

# A Preliminary Study : User Interface Design of Online Travel Booking Application

Nur Ani

Faculty of Computer Science, Universitas Mercu Buana, Jakarta Barat, Indonesia

## ABSTRACT

In recent years, area of software product development not only focused on features but also usability aspect. Software product must deliver the best user interface since it launched. To achieve this aim, the developers should realize application with suitable features and good interface based on user needs. This paper aim is to present user interface design for online travel booking application. This research is consisted of five phases, i.e. defining research problem, collecting literatures, designing research methodology, evaluating existing system, proposing of an initial model of user interface. As the research result, we proposed user interface of initial design that is consisted of main menu, content sliders, online booking form, body and footer. Main menu is designed by providing menu flight, hotel, train, travel add-ons, promo, register, login, and contact. Content sliders contained image about promo and favorite destination. The online booking is provided for many types based on order such as flight service, hotel service, trains service and so forth. The body of web contained information about favorite destination, promo and best offers. For footer presented social media, about, support and many more.

**Keywords:** User Interface Design, Online Travel Booking, UI Reengineering

## I. INTRODUCTION

Nowadays, the business area of software not only focused on features but also user interface design aspects. The properties of software must deliver the best user interface since it launched. To realize this purpose, the developers should realize software with suitable features and excellent user interface based on user needs [1][2].

In the previous study, to collect user feedback about interface design can be used interactive method, i.e., interview, joint application design (JAD), and survey using a questionnaire. Those methods are named interactive approach because the interaction between respondent and researchers based on some issues is

needed to achieve the aim of the information collection. [3].

Existing research on the user interface design purposed by [4]–[7]. Franco et al. a web-based graphical food frequency assessment system [4], Little et al. gathered feedback about mobile application for patients rehabilitating [5], Dexheimer et al. evaluated usability of Self-Monitoring Activity-Restriction and Relaxation Treatment (SMART) application for youth with morbidity associated with mild traumatic brain injury (mTBI) [6] and many more.

This research evaluated existing online travel booking application and proposed the its general model because this application is one of the most popular and the newest application in Indonesia [8]. The result of this research is important to represent insight about

interface recommendation for online travel booking application that is suitable with characteristics of Indonesian people.

## II. LITERATURE REVIEW

### A. Related Works

Related works of this research includes research about usability evaluation and user interface design.

Many studies about usability evaluation using system usability scale have been done by researchers through translating questionnaire items to many languages, for examples Polish [9] and Bahasa [10], Portuguese [11], Slovene [12], Persian [13] and Germany [14].

The recent study of the interface design has been complete by researchers, for example mobile interface to content management system based on HTML5 and Drupal: a case study [15], mobile business applications designing user interface and architecture [16] and mLUX: usability and user experience development framework for m-learning [17].

Moreover, study of user interface design and evaluation has been done by Franco et al. for evaluating a web-based graphical food frequency assessment system [4], Little et al. for gathering feedback about mobile application for patients rehabilitating [5], Dexheimer et al. for evaluating usability of Self-Monitoring Activity-Restriction and Relaxation Treatment (SMART) application for youth with morbidity associated with mild traumatic brain injury (mTBI) [6] and Noprisson et al. for evaluating m-Government application [7].

### B. Online Travel Booking Application

The growth of information technology and communication (ICT) lead to people conducted all transaction by online network, including travel booking. Online travel booking has been started by online travel agents (OTAs) (e.g., Travelocity, Priceline in the 1990s [18]. In Indonesia, online travel booking more famous after several online travel

booking application is launched, e.g. Traveloka, Tiket and PegiPegi.

### C. System Usability Scale

System usability scale is the famous scale for measuring usability feedback from users [19]. Some researchers called this scale as “quick and dirty” because it can be used to measure usability quickly with limited respondents [20]. This questionnaire is consisted of 10 (ten) simple statements, which are, represented all aspects of usability as shown in Figure 1 below.

No.	Original Item
1	I think that I would like to use this system.
2	I found the system unnecessarily complex.
3	I thought the system was easy to use.
4	I think that I would need the support of a technical person to be able to use this system.
5	I found the various functions in the system were well integrated.
6	I thought there was too much inconsistency in this system.
7	I would imagine that most people would learn to use this system very quickly.
8	I found the system very cumbersome to use.
9	I felt very confident using the system.
10	I needed to learn a lot of things before I could get going with this system.

**Figure 1.** The original item of system usability scale (SUS) in Bahasa Indonesia [19]

For counting the SUS score, we should focus on odd and even number of questionnaire items. For odd number (1, 3, 5, 7, and 9), SUS score is the selected scale value minus 1. For even number (2, 4, 6, 8 and 10), SUS score is 5 (five) minus the selected scale value. All SUS scores are counted its averages to ease interpretation of the result [19].

## III. METHODOLOGY

This section will be presented research phases, data collection and research instrument.

### A. Research Phase

This research is consisted of five phases, i.e. defining research problem, collecting literatures, designing research methodology, evaluating existing system,

proposing of an initial model of user interface, which are presented in Figure 3.

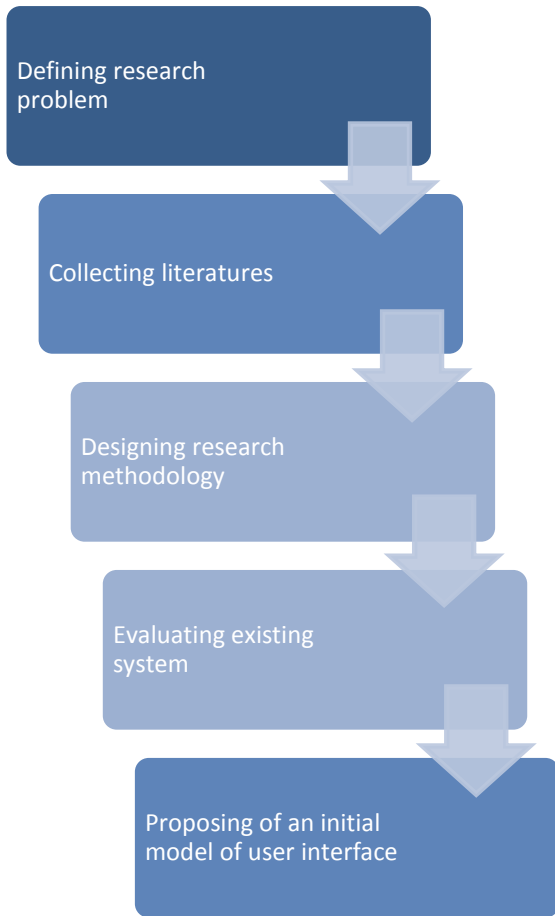


Figure 2. Research phase

First, defining research problem and research object is conducted by reading research paper from research databases. Second, collecting related literatures is needed to gain knowledge in order to complete research and tackle research problem. Third, designing research methodology is important to arrange research activities completed on schedule and systematically. Then, based on feedback of data from online questionnaire by involving participants and reviewing design of existing system, we proposed initial model of online travel that will be used as general model for next research

### B. Data Collection

Research data is collected in two phases including:

### 1. Data for existing system evaluation

A random sample of 1,254 respondents was drawn from Jakarta, Indonesia. We used two established criteria to find respondents in this research. First, respondent must be familiar with Internet and smartphone. Second, respondents must have experience about online travel booking application in Indonesia.

### 2. Data for proposing an initial model

In this study, we referred to three online travel booking application, including Traveloka.com, Tiket.com and PegiPegi.com to proposed initial model of user interface design.

## IV. RESULTS AND DISCUSSION

### A. Feedback of Existing System Evaluation

The interpretation of research result based on data from online questionnaire by involving 1,225 participants. Respondents were asked to answer questionnaire items based on their experience using online travel booking application.

This research is important to inspect and review current online travel booking application in order to get recommendation about content and design of application which is easy to use [21].

The overall SUS scores is only 56.13 based on 1,225 participant's perspective. This score result of SUS is below 68 (average) so that it must be improved.

Based on review from respondents, there are some points that must be improved including interface design should be simple, memory size used to install must be reduced because application was running not well in some smartphones, online travel agents must be added a feature to communicate with customer

service easily, application should integrate other user data to reduce some errors in filling data for booking process, time for completing payment should be more

than 45 minutes because many respondents don't have internet banking.

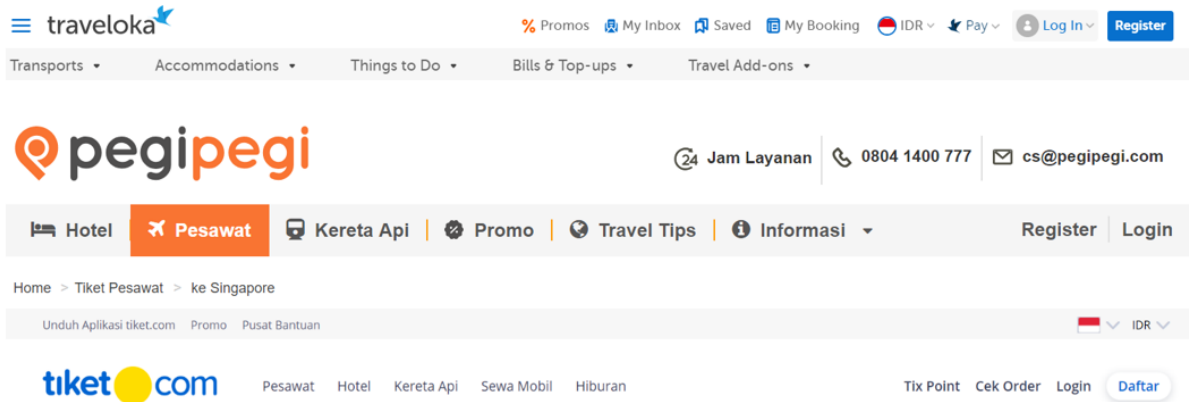


Figure 3. Main menu of existing system

**B. Initial Model of User Interface**

Traveloka present more menus than PegiPegi.com and Tiket.com. Moreover, PegiPegi.com and Tiket.com designed their menu only focus for their main business, including “flight”, “hotel” and “train” reservation. However, PegiPegi.com did not provided the language option in their header. Our proposed model for main menu can be seen below.

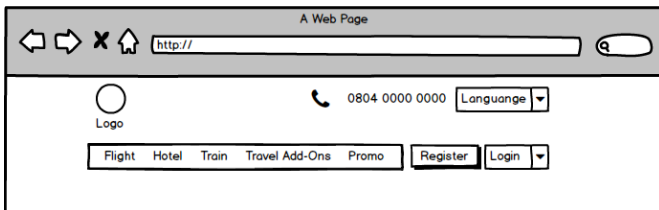


Figure 4. Main menu of proposed system

For content sliders setting, three of systems provides image slide-show with navigation tools that present different type of information, mostly about the current promo and favourite destination as can be seen as follow.

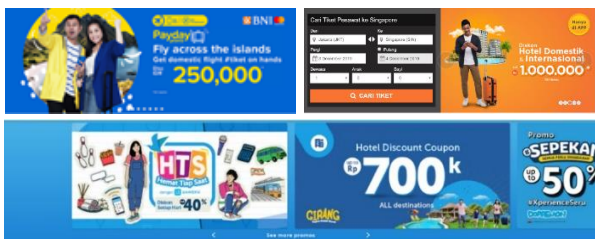


Figure 5. Content sliders of existing system

The existing system also present online booking form in their main page. The systems provide the different form based on their service, for instance, flight service, hotel service, trains service and so forth as depicted as follow.

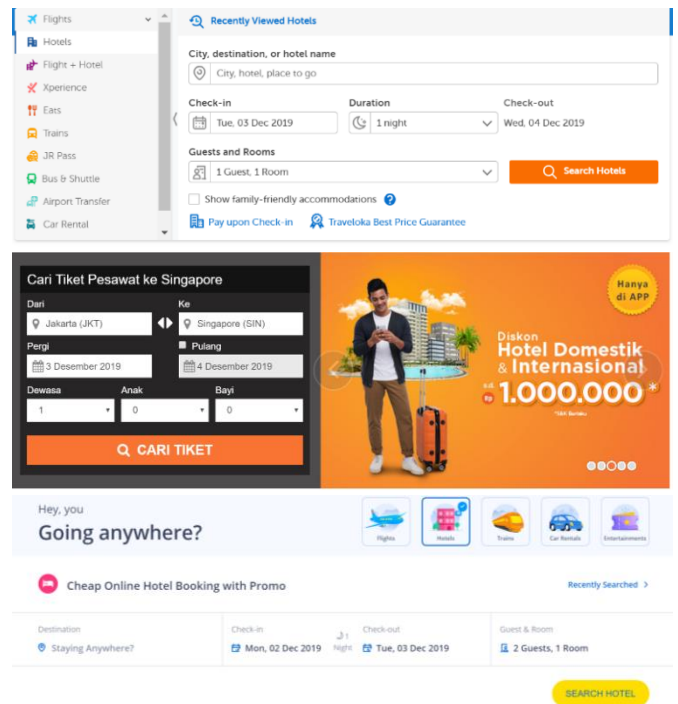


Figure 6. Booking form of existing system

The existing system present various types of web body. There is content of promo, offers, favourite destination, and cooperation as presented as follow.



Figure 7. Web body of existing system

For the footer design, the existing system present many information that did not present in main menu for example social media, about, support and many more as depicted as follow.

travel that will be used as general model for next research. The proposed model can be seen in Figure below.

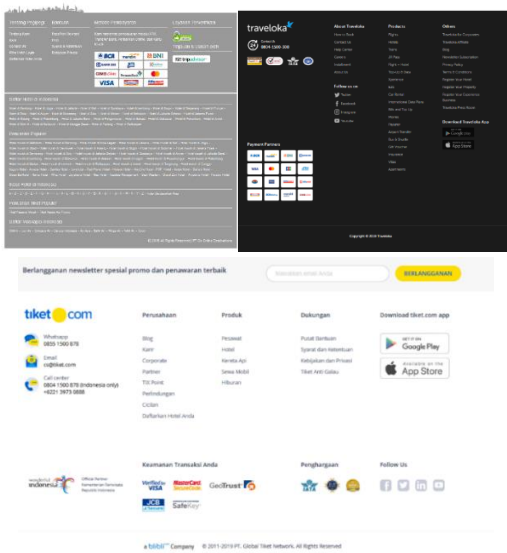


Figure 8. Footer of existing system

Based on feedback of data from online questionnaire by involving 1,225 participants and reviewing design of existing system, we proposed initial model of online

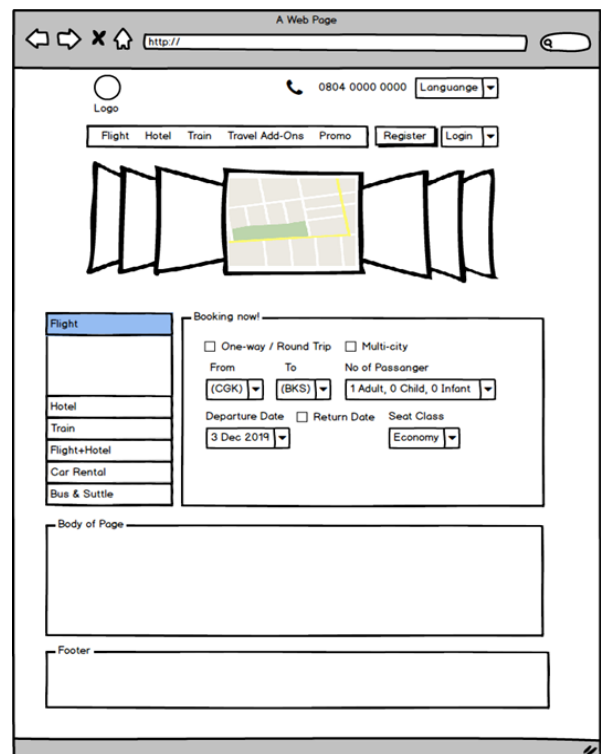


Figure 9. Proposed model of user interface design of online travel booking system

## V. CONCLUSION

This research aim is to represent insight about interface recommendation for online travel booking application that is suitable with characteristics of Indonesian people. Based on the research result, we found User interface of initial design consisted of main menu, content sliders, online booking form, body and footer. Main menu is designed by providing menu flight, hotel, train, travel add-ons, promo, register, login, and contact. Content sliders contained image about promo and favourite destination. The online booking is provided for many types based on order such as flight service, hotel service, trains service and so forth. Body of web contained information about favourite destination, promo and best offers. For footer section presented social media, about, support and many more.

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