

Influence of UX Factors on User Behavior: The Critical Incident Technique

Jessica Kollmorgen^{1,2}^a, Yaprak Turhan²^b, María José Escalona¹^c and Jörg Thomaschewski²^d

¹University of Sevilla, Seville, Spain

²University of Applied Sciences Emden/Leer, Emden, Germany

Keywords: User Experience, UX, Holistic UX Factors, Usage Frequency, Critical Incident Technique.

Abstract: Measuring user experience (UX) is essential for strengthening user loyalty and product success. Usage frequency plays a central role, as it both can influence and be influenced by UX. Standard measurement methods like questionnaires can assess UX factors and calculate their impact on usage frequency. Alongside UX factors, socio-demographic data like gender are also collected in practice, as they can affect usage patterns depending on the product. However, the question remains whether additional holistic UX factors exist that are not yet captured in standard UX questionnaires. Understanding these could improve UX and raise long-term usage. To investigate the possibility of new factors, we applied the Critical Incident Technique (CIT), a method from psychology, to UX research. Using Netflix as an example, we employed CIT in a questionnaire to capture very positive/negative (“critical”) user experiences and conducted 12 interviews to assess the incidents’ influence on usage frequency. The study found that beyond the known UX factors, additional holistic factors such as *Nostalgia* and *Anticipation* were identified. These newly identified factors were also shown to impact usage frequency. Overall, CIT proves to be a promising method for capturing holistic UX factors, providing a foundation for future research into the context of use.

1 INTRODUCTION

User loyalty plays an important role in supporting the long-term success of products. To this end, it is advisable to record the expectations and needs of users and fulfill them. In practice, user experience (UX) measurement methods can be used for this purpose, such as questionnaires like the User Experience Questionnaire Plus (UEQ+) (Schrepp and Thomaschewski, 2019), which can measure relevant UX factors depending on the individual product and use case such as Efficiency, Quality of Content or Trust. New UX factors are also constantly being identified and made measurable (e.g., for voice user interfaces (Klein et al., 2020) or social factors (Mortazavi et al., 2023)).

However, it can be assumed that it is not clear whether, in addition to standard UX factors, there are other factors that have not yet been recorded and which can be relevant for a positive UX. According to

ISO 9241-210:2019, UX is defined as “a consequence of brand image, presentation, functionality, system performance, interactive behavior, and assistive capabilities of a system, product or service. It also results from the user’s internal and physical state resulting from prior experiences, attitudes, skills, abilities and personality; and from the context of use” (ISO9241-210, 2020). The ISO definition shows that more UX factors are possible than we have previously considered in questionnaires and other UX methods. This is why we refer to all factors as holistic UX factors in the following. A more detailed definition is given in Section 2.1.

In this article, we use a method from the field of psychology to investigate holistic UX factors: the Critical Incident Technique (CIT) (Flanagan, 1954). The CIT is used to record very positive or very negative (i.e. “critical”) experiences that have had an impact on the perception of the product. The method has already been applied in the past in customer experience research to identify factors that have an influence on purchasing and recommendation behavior (e.g., (Oh and Oh, 2017), see Section 2.2). The CIT is therefore transferred to user experience research in

^a <https://orcid.org/0000-0003-0649-3750>

^b <https://orcid.org/0009-0002-4877-7372>

^c <https://orcid.org/0000-0002-6435-1497>

^d <https://orcid.org/0000-0001-6364-5808>

this study with the help of a questionnaire and 12 interviews to identify factors that can have an influence on user behavior. The well-known and internationally popular streaming platform Netflix is being examined for this purpose. Accordingly, the following first research question is to be answered:

RQ1: Which holistic UX factors are mentioned most for the streaming platform Netflix?

In addition to UX factors, socio-demographic and behavioral data (e.g. frequency of use or place of use) are often recorded in questionnaires to obtain an holistic overview of the target group. In the past, it has already been shown that age, gender or culture can have an influence on the perception of products (Kollmorgen et al., 2024; Kollmorgen et al., 2023; Santoso and Schrepp, 2019). This already shows that there are other factors apart from the UX factors that can influence user perception. For example, a high frequency of use can also influence the perceived UX, and conversely, a good UX can ensure a high frequency of use (Kollmorgen et al., 2022). A good UX is described by a high rating of the UX factors in the questionnaires. However, to the best of our knowledge, there is no established UX method that can capture the factors influencing the frequency of use in a holistic way. This leads to the following second question:

RQ2: Which holistic UX factors can have an influence on the frequency of use, using Netflix as an example?

By answering the two research questions, this study aims to methodologically advance UX research by exploring the applicability of the CIT for identifying holistic UX factors that influence usage behavior. Using Netflix as a case example, the study provides new insights into usage-related factors beyond those covered by standard UX instruments, thereby contributing both to the development of UX methods and to the understanding of user experience in real-world contexts.

The article structures as follows: in Section 2, background on the Critical Incident Technique and their application in related studies is given, followed by the description of this study including participants and approach in Section 3. Afterwards, in Section 4, the results of the study are presented and then discussed in Section 5 to answer both research questions. Finally, a conclusion is drawn and an outlook given in Section 6.

2 RELATED WORK

As the field of research is constantly evolving and new UX factors are being identified (e.g., see (Klein et al., 2020)), this section will first provide an overview of UX factors and their significance for different experiences. This will be differentiated from the holistic UX factors. The Critical Incident Technique is then described in its functionality and application in order to clarify the research gap and its added value for the identification of holistic UX factors.

2.1 UX and Holistic UX Factors

To ensure that users can interact with the products satisfactorily, they should be able to use the products efficiently and with little effort. The intentions of use are individual and subjective, which raises the question of how generalized conclusions can be drawn (Hinderks et al., 2020; Kollmorgen et al., 2024).

To do this, it is first necessary to measure the user experience. An established method here is standardized questionnaires such as the UEQ+, which makes it possible to measure various real UX aspects in a modular way depending on the use case (Schrepp and Thomaschewski, 2019). The UX factors measured in the questionnaire can relate on the one hand to classic usability aspects such as *Efficiency* and *Usefulness*, for example. On the other hand, the UEQ+ can also measure UX factors that go beyond usefulness and are intended to give the user pleasure, such as *Stimulation* or *Novelty* (Schrepp and Thomaschewski, 2025). An overview of the 27 UX factors that can currently be measured with the UEQ+ can be found on the website (Schrepp and Thomaschewski, 2025).

The UEQ+ has been further developed over the years and did not include all 27 UX factors from the start. With the further development of technology, such as the establishment of social media and voice user interfaces, additional factors have been added over time (e.g., see (Mortazavi et al., 2023; Klein et al., 2020)). It has also been shown that not all of the 27 factors are equally relevant for every product. Different factors should be measured depending on the investigated product and product category. While factors such as *Stimulation* and *Novelty* are important for social networks and games, factors such as *Trust* and *Dependability* are important for booking systems and online banking (Kollmorgen et al., 2024). Furthermore, other experiences also have factors that are important for consideration, such as *Image* or *Authenticity* for the brand experience (Alfikry et al., 2024) or *Price* and *Personalization* for the customer experience (Garg et al., 2011).

Against this background, it becomes clear that UX factors are not only diverse and dynamic, but also have different relevance depending on the context of use and product type. At the same time, there are other influencing factors in other areas of experience, such as brand experience or customer experience, which also shape the overall experience of a product. In order to bring these different dimensions together, holistic UX factors are becoming increasingly important. In this study, holistic UX factors refer to overarching, context-independent factors that are not limited to individual areas of experience, but rather shape the overall perception of a product. The identification and measurement of such holistic factors is crucial in order to capture the user experience in its entirety and to adequately take into account the ongoing changes brought about by new technologies and usage contexts.

2.2 The Critical Incident Technique

The Critical Incident Technique (Flanagan, 1954), which comes from the field of psychology, opens up new possibilities here by focusing on individual user experiences. It collects particularly positive or negative (i.e. “critical”) experiences, which make it clear which moments have a particularly strong impact on the UX and which factors are most important for users.

Psychological methods are often very valid and robustly developed. Their transfer to UX research brings a plurality of methods and strengthens the scientific foundation of UX studies. It helps to identify new, emergent factors because the users themselves prioritize what was critical for them and thus unexpected user needs can also be made visible. This often reveals authentic, unfiltered UX problems or success factors that would be overlooked in traditional questionnaires or usability tests.

This subsection thus presents the Critical Incident Technique as well as scientific papers that have applied the CIT in different contexts. These papers aim to illustrate the diverse applications of the CIT method and serve as a foundation for this work.

To design a product or service tailored to the preferences and needs of the end user or customer, the challenge lies not only in the precise analysis of their characteristics and abilities but also in understanding the relationships between these factors and the end users. Thus, it is crucial to identify which particularly positive attributes of the product experience contribute to its success, while also adopting a holistic perspective to thoroughly examine its particularly negative attributes. In this way, a comprehensive un-

derstanding can be developed of how a product can be improved and aligned with the needs of the end user. The methodological approach of the CIT (Flanagan, 1954) is suitable for this purpose. It focuses on analyzing both the significantly positive and significantly negative critical incidents to draw conclusions for improvements. In this context, a Critical Incident (CI) is an event related to the product or service investigated that is outside the normal expectations of the interaction and therefore easier to recall than everyday events (Oh and Oh, 2017).

Grisson et al. (2013) investigated in 2013 routes using public transportation using CIT and identified key insights. Interviews were conducted with 19 participants and a questionnaire was completed by them. The authors identified 94 critical incidents (35 positive and 59 negative). The most important findings were that route choice depended on different factors, such as contextual/personal factors (e.g., time or personal comfort), (un)satisfying factors (e.g., unexpected events or delays), alternatives or different perceptions (e.g., age and knowledge). Thus, the authors stated that the decision-making was influenced by individual and contextual variables.

Oh and Oh (2017) describe in their study from 2016 the behavior of smartphone users across the categories of devices, device-related services, network services, and content services. Using the CIT method, the authors conducted a two-staged survey, whereby the responses of 144 participants to a questionnaire were first evaluated to identify CIs, which were divided into 13 categories (factors). Subsequently, 651 responses were analyzed, whereby the influence of the 13 factors on future intentions was examined. The authors found that positive critical incidents improved user intentions and increased willingness to recommend, whereas negative critical incidents weakened these aspects. This study also highlights that the CIT method is not only flexible in its application but also capable of identifying both positive and negative experiences.

Overall, it becomes clear that all four studies use the CIT method to analyze specific challenges in different application areas and derive certain factors. The related work has shown that, in addition to the specific product and use case-related factors, also contextual and personal factors can be relevant for a good experience. The CIT considers a wide range of factors, leading to more differentiated results. This is achieved through the indicators of positively critical and negatively critical factors. Thus, it can be said that the versatility of CIT enables detailed examination of human behavior in various usage contexts. It can be assumed that it is possible to transfer the CIT to

the field of UX research and thus identify holistic factors that have an influence on the perception of products (RQ1). Furthermore, Oh and Oh (Oh and Oh, 2017) have also already investigated the influence of the factors on the future intentions of customers based on the CIT, so that an investigation of the influence on the frequency of use is also possible (RQ2).

3 STUDY DESCRIPTION

The procedure for this study is based on the approach already used in other human factors research, including research on public transport modes (Grison et al., 2013) and the customer experience (Oh and Oh, 2017) (see Section 2). The streaming platform Netflix was chosen as the product to be investigated, as the product is used internationally by different target groups in a wide variety of contexts and can therefore generate findings that are as heterogeneous as possible.

In the first step, a qualitative questionnaire was created to obtain as many answers as possible and to derive UX factors from the critical incidents. In the second step, five specific UX factors from the first step (*Subscription Price*, *Bingewatching*, *Recommendations*, *Nostalgia*, *Amount of Time until Goal is Reached*, see Section 4.1) were selected as a sample and their influence on the frequency of use was examined in interviews. The structure of the questionnaire and the interviews are described in the following subsections and an overview of the participants is given.

3.1 Questionnaire

In the first part of the questionnaire, socio-demographic information on age, gender and country of residence was requested (see Figure 1). In the second part, the duration of use, frequency of use, place of use and self-assessed knowledge were recorded. In the third part, firstly the positive “critical” incidents were recorded using the following three questions:

- *What has happened that you remember as particularly positive in relation to Netflix? Please also explain when/where/with whom it happened.*
- *What makes this event critical / particularly positive for you?*
- *What were the short, medium and long-term consequences of this event?*

In this way, the scope for interpretation could be limited. The users were also asked to rate on a scale from 1 (not significant) to 5 (significant) how critical they considered the incident described to be. Subsequently, up to two further critically positive incidents

could be explained. Afterwards, the procedure was repeated for up to three critically negative incidents. The critical incidents form the basis for identifying the holistic UX factors and thus for answering RQ1.

This is where the CIT differs from simple open-ended questions. While the latter often capture general impressions or opinions that could be influenced by the current mood, the CIT is not about average experiences, but about outstanding, memorable moments that have made a difference. This forces respondents to focus on specific details, actions and consequences rather than sticking to generalities (e.g., “It was okay”, “I found it user-friendly”). The CIT is exploratory and designed to draw conclusions about overarching success or failure factors from the critical incidents (Flanagan, 1954).

Next, based on the 90 UX factors generated in this CIT questionnaire, the 5 UX factors *Subscription Price*, *Bingewatching*, *Recommendations*, *Nostalgia* and *Amount of Time until Goal is Reached* were then selected as random samples in order to subsequently investigate their influence on the frequency of use with the help of interviews. These 5 factors were determined based on the number of mentions, the allocation of both positive and negative characteristics as well as the significance of the associated CIs indicated by the participants (see Section 5.1 for further explanations on the selection).

3.2 Interviews

In the first part of the interviews (see Figure 2), socio-demographic data (age, gender, country of origin) and information on usage behavior (duration of use, frequency of use, place of use and self-assessed knowledge) were again recorded.

In the second part, a UX factor was used as an example to explain what a critical incident is and how the interview will proceed. To ensure a common understanding, the meaning of the five UX factors was explained with an example at the beginning of the interview. Questions were asked by the participants in case of uncertainty (e.g., regarding nostalgia: “Do you mean nostalgia through content or through interface design?”).

Subsequently, the number of positive and negative critical incidents for the five UX factors that the participant can specifically remember for each UX factor was recorded, and explanations of the respective CIs were queried. An example of this is:

“How many situations can you remember in which the factor ‘Nostalgia’ made you think critically positive about Netflix?”

If anything was unclear, follow-up questions were

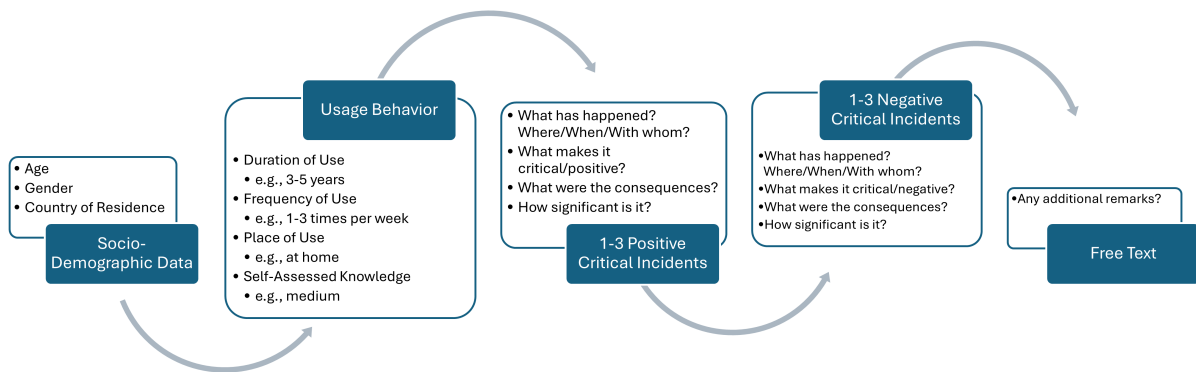


Figure 1: Structure of the questionnaire to query the critical (positive/negative) incidents **in order to derive the UX factors**.

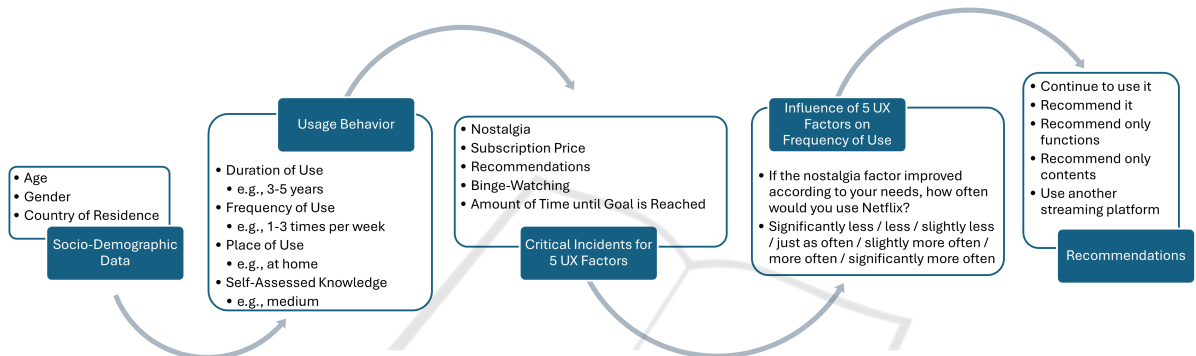


Figure 2: Structure of the questionnaire to query the critical (positive/negative) incidents **according to the 5 chosen UX factors in order to investigate their influence on the frequency of use**.

asked that were similar to the open-ended questions in the questionnaire (see Section 3.1).

In the third part, we then recorded how a change in the UX factors affects the frequency of use, both positively and negatively. Participants were given a 7-point Likert scale to choose from, including the following labels:

- 1 (“I would use Netflix significantly less”)
- 4 (“I would use Netflix just as often”)
- 7 (“I would use Netflix significantly more often”)

They were asked the according questions in the following format:

“If the ‘Nostalgia’ factor improved according to your needs, how would your frequency of Netflix use change?”

Finally, respondents were asked whether they would recommend the product in general, whether they would only recommend content/functions and whether they would subscribe to another streaming service (possibly additionally).

Based on the interviews, the influence of the 5 holistic UX factors on the frequency of use can be investigated in order to answer RQ2.

3.3 Participants

The questionnaire ran from November 11 to December 5, 2024. The participants were recruited via different channels in order to ensure a sample that was as diverse and relevant to the study as possible. On the one hand, LinkedIn posts were created and shared by the authors, and on the other hand, people from the extended professional network (e.g. acquaintances of colleagues or former work colleagues) were also contacted to share the questionnaire. In addition, the questionnaire was linked to a survey platform where interested people worldwide could answer it free of charge to reach as many people as possible. In this way, a total of 49 participants were recruited who completed the questionnaire in full. All participants answered the quality assurance question correctly and apart from that had no anomalies in their answers or processing time, which is why all data sets could be used. The participants were between 19 and 65 years old (33.29 years on average). There were 28 male, 18 female and 3 diverse participants.

Subsequently, UX factors were derived from the questionnaire and the interview guideline was created so that the interviews could be conducted between

January 3 and 10, 2025. Overall 12 users from the extended professional network (e.g. acquaintances of colleagues or former work colleagues) were interviewed, who came from different professional areas and had different socio-demographic characteristics to gain the most heterogeneous insights possible. The participants (6 men and 6 women) came from different backgrounds, such as software development, account management, media design or planning in the field of fiber optics. The participants were between 19 and 35 years old (29.17 years on average).

4 RESULTS

This section first describes the usage behavior of the study participants, followed by the holistic UX factors identified in the questionnaire and the influence of 5 UX factors on the frequency of use.

4.1 Usage Behavior

The usage behavior of the participants for the questionnaire (N=49) and the interviews (N=12) is described in the following. The questionnaire showed that the majority of participants rated their knowledge of Netflix as medium (n=29) or high (n=13) and only a few as low (n=5) or excellent (n=2). This is also reflected in the duration of use, as most of the participants had been using Netflix for between 3 and 7 years (see Table 1). Around 16% of participants were frequent users and used Netflix once a day or more (see Table 2).

Table 1: Number of participants for questionnaire (N=49) and interviews (N=12) with respective usage duration.

Duration of Use	Participants Questionnaire	Participants Interviews
Less than 1 year	1	0
1-3 years	7	1
3-5 years	18	0
5-7 years	15	4
More than 7 years	8	7
Overall	49	12

The sample for the interviews was slightly different. Two persons rated their knowledge as medium, nine as high and one as excellent. 11 out of 12 people had been using Netflix for more than 5 years (see Table 1). Over 91% were frequent users (see Table 2).

Table 2: Number of participants for questionnaire (N=49) and interviews (N=12) with respective usage frequency.

Frequency of Use	Participants Questionnaire	Participants Interviews
1x a month/less	4	0
>1x a month	11	1
1-3x a week	11	0
>3x a week	12	0
1x a day	8	7
>3x a week	3	4
Overall	49	12

4.2 Questionnaire: RQ1 and Holistic UX Factors

In the first step, the holistic UX factors were determined based on the critically positive and negative incidents of the N=49 participants. As described in Section 2, these UX factors are all factors influencing the positive/negative perception of Netflix.

All 49 participants described at least one positive as well as one negative critical incident. In addition, 5 participants described another critically positive incident and 6 participants described another negative incident.

The critical incidents were summarized into holistic UX factors based on recurring terms. One example of this is the statement “*It gives me a particularly nostalgic feeling, like being a child at home on the sofa again*”, which was assigned to the UX factor Nostalgia. The explanatory questions concerning the impression and consequences of the incident (see Figure 1) were used as an additional limitation of the interpretation. In this way, also multiple UX factors could be identified in one critical incident. The assignment was carried out and compared by two researchers to achieve a higher quality of identifying the factors.

A total of 55 UX factors with positive incidents (e.g., *Trust*, *Fun* or *Nostalgia*) and 35 UX factors with negative incidents (e.g., *Time Wasting*, *Frustration* or *Addiction Potential*) were formed. Several UX factors could be formed by one participant, and one UX factor could be named by several participants. The most frequently mentioned UX factors are shown in Table 3. Some of the identified UX factors were rated as positive by some participants, while others found them to be negative. These included, for example, *Versatility* (“*Lots of Choice*” vs. “*Too much content suddenly dropped, leading to little choice*”), *Subscription Price* or *Nostalgia*.

At this point, it becomes clear that only one of the most frequently mentioned positive and negative UX

factors is included in standard questionnaires such as the UEQ+ (*Social Interaction*). Moreover, this factor was not included in the UEQ+ until 2023 (Mortazavi et al., 2023). Furthermore, factors from other experiences were identified (e.g., *Subscription Price* of the customer experience), which are included in the holistic UX consideration.

Table 3: Most frequently mentioned holistic UX factors using Netflix as an example based on the questionnaire (N=49). One factor could be named by multiple participants, and one participant could name multiple factors.

Number of Mentions	UX Factor (positive)
27	Versatility
13	Social Interaction
12	Bingewatching
12	Comfortability
7	Self-Improvement
Number of Mentions	UX Factor (negative)
17	Subscription Price
10	Patience
7	Consistency
6	Transparency
6	Recommendations

Afterwards, 5 of the 90 identified holistic UX factors should be selected to be examined in interviews for their influence on the frequency of use. For this purpose, the 10 most frequently mentioned positive and negative UX factors (20 factors overall) were first taken into consideration to ensure that the selected factors have a broad relevance for the sample. The selection was then reduced to 8 factors that caused both positive and negative events. Subsequently, 3 factors that had lower significance values (<3) in relation to the critical incidents were removed to further limit the amount of UX factors to be investigated. As a result, the following 5 holistic factors remained for an investigation of their influence on the frequency of use in the interviews:

- *Subscription Price*: Perception of the pricing model in relation to benefits
e.g., "Netflix's subscription model has become far too expensive."
- *Bingewatching*: Ability to watch multiple episodes in a row
e.g., "I ended up watching the entire season in one night. I didn't plan to, but Netflix kept auto-playing – it was addictive."
- *Recommendations*: Quality and relevance of suggestions in the interface
e.g., "The recommendations were completely off.

I kept seeing shows I'd never watch, which made browsing frustrating."

- *Nostalgia*: Emotional recollection of earlier times through content
e.g., "Netflix offers many old series that remind me of my childhood, which I think is great."
- *Amount of Time until Goal is Reached*: Time until desired content is found or experience is achieved
e.g., "It sometimes takes me 20 minutes just to find something I actually want to watch. There's too much irrelevant content."

4.3 Interviews: RQ2 and Frequency of Use

The first aim of the interviews was to encourage participants to think about the UX factors and gain an impression of the positive and negative connections between critical incidents and the factors. To this end, the participants were asked for each factor how many and which critical incidents they could remember. The number of CIs per factor is shown in Table 4. For the 12 participants, the *Subscription Price* and *Amount of Time until Goal is Reached* are linked more to negative impressions overall (63.6% and 60.5% respectively), while *Nostalgia* and *Recommendations* are more linked to positive impressions (86.7% for both factors).

Table 4: Number of Positive Incidents (pCI) and Negative Critical Incidents (nCI) for the five investigated holistic UX factors.

UX Factor	pCI	nCI	Overall
Subscription Price	12	21	33
Bingewatching	18	11	29
Recommendations	23	6	29
Nostalgia	26	4	30
Amount of Time until Goal is Reached	15	23	38

Regarding the frequency of use subsequently surveyed, it should first be noted that participants generally stated that the frequency of use would remain the same or increase if the UX factor improved. If the respective factor deteriorated, a constant or lower frequency of use was expected. Thus, positive (negative) experiences in relation to the 5 factors do not appear to result in a reduction (increase) in the frequency of use on the example of the streaming platform Netflix.

Related to the *Subscription Price* factor, 11 of the 12 participants stated that they would still watch Netflix just as often if the price were better, one person slightly more often. The most common argument

given here was that this would be limited by the time available. Conversely, 7 participants stated that they would use Netflix less or significantly less if the price got worse, while 5 would still watch just as often. Here, the lack of alternatives or general satisfaction with Netflix was cited as an argument.

The *Recommendations* factor showed that only one person would watch just as often if the suggestions within Netflix improved, while 11 people would watch it slightly to significantly more often. However, if the *Recommendations* worsened, 8 people would watch less, 1 person would watch slightly less and 3 people would watch as often. The available time and the switch to alternative streaming platforms were also cited as arguments for this factor.

Regarding *Bingewatching*, half of the people stated that they would watch Netflix just as often if the factor improved, while 2 participants would watch it slightly more often, more often or significantly more often. If the factor worsened, half of the people would watch Netflix significantly less, related to the addiction risk.

With regard to the *Amount of Time until Goal is Reached*, 3 people would watch significantly more often if less time was required, 5 people would watch slightly more often and 3 participants would watch just as often. If it worsened, half of the people would watch Netflix less.

Related to the *Nostalgia* factor, it also became clear that 11 of the 12 people would watch Netflix slightly to significantly more often if the factor improved. If it worsened, half would still watch just as often and only one person would watch significantly less.

Figure 3 provides a visual overview of how the five holistic UX factors influence the frequency of Netflix usage, depending on whether the factor improves or deteriorates. The vertical positioning of the factors in the graph is for illustrative purposes only and does not represent a quantitative Y-axis. The focus lies solely on the comparison of mean values along the X-axis.

The sample shows that the holistic UX factor of *Nostalgia* has the greatest influence on increasing the frequency of use in the case of an improvement of the factor. The argument put forward by the participants was that they would then be able to watch movies etc. without other streaming services, leaving more time to use Netflix. The UX factor *Subscription Price*, on the other hand, has the least influence on the frequency of use, which was argued with the available free time.

If the UX factor deteriorates, however, the *Bingewatching* factor has the greatest influence on the re-

duction in usage frequency, which was linked to a higher risk of addiction and corresponding action measures. The *Nostalgia* factor has the least influence in case of deterioration, as streaming new content would be preferred.

In summary, the 5 holistic UX factors using Netflix as an example showed that the factors have an influence on the frequency of use.

5 DISCUSSION

In this section, the research questions

- **RQ1: Which holistic UX factors are mentioned most for the streaming platform Netflix?** (Section 5.1) and
- **RQ2: Which holistic UX factors can have an influence on the frequency of use, using Netflix as an example?** (Section 5.2)

are answered based on the results. The key findings are summarized in Figure 4.

5.1 RQ1: Most Mentioned Holistic UX Factors

Based on the responses of 49 participants to critical incidents in connection with the streaming platform Netflix, a total of 90 holistic UX factors were identified. These were 55 positive and 35 negative UX factors. The identified factors provided a better impression of the target group and their needs. Some of the factors were both positive and negative, such as *Versatility* or *Nostalgia*. The first thing that becomes clear is that only one (*Social Interaction*) of the 10 most frequently mentioned factors can already be measured using established UX methods such as the UEQ+ (see Table 3 in Section 4.2).

This also shows that within the 90 holistic UX factors, UX factors were found that can already be measured using standard UX methods such as the UEQ+ questionnaire. These include *Trust*, *Efficiency*, *Clarity* and *Novelty* (see Table 5).

Furthermore, factors were identified that can already be measured using standard methods from other experiences, such as *Subscription Price* of the customer experience or *Image* and *Exclusivity* from the brand experience.

Additional holistic UX factors were also identified, which make it clear that even more factors are relevant for the positive perception and expectations of users than can currently be measured using established UX methods. With regard to the Netflix

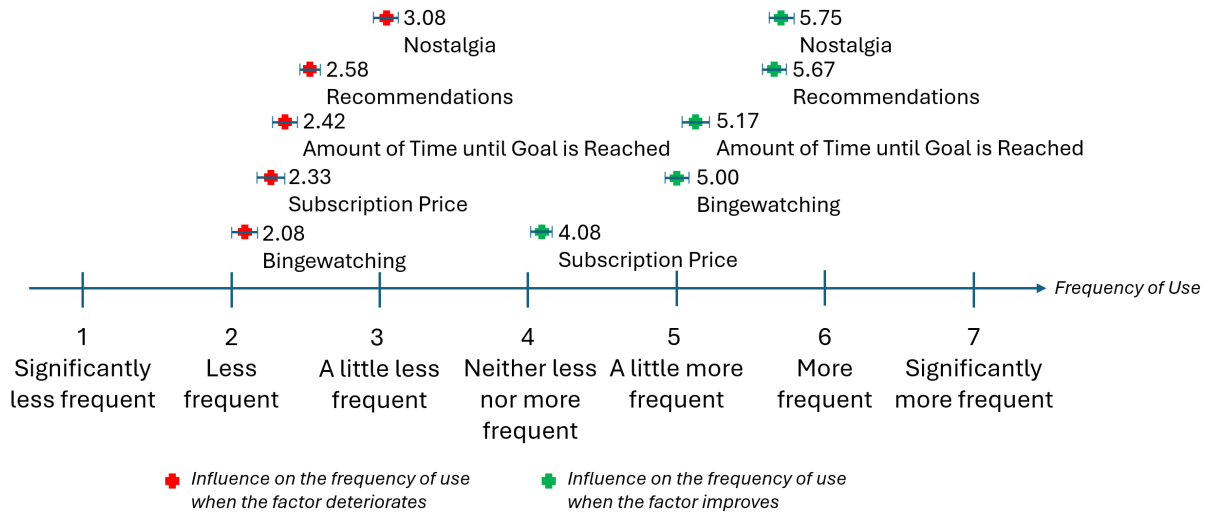


Figure 3: Mean rating of the influence of the 5 holistic UX factors on the frequency of use using the streaming platform Netflix as an example (N=12).

streaming platform, these include, for example, *Nostalgia*, *Frustration*, *Internationality* and *Anticipation*. It became clear that the Critical Incident Technique is also suitable for UX measurement to identify user expectations and needs and form a basis for a good UX.

Table 5: Examples of the 5 most frequently mentioned established UX factors, factors of other experiences and newly identified holistic UX factors.

Existing UX Factors	Factors of Other Experiences	Identified Holistic UX Factors
Social Interaction	Subscription Price	Versatility
Trust	Image	Bingewatching
Efficiency	Exclusivity	Patience
Clarity	Personalization	Consistency
Novelty	Social Responsibility	Self-Improvement

5.2 RQ2: Influence on Frequency of Use

The holistic UX factors that can have an influence on the frequency of use were also investigated. This was done using the example of the 5 factors *Subscription Price*, *Bingewatching*, *Recommendations*, *Nostalgia* and *Amount of Time until Goal is Reached* with the help of 12 interviews.

It was shown that all of the factors examined have an influence on the frequency of use. In the case of an improvement in the respective factor, the frequency of use increased or remained the same, while in the case of a deterioration, the factor remained the same

or decreased.

It should be noted that some of the factors are limited by the context of use. For example, the frequency of use changes little or not at all when the Subscription Price improves, as according to the participants, the available free time is decisive and the subscription simply continues as normal.

In contrast, improving the *Nostalgia* factor would significantly increase the frequency of use, as in this case there would be no need to subscribe to additional streaming platforms. This shows that not only product-related but also emotional factors can have an influence on the perceived user experience. With the targeted use of these factors, it is also possible to influence user behavior.

By using the Critical Incident Technique when evaluating the product, it is possible to identify significant events and factors that have a long-term influence on the perceived UX. Factors that are associated with positive memories (positive CIs) can increase the frequency of use. By using these findings, it is possible to increase the quality of products, strengthen user loyalty and create products that are more memorable and stand out from the competition.

5.3 Limitations

As with any empirical study, several limitations should be acknowledged, even though steps were taken to mitigate their impact.

First, the number of participants in the interview phase (N=12) is relatively small, which may affect the generalizability of the findings. However, this sample size aligns with common practice in qualitative UX research using the CIT, where depth and richness of

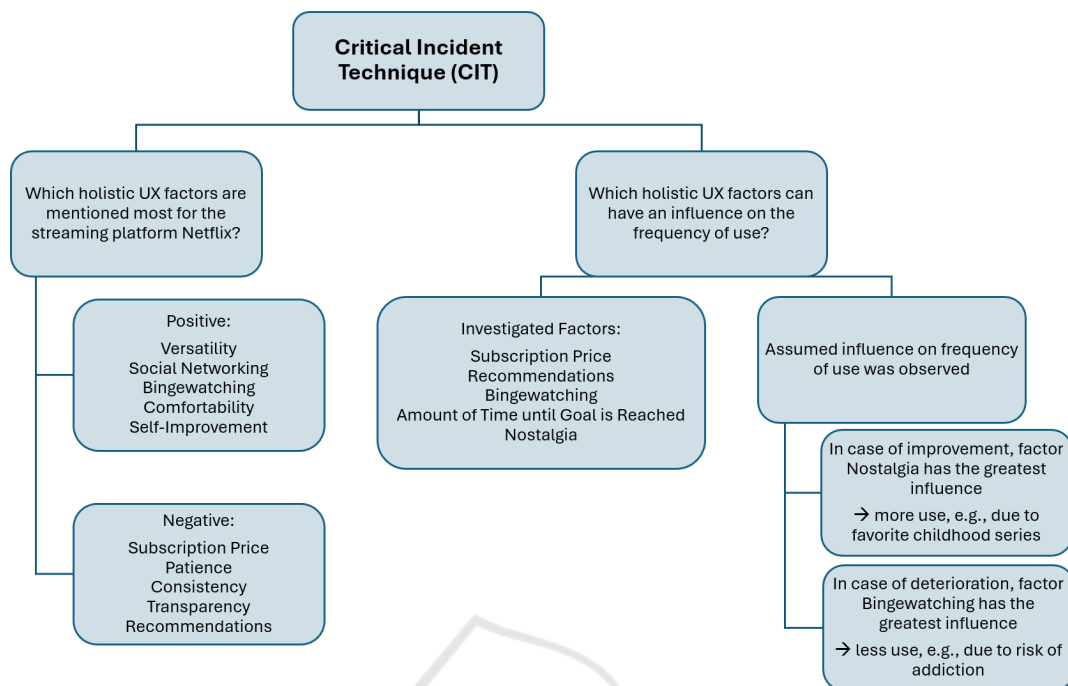


Figure 4: Summary of key findings of the research questions.

individual responses are prioritized over quantity. The participants were selected to represent diverse professional and demographic backgrounds in order to capture a wide range of experiences.

Second, while the five UX factors examined in the interviews do not represent an exhaustive list, they were selected systematically based on the most frequently mentioned and critically rated factors from the questionnaire phase. This approach was used to ensure relevance and to capture factors with both positive and negative connotations. Additionally, the selection process considered diversity across emotional, functional, and contextual dimensions.

Third, the context of the study, with using Netflix as a single application example, may limit the applicability of the findings to other domains. However, Netflix was deliberately chosen as a widely used and context-rich platform that offers both utilitarian and emotional UX touchpoints. The goal was not to generalize to all platforms, but to demonstrate how CIT can uncover holistic UX factors in a concrete and well-understood use case.

Finally, while CIT provides valuable qualitative insights, it is also resource-intensive in both data collection and analysis. This study followed a two-stage process to balance exploratory depth with feasibility. Future work could explore hybrid approaches (e.g., combining CIT with standardized questionnaires) to scale the method for broader use.

Despite these limitations, the study provides

a solid methodological foundation and contributes meaningful insights into holistic UX measurement using CIT.

6 CONCLUSION

That UX factors can have an influence on user behavior has been demonstrated in the past. However, it was unclear whether, in addition to the UX factors of established UX methods such as questionnaires, there are other holistic factors that can influence user behavior (Kollmorgen et al., 2024; Kollmorgen et al., 2023; Santoso and Schrepp, 2019; Kollmorgen et al., 2022). For this reason, this article uses the streaming platform Netflix as an example to examine which holistic UX factors are mentioned most frequently and what influence they have on the frequency of use.

For this purpose, the Critical Incident Technique (Flanagan, 1954) was used, which has been used to investigate influences on future intentions in other areas such as customer experience. In the first part of the study, critical incidents were recorded from 49 people using a questionnaire. A total of 90 holistic UX factors (55 positive and 35 negative) were derived from these incidents. This showed that only one (*Social Interaction*) of the 10 most frequently mentioned holistic UX factors can already be measured using standard questionnaires such as the UEQ+. Furthermore,

factors from other experiences such as *Subscription Price* of the customer experience or *Image* and *Social Responsibility* of the brand experience were also among the factors identified. It is clear that a more holistic picture of the user experience may be necessary to support product success in the long term, for which the transfer of CIT to UX research is suitable.

A sample was selected in the form of the five most frequently mentioned factors to investigate their influence on the frequency of use: *Subscription Price*, *Bingewatching*, *Recommendations*, *Nostalgia* and *Amount of Time until Goal is Reached*. It was found that each of the factors had an influence on the frequency of use. When the corresponding factor improved, the frequency of use also increased on average, and when it deteriorated, it decreased. The holistic UX factor *Nostalgia* stood out, as it had the greatest influence on the frequency of use when improved, with the absence of additional competitor products being cited as an argument. The *Subscription Price* factor had the greatest influence on the frequency of use when the factor deteriorated, which was justified by the increased use of competitor products. It can therefore be seen that the consideration of critical incidents and the holistic UX factors derived from them can influence usage behavior. By strengthening the positive characteristics, it may also be possible to increase long-term customer loyalty and create products that stand out from the competition.

The critical incidents were formed based on participants with different frequencies of use. However, it should be noted that, with one exception, the interview participants were frequent users (they used Netflix at least once a day). Furthermore, the actual strength of the influence cannot be determined due to the small sample size. A future investigation of the strength of the influence of the holistic UX factors for different participant groups can therefore be an interesting prospect.

In summary, the **implication for researchers** is that the example of the streaming platform Netflix demonstrates how CIT can effectively uncover individual, subjectively significant experiences, even within narrowly defined product categories. It makes it possible to identify key experiences from the user's perspective that are often not depicted in traditional models or questionnaires.

At the same time, it becomes clear that the CIT works depending on the context and product. The type of factors identified depends heavily on the product, its use and target group. However, this does not speak against the method, but rather shows the strength of the CIT, as it can be used flexibly and adapted to different contexts.

The holistic factors found are initially specific to the streaming platform Netflix and similar, but provide indications of general categories that could also be relevant in other areas (e.g., *Social Interaction*, *Personalization* or *Consistency*). Such factors can serve as a starting point for comparative studies to find out which holistic UX factors actually apply across products and which are context-specific. They also help to expand and refine existing UX models.

The results of this study also offer several **implications for practitioners**. First, the identified holistic UX factors, such as *Nostalgia* or *Amount of Time until Goal is Reached*, highlight that emotional and contextual aspects can significantly influence usage behavior. These factors are not integrated in standardized questionnaires, yet they may play a role in product engagement and long-term user retention. Practitioners should consider incorporating such dimensions into their UX strategies, especially when aiming to design for memorable and emotionally resonant experiences.

Furthermore, although the CIT is not yet widely used in UX practice, our study demonstrates its potential to uncover rich, context-sensitive insights that might remain hidden through conventional methods. CIT is particularly suited for early-stage product evaluations, where understanding real user experiences and expectations is essential. However, due to its resource-intensive nature by requiring detailed qualitative data collection and analysis, its use in large-scale evaluations is limited unless the method is adapted.

To enhance practical usability, a two-stage process could be applied: first using CIT to explore unknown or product-specific UX factors, followed by a standardized survey to quantify their relevance. Alternatively, CIT elements may be integrated into lightweight methods such as diary studies, post-test interviews, or in-situ feedback prompts. In this way, practitioners can benefit from the depth of CIT insights while maintaining efficiency in applied settings.

Overall, the results show that UX cannot be described in purely functional or rational terms, but is strongly characterized by individual and emotional experiences. They suggest that holistic UX factors provide added value in understanding the overall perception of a product. Even if the generalizability is limited, the results exemplify how important it is to consider usage contexts in UX research.

ACKNOWLEDGEMENTS

This research was supported by the EQUAVEL project PID2022-137646OB-C31, funded by MICIU/AEI/10.13039/501100011033 and by ERDF, EU.

REFERENCES

- Alfikry, A., Widodo, A., Silvianita, A., and Rubiyanti, N. (2024). The effect of sensory marketing, brand experience, brand image, and perceived service quality on brand loyalty with customer satisfaction as an intervening variable (study conducted on luxury brand product consumers): A conceptual paper. *International Journal of Scientific Multidisciplinary Research*, 2(5):523–538.
- Flanagan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, 51(4):327–358.
- Garg, R., Rahman, Z., Kumar, I., and Qureshi, M. (2011). Identifying and modelling the factors of customer experience towards customers' satisfaction. *International Journal of Modelling in Operations Management (IJMOM)*, 1(4):359–381.
- Grisson, E., Gyselinck, V., and Burkhardt, J.-M. (2013). Using the critical incidents technique to explore variables related to users' experience of public transport modes. In *Proceedings of the 31st European Conference on Cognitive Ergonomics, ECCE '13*, New York, NY, USA. Association for Computing Machinery.
- Hinderks, A., Winter, D., Schrepp, M., and Thomaschewski, J. (2020). Applicability of user experience and usability questionnaires. *Journal of Universal Computer Science*, 25:1717–1735.
- ISO9241-210 (2020). Ergonomics of human-system interaction - part 210: Human-centred design for interactive systems.
- Klein, A. M., Hinderks, A., Schrepp, M., and Thomaschewski, J. (2020). Construction of ueq+ scales for voice quality: measuring user experience quality of voice interaction. In *Mensch und Computer 2020 - Tagungsband*, page 1–5. ACM, New York.
- Kollmorgen, J., Hinderks, A., and Thomaschewski, J. (2024). Selecting the Appropriate User Experience Questionnaire and Guidance for Interpretation: The UEQ Family. In *International Journal of Interactive Multimedia and Artificial Intelligence*, pages 1–14.
- Kollmorgen, J., Schrepp, M., and Thomaschewski, J. (2022). Impact of usage behaviour on the user experience of netflix, microsoft powerpoint, bigbluebutton and zoom. In *International Conference on Web Information Systems and Technologies*, pages 297–406. doi: 10.5220/0011380100003318.
- Kollmorgen, J., Schrepp, M., and Thomaschewski, J. (2023). Influence of demographic variables and usage behaviour on the perceived user experience. In Marchiori, M., Domínguez Mayo, F. J., and Filipe, J., editors, *Web Information Systems and Technologies*, pages 186–208, Cham. Springer Nature Switzerland.
- Mortazavi, E., Doyon-Poulin, P., Imbeau, D., and Robert, J.-M. (2023). Development and validation of four social scales for the ux evaluation of interactive products. *International Journal of Human-Computer Interaction*, pages 1–14.
- Oh, Y. and Oh, J. (2017). A critical incident approach to consumer response in the smartphone market: product, service and contents. *Information Systems and e-Business Management*, 15(3):577–597.
- Santoso, H. B. and Schrepp, M. (2019). The impact of culture and product on the subjective importance of user experience aspects. *Heliyon*, 5(9):e02434.
- Schrepp, M. and Thomaschewski, J. (2019). Design and validation of a framework for the creation of user experience questionnaires. *International Journal of Interactive Multimedia and Artificial Intelligence*, 5(7).
- Schrepp, M. and Thomaschewski, J. (2025). UEQ+ Website. [Online; accessed 09-May-2025].