FINAL PROJECT – TI 184833

USER EXPERIENCE (UX) ANALYSIS ON WEB STREAMING SERVICE PLATFORM BY CONSIDERING ITS PRAGMATIC AND HEDONIC ASPECTS

RACHMAD IRVAN SYAHPUTRA
NRP 02411640000166

SUPERVISOR
Ratna Sari Dewi, S.T., M.T., Ph.D.
NIP. 198001132008122002

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APPROVAL SHEET

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FINAL PROJECT

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Surabaya, Indonesia

Author:

RACHMAD IRVAN SYAHPUTRA

NRP 02411640000166

Approved by:
Final Project Supervisor

Ratna Sari Dewi, S.T., M.T., Ph.D.

NIP. 198001132008122002

SURABAYA, AUGUST 2020

ABSTRAK

ANALISA *USER EXPERIENCE* PADA PLATFORM *STREAMING* SERVIS DENGAN MEMPERTIMBANGKAN ASPEK PRAGMATIS DAN HEDONIS

Nama : Rachmad Irvan Syahputra
NRP : 02411640000166
Pembimbing : Ratna Sari Dewi, S.T., M.T., Ph.D.

ABSTRAK

Di Indonesia penetrasi pengguna internet telah mencapai 64.8% dari total populasi pada tahun 2018. Banyak sektor industri yang terpengaruhi oleh hal tersebut dan salah satunya adalah industri televisi (TV), pada setiap tahunya pengguna TV berkurang akibat dari pengaruh platform *streaming*. Karena makin meningkatnya jumlah platform *streaming*, salah satu hal yang perlu diperhatikan dalam desain suatu produk/sistem adalah *User Experience* (UX). UX merupakan perspesi dan respon pengguna yang dihasilkan dari interaksi pengguna dengan sistem yang digunakan yang dipengaruhi oleh berbagai faktor dan menghasilkan aspek pragmatis dan hedonis. Penelitian ini bertujuan untuk mengevaluasi Netflix dari dua perspektif untuk mendapatkan persamaan/perbedaan evaluasi untuk menghasilkan rekomendasi untuk Netflix maupun platform lain, terdapat dua metode yang digunakan yaitu Microsoft *product reaction card* untuk perspektif pengguna dan evaluasi heuristik untuk perspektif ahli. Hasil dari perspektif pengguna menunjukan bahwa terdapat variabel yang memberikan dampak terhadap variabel terikat; variabel tersebut adalah variabel fokus studi, dan kombinasi variabel jenis kelamin dengan pengalaman pengguna. Tendensi dari pengguna maupun ahli melihat bahwa Netflix merupakan platform yang positif dan lebih fokus terhadap aspek pragmatis dibandingkan hedonis. Data kualitatif gabungan dua perspektif telah menghasilkan 30 evaluasi positif dan 32 evaluasi negatif. Menggunakan evaluasi dan validasi dari ekspert didapatkan 10 rekomendasi positif prioritas dari 72 rekomendasi yang berdasarkan evaluasi positif dan 10 rekomendasi negatife prioritas dari 83 rekomendasi berdasarkan evaluasi negative. Kedua rekomendasi dapat digunakan untuk meningkatkan kualitas UX dari Netflix ataupun platform lain.

Kata Kunci: *User Experience*, Metode Evaluasi Heuristik, Microsoft *Product Reaction Card*, *Streaming* Servis, Netflix.

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ABSTRACT

USER EXPERIENCE (UX) ANALYSIS ON WEB STREAMING SERVICE PLATFORM BY CONSIDERING ITS PRAGMATIC AND HEDONIC ASPECTS

Name : Rachmad Irvan Syahputra
Student ID : 02411640000166
Supervisor : Ratna Sari Dewi, S.T., M.T., Ph.D.

In 2019 Netflix for the first time missed their subscriber target and many platform have encounter the same problem due to the increasing number of movie streaming service. So one thing that needs to be concerned based on the Survey from PwC other than content is UX (User Experience). UX is a person's perceptions/ responses that result from the use and anticipated use of a product system that affected by many factors and consists of a pragmatic and hedonic aspect. This research objective is to evaluate Netflix which one of the biggest streaming service platform in the world from two perspective to obtain comprehensive evaluation and to generate recommendation. Two main methods were used: Microsoft Product Reaction card for user perspective and heuristic evaluation method for expert perspective. There were three supporting methods: Task Analysis, inferential statistic, and Affinity Diagram. The final result shows that affecting the UX evaluation; those are academic major and the combination of gender and experience variables. Both of the perspective results were conformed with each other, which both of them see Netflix as a good streaming service platform that more focused on the pragmatic aspect. From the combined qualitative data it obtained, 30 positive evaluations and 32 negative evaluations. Based on the evaluations, validation and assessment with expert judgment, there are 10 positive priority recommendations, from 72 positive based recommendation and 10 negative priority recommendations, from 83 negative based recommendations, that both may be applied for Netflix or another platform.

Keyword: User Experience, Heuristic Evaluation Method, Microsoft Product Reaction Card, Streaming Service Platform, Netflix

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This report is far from perfect; writers realize that there is a lot of imperfection, mistakes in grammar, content, or other aspects. So. any criticisms and suggestions from various parties are needed for future improvements.

Surabaya,

Rachmad Irvan Syahputra

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CHAPTER 1
INTRODUCTION

This chapter elaborates on the research background, problem formulation, research objective, research benefit, research limitation, and research assumption. There is also a brief explanation of this research report's structure at the end of the chapter.

1.1 Background

In Indonesia the use of the internet, mobile users, and also computers is increasing significantly in contrary to the fixed-line telephone is decreasing (Badan Pusat Statistik (BPS), 2018). In 2018 itself the internet user of Indonesia already reach 171.17 million users who are equal to 64.8% of total Indonesia population which dominated by the user from Java and Sumatra island, compared it with the previous year, it increased 10.12 %. It just does not only happen in Indonesia, but it happened globally around the world, internet users worldwide are already increased to 416 million users since October 2018. It is also shown that 58% of the world's total population is already connected with the internet, and various activities have been done on the internet from gathering information, socializing, communication, business, financial, transaction, and entertainment that still dominated watching online videos (Datareportal, 2019). It has much positive impact from a country's perspective; it can be one of the instruments of economic development, increase knowledge and literacy level, building a network and increasing consumer ability (Indonesia Baik, 2019).

With the increasing number of internet users, it also effects the source of entertainment, such as traditional television, especially for younger adults. In the United Kingdom, the number of viewing times of traditional TV is declining each year, with a total of 4 hours and 34 minutes of video per day the viewer spends 2 hours and 39 minutes on other videos such as Netflix and Youtube (informitv, 2019) as shown in the figure 1.1. It is also shown by the projection of cord-never and cord-cutters that significantly increased, followed by the TV ads industry that declined

over the year and forecasted to decline at least 2 percent through 2022 because marketers diverted more money on the digital media. (New York Times, 2018).

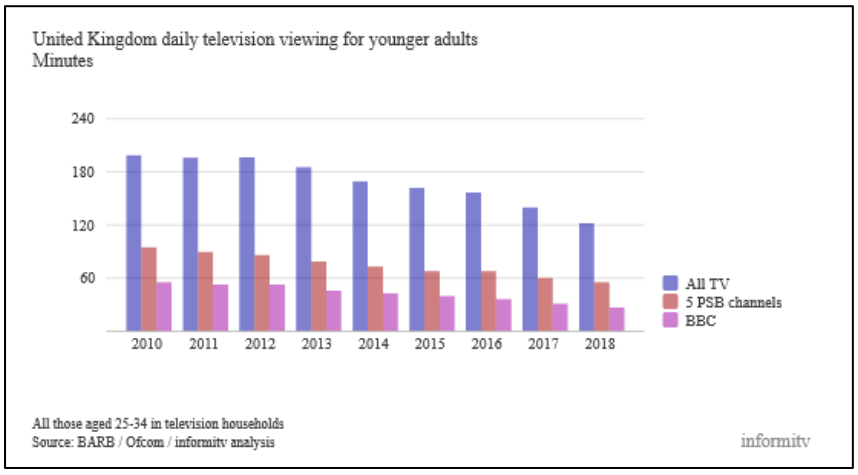

Figure 1. 1 Total TV Viewing Time in United Kingdom

Source: (informitv, 2019)

One of the main aspects that disrupt traditional TV is movie streaming services platform. It is a platform that entertains such as movies, audio, and games over the internet. There are over 200 movie streaming services in the US alone, with big players such as Netflix, Hulu, Amazon Prime, and HBO (Flixed, 2019) moreover, it is going to increase over the year due to the increasing number of internet users. Hence, 93.5 million households from 119.9 million in the US still pay for TV the number is continuously decreasing from 89 to 76% in 2018 to 2019 while streaming service platforms already owned by 84% of US (Hollywood Reporter, 2019). In Indonesia itself from 2014 until 2019, there are over eight streaming services that offer a variety of local and international content. An international company such as Netflix, Amazon, and HBO; from Southeast Asian companies such as Iflix, HOOQ, and others. Therefore with the increase of technology development, primarily services such as website or application in TV, smartphone, or computer, a positive user experience (UX) design need to be the central design for products and services in this era because it can give a several benefits to the business or brand. Such as reduce cost down the line, increase search engine indexing (SEO), increase brand loyalty, increase word of mouth, increase conversion rate that will lead to increasing revenue (O'Brien, 2018). Several examples of consequences or cases of bad UX based on the are $243 lost per

customer from bad user experiences, $150 billion lost due to wasted development time, Walmart losing $1.85 billion for changing UX, Make a negative brand perception and get a low rand on a search engine rankings, Icons8 lost 50% of their use due to bad UX, United Kingdom (UK) government wastes £12 billion due to failed patient records project and even 88% percent online consumer would not return a site after a bad experience (White, 2018; Akindunjoye, 2018; Urbanemu, n.d.; Momentum, n.d.).

User experience is a person's perceptions and responses that result from the use and anticipated use of a product or service system. On the contrary, usability is concerned with the effectiveness, efficiency, and satisfaction with which specified users achieve specified goals in a particular environment (ISO 9241-11, 2010). With the main difference, while the usability is only concerned with the functional part of a product and service, the User Interface (UI) is a medium/conduit where human-computer interact and communicate with a particular device to complete a specific task that concerned with the overall feel of the design. At the same time, user experience also involves user subjective/emotional aspects, psychological expectations, design, also usability, and UI itself. Both are essential and equally important for evaluating the development of a successful website or application. However, UX evaluation focuses more on user-centered work processes; therefore, it more suitable to be tested on the final product/prototype to have more overall evaluation in the product. UX Evaluation extends a user-centered design approach to cover issues beyond pragmatic functionality and usability with hedonic user motivation (Väänänen-Vainio-Mattila & Wäljas, 2009).

User experience is effected by two things which are pragmatic and hedonic (Hassenzahl & Noam, 2006; Hassenzahl, 2003), while a pragmatic focus on usability aspect such as perceived usefulness, efficiency, ease of use, an error that is the primary function of the product, hedonic aspect is the "joy" of use, self-expression, a psychological aspect that emphasizes stimulation, identification, and evocation generated by usage of product and service (Väänänen-Vainio-Mattila & Wäljas, 2009). Both of them are equally important. One cannot overshadow other aspects because it depends on the type of the product, and the favorable combination of these two aspects will lead to the product's acceptance (Hassenzahl, 2003).

Since the first term of user experience was brought by Donald Norman in mid-1990 (Knemeyer & Svoboda , 2002) until now, many tools are expanding and extending field usability to evaluate a product or service to find the pragmatic and hedonic value. Currently, over 80 classified methods are ranging from simple to highly sophisticated techniques (Balasubramoniam & Tungatkar, 2013) such as Experience Sampling Method (ESM), Day Reconstruction Method (DRM), iScale, Repertory Grid Technique, and many others. The usage of it depends on the type of evaluation, complexity data needed, evaluator, software requirement, and many others. One of the earliest and the most used method is Heuristic Evaluation Method that developed around the 1990s is originally usability evaluation method that used expert review and knowledge to identify usability problem in interface design based on the usability principle. However, in recent years, it has been used to evaluate user experience problems as well. Other methods that such as Microsoft Product Reaction Card (MPRC) that was developed in 2002 by Microsoft due the limitation inherent in a standard feedback mechanism and to obtain that complexity of the data (Barnum & Palmer, 2011), this method contains 118 product reaction cards, and after the user already evaluates the product and service, they can choose the suitable reaction card. However, researchers tend only to use one User Experience Evaluation Method (UXEM) to evaluate products and services, even though many of those methods have weaknesses on their own that can decrease the analysis level on the evaluation. For example, in the Heuristic Evaluation Method, it only focuses on the expert review of the product, not the user, and there is a probability that the user and expert desired can be different and can lead to user dissatisfaction if it only depends on expert review. On the contrary, MPRC, while it is a more flexible method that mainly used for user evaluation, the user may lack knowledge of user experience principle that may give the final result is too subjective. UX is highly subjective by its nature; hence the combination of user and expert evaluation is needed to give a more proper and detailed result (Väänänen-Vainio-Mattila & Wäljas, 2009; Roto, et al., 2009). The expected adjustment from this research is the combination of the user and expert evaluations to cope with the weakness of the MPRC and Heuristic Evaluation method in the streaming service platform to obtain the difference between user and expert. These two methods were chosen because

they precisely measure the pragmatic and hedonic aspects in the evaluation, and recently those methods are often used in UX evaluation.

This study evaluates Netflix as the streaming service platform that will be observed that launched 2016 in Indonesia, since then Netflix user is always increased and achieved the subscriber target, but in Q2 and Q3 of 2019 it misses the subscriber target reducing the company stock of 15% (Forbes, 2019; Vox, 2019). Another example of a platform that is struggling are HOOQ that closed its platform due to the fierce competition (Kompas.com, 2020), Amazon Prime Video and Hulu despite the number of subscribers is kept increasing over the year, but they only got 11% and 8% of market share while the others such as HBO, Catchplay, Viu, and Iflix got below 2% combined (Parrot Analytics , 2019). To solve and achieve those subscriber targets Netflix or in another platform, they cannot rely only on the content alone, because of positive/negative user experience able to effect the increasing/decreasing number of subscribers in those streaming services that will lead to financial condition of the company, in addition user experience still plays an important role that influences the user to use a specific streaming service platform (PwC, 2019). Therefore by using those two method which are heuristic evaluation method from expert and MPRC from user, the result can be analyzed to provide a more comprehensive recommendation.

1.2 Problem Formulation

Based on the background explained in the previous subchapter, this research will focus on User Experience Evaluation on Netflix streaming service by using Heuristic Evaluation Method and MPRC to have a better understanding and analysis towards the expert and user review, hence can give a comprehensive recommendation.

1.3 Research Objective

By conducting this research, the author aims to achieve several objectives, such as:

1. To evaluate Netflix based on daily user perspective, including the factor that effects it.

2. To evaluate Netflix based on the expert review using user experience principle as a comparison.
3. To asses and analyze the differences/ similarities in user and expert review in pragmatic and hedonic aspect.
4. To give a comprehensive recommendation towards Netflix or other streaming service platform.

1.4 Research Benefit

By conducting this research, the expected benefits of this research are

1. To obtain a more detailed analysis of the difference and similarities about the pragmatic and hedonic level between real-life user and expert review.
2. Expand the usage of UXEM in streaming service platforms that focused on leisure activity.
3. Suggest an improvement to Netflix or other streaming service platform based on the user and expert review.

1.5 Research Limitation

The author conducted this research based on several limitations, those used in this research are:

1. The user experience evaluation conducted on Netflix.
2. The evaluation conducted using Mozilla Firefox/ Google Chrome/ Microsoft Edge browser.

1.6 Research Assumption

The author conducted this research based on several assumptions, those used in this research are:

1. There are no changes in Government regulation regarding streaming the service platform in Indonesia.

1.7 Report Writing Systematic

The research report consisted of several systematical chapters that are used to record the process of the research. The chapters used in this report are explained below.

CHAPTER 1 INTRODUCTION

This chapter consists of an introduction towards the research background that the initial discussion talked about the current condition about internet penetration, then it continued by the decline of the TV industry compared with the streaming service industry that makes UX played an important role in those service. That also the objective of this research, therefore the differences/similarities of the customer and expert review can give an improvement towards Netflix, with specific limitations and assumptions.

CHAPTER 2 LITERATURE REVIEW

This chapter consists of an explanation of existing theories, theoretical frameworks, and previous research used to support the research idea. The literature review contains seven sub-chapter. The first one is a streaming service platform definition, and mechanism with sub-subchapter discussed Netflix; the second one is cognitive ergonomics, which is the main course that related to user experience topic. Then the main sub-chapter is user experience definition that also explained the user experience evaluation method, including two primary methods that used in this research, which are the Heuristic Evaluation Method and MPRC. The next sub-subchapter is the supporting method/literature that supports this research. It is an affinity diagram, task analysis, statistical analysis.

CHAPTER 3 RESEARCH METHODOLOGY

This chapter consists of methods that will be used in this research. Research methodology describes the steps for conducting the research that includes the framework, formulation, development, instrument, phase, and others. The framework/flowchart is contained of 9 steps starting for determining the streaming service platform by comparing it with other platforms, obtaining a literature review, designing the design of the experiment until analyzing the experiment result to obtain the conclusion, and recommendation.

CHAPTER 4 DATA RECAPITULATION AND PROCESSING

This chapter consists of recapitulation of all the data from both user and expert perspectives and processed using each of their methodologies. The quantitative method will be used in user data which process the data using a inferential statistic. Qualitative methods will be used both in user and expert review to recap the evaluation from both perspectives to give a comprehensive evaluation using the affinity diagram.

CHAPTER 5 DATA ANALYSIS AND INTERPRETATION

This chapter consists of the analysis and interpretation of the data that have been processed in the previous chapter. For the user data, it will analyze the participant profile, the result of statistical testing, which are the effect of independent variable towards the dependent variable, and also the affinity diagram of the evaluation. For the expert data, participant profiles will be analyzed, and the affinity diagram will be generated from an expert perspective. The last analysis is to evaluate the combined affinity diagram from both perspectives to generate a comprehensive recommendation that will be processed further based on the expert judgement.

CHAPTER 6 CONCLUSION AND SUGGESTION

This chapter consists of the conclusion and suggestion of this research. The conclusion will be answering the research objective that already stated in chapter 1. The suggestion consists of all the evaluations regarding this research that can be improved in future research.

CHAPTER 2
LITERATURE REVIEW

This chapter emphasizes on theories that related and used to support the analysis, evaluation and the recommendation of this research.

2.1 Streaming Service Platform

It is a platform that offers to deliver media content such as movies, audio, games over the internet that can be used by various devices such as smart TV, smartphone tablet, and others. The streaming service provider sent the compressed form over the internet and can be used in real-time rather than the conventional method that the end-user needs to download the content from the internet or buy the content from the retailer. Rather than being saved to the devices, the media is sent in a continuous stream of data, so the user can use the media as they could with a downloaded file it uses basic HTTP, TCP/IP, and HTML protocols (Rouse, 2019). The content in it can be prerecorded files or a live broadcast feed that streamed to multiple users at the same time. Although it has advantages over conventional methods such as more convenient, cheaper, and easy accessibility, it also has a drawback, especially in third world countries such as high bandwidth use that will give a buffering and may experience reduced video quality, hence will lead to higher cost of internet. But in a developing and developed country that has a stable internet connection will use streaming service over the conventional TV, this changing behavior shown by the number of cord-cutter and cord-never is increasing since 2015 that result of decreasing TV ad spending as is shown in Figure 2.1 (New York Times, 2018).

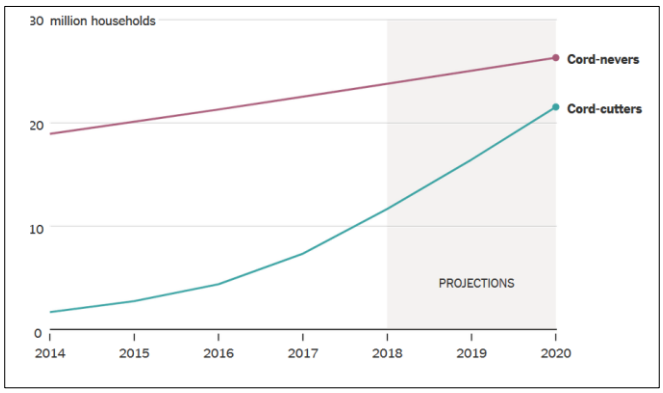

Figure 2. 1 Number of Cord-Nevers and Cord-Cutters in US

Source: (New York Times, 2018)

There are three types of streaming services: movies and TV, audio, and games, each of different content and price. Even though those services have advantage and disadvantage, it has the same pricing model which charging user to pay several amounts of money for each month without any commitment and unlimited viewing (Mohammed, 2019). Currently, there are over 200 streaming service that exists over the world (Flixed, 2019) Furthermore, the number is going to increase over the year due to increasing monthly data consumption, a number of smartphones, and internet penetration that increased significantly. For mobile phones, there will be 12.3 billion mobile-connected devices, and ¾ of them will be smart devices. The internet connection speed will increase more than three-fold and shown in Figure 2.2, 79% percent of total mobile data traffic will be on-demand content all by 2022 (Cisco, 2019)

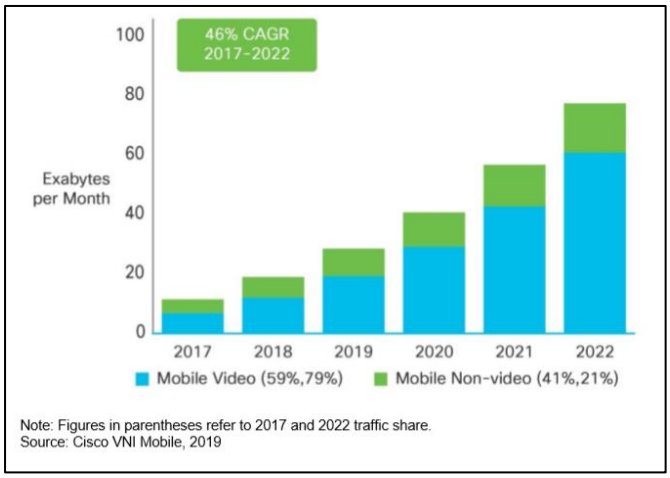

Figure 2. 2 Amount of Traffic Data Used for Video

Source: (Cisco, 2019)

2.1.1 Netflix

Figure 2. 3 Netflix Logo

Netflix was first founded in 1997 by Marc Randolph, and Reed Hasting in Scoots Valley, California that was initially was a website based movie rental service. It changes to the streaming model in 2010 that allows end-user to watch a variety of award-winning TV shows, movies, documentaries and more on the inter-connected devices that ad-free and new content every month (McFadden, 2019). It has 4 membership plans, each with its price and service. Netflix content can be seen anywhere, anytime with various devices such as smartphone, Smart TV, Tablet, console, and tables, also because it is a streaming service based it has an internet speed recommendations depending on the quality of the streaming video, for example, it needs 3.0 Mbp/s for SD quality and 25 Mbp/s for Ultra HD quality (Netflix, n.d.).

Today Netflix users already reach 151 million paid subscribers in over 190 countries, with 5.5 million free trial customers and 60.52 million comes from the United States. Even though the number of users is never decreasing since 2010, as shown in Figure 2.4, in the last Q2 and Q3 of 2019, it misses the expected subscriber target, and that effect Netflix stock down to 15%. This happens due to various of reason such as the decreasing number of the movie title from 6755 to 4010 (Businessinsider, 2018), reliant on licensed content, reliance on the credit market, wrong strategy in content spending and also a competition that since Q3 2019 is ramping up, and it is still going to increase in 2020.

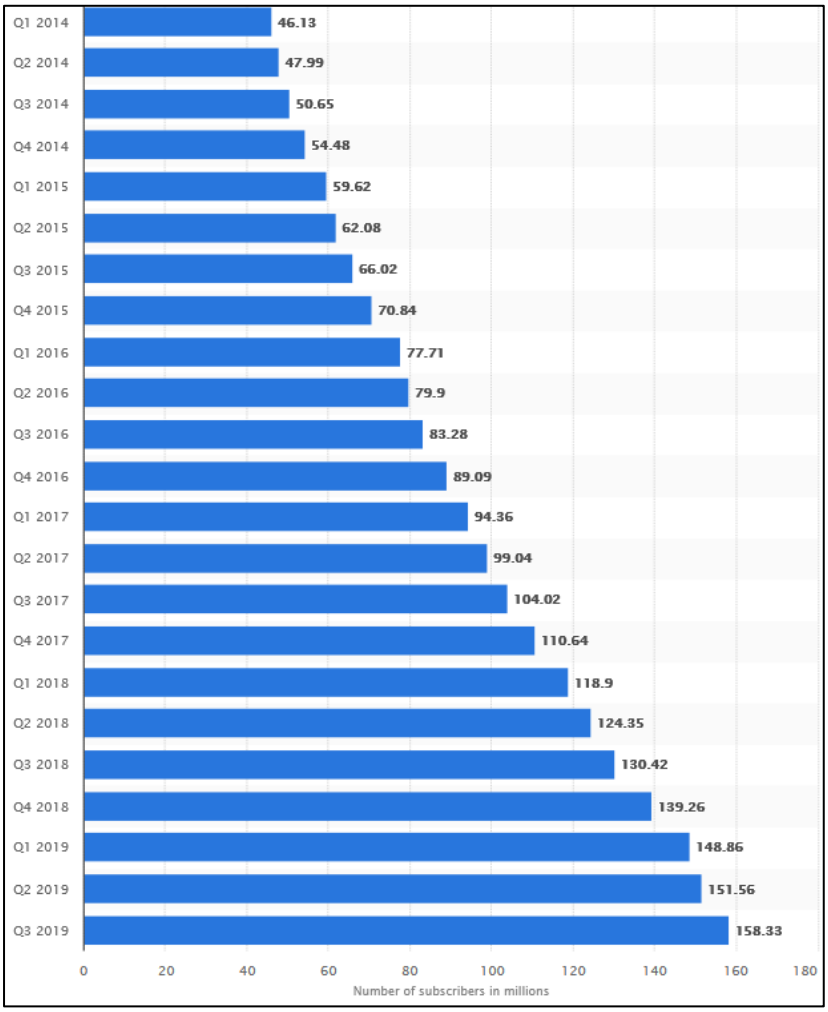

Figure 2. 4 Number of Netflix User Every Year

Source: (Statista, 2020)

2.2 Cognitive Ergonomics

Ergonomics is a discipline that focuses on understanding interaction between humans and other elements in a system to optimize human well-being and overall system performance, and it has three domains of specialization: physical, organizational, and cognitive ergonomics (International Ergonomics Association, n.d.; Wignjosoebroto, 2008). While physical ergonomics concerned with the human physical condition in physical activity and organizational ergonomics concerned with the sociotechnical system, cognitive ergonomics focus on mental processes towards a system in a particular activity such as perception, memory, reasoning and motor response that included in the human brain and sensory system. Those topics that related to cognitive ergonomics such as mental workload, decision making,

skilled performance, Human-Computer Interaction, human reliability, work stress and other, the example of those topics such as design principle for fighter aircraft, designing function allocation of a control room and many other (International Ergonomics Association, n.d.; Wignjosoebroto, 2008). There are three classifications of activities that mainly focus on those are have an emphasized cognitive component, in a safety-critical environment, in a complex/changeable environment (Interaction Design Foundation, n.d.; Wignjosoebroto, 2008).

Cognitive ergonomics is related to human mind perception towards information that related two perceptions and memory of the human mind, hence there human processed information classified into three primary processes those are (Kantowitz, 1989)

1. Perceptual Encoding is a stage where information obtained from the sources that will be registered by sensory nerve, the human will be compared with the current understanding that saved in the memory to give any information/perception towards the object.
2. Perceptual Encoding is a stage where information obtained from the sources that will register by sensory nerve, the human will be compared with the current understanding that saved in the memory to give any information/perception towards the object.
3. Cognitive Stage or Central Processing where the process where the human brain where the information/perception towards the object will be further be analyzed to give a suitable response for that information such as intervention, problem-solving or other responses.
4. Action Stage/Responding is the final stage after the suitable response is chosen; it will give a motor signal to the related body part to do the response execution.

The processed personal information can be used to designing a system that focuses on human-centered design so it can be more efficient and effective; incapability between product and personal information can give a failure, misperception, and hazard (Wickens, et al., 1998).

2.3 User Experience

Since 1995 there is no official definition of user experience (UX); it is regarded as a contemporary paradigm of usability (Bader, et al., 2017), Until 2010 it was defined by ISO 9241-11 by is a person's perception and responses resulting from the use and anticipated use of a product, system or service that includes all the user emotion, belief, preferences, perception, physical and psychological responses, behavior and accomplishments that occur before, during and after use. It is an experience that an individual gets when they interact with products and services; there are five main factors that interact with each other that will result from the positive/negative of user experience those are user, social factors, cultural factors, the context of use and product. In the following Figure, 2.5 is the more detailed sub-factors that affect UX.

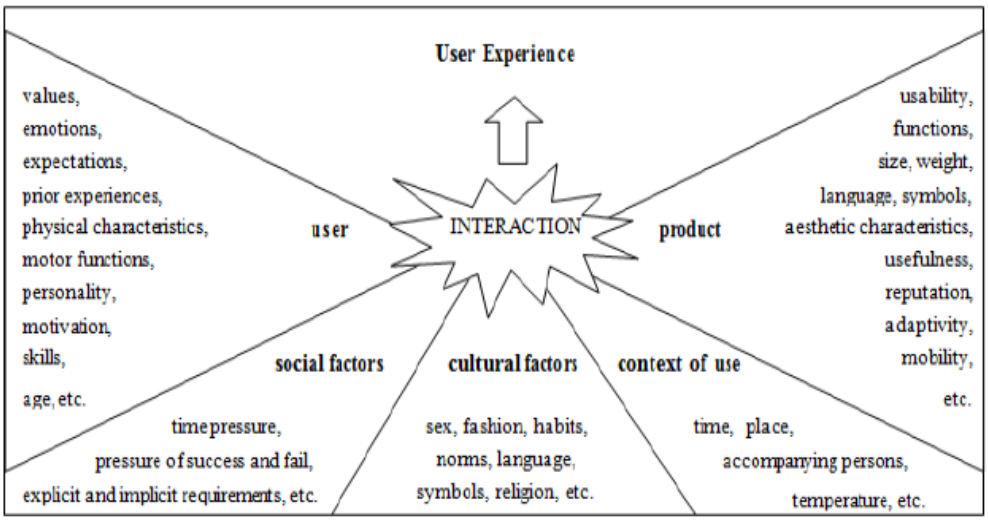

Figure 2. 5 Factor that Influence User Experience

Source: (Balasubramoniam & Tungatkar, 2013)

The result of user experience is shaped by the combination of pragmatic (Instrumental) and hedonic (Non-Instrumental) aspect either negative or positive result, while pragmatic refers to the product's perceived ability to do the intended goals such as usefulness, efficiency, ease of use, error and all task-oriented quality, while hedonic quality refers the product perceived ability to support the main function such as the appeal, fun, originality, joy of use, self-expression and psychological aspect while using the product (Hassenzahl, 2003; Hassenzahl, 2008). A pragmatic and hedonic aspect of the product is coming from the product

features (content, presentational style, functionality, interactional style) that have been chosen and combined by the designer to convey an intended product character, so it depends on the nature of the product/service the level of pragmatic and hedonic characteristic that emphasized in the product design (Hassenzahl, 2003; Väänänen-Vainio-Mattila & Wäljas, 2009). The pragmatic and hedonic aspects also have their attributes to build their level, which will give the final result of the product/service characteristic shown in Figure 2.6 and Figure 2.7, pragmatic consists of manipulation and hedonic consist of stimulation, identification, and evocation.

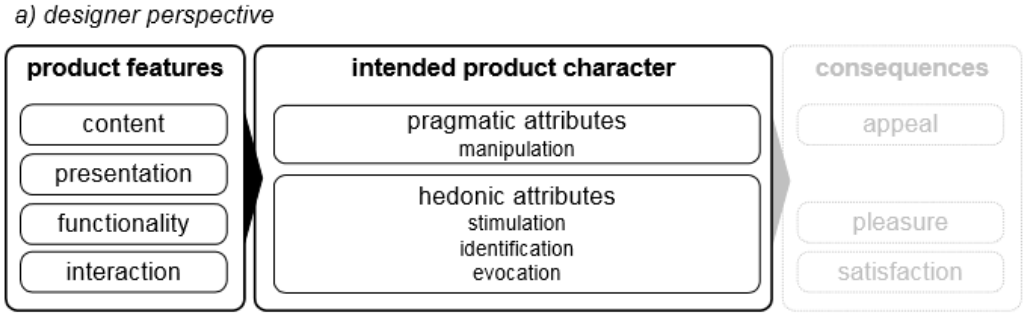

Figure 2. 6 User Experience from Designer Perspective

Source: (Hassenzahl, 2003)

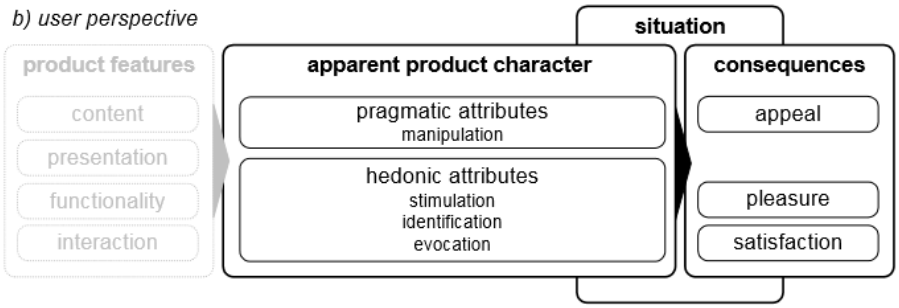

Figure 2. 7 User Experience from Designer User Perspective

Source: (Hassenzahl, 2003)

2.3.1 User Experience Evaluation Method (UXEM)

User experience evaluation method is a collection of method or tool to evaluate or assess a system or product that the objective is to gain a better complete understanding of users, and expert needs to improve customer satisfaction through all the user experience aspect (Rajeshkumar, et al., 2013). One of the necessary multi-functional tools is by following UX dimension principle, one of the earliest

dimension is developed by peter morville called UX honeycomb that shown in Figure 2.8 and the most recent one as is shown in Figure 2.9 was made researcher from Germany that more associated with pragmatic and hedonic quality, both of them contain all the essential aspect in the UX that can be used to breakdown the component of the current user experience, benchmarking and modular approach to web design or serve as an observation view (Morville, 2004; Schrepp, et al., 2017).

Figure 2. 8 Peter Morville UX Honeycomb

Source: (Morville, 2004)

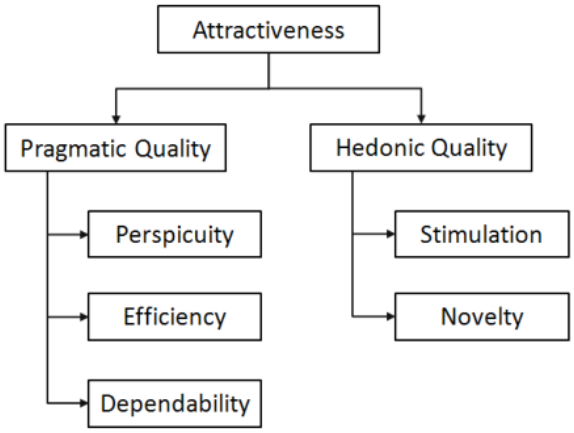

Figure 2. 9 Scale Strucutre of User Experience

Source: (Schrepp, et al., 2017)

Currently, there are over 80 classified method ranging from simple to highly sophisticated technique that depends on many variables such as an object, participant, duration, tools due to multi-dimensional and dynamic aspect of user experience (Balasubramoniam & Tungatkar, 2013; Vermeeren, et al., 2010). Those existing methods differ from usability evaluation that focuses on effectiveness and efficiency because they emphasize pragmatic and hedonic aspects more. UX cannot be an evaluation with stopwatch or logging in execution time or error only (Roto,

et al., 2009). Despite those shortcomings in those 80 classified methods, many can be used for usability evaluation and vice versa. Due to the high variation of method and tools, it is essential to make a specific objective also limitation in the evaluation product/service to be able to choose the proper method, because the different method has been designed for different time horizon, level of detail, complexity and also the type of data.

2.3.1.1 Heuristic Evaluation Method

Heuristic evaluation is a usability evaluation method with the identity usability problem in user interface design. A set of expert evaluators will be presented by the interface design and evaluate the interface according to specific guidelines document, including the error, positive/negative aspect. (Nielsen & Molich, 1990). It is an iterative process that was first developed in 1990 by Jakob Nielsen and Rolf Molich. The main goal is to find all the usability problem that shown in the product/service with possible impact and lowest cost, because of that it needs a set of evaluators to be able to identify all the problem and also required an expert to use their practical skill combining theoretical skill following the heuristic guidelines to improve effectiveness and efficiency by enabling them to evaluate the particular design (Yeratziotis & Zaphiris, 2017). The difference with frequent usability testing while heuristic evaluation looks at the user interface and identifies the problem by themselves, usability testing participant try the real task that has been assigned. Hence, the problem found in heuristic is a potential problem, while usability testing is the actual problem.

The expert used in many cases, such as Human-Computer Interaction (HCI) Experts, Web Developers, and Heuristic, uses a set of guidelines for the evaluator to find the error/problem the earliest and accessible guidelines is Shneiderman, Xerox Checklist and Jakob Nielsen usability heuristic. Since then many heuristic guidelines emerged that is more suitable to different context and objectives to improve their effectiveness and efficiency (Yeratziotis & Zaphiris, 2017; Bader, et al., 2017). Shown in Table 2.1 is the example of heuristic guidelines from Shneiderman and Nielsen & Molich.

Table 2. 1 Example of Heuristic Guidelines

No	Heuristic Guidelines	
	Shneiderman	**Nielsen & Molich**
1	Strive for Consistency	Visibility of system status
2	Seek Universal Usability	Match between system and the real world
3	Offer Informative Feedback	User control and freedom
4	Design dialogs to yield closure	Consistency and standards
5	Prevent errors	Error prevention
6	Permit easy reversal of actions	Recognition rather than recall
7	Keep users in control	Flexibility and efficiency of use
8	Reduce users in control	Aesthetic and minimalist design
9		Help users recognize, diagnose, and recover from errors
10		Help and documentation

2.3.1.2 Microsoft Product Reaction Card

Product reaction card was developed by Microsoft researcher Joe Benedek and Trish Miner in 2002, and the objective is used to obtain customer desirability by considering usability and user experience dimension of product/services (Hinkle, 2012). It was made by the limitation of the standard evaluation method biased to answer in questionnaires/interviews, time-consuming to conduct and analyze and to restrict the participant to give the specific answer especially for negative criticism (Barnum & Palmer, 2011). This method's objective is to get a better and fast result towards user comments; it contains 118 reaction cards shown in Figure 2.10, with 60% positive and 40% negative words that need to be selected by the participant after interacting with the system that describes participant experience. This method can quantify the result more efficiently and summarize the suggestion and recommendation based on the keywords that minimize analysis time for the result. The result can also be displayed by various graphical displays such as word cloud, convergence, and consistency diagrams.

Accessible	Creative	Fast	Meaningful	Slow
Advanced	Customizable	Flexible	Motivating	Sophisticated
Annoying	Cutting-edge	Fragile	Not secure	Stable
Appealing	Dated	Fresh	Not valuable	Sterile
Approachable	Desirable	Friendly	Novel	Stimulating
Attractive	Difficult	Frustrating	Old	Straightforward
Boring	Disconnected	Fun	Optimistic	Stressful
Business-like	Disruptive	Gets in the way	Ordinary	Time-consuming
Busy	Distracting	Hard to use	Organized	Time-saving
Calm	Dull	Helpful	Overbearing	Too technical
Clean	Easy to use	High quality	Overwhelming	Trustworthy
Clear	Effective	Impersonal	Patronizing	Unapproachable
Collaborative	Efficient	Impressive	Personal	Unattractive
Comfortable	Effortless	Incomprehensible	Poor quality	Uncontrollable
Compatible	Empowering	Inconsistent	Powerful	Unconventional
Compelling	Energetic	Ineffective	Predictable	Understandable
Complex	Engaging	Innovative	Professional	Undesirable
Comprehensive	Entertaining	Inspiring	Relevant	Unpredictable
Confident	Enthusiastic	Integrated	Reliable	Unrefined
Confusing	Essential	Intimidating	Responsive	Usable
Connected	Exceptional	Intuitive	Rigid	Useful
Consistent	Exciting	Inviting	Satisfying	Valuable
Controllable	Expected	Irrelevant	Secure	
Convenient	Familiar	Low maintenance	Simplistic	

Figure 2. 10 List of MPRC Words

Source: (Barnum & Palmer, 2011)

Since first launched in 2004 to evaluate MSN explorer this method has been used to cut through complexity, fast but still useful; consequently, this method has been adjusted based on the researcher intended such as form change the card into checklist and comparison, reduce the number of cards, selection of words or manner of the application so it will give a more suitable result (Merčun & Maja, 2016). The design of the experiment in this study is that participants/users were instructed to review the product/service based on the scenario, task, or other scenarios that will be presented by the researcher. In the individual measure, each participant can give more detailed reasoning to give better analysis, and if it comparison evaluation, participants may rank the product/service. If it uses a discussion method the participant with a similar result in the previous phase will be grouped to give a more detailed reasoning and top three words that describe the experience of all the participant (Barnum & Palmer, 2011).

2.4 Affinity Diagram

Affinity Diagram is a tool introduced in 1960 by Jiro Kawakita, and it referred to affinity chart, affinity map, or KJ method. It is a business tool to sort large amounts of data/list of ideas that gathered during research, survey result, developing relationship, reduce relationships, or after brainstorming sessions related to product, process, complex issue, or problem. This tool able to help and give researcher recommendation or solution those are

- Understand important fact of ambiguous data
- Reduce/Tame Complexity
- Identify relationship and themes in data
- Create hierarchies for each data
- Fasten the process to develop innovative solution
- Improve effectiveness and efficiency of the process

However, this method also has some weaknesses, which are if it physical/analog type of data, it will be time-consuming, and if the data are too diverse. To conduct an affinity diagram, the most effective result is by having a related user/stakeholder with some experience in it; currently, many websites/platforms can be used to make affinity diagram that the process follows.

1. After the brainstorming session, record the data individually in sticky notes, form or other media either online or offline
2. Sort the ideas into a group based on the similarity
3. Make the header and super header for each sub-group and group

2.5 Task Analysis

Task Analysis is a tool/technique to systematically identify and breaking down complex/big tasks into a smaller step/action; it used to identify the action and cognitive processes (task identification and categorization) required for a user to complete a specific procedure. It is a tool that can use throughout the design process that used for (Hackos & Redish, 1998)

- Understand the user goals and what they want to achieve
- The procedure/steps taken in order to achieve their goals

- What personal, social and cultural factor users bring to the task
- How user influenced by the environment to meet the goal
- How user knowledge and experience influence the workflow

Therefore those result able to give a better understanding to improve the new product/service appropriately that evaluated by preventing error, reduce the complexity/difficulties, change the information flow, decide the best application interface, redefine the navigation, and many others depending on the intention of the evaluator.

There are several types of task analysis Goals Operators Method Selection (GOMS), Conceptual task analysis, Timeline analysis, tabular task analysis, and many others that divided into three categories, which are technical methods, conceptual methods, and work process method. The most common use of task analysis technique (Crystal & Ellington, 2004). Below are the explanation of Hierarchical Task Analysis and Cognitive Task Analysis that the more comprehensive comparison is shown in Figure 2.11

- Hierarchical Task Analysis (HTA) was first introduced in 1967 by Annet and Duncan to evaluate an organization's training needs. This task analysis focus on decomposing a compound such as planning, diagnosis, and decision making task into subtask and operation. The process is identifying tasks, categorization, identifying subtask, and check the accuracy of the model. It used for interface designers because it provides an analytical framework and practical tool for the designer.
- Cognitive Task Analysis (CTA) focuses on the understanding task that requires decision making, problem-solving, attention, and judgment to uncover cognitive activities. Examples of the technique are structured interview, observation, ethnography contextual inquiry. Compared to HTA, CTA has increased an understanding of many critical cognitive aspects. However, it is still unclear that the effectiveness or efficiency of these aspects, and it requires much time also resources in real task situations.

	Technique	Efficiency	Effectiveness	Evidence
Technical	HTA	▪ Decomposes complex tasks into subtasks ▪ Complex activities demand extensive hierarchy construction/charting	▪ Improves problem diagnosis and useful for concurrent operations ▪ Does not account for system dynamics	MacLean et al., 1991 Annet and Stanton, 2000 Hollan et al., 2000 Shepherd 2001
	GOMS	▪ Requires detailed analysis of keystroke level interaction	▪ Improves productivity ▪ Not applicable to broader problems ▪ Ignores contextual factors	Card et al., 1983 Preece et al., 1994 John and Kieras, 1996
Conceptual	CTA	▪ Defines a coherent knowledge representation for the domain being studied ▪ Requires deep engagement with a particular knowledge domain	▪ Increases the understanding of cognitive aspects of the task ▪ Captures task expertise ▪ Fails to fully incorporate learning, contextual and historical factors	Barnard and May, 2000 Chipman et al., 2000 Dubois and Shalin, 2000
Work-Process	Activity Theory	▪ Analyzes the activity, not the task, implying a potentially great increase in scope and complexity ▪ Requires near-ethnographic knowledge of culture	▪ Accounts for learning effects ▪ Extends scope of technology ▪ Requires a high level of abstraction ▪ No disciplined set of methods ▪ Difficult to apply systematically	Kuutti, 1996 Hollan et al., 2000

Figure 2. 11 Type of Task Analysis

Source: (Crystal & Ellington, 2004)

2.6 Statistical Method

A statistic is a knowledge and tools related to data collecting, data processing, data analysis, and concluding to make a decision based on the data and the fact that obtained. There are two statistical methods: descriptive statistics and inferential statistics; below are the further explanation of those methods (Groebner, et al., 2013).

- Descriptive Statistic

  A descriptive statistic is discussing obtaining data, summarize, measure, and displaying data obtained from experiments and observation to obtain a more comprehensive understanding regarding the information implied in the data. The objective of statistic descriptive is to help to display the pattern of the data, either qualitative or quantitative, to give a better understanding of the observant using the numerical or graphical method without related to the decision making process.

- Inferential Statistic

  Inferential statistics discuss how to analyze and drawing a conclusion to make a decision based on the parameter, variable, and

hypothesis from a sample of data. There are two categories of inferential statistics, which are parametric statistics and non-parametric statistics. The first category is to test a population parameter (α, β, etc.) or sample data that is most suitable for ratio or interval type of data measured by the mean; the benefit is that it can draw more conclusions to be analyzed. However, there are a specific distribution that need to be followed. The second category is the non-parametric statistics. It is suitable for ordinal and nominal data that best represent by a median. Even though the results may not as detailed as parametric statistics, the data does not need to follow a specific distribution so that the application will be more extensive. A hypothesis is an argument from a person that is based on the understanding; in an experiment, those hypotheses will be tested whether it is going to be accepted or rejected. There are two types of hypotheses: the initial hypothesis (H0) and the alternative hypothesis (HA); the difference is H0 is an initial argument on the experiment. The alternative hypothesis is the opposite argument to the initial hypothesis. To conduct a hypothesis testing, there are several of method that can be used depends on the objective of the experiment such as in parametric statistic there are Student T-tests, Z Test, Analysis of Variance (ANOVA), regression, correlation, and others. For non-parametric statistics, there are Kruskal Wallis, Median Test, Spearman Test, Wilcoxon-sum rank test, and others. In this research, the method that will be used is ANOVA that will used to know the difference between multiple populations, including the significant factor that effects the population. There are two types of ANOVA tests: one-way ANOVA and Two-Way ANOVA, in which the difference is the number of observed variables. In this research, the independent variable is more than 1, so it used Two-Way ANOVA. One of the developments of ANOVA method is MANOVA (Multivariate Analysis of Variance), it is a generalization of ANOVA that used to measure the significance of two or more dependent variable at one time, MANOVA can reduce type I (α) error and able to give a better understanding about the interaction.

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CHAPTER 3
RESEARCH METHODOLOGY

This chapter explains the methodology of this research. It is used to show the systematic plan of the research in the form of flowchart that is explained narratively, also explained the design of the experiment, method development.

3.1 Research Flowchart

Research needs to follow a necessary procedure because it will provide a guideline for the research so it can be systematic, efficient, and structured. In the following figure 3.1 are the procedure in conducting the research that will be explained deeply in the next sub-chapter.

Figure 3. 1 Research Flowchart

3.2 Determine Streaming Service Platform

The popularity of streaming service platforms started in the early 21st by Hulu and Netflix. Since then, many streaming service was emerge to compete with one and each other, currently there is over 200 streaming service that exists in the whole world. In Indonesia, the popularity of streaming service was started by Netflix in 2016 since then there is over nine streaming service available in Indonesia.

3.3 Design of Experiment

Variables are divided into two categories which are independent and dependent variable. Independent variables that is a variable that can be manipulated and dependent variable is the output that caused by the independent variable that can not be manipulated.

3.4 Participant Recruitment

There are two kinds of participant to evaluate this research; each of the participants need to follow fulfill some of the recruitment regarding the background and skill to be able to participate in this research. The first one is an expert to conduct the Heuristic Evaluation Method; there is two recruitment that needs to be fulfilled from the evaluator to be classified into an expert. The first one is a person with a related degree about UX, such as information systems, computer engineering, or computer science.

3.5 Method Development

In both of the methods used in this research, since it was first introduced, it was developed by many developers to suit their specific objectives. This method has a guideline for the evaluator to evaluate the product/ service. However, those guidelines cannot be applied in all cases because different cases have different objectives, since then many heuristic guidelines emerged that is more suitable to different context and objectives to improve their effectiveness and efficiency (Yeratziotis & Zaphiris, 2017; Bader, et al., 2017).

3.6 Data Collection and Processing

The data collecting process from both of the perspective started with the personal information and the willingness sheet. The location for the MPRC method is flexible, but it must be conducted offline due to the certain data that can be obtained in direct observation, for Heuristic Evaluation Method, it can be online or offline depends on the availability of the respondent.

3.7 Data Analysis and Recommendation

The data that have been processed in the previous sub-chapter will be further analyzed to gain more insight regarding the experiment. The first analysis is focused on the effect of all the factor. The second one is to see the similarities/ differences between the two perspectives in the final result. The two affinity diagrams between the user and the expert perspective will be compared to gain insight into similarities or differences. Both of the previous analyses will be used to give a more detailed factor and background/ reason regarding the difference/similarities tendency about the user and expert review result. The final result is to give a comprehensive recommendation and evaluation for Netflix to improve their UX by combining both of the affinity diagrams into one to improve its UX.

3.8 Conclusion and Suggestion

The last step of this research is to conclude the research based on the research objective that already has been stated in Chapter 1. Then the suggestion will be given regarding the research, result, or the flaw that happened across this research. The suggestion is given to guide and improve the UX topic that will be conducted in the future.

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CHAPTER 4
DATA COLLECTING AND PROCESSING

This chapter provides information about the data collection and data processing result. It consists of two main sub-chapter, which are user and expert data. Each of them will consist of data recapitulation and processing.

4.1 User Data Recapitulation and Processing

In this subchapter, the data obtained from the user perspective, both qualitative and quantitative, will be processed.

4.1.1 User Data Recapitulation

In the user data perspective, due to the COVID-19 pandemic (Coronavirus diseases), the data collection process was changed, wherein the initial planned the data collecting process will be conducted offline in the Ergonomic and Work System Design Laboratory, Industrial and Systems Engineering Departement, Sepuluh Nopember Institute of Technology (ITS) because there is performance scores variable that needs to be measured directly with a stable connection. In the contingency planned, it was changed by removing the performance scores variable so it can be conducted entirely online. In table 4.1 is contained all the independent variables that have been adjusted to suit the data collecting process. So the procedure is the participant will be completing the Job-Task-Analysis shown in table 4.2 in Netflix, and the evaluator will be observed/checked it using a zoom application. After that, the participant can fill the questionnaire.

Table 4. 1 Adjusted Independent Variable

No	Independent Variables	Detail
1	Gender	Female, Male
2	Academic major	UX Related, Non UX Related
3	Experience	Daily User, New User

Table 4. 2 Summary of Job Task Analysis in Netflix

Netflix	
Job Task Analysis	
No. Task	**Task Activity**
1	**Sign In**
2	**Search for a Movie/TV Show**
2.1	*Manually looking in the homepage*
2.2	*Using Search Feature*
2.3	*Based on genre*
2.4	*Use "More Like This Feature"*
3	**Watch a Short View**
4	**Read a Synopsis and Details**
5	**Watch Trailer**
6	**Adjusting the Film (All the setting that available)**

**Complete tables shown in the hard copy of the thesis/published journal*

The participant data need to have a specific requirement that shown in the balance design theory that used a combination of the dependent variable. After one month the data that was obtained is 66 participant, that the majority of the participant is bachelor degree university student age 18-23 in their 4th-year study in ITS Surabaya that has experience using the streaming service platform. In table 4.3 is the recapitulation of the demographic data of the participant that have been converted based on the determined independent variables.

Table 4. 3 User Data Recapitulation

User Id	Gender	Academic major	Experience
UP-4	Male	UX Related Degree	Daily User
UP-7	Male	UX Related Degree	Daily User
UP-10	Male	UX Related Degree	Daily User
UP-44	Female	Non UX Related Degree	New User
UP-50	Female	Non UX Related Degree	New User
UP-54	Female	Non UX Related Degree	New User
UP-56	Female	Non UX Related Degree	New User
UP-57	Female	Non UX Related Degree	New User
UP-59	Female	Non UX Related Degree	New User

**Complete tables shown in the hard copy of the thesis/published journal*

The recapitulation data have been sorted based on the combination of the independent variable. Based on the data recapitulation the demographic of the participant that is related to the independent variable can be shown, which are gender, a academic major and experience that shown in figure 4.1, 4.2 and 4.3.

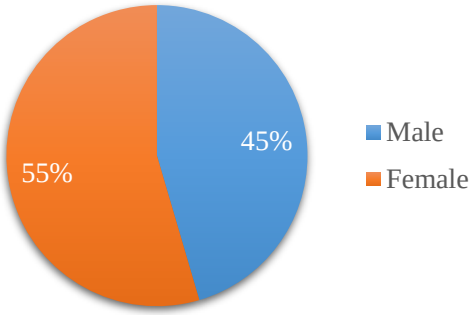

Figure 4. 1 Demographic User Participant Based on Gender

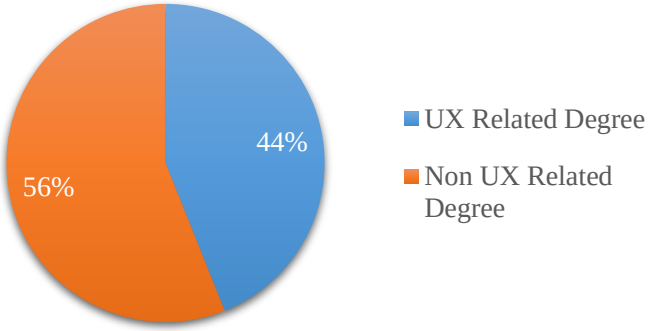

Figure 4. 2 Demographic User Participant Based on academic major

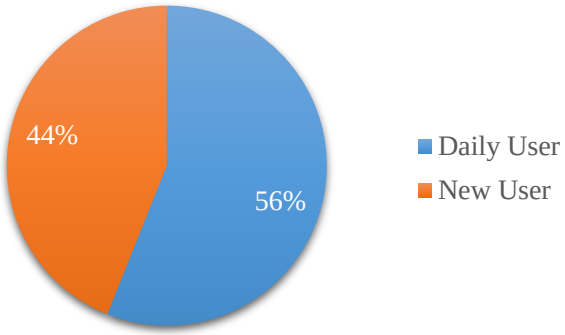

Figure 4. 3 Demographic User Participant Based on Netflix Experience

Based on the number of participants based on gender, the number of female participants is larger than the male ones, which is 36 and 30 participants. Where the data based on the academic major shown that the participant that have a similar percentage as the previous graph, which participant that has UX related study is 29,

and the participant that does not have UX related study is 37. The last demographic is based on the experience in Netflix; based on the graph is shown that the new user has a smaller number than the daily user, which about 29 and 37 participants. The other data that was obtained from the questionnaire the factor effecting the user choice. Graph 4.4 also shown the factor that effects the user choice in choosing their streaming service platform.

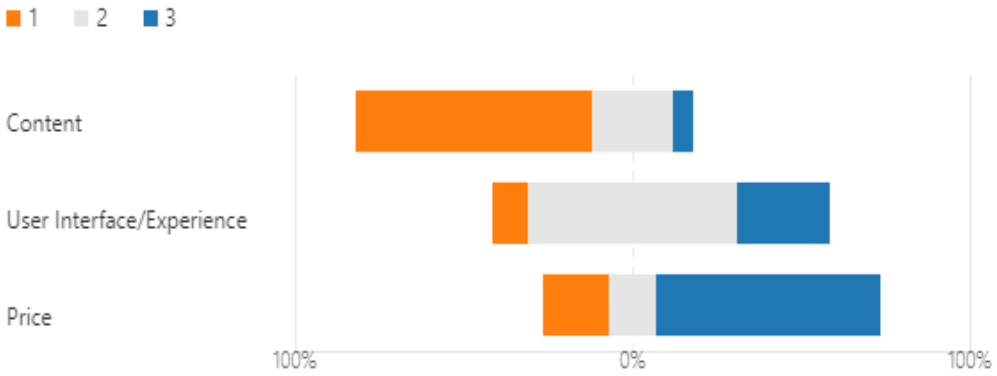

Figure 4. 4 Main Factor that Effect User Choice

There are three main factors which content, user interface/experience, and price. The 1-3 number is indicating the priority of each factor, which 1 has the most substantial effect, and 3 have the least effect on the user. Then the main data that will be used to do statistical testing is the number of pragmatic and hedonic words that counted in each participant, either positive or negative. In table 4. 4 is the recapitulation of the data in each category.

Table 4. 4 Number of Pragmatic and Hedonic Words (User Perspective)

User Id	Pragmatic Positive	Pragmatic Negative	Hedonic Positive	Hedonic Negative
UP-4	3	1	2	1
UP-7	4	2	3	1
UP-10	4	0	2	2
UP-56	3	1	2	2
UP-57	3	1	3	1
UP-59	5	1	3	1
Total	226	79	164	70

**Complete tables shown in the hard copy of the thesis/published journal*

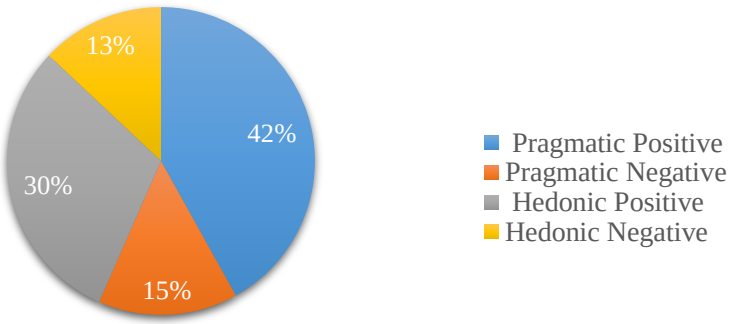

Figure 4. 5 Percentage of Pragmatic and Hedonic Words (User Perspective)

In total that shown in the figure 4.5, it is shown that the user has a good impression on Netflix; it is shown that the number of positive perception is overtaking the negative words both in pragmatic or hedonic. In the aspect of negative perception, it showed a similar result with it lean towards the pragmatic negative. In each category, both pragmatic and hedonic levels, there are around 8-9 words that can be chosen by the participant that represents their feeling. In graph 4.6 until 4.9 is the recapitulation of user choice in each category to show which words that chose by the participant the most.

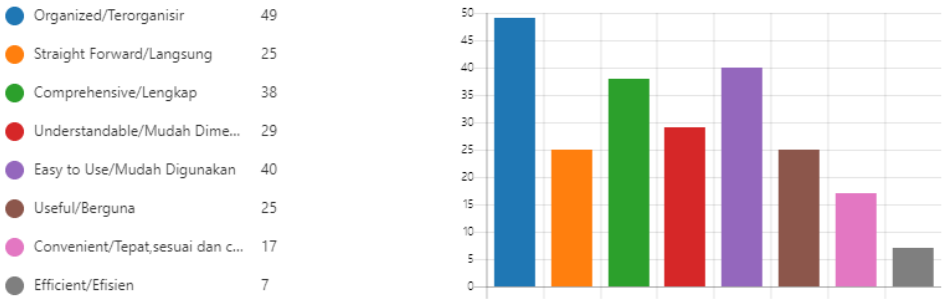

Figure 4. 6 Number of Pragmatic Positive Words

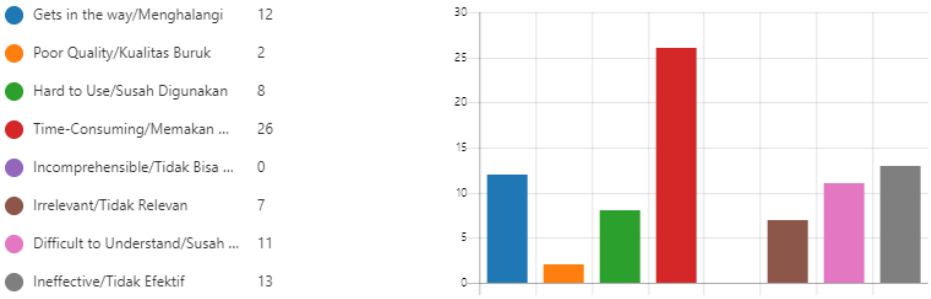

Figure 4. 7 Number of Pragmatic Negative Words

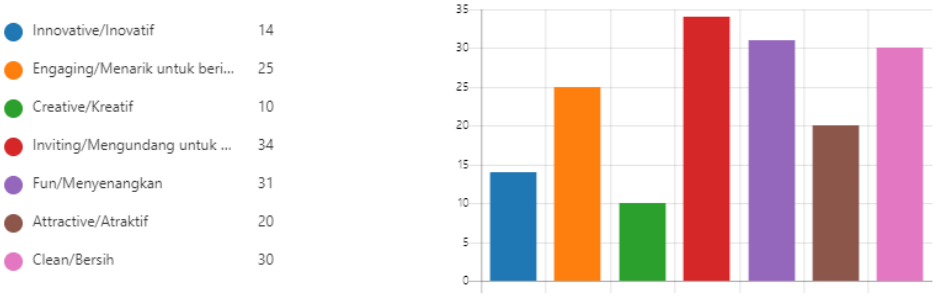

Figure 4. 8 Number of Hedonic Positive Words

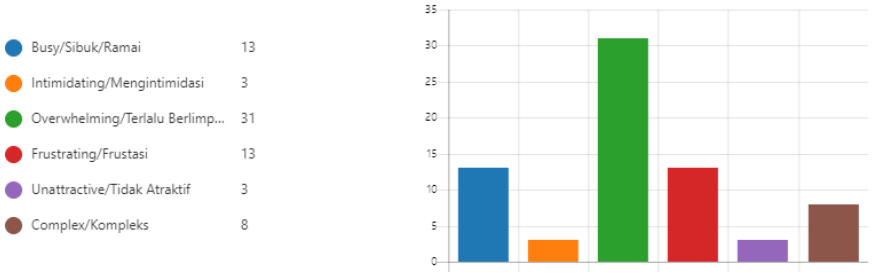

Figure 4. 9 Number of Hedonic Negative Words

From the positive graph both in pragmatic and hedonic, it has shown the choice of words varies between one and another, while in the negative category, it has shown there are certain words that mostly chosen by the user wherein the pragmatic aspect is time-consuming, and the hedonic aspect is overwhelming. The last data that will be recapitulated is the qualitative data that concerned with user clarification regarding their choice of words. In table 4.5 is the example of user clarification in those four categories.

Table 4. 5 The Clarification of the User Participant

User Id	Pragmatic Positive	Pragmatic Negative	Hedonic Positive	Hedonic Negative
UP-4	1. Organized because the placement of each icon, content easy to find and very user friendly 2. Understandable because I can easily understand the meaning of each feature 3. Easy to Use because the film are divided into each section so it easy to find and efficient.		1. Engaging because the platform have section for movie categories which makes the user engaged to try each film available in it 2. Fun because have several audio and subtitle in multi language choice, therefore it will be more fun to learn new language while also watching movie	1. Overwhelming because there too many films to be watch so it is often confuse the user to pick a movie
UP-50	1. Understandable because all the feature is self-explanatory and easily understand 2. Easy to Use because the layout of the section, feature and also content is tidy and neat, so new user can adapt as soon as possible	1. Time Consuming because if we want to see the trailer or other episode we need to click down arrow first, this make almost 3 step to do it	1. Inviting because complete feature and content make people want to try those platform 2. Attractive because some of the feature is unique and the layout is great the combination the color and the shape of the layout	1. Busy because in the homepage there are too many movie/tv show that make the page looks really crowded, it gotten worse because there is a popular movie that shown with bigger poster even though it's not suit with my taste

The clarification was made in each category, and the quality of the answers is different from each of the participants. These evaluations will be summarized using the affinity diagram and will be used as a primary consideration for further recommendations for Netflix or other streaming service platforms.

4.1.2 User Data Inferential Statistic testing

There are two types of statistical testing, the first one is Non-Parametric Test is a branch of statistic that is usually called distribution-free test because it does not follow a specific distribution, this test suitable if the data is better represented by median and the type of sample data is ordinal or nominal data, while parametric

statistic is a test that assume the data follow specific distribution, this test suitable if the data is better represented by mean and the sample data is interval or ratio (Groebner, et al., 2013). In this research, one of the research objectives is to obtain the factor that effects user perception towards the platform to know the factor that effects the user perception result there is a various test that can be used, in this research it will use ANOVA and MANOVA for parametric statistic. In the table 4.6 is the recapitulation of the independent variable that affect the dependent variables both in ANOVA and MANOVA.

Table 4. 6 ANOVA and MANOVA Results

Independent Variable	Dependent Variable	Significant Value
Academic major	Pragmatic Positive	0.028
Gender*Experience	Hedonic Negative	0.09
	Hedonic Variable	0.011
	Negative Variable	0.032
	All Variable	0.04

**Complete tables shown in the hard copy of the thesis/published journal*

It shown there are only two variables that able to affect the dependent variable which are academic major and the combination of gender and experience. For the ANOVA result both of the indpendent variable affect the pragmatic positive and hedonic negative variable, a post-hoc test will be done to see the difference in each level within the independent variable itself that shown in the table 4.7 and 4.8.

Table 4. 7 Tukey Test Result for Pragmatic Positive

Dependent Variable	Tukey Test Result				
	Academic major	N	Mean	Grouping	
Academic major	Non UX Related Degree	24	3.625	A	
	UX Related Degree	24	2.95833		B

Table 4. 8 Tukey Test Result for Hedonic Negative

Dependent Variable	Tukey Test Result				
	Academic major	N	Mean	Grouping	
Gender*Experience	Male Daily User	12	1.41667	A	
	Female New User	12	1.33333	A	B
	Male New User	12	1	A	B
	Female Daily User	12	0.66667		B

It shown that for the academic major the Non UX Related Degree participant tend to choose higher number of words in the pragmatic positive aspect. While for the combination of gender and experience Male Daily User tend to choose higher number of words rather than female daily user.

4.1.3 User Data Affinity Diagram Development

The total number of qualitative data is following the number of words in each category. Therefore in total, there are 226 pragmatic positives, 79 pragmatic negatives, 164 hedonic positives, and 70 hedonic negative qualitative data that will be sorted using affinity diagram. The affinity diagram will be based on the theme/keyword that suitable for each evaluation. First, all the qualitative data from pragmatic and hedonic categories from the user clarification will be merge and sorted based on the certain themes of the evaluation. This process is to ensure that all the evaluation is already sorted based on each theme. In these table 4.9 and 4.10 are all themes that have been generated from the evaluation.

Table 4. 9 Affinity Diagram Development in User Perspective (Positive Evaluation)

Evaluation	Example of User Clarification			Total
It Have Many Category and Genre that Netflix Organized Film Into It	it place the movie in an organized place according to its category	a lot of categorization based on genre	Netflix already classified the movie in some categories	56
All the Interface and Tools is Easy to be Found, Used and Self-Explanatory	interface is easy to understand and use	I can explore the interface easily	all the function is easy to understand	46
Smooth, Interactive and Fast Pageless Interaction	The transition is great	the interaction is interesting, small loading time, no page transition	it's fun for just playing around in the interface	24
There are Many Useful Shortcut in Each Page or Video Playback	many shortcut is directly in the interface	it's easy to change the setting in the video playback	feature from simple to complex	22
Seamless Interaction with no ad, sudden unrelated pop up or others	it doesn't have any ad	it doesn't have any ad/unknown video/pop up that shown in other platform	no annoying pop up/ad or others	21
It Have Complete and Essential Feature	all the feature is essential and not wasteful	all the feature is essential for user	feature that available is complete	21

Table 4. 9 Affinity Diagram Development in User Perspective (Positive Evaluation) (Cont)

Evaluation	Example of User Clarification			Total
It Have Many Original Feature	this platform experience such as Netflix party	many feature is different with other streaming service	some of the feature is unique	20
The User Interface and Navigation is Well Structured/Tidy/Neat	the layout is tidy and categorized	the overall interface looks neat and clean	there layout are well organized	19

**Complete tables shown in the hard copy of the thesis/published journal*

Table 4. 10 Affinity Diagram Development in User Perspective (Negative Evaluation)

Evaluation	Example of User Clarification			Total
Too Many Content that Shown in the Main Page	it have to many content that shown in the homepage	Content shown in one page is too much	too much information or movies displayed in home screen	34
No Tutorial Available Makes it Difficult/Time Consuming to Understand All of It	no tutorial so the user will need to adapt and explore by themselves	I need to adapt with with the feature especially moving to other episode in the video playback	there will be a learning curve until user can operate it optimaly	20
There are Some Inconsistency and Bad Navigation	to see the detail from a movie/TV show is not as suitable with the user habit	There is a rating feature but no number of likes and dislikes are shown for the film	if we want to have kids filter shortcut we need to add a new profile then the pop up will showed up. This is difficult because there are no clue/instruction	15
Repeated Suggestion in Category and Content	too many repeated suggestion that being displayed	Netflix suggestion is too much, that make me confused	to many repetition that make frustrated when I want to find a movie	12
Too Many Unique Category	too many categories make me confused	category shown in one page is too much	too many unique category that make it confusing,	11

Table 4. 10 Affinity Diagram Development in User Perspective (Negative Evaluation) (Cont)

Evaluation	Example of User Clarification			Total
The Automatic Played Video is Disrupt the Experience	the video that automatically played in the home page is really unexpected in the bad ways	There is an automatic video play feature that users don't really want to see	it gotten worse because there are some movies that automatically played (short view)	9
Inaccurate Recommendation	some of the recommended film is not accurate enough for my taste	sometimes the content recommendation is not suite with my taste	to many suggestion make me want to watch less	8

**Complete tables shown in the hard copy of the thesis/published journal*

It obtained there is 18 theme of evaluation in positive categories and 16 themes of evaluation in negative categories. In the process of the development, there is 5 additional theme in positive categories and 3 in negative categories, and those themes were not included in table 4.9 and 4.10 because all the evaluation was not concerned about the user experience that evaluated. The final step is to rank all themes of the evaluation. In table 4.11 and 4.12 is the recapitulation of categorization and rank of the theme of the evaluation.

Table 4. 11 Categorization of the Evaluation in User Perspective (Positive Evaluation)

Category		Evaluation	Total
Positive	**Pragmatic**	It Have Many Category and Genre that Netflix Organized Film Into It	56
		All the Interface and Tools is Easy to be Found, Used and Self-Explanatory	46
		Smooth, Interactive and Fast Pageless Interaction	24
		There are Many Useful Shortcut in Each Page or Video Playback	22
	Hedonic	Seamless Interaction with no ad, sudden unrelated pop up or others	21
		It Have Many Original Feature	20
		Give a Perzonalized Recommendation	18
		Minimalist Design	18

**Complete tables shown in the hard copy of the thesis/published journal*

Table 4. 12 Categorization of the Evaluation in User Perspective (Negative Evaluation)

Category		Evaluation	Total
Negative	**Pragmatic**	No Tutorial Available Makes it Difficult/Time Consuming to Understand All of It	20
		There are Some Inconsistency and Bad Navigation	15
		Repeated Suggestion in Category and Content	12
		Video Playback Difficulties	7
	Hedonic	Too Many Content that Shown in the Main Page	34
		Too Many Unique Category	11
		The Automatic Played Video is Disrupt the Experience	9
		Inaccurate Recommendation	8

**Complete tables shown in the hard copy of the thesis/published journal*

These affinity diagrams and the one that will be made based on the expert evaluation will be merged to give a more comprehensive assessment to generate recommendation toward Netflix or other streaming service platform.

4.2 Expert Data Recapitulation

In this subchapter, the data obtained from the expert perspective in qualitative data will be recapitulated using an affinity diagram.

4.2.1 Expert Data Recapitulation and Descriptive Statistic

In the expert data recapitulation, the initial planned was conducted online, and there were no changes that will be implemented in the contingency plan. Therefore the data recapitulation follows the initial idea, which the evaluator will distribute Netflix account and all the documents that needed, then the participant can conduct a self-evaluation within 14 days. After one month of data collection, there is 10 participant that participated in the experiment. In table 4.13 is the recapitulation of the demographic of the participant.

Table 4. 13 Expert Data Recapitulation

User ID	Gender	Occupation	Academic major	UX Experience
EP-01	Male	Final Year Student	Information System	1. UX Research 2. Freelance UX Designer 3. UX Project
EP-02	Male	Final Year Student	Telecommunication Engineering	1. Product Owner Designer in Independent Company 2. UX Project

Table 4. 13 Expert Data Recapitulation (Cont)

User ID	Gender	Occupation	Academic major	UX Experience
EP-03	Female	Final Year Student	Information System	1. UX Focused Study 2. Internship UX Project 3. UX Research
EP-04	Female	Final Year Student	Computer Engineering	1. UX Designer in Independent Company 2. UX Focused Study 3. UX Project

**Complete tables shown in the hard copy of the thesis/published journal*

The recapitulation of the data will be presented using a pie diagram to give a better presentation towards the demographic of the participant. In figure 4.18 and 4.19 are the percentage participant based on gender and academic major.

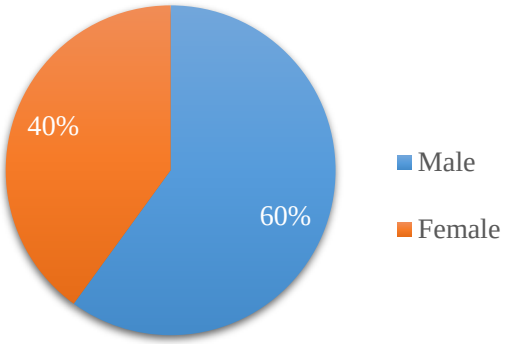

Figure 4. 10 Demographic Expert Participant Based on the Gender

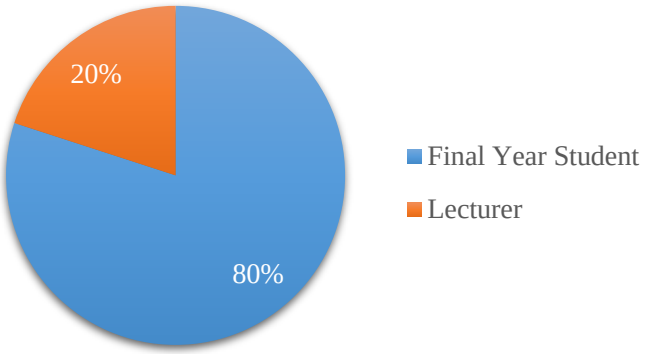

Figure 4. 11 Demographic User Participant Based on Main Occupation

Based on the graph, it is shown that the number of female participants is more significant than the male participant, which six compared with four; also, the

majority of them is final year student. Then the main data that will be used to do descriptive statistical testing to see the tendency of expert perspective is the number of pragmatic and hedonic words identified by the expert participant. In table 4. 14 is the recapitulation of the data in each category.

Table 4. 14 Number of Pragmatic and Hedonic Words (Expert Perspective)

Heuristic	Category			
	Pragmatic Positive	Pragmatic Negative	Hedonic Positive	Hedonic Negative
H1	29	6	11	7
H2	23	9	11	7
H3	23	9	20	6
H4	14	7	9	4
H5	15	6	6	2
H6	19	4	10	4
H7	21	6	14	8
Total	202	71	130	58

**Complete tables shown in the hard copy of the thesis/published journal*

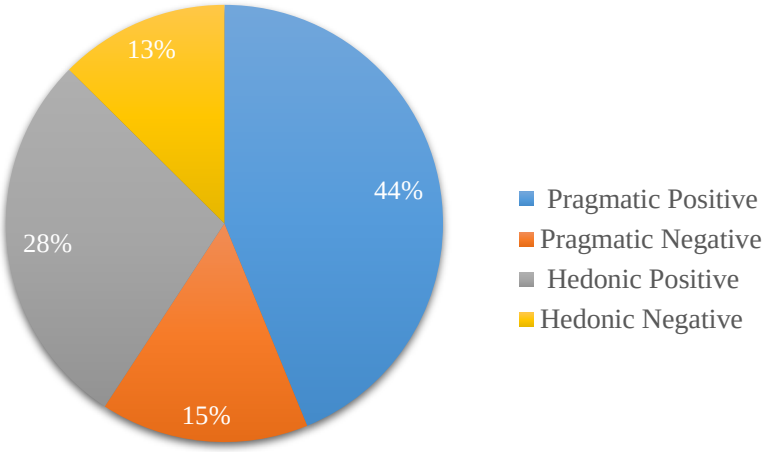

Figure 4. 12 Percentage of Pragmatic and Hedonic Words (Expert Perspective)

In total, it was shown, that the expert has a good impression towards Netflix; it is shown that the number of positive perception is overtaking the negative words both in pragmatic or hedonic. In the aspect of negative perception, it showed a similar result with it lean towards the pragmatic negative. The last data that will be recapitulated is the qualitative data that concerned with the expert explanation regarding their self-identification about potential problems in the system. In table 4.15 is the example of an expert explanation in those four categories.

Table 4. 15 The Explanation of the Expert Participant

Inostroza Heuristic Guidelines					
ID	**Heuristic**	**Aspects**			
		Pragmatic		**Hedonic**	
		Positive	**Negative**	**Positive**	**Negative**
EP-01	H1	System give an appropriate feedback towards the system such as: 1. Loading Time 2. Progress Bar in a series that being watched 3. Like and Dislike series 4. Add to playlist 5. Status profile that used to open Netflix		1. Most of the status shown because of the interaction from user and the platform. This makes it motivating and attractive.	1. System status in My list using element that randomized and unfriendly
EP-02	H5	1. Confirmation appears when trying to do something important, such as making payments and changing membership plans			
EP-3	H11	1. Provide a FAQ about the error that frequently faced by the user.		1. The help center page stores error messages that users have experience.	

The explanation was made in each category are based on each self-identification of the system, so the variety is different between one and another expert. These evaluations will be summarized using the affinity diagram. They will be used as a primary consideration to give a further recommendation for Netflix or other streaming service platform based on the expert perspective.

4.2.2 Expert Data Affinity Diagram development

The total number of qualitative data is following the number of words in each category, and therefore in total, there are 202 pragmatic positives, 71 pragmatic negatives, 130 hedonic positives, and 58 hedonic negative qualitative data that will be sorted using affinity diagram. The affinity diagram will be based on the theme/keyword that suitable each of the evaluation. First, all the qualitative data from pragmatic and hedonic categories from the expert clarification will be merge and sorted based on the specific themes of the assessment. This process is to ensure that all the evaluation is already sorted based on each theme. In these tables, 4.16 and 4.17 are the all theme that has been generated and some of the examples regarding user clarification.

Table 4. 16 Affinity Diagram Development in Expert Perspective (Positive Evaluation)

Evaluation	Example of Expert Clarification			Total
There are Many Useful Shortcut in Each Page or Video Playback	There are many shortcut to do many things such as exit, pause and others.	Able to control stop, pause, and next when watching the film easily. The icons also easy to find.	There are "Skip Intro", "Watch Credit", and "Next Episode" features that can save users time.	56
It Provides Help Feature (Page and Live Chat) That Easy to Use	Call Us and Live Chat features are available on the help center page	There is a Help Center to help overcome problems that might occur	there is a help center page and clear information	27
It Provide All Movie Details and Easy Way to Access It	Give a familiar experience such with a physical product. By choosing/hovering the film we can see all the details.	Information about new episodes in the film poster makes users don't need to guess whether the film already has a new episode or not.	There is a menu that displays the synopsis of all episodes in one season	26

**Complete tables shown in the hard copy of the thesis/published journal*

Table 4. 17 Affinity Diagram Development in Expert Perspective (Negative Evaluation)

Evaluation	Example of User Clarification			Total
The Shortcut is too Default/Basic and Can't be Cuztomized	There's a limited user control or customization	The user doesn't have the freedom to make a custom list/shortcut	There are no shortcuts to display favorite genre	16
Inconsistent/Unhelpful Warning and Helping Message	In some experiences when a user gets an error message but there is no message to recover from error.	Does not display warning messages	The choice of assistance provided is limited to an existing list.	13
No Tutorial Available Makes it Difficult/Time Consuming to Understand All of It	It takes time to get used to the control of choosing episodes because of the many controls	The desire to explore too much information if not followed by the ability to sort out information	Not giving help or suggestion about how the system work on the main page.	10
There are Some Inconsistency and Bad Navigation	tab navigation overview, episode etc is positioned below and is almost invisible	Information for synopsis is often missed because the button to see synopsis is less clear in its differentiation with the action button for watching movies.	Navigation pane in each page is different.	10

**Complete tables shown in the hard copy of the thesis/published journal*

It obtained there is 22 theme of evaluation in positive categories and 27 themes for the assessment in negative categories. In the process of the development, there is one additional theme in positive categories; those themes were not included in table 4. 24 because all the evaluation was not concerned about the user experience that evaluated. The final step is to rank all themes of the evaluation. In table 4.18 and 4.19 is the recapitulation of categorization and rank of the theme of the assessment.

Table 4. 18 Categorization of the Evaluation in Expert Perspective (Positive Evaluation)

Category		Evaluation	Total
Positive	**Pragmatic**	There are Many Useful Shortcut in Each Page or Video Playback	56
		It Provides Help Feature (Page and Live Chat) That Easy to Use	27
		It Provide All Movie Details and Easy Way to Access It	26
		Automatically Detect an Error/Critical Action and Give a Warning Message	24
	Hedonic	Give a Perzonalized Recommendation	17
		Easy on the eye interface	13
		Simple Help Feature Design	11
		Follow User Habit (Use Cookies)	9

**Complete tables shown in the hard copy of the thesis/published journal*

Table 4. 19 Categorization of the Evaluation in Expert Perspective (Negative Evaluation)

Category		Evaluation	Total
Negative	**Pragmatic**	Inconsistent/Unhelpful Warning and Helping Message	13
		There are Some Inconsistency and Bad Navigation	10
		No Tutorial Available Makes it Difficult/Time Consuming to Understand All of It	10
		Video Playback Difficulties	5
	Hedonic	The Shortcut is too Default/Basic and Can't be Cuztomized	16
		Help Feature Design is Plain and Boring	8
		The Automatic Played Video is Disrupt the Experience	6
		My List Feature is Unstructured/ Randomized	6

**Complete tables shown in the hard copy of the thesis/published journal*

These affinity diagrams and user evaluation affinity diagram will be merged in the next sub-chapter to give a more comprehensive evaluation to generate recommendation toward Netflix or other streaming service platform.

4.3 Combined Affinity Diagram

After developing an affinity diagram based on the user and expert review, the last procedure is to merge both of them into one more comprehensive evaluation towards Netflix both from the user and expert perspectives. It will be divided into positive and negative evaluations with two subcategories, which are pragmatic and hedonic. In table 4.20 and 4.21 is the final affinity diagram from both perspectives.

Table 4. 20 Final Affinity Diagram From User and Expert Perspective (Positive Evaluation)

Category		Evaluation	Total
Positive	**Pragmatic**	There are Many Useful Shortcut in Each Page or Video Playback	78
		It Have Many Category and Genre that Netflix Organized Film Into It	67
		All the Interface and Tools is Easy to be Found, Used and Self-Explanatory	62
		It Provide All Movie Detail and Easy Way to Access It	45
		The Icon, Language and Instruction is Easy to Understand	30
		All Main Content Directly Displayed in Every Page	27
	Hedonic	Give a Personalized Recommendation	35
		Easy on the eye interface	30
		Attractive Color	21
		Seamless Interaction with no ad, sudden unrelated pop up or others	21
		It Have Many Original Feature	20

**Complete tables shown in the hard copy of the thesis/published journal*

Table 4. 21 Final Affinity Diagram From User and Expert Perspective (Negative Evaluation)

Category		Evaluation	Total
Negative	**Pragmatic**	No Tutorial Available Makes it Difficult/Time Consuming to Understand All of It	30
		There are Some Inconsistency and Bad Navigation	25
		Video Playback Difficulties	12
		Inconsistent/Unhelpful Warning and Helping Message	13
		Repeated Suggestion in Category and Content	13
		It's Hard to Find a Certain Feature	9
	Hedonic	Too Many Content that Shown in the Main Page	40
		The Shortcut is too Default/Basic and Can't be Customized	16
		The Automatic Played Video is Disrupt the Experience	15
		Inaccurate Recommendation	12

**Complete tables shown in the hard copy of the thesis/published journal*

It obtained in a positive category, and there are 17 pragmatic and 14 hedonic themes of evaluation; in the negative category, there 17 pragmatic and 15 hedonic themes of assessment. All of this theme evaluation will be elaborated in the next sub-chapter to give a recommendation towards Netflix or other streaming service platform.

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CHAPTER 5
DATA ANALYSIS AND INTERPRETATION

This chapter discusses the interpretation analysis from the data collection and processing in the previous chapter, including both user and expert analysis in quantitative or qualitative data to answer the research objective.

5.1 User Data Analysis and Interpretation

In this research, the analysis will be concerned with all the user data that have been recapped and processed in the previous chapter.

5.1.1 User Participant Profile Analysis

In this experiment, the minimum amount of data that needs to be obtained is 32 participants. It's based on the observation in the previous research and the balance design theory by combining all the independent variables, which are gender, academic major, and experience of the participant. After the data collecting process that have been conducted the data that have been obtained is 66 participant. All the participant have age ranging from 18 until 23, and it contains 36 of the participant is woman, and 30 of them is a man. The majority of the participant is university student 52 participant is on 3rd-4th year, 3 of them is a 1st-year student, and 11 of them is graduated student, which the majority of the participant comes from Industrial and System Engineering Department, followed by computer science/information technology/information engineering and a small number of participant is a non-engineering student (public health, medical student, business management, etc, which makes the participant 56% of them is having a UX related topic of study and 44% of the participant doesn't learn/study about UX. All the participants have experience in using the streaming service platform, either illegal or legal services. But not all of them have experience towards Netflix; it is shown that only 56% of the participant can be categorized as a daily user and 44% for the new user. Based on the participant they also choose the main factor of choosing streaming service platform, even though the majority of the participant still select the content as their main priority but the user experience goes to 2nd priority compared the prices goes into 3rd. It means that user experience still plays a vital role in effecting the user choice.

5.1.2 User Quantitative Data Analysis

For parametric statistics, there are ANOVA one way, ANOVA two way, and MANOVA testing. For the first test, which is ANOVA one way it compares each independent variable towards each dependent variable. It has shown there are only one variable that value below α (0.028<0.05), it is academic major variable towards pragmatic positive variable, that means there is a significant effect between academic major for the pragmatic positive variable. In the academic major variable, there are two levels those are non UX related degree and UX related degree, and the Tukey test result is a non-UX result related degree tend to choose more pragmatic positive words than UX related degree. This result may happen because, with more experience and knowledge in UX, those participant is more careful/thoroughly and selective. The others variable such as gender and experience doesn't give a significant impact towards the dependent variable which are pragmatic positive, pragmatic negative, hedonic positive and hedonic negative variable.

The next test is ANOVA two way the result is there are only one variable independent that have a value below α (0.009<0.05), it is a combination of gender and experience towards negative hedonic variable, that means there is a significant affect between the combination of gender and experience variable for the negative hedonic variable. Because there is a variable that affects the result of the independent variable, therefore Tukey test will be conducted to know the difference of each level. In the combination of gender and experience variables, there are four levels, and the one that comes from different groups is male daily user and female daily user, while the other level comes from the same grouping, so there are no significant results between each of them. It is shown that male daily users tend to have more evaluation rather than female daily users. For other combination variable such as gender and academic major, academic major and experience, or academic major, experience and gender simultaneously doesn't give a significant impact towards each dependent variable.

For MANOVA result, there are several combinations of dependent variables that tested those are pragmatic variable (both positive and negative), hedonic variable (both positive and negative), positive variable (pragmatic and hedonic

positive), and all variable simultaneously. It has shown there are three combinations of the dependent variable that effected by the independent variable those are hedonic, negative variable, and overall variable. The dependent variable affected by the same independent variable that have value of below α, which is the combination of gender and experience variable. The value are 0.011 for the hedonic variable, 0.032 for negative and 0.040 for the overall variable. In table 5.1 is the recapitulation of the ANOVA and MANOVA results. While the others each or the combination of independent variable doesn't give a significant impact towards the result of the dependent variable.

Table 5. 1 Recapitulation of ANOVA and MANOVA result

Independent Variable	Dependent Variable	Significance
Academic major	Pragmatic Positive	Significant
Gender*Experience	Hedonic Negative	Significant
	Hedonic Variable	Significant
	Negative Variable	Significant
	All Variable	Significant

**Complete tables shown in the hard copy of the thesis/published journal*

There are several aspects that may affect the result of user experience those are user, social factor, cultural factor, the context of use, and product (Balasubramoniam & Tungatkar, 2013), the factor that observed in this research is focused on the user and cultural factor. The result of this research the academic major of the participant may affect the result of the pragmatic variable, this was the opposite with the previous research that was conducted by Tanja Merčun, et al. (2017), and Effie et al. (2009) where the background of the participant showed no differences in the pragmatic result overall result. Those differences can cause by all the previous research was conducted offline, so it easier to check and control the participant. However the further post hoc test indicating that less expert participants tend to choose more words of evaluation rather than expert participant, it is aligned with the previous research; it stated by Effie et al. (2009) that the more knowledge that related in UX, the more selective and critical the answer of the participant.

As for the combination of gender and experience variable that affect the result of the hedonic result, the further post-hoc test that comes from different

grouping indicates that male that is a daily user tend to choose more words of evaluation rather than female that is a daily user, it goes the same as the experience of the participant, it shown that new user has a higher words of evaluation rather than daily user. This result is aligned with the previous research, based on the Tanja Merčun and Maja Žumer (2017), the more the participant experienced with the platform, the observation will be more critical and lower. As for gender though it's small, it has a significant impact toward the result of hedonic quality (Diefenbach, et al., 2014), because female become more interested with a system that they find a socially/intellectually meaningful, where male prefer the action-oriented application; therefore the user interface, color, layout have a different impact towards each gender (MUNDORF, et al., 1993), that is why male that is a daily user tend to choose more words of evaluation rather than another combination of variables, it's because Netflix have a lot of activity within the interface and also interactive for the user.

5.1.3 User Qualitative Data Analysis

For in user data, the MPRC result, the tendency of the evaluation is the participant sees Netflix as an excellent platform with the positive words is 72% and 28% for negative words. The user participant focused more on the pragmatic aspect than hedonic evaluation in positive or negative findings, which is 57% pragmatic, compared with 43% of hedonic words. With the total words that gathered is 539, there are several words that have higher value rather than the others.

In the pragmatic positive shown the higher ranking words is organized with 49 participants with the rank number 2 is easy to use with 40 participant. Organized chosen by the participant because Netflix is able to organize all the content within many unique category and genre, so there are clear separation within one and other content. For the easy to use is because many of the content and feature are available directly within the main page, there is no confusing flow of interface or hidden feature. In the pragmatic negative, shown in the higher ranking words is dominated by time-consuming with 26 participants, with the next rank is ineffective and gets in the way with only 13 and 12 participants. The evaluation of time-consuming is because participant sees Netflix still lack some of the important features and not consistent enough within the interface. Hence, it took time to figure out or solve

their problem, for example, no personal time reminder, no tutorial to explain all the features, many icon/words that are too invisible, and others. Most of the ineffective evaluation is because there is still a lack of shortcuts that prevent users from achieving their goals, such as no option to adjust video quality and broken search features.

For the positive hedonic, shown the higher rank words inviting with 34 participants, with the next rank is fun with 31 participants. The inviting word evaluation comes from the comparison between Netflix and another platform, and the participant was invited because Netflix has many contents, good implementation, and features that the other platform doesn't have. For the fun evaluation, it's because emotionally when participant interacts with the platform, it makes them emotionally happy because of the interaction within the platform and feels more personalized because keep giving a recommendation based on the film history. For negative the hedonic words evaluation, it's dominated by overwhelming evaluation with 31 participants, with the next rank of evaluation is busy and frustration with 13 participants. For the overwhelming evaluation, all the participant sees there are too many contents shown on the first page that confuses the user and loses focus. For the frustrating, it mainly based on the new user because there is no tutorial, so it makes them need to find it by themselves, which sometimes they experience difficulties and also because the number of content that shows it makes them even frustrated. Based on the all finding evaluation both positive and negative, all the evaluation are filtered using affinity diagram to generate a certain theme based on the keyword both positive and negative. It obtains 12 pragmatic and six positive hedonic evaluations, and for negative evaluation, there are nine pragmatic and eight hedonic.

5.2 Expert Data Analysis and Interpretation

In this research the analysis will be concerned all the expert data that have been recapped and processed in the previous chapter.

5.2.1 Expert Participant Profile Analysis

In this experiment the minimum number of data that need to be obtained is 3 participant, it's based on the previous research where the participant is ranging

from 3 to 30 and also in this data perspective there is no independent variable that wants to be observed the effect of it towards the result; therefore, it follows the minimum number of a participant in the previous research. After the data collecting process that have been conducted the data that have been obtained is 10 participant. 40% of them are female, 60% are male, the demographic of the participant is 80% of them is final year student, and 20% of them is a lecturer in a university. Both the student and the lecturer is concurrently working/have a work experience related to UX.

5.2.2 Expert Qualitative Data Analysis

For expert data, the result of heuristic, the tendency of the evaluation result is similar with the user evaluation. The participant sees Netflix as an excellent platform with a positive evaluation finding is 72% compared with negative evaluation is only 28%. The expert participant also more focused on pragmatic evaluation rather than hedonic evaluation both in positive or negative findings, with the pragmatic evaluation is 59% compared with hedonic evaluation is only 41%. With the total finding is 461 evaluation, there are several heuristics that focused by the participant. For the pragmatic positive, all the participants focused on giving evaluation in heuristic one, which is the Visibility of System Status that is 14% of the total finding; based on the evaluation, Netflix shows a clear indicator of every action that the user took when interacting with the platform. While in the pragmatic negative there are two aspects that are the primary concern of the expert participant which both value 12.68%, the first one is heuristic two which is a match between system and the real world because there are many icons, feature and interface component that challenging to see, the Netflix doesn't follow the user habit (closing, opening, minimizing, etc.) and also lack of privacy between profile. The second heuristic that sees by an expert as negative aspect is heuristic three, which is a user control and freedom; most of the evaluation about it is regarding the user can't adjust the video quality. Even though heuristic 3 has a highest pragmatic negative value which is 15.38%, it sees by the participant it also has the highest hedonic value other than another heuristic, it happens because though they overlook a small detail regarding the video quality they still maintain all the user freedom in an interesting way, most of the evaluation such as all the icon and feature is intuitive,

there are many ways for the user to do or achieve one of a certain objective. The last aspect is hedonic negative, in which there are two heuristics, those are heuristic 7 and 9, with both of them value 13.79%. For heuristic seven which customization and shortcut, this one have the highest rank because Netflix hardly has customization in their platform user can't customize the content/category displayed, don't have an option to make a custom list or other shortcut, can't customize the layout, color and can't customize their feature. The second heuristic is heuristic nine, which is an aesthetic and minimalist design, and the main evaluation is focused on the number of content shown on the page that makes the interface less aesthetic.

Based on the all finding evaluation both positive and negative, all the evaluation are filtered using affinity diagram to generate a certain theme based on the keyword both positive and negative. It obtains 12 pragmatic and ten positive hedonic evaluations, and for negative evaluation, there are 15 pragmatic and 12 hedonic. While the highest finding in pragmatic or hedonic evaluation is important to determine which one of them need to be prioritized, but the lower finding of evaluation can't be ignored, because with the increasing number of evaluator it's expected there is some aspect that only found by a small number of the evaluator (Nielsen & Molich, 1990).

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CHAPTER 6
CONCLUSION AND SUGGESTION

This chapter consists of the research conclusion and recommendation according to the process performed during research.

6.1 Conclusion

In this sub chapter, the conclusion of this research will be answered based on the research objective that stated in Chapter 1.

1. Based on the user perspective, they sees Netflix as a positive and good streaming service platform that more goes into pragmatic rather than hedonic aspect. There are three independent variable and four dependent variable that observed, it shown that academic major show an significant impact towards pragmatic variable, because based on Effie et al. (2009) that the more knowledge and experience that related in UX, the more selective and critical the answer of the participant. The combination between gender and experience variable also able to give a significant impact towards hedonic negative, all hedonic variable, all negative variable and all variable. It's because based on Tanja Merčun and Maja Žumer (2017), the more the participant experienced with the platform, the observation will be more selective. As for gender female become more interested with a system that they find a socially/intellectually meaningful, where male prefer the action-oriented application; therefore the user interface, color, layout have a different impact towards each gender (MUNDORF, et al., 1993), thus why gender is sensitive on the result of UX. From the evaluation, an affinity diagram based on the keyword was generated to filtered and sorted out all the evaluation. It obtained 18 positive evaluation (12 pragmatic and 6 hedonic) and 17 negative evaluation (9 pragmatic and 8 hedonic)
2. Based on the expert perspective, they sees Netflix also as a positive and good streaming service platform that more focused into pragmatic rather than hedonic aspect. From the evaluation, an affinity diagram based on the keyword was obtained to filtered and sort all the evaluation. It obtained 22 positive evaluation

(12 pragmatic and 11 hedonic) and 27 negative evaluation (14 pragmatic and 13 hedonic)

3. There are no differences between the results of expert or user evaluation, Both perspective sees Netflix as an excellent platform. From user perspective the number of pragmatic words 59% compared with hedonic evaluation is 40%, for expert perspective the ratio is 57% pragmatic and 43% hedonic evaluation. It can be concluded that the user and expert evaluation is conformed within each other. For qualitative method the result is the expert have more variance of the evaluation and more detailed rather than in user participant.
4. The recommendation is based on the combined affinity diagram between each perspective and it obtained there are 30 positive evaluation (17 pragmatic and 13 hedonic) and 32 negative evaluation (17 pragmatic and 15 hedonic). Using all those evaluation, the comprehensive recommendation was obtained that varies from more general recommendation until more specific. It obtained there are 72 positive based recommendation and 83 negative based recommendation. The positive based recommendation will be used for Netflix to indicate a specific feature that need to be maintained and improved, also those evaluation also can be implemented/adapted by other platform as well. For negative based recommendation it indicates a feature that need to be added/fixed for Netflix or other platform.

6.2 Suggestion

In this sub chapter, the suggestion and evaluation towards this research that concerns about methodology, mechanism, and others will be explained.

1. Increase the number of independent variable that observed in the participant and if it the situation possible conduct an offline experiment to obtain quantitative variable that can increase the level of analysis
2. Generate a real mockup interface based on the recommendation and conduct a reliability testing to know the accuracy of the recommendation and evaluation.
3. Increase the number of participant both from user and expert perspective.

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AUTHOR'S BIOGRAPHY

Rachmad Irvan Syahputra was born in Surabaya, October 21st 1998. The writer was a student of Kendangsari 1 Elementary School, 12th Junior High School and 15th Senior High School in Surabaya, after graduated from Senior High School, the writer was accepted to study in Industrial and Systems Engineering Department, Sepuluh Nopember Institute of Technology (ITS) in Surabaya.

Through four years of pursuing a bachelor's degree, the writer was active in numerous academic and non-academic activities. The writer was involved in Industrial Engineering Student Association ITS (HMTI ITS) as the staff (2017/2018) and head of community service (2018/2019) in Social Community Department, he also involved in multiple committee project which are Save Village Project (2016/2017) in faculty level and ITS Expo 2017 in institutional level. Not only actively involved in activities within ITS but the writer also joined organization that focused in internationalization which AIESEC Surabaya as Exchange Participant Mentor (2017/2018) and Customer Relation Management Team Leader (2018/2019) in Outgoing Global Volunteer (OGV) Department. The writer also joined multiple volunteer activities as a teacher in YOUCAN Indonesia, IYALE in national scale and AIESEC Krakow in International Scale.

The writer was listed as a laboratory assistant of Ergonomic and Work System Design Laboratory since 2018/2019 odd semester until 2019/2020 even semester. The writer also was an intern at PT Garuda Maintenance Facility (GMF) AeroAsia and PT Dirgantara Indonesia, where the writer was assigned to conduct workforce management in PT GMF and established a workload methods and standard operation procedure in PT Dirgantara Indonesia. As a vibrant student, writer gained a several achievement such as: 1) Finalist in NBCC Business Case Competition, 2) Speaker in International Office ITS and Marine Transportation, 3) Most Acting Sustainably in AIESEC Surabaya. For any occasions or inquiries, the writer can be contacted via e-mail rchmadirvan@gmail.com.