UX design and user research. They also had knowledge about sales and client relationships. The purpose of the interview was to get a deeper understanding of the problems they identified and especially the ones associated with sales and client relationships.

The feedback from the supervisor was received during the project through informal conversations and tutoring sessions. During the project the researcher kept research notes focusing on the challenges and possibilities that emerged during the study.

### 3.1 Benefits of Using IPA in UX

The favorable qualities of IPA included the holistic insights, several possible uses, and the focus on direct quotes.

*3.1.1 Holistic Insights.* The insights about the start-up's users were at a general level, which meant that they shed light on subjects that were not limited to a specific situation of use or to a specific application. Instead, the UX IPA revealed things about users' deeper desires and goals in life at a broader level. An example is the insight that the start-ups' users need "to feel

community and solidarity at a national level". This is an insight that affects a large portion of a person's life.

The interviews reveal that use-specific insights are important for designers when designing a product since it gives them a clear knowledge-base for their design choices. However, when evaluating the method, it became apparent that they saw use for these general insights at an explorative, opportunity seeking, and service design level, common in the fuzzy frontend of design and innovation. For example, one designer said:

> [UX IPA] might be fitting for something that's above several services because you don't want to be specific in that context since the practical needs [tied to each service] will vary.

*3.1.2 Several Possible Uses.* The designers saw several uses for the UX IPA. They especially thought it could be used to immerse oneself in a user group. One designer said:

> After you have done your interviews and identified your different user groups, then you could find typical cases for these groups and immerse yourself to find nuances within them.

Another designer wanted to use the method to learn more about already existing personas or to verify their authenticity:

> If I already have different personas and want to find deeper insights about them, or to dig a little deeper in particular parts, then this seems to be an interesting method.

One designer also expressed a curiosity to use the method with one to three participants as a tool to build hypotheses that then could be tested on a larger sample with a less time consuming method. This designer also wanted to use the method within a design team where the different members performed one analysis each and then compared the emerging themes and insights. This would allow for researcher triangulation.

Another designer also believed it could be a useful method to use when it is not possible to meet many users, and you have to make the most of the few you meet.

*3.1.3 Quotes.* One thing that all participants in the interview and the focus group agreed upon where that the quotes from the different transcripts added value to the visualizations. It allowed them to feel that the insights were rooted in, and came from, a real person that they could emotionally connect with.

## 3.2 Challenges with IPA and UX

The challenges to using IPA in UX were associated with high cost and low sample size.

*3.2.1 Expenditure of Time vs. Produced Value.* One challenge that faces the adapted version of IPA is that it takes a long time to produce the analysis, even though it has already been reduced compared to a traditional IPA. The question if the benefits are worth the cost remains. The UX designers involved in sales and customer relations did not believe that this was the case. For comparison, one method that the design agency uses regularly produces a less exhaustive, but more streamlined analysis, and takes half the time as the adapted IPA.

*3.2.2 Few Participants.* The evaluation showed that the UX designers were concerned about the low sample size in the method. The design agency usually conducted interviews with 10–20 users, whereas IPA goes into more depth with as few as 3–5 users. There were two different reasons for concern. The first reason regarded a concern of missing important user groups in the research. This concern could, however, be dealt with by a thorough selection. The second reason was whether it would be possible to get the clients to trust this kind of qualitative research or not. One designer said:

> What the client is used to is several thousand respondents, so I agree that if you would say that we have met with three people, they would say, "No there can't be a method that works with that", regardless if there is such a method they would have trouble believing it.

Several of the UX designers believed the reason for their clients' opposition to the small sample size would be their tendency to favor quantitative methods. However, they did also believe that there would be a possibility to sell this research method to a client, but then you would have to be very clear on its purpose and why it would be beneficial to learn something about such a small number of users.

*3.2.1 Transcription.* Another challenge that faces the adapted IPA is that it builds on full transcription of interviews, which is a large cost. Most of the UX designers did not transcribe their interviews. One advantage of transcription is that it captures a lot more than note taking, and one designer was positive towards transcription since it ensures that important phrasing and nuances are not lost. Our own research notes, indicate that the researchers' perception of the interviews changed during transcription. Some interpretations that felt promising during the interview, proved to be void of detail, and one interview that the researcher believed to have been poor in material turned out to be one of the richest.

# 4 DISCUSSION

In short, IPA is a qualitative research method focusing on in-depth understanding of a few participants. It consists, in its version adapted for UX, of five steps: Collection of data; analysis of the first case; analysis of the remaining cases; finding connections between cases; and visualizing insights. The UX adaption of IPA differs from traditional IPA mainly in employing not only bottom-up analysis but also top-down, and visualizing insights for further design work rather than purely writing. The approach has a phenomenological aspect and a hermeneutical aspect. The phenomenological aspect focuses on what is important to users, and how those things are experienced. The hermeneutical aspect focuses on what those experiences mean for the participants and what they lead to.

The evaluation of IPA with professional UX designers indicated that it could provide holistic insights for early stage and fuzzy front-end innovation as well as service design. It

should be noted, that the UX professionals had no first-hand experience of using the method. These results should therefore be viewed as indicative. The designers saw several possible uses including creating immersion with users, verifying personas, and building hypotheses for personas that could be tested with a larger sample. Another use could be to use IPA as a main approach when you only have access to a few users. The focus on direct quotes and grounding insights in data was perceived as positive by the designers. Challenges to using IPA in professional UX practice was thought to be the high cost and the low sample size. The question for the remainder of this paper is what we can learn from the results of this case study.

From our practical trial of the UX IPA method, it seems clear that it can play a role in the development of personas and hence complement other methods for that purpose [12, 22, 24]. It also offers a structured and more detailed variant of thematic analysis compared to the often-used affinity diagramming [25]. UX IPA can work as a method to set user experience goals to get a team to work towards the same goal [18, 19].

### 4.1 Developing the UX IPA Method

One way to further streamline the UX IPA and reduce cost is to look at what kind of coding schemes that could be used for top down analysis, which is more time efficient than a pure bottom up approach. Good candidates exist in existing UX models, as for example emotional design [23], pleasurable design [17], the use-quality prism [3], threads of experience [21], the be-do model [13], and product experience [7] (see Gkouskos' [11] Ph.D. thesis for a good overview of UX models).

Top-down approaches to IPA has previous been shown useful [31], and mixing a top-down and a bottom-up process is not uncommon in design [4]. However, there is a risk of compromising the phenomenological foundation of IPA, and enforce pre-conceived notions on the individuals' unique experience.

One way to mix a top-down and a bottom-up process would be to intertwine interviews and analysis so that the analysis of one case is used to direct the data collection and analysis of following cases. After a few cases, categories will have emerged that can be used to gather data from a larger set of participants, and the same categories can then be used for top-down analysis.

One challenge of using IPA in UX practice is the low sample size, which makes it difficult to argue for generalizability to entire user groups. It would therefore be worthwhile to investigate how a mixed-methods approach that combine IPA with quantitative methods could be employed in UX design.

Another development of the method would be to study visualizations. What visualizations are appropriate for communicating insights from IPA to design? The ones used in this study are a first attempt at visualizing insights based on current practices within the design agency of the case.

Finally, one of the main contributions of UX IPA compared to existing user research methods would be in the actual analysis work. Future research should highlight the potential phenomenological contributions to the analysis work in UX practice.

### 4.2 Conclusion

We have in this paper shown how IPA can be adapted to professional UX research practice in the case of understanding how newly arrived immigrants to Sweden experience a start-up service that introduce them to the job market. Adaptations include mixing a top-down and a bottom up coding strategy, and using visualisations to communicate insights. IPA contributes to UX research by investigating both experience and meaning, and by providing holistic insights appropriate for service design and the fuzzy front-end of innovation, especially in relation to major life events. It is less appropriate in user research for specific products. In UX practice, IPA could be too costly and employ too small sample sizes to convince clients, but there are potentially remedies in terms of top-down approaches and mixed-methods approaches. These issues are not a problem in many academic user experience studies, and IPA is therefore a good candidate method to academic research on user experience.

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