Volume 18 Issue 43
Originally issued as F2

Global Journal of Management and Business Research: F
Real Estate, Event and Tourism Management
Volume 18 Issue 2 Version 1.0 Year 2018
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

The Issue on eTravel Business: The Impact of Poor Digital Media Design – A Case of Thailand

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GJMBR-F Classification: *JEL Code: L83*



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Abstract- This research investigates the cause of revenue deceleration in eTravel in Thailand, about the design of digital media. eTravel involves the purchasing activities of customers, for example in online travel service booking and online ticketing. These services are provided by businesses with an online presence, known as eTravel service providers. The quantitative research approach determines the relationship between satisfaction factors in digital media design and conversion. The reasons for failure in eTravel conversion are presented as association rules. The research results are used as inputs for developing digital media design guidelines-for example, in recommendations for website design to engage more customers and result in conversions. By applying the guidelines on digital media design, the local eTravel service provider can successfully increase eTravel revenue. In this study, eTravel increased in revenue by 42.50% on average, compared to the same month in the previous year. This confirms the applicability of the proposed guidelines.

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I. Introduction

Tourism is a major economic contributor in Thailand. The direct contribution of travel and tourism to the Gross Domestic Product (GDP) addresses the spending on leisure and business travel for the Thai people, as well as the government, directly influencing the tourism business. From the research report (Turner, 2017), travel and tourism contributed USD 36.7 billion to the economy, which constitutes 9.2% of the total GDP in 2016 and is forecast to increase continuously. The government of Thailand highlights tourism and hospitality in the Sustainable Development Goals in the National Tourism Development Plan. As a part of the development goals, not only tourism is mentioned, but Information and Communication Technology (ICT), as a tool, is also considered. Innovation and technology are mainly considered as enablers of sustainable development activities and will support the growth of tourism. Therefore, the internet and digital media become accelerators of revenue by default. The sales channel and tourism service for purchasing on the internet is called eTravel and involves online travel service booking and online ticketing.

The purchase of services can be completed on either a computer or mobile device (Statista, 2017b). So far, the success of eTravel arises from a well-performing digital marketing campaign, together with a proper digital media design (Statista, 2017a) mostly focusing on social media, websites, mobile applications, and e-commerce. Therefore, the poor design of digital assets can naturally have a negative impact on revenue growth in tourism services.

To accelerate the eTravel revenue, this research primarily focused on how the design of digital media can increase the conversion rate in digital marketing. This research aims to understand how a low conversion rate is related to the poor design of digital assets, and to discover the minimum requirements for digital media design to engage an eTravel customer in making a service purchase.

This research paper is separated into five chapters. Chapter 1, Introduction, guides the readers in understanding the bigger picture of the research, including its value and purpose. Chapter 2, the literature review, presents the previous research in this area which is relevant to eTravel. The research works mentioned in this chapter allows the reader to gain a greater understanding of how the poor design of digital media negatively impacts revenue in tourism services. In Chapter 3, the methodology, the research framework together with the data processing is presented. This includes 2583 survey feedback responses from an online survey platform from eTravel customers. The quantitative research provides statistical information on the survey responders. The correlation statistical method that was utilized presents the relationship between the revenue factors. Moreover, the qualitative research method is introduced to gain insight into the design of digital media. The results and discussion are presented in Chapter 4. The suggestions provided by eTravel customers are also summarized in this chapter. Digital media designers and digital marketing experts can leverage this research to increase the conversion rate. Guidelines regarding the preferred digital design are provided, together with an opportunity for improvement. The conclusion and directions for future work are addressed in Chapter 5.

II. Literature Review

The background knowledge and previous research related to eTravel are categorized into two groups: conversion rate and digital media design. The research review implicitly concludes the problem

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statement, focusing on the deceleration of service revenue.

a) Conversion Rate

The conversion rate is the ratio between the number of customers who purchase the services available in an online sales channel and the unique customers entering the online sale channel, which can be calculated in percentage form. Greater profitability could occur when the conversion rate is increased. In other words, the conversion rate directly impacts the profitability of online sales (Heathman, 2012). Moreover, as shown in previous research, the conversion rate is significantly influenced by digital media content and design. The interactive design of digital media is considered as a reducer of the bounce rate (Farag, 2003). The removal of unnecessary graphics and colorful tones from the media can encourage the customer to stay longer on an eTravel sales channel. The short checkout flow in e-commerce can help the customer to easily navigate to and submit an eTravel purchase, also increasing the conversion rate (McDowell, Wilson, & Kile, 2016). A personal assistant, either human and robot, can shorten the decision time of purchases (Sismeiro & Bucklin, 2004). This increases the conversion rate growth. For customer insight, click behaviors in e-commerce media are profiled, and the statistics are used for service suggestions. Offers are selected based on customer interest and profile (Yanbin & Ping, 2011). The conversion rate increases if the offer matches with personal preferences. Moreover, the consumer's trust in the brand is also a supporting factor which can increase the conversion rate. Trust in a brand on an online channel can be supported by a good media design, which in turn promotes trust in the purchase. Higher levels of trust in the customer can increase online purchase intentions (Schlosser, White, & Lloyd, 2006). Regarding information system security, a good media design can lead the customer to feel safe when purchasing a service online (Bomil & Ingoo, 2003). Specifically, e-commerce and digital media equipped with good technical information security controls, transaction encryption by a Secure Sockets Layer (SSL), personal data protection, and a secured payment gateway can effectively prevent the loss of conversion (Martin & Murphy, 2017; Zhou, Lau, & Yang, 2004). In short, the design of digital media explicitly impacts the conversion rate, the bounce rate, and the length of time the customer stays on an e-commerce platform. Furthermore, it implicitly influences the trust of the customer in the online purchase service and provides decision support to the customer.

b) Digital Media Design

The impact of digital media design on increasing the conversion rate is mentioned in Chapter 2.a. The design creates customer willingness to buy the service (Smith & Sivakumar, 2004). Multimedia components and features such as video clips, interactive maps, and games are usually used to boost the positive attitude of the customer when viewing the media (Hsi-Peng & Philip Yu-Jen, 2009). The interactive digital media components, such as a frequently asked questions section, chatbot, and live chat, can help the customer to understand the details of a product in a short period (Sohrabi, Mahmoudian, & Raeesi, 2012). Positive attitudes toward a good media design lead to further content exploration and conversion (Menon & Kahn, 2002). Focusing especially on design, the top three design elements that can draw customers—which are also highlighted in many studies—are navigation, graphical representation, and the organization of the website (Garett, Chiu, Zhang, & Young, 2016). Personalized navigation can improve the customer experience concerning both content and product exploitation. The suggested next content/page of the system is based on the current page and the navigational purposes of the customer. A usage similarity among websites creates self-learning in the customer (Flesca, Greco, Tagarelli, & Zumpano, 2005), wherein the customer can explore the website easily, without prior learning of the website structure. This can reduce the number of clicks required during content searching. On the smartphone, (Jung & Jang, 2015) addressed a navigation improvement for the small hyperlinks on the device screen. The automatic error correction function helps the customer to access the right content/page if the initial press on the hyperlink fails. This makes exploring the media content faster for the customer, without the concern of incorrect link access. For graphical representation, a system with a well-designed user interface, which is user-friendly, minimizes the required keyboard operations and maximizes effective interaction with the system, and thereby can engage more customers who shop online (Namratha & Adiraju Prasanth, 2018). Cascading Style Sheets (CSS) is an option to make the design style more flexible. CSS improves the user experience when visiting the web application. The color and tone of the digital media are controlled by CSS. It introduces a standard look and feels to the whole website space (Wolf & Henley, 2017). With regards to content organization, responsive design makes the content self-adjustable, fitting to the pre-defined screen size. The position of the menu and contents include graphics and multimedia components that can dynamically change to make customers' experiences better and improve navigation (Natda, 2013). A good digital media design influences the revenue from eTravel directly. It makes the brand or image of the service appear more impressive, leading to a higher degree of trust in the service that the customer purchases. To accelerate revenue from eTravel, the design of digital media should align with the customer behavior and the signature of the products on the shelf.

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From the reviews of previous research, the objective of digital media design is to increase purchase intentions of customers, whether the purchase behavior of the customer is clear or not (Chanaka, 2004). Misleading graphics that are presented to consumers potentially decelerate the revenue due to a higher bounce rate and low conversion rate (Sismeiro & Bucklin, 2004). Therefore, to increase the revenue of eTravel, the best practice in digital media design is to maximize the opportunity for purchases to occur, which is the value and purpose of our research.

III. Methodology

The methodology chapter presents a statistical method, research framework, and the mathematical model for the examination of the relationship of factors in this research. The quantitative research provides information on tourists who gave feedback on the survey regarding digital media design and customer confidence when purchasing eTravel. A correlation and association rule method shows the relationship among the revenue deceleration factors, while the qualitative research method provides customer insight into the preferred digital media design, which translates into an improved conversion rate.

a) Research Questions

In 2017, tourists who traveled to Thailand lacked confidence in eTravel due to the poor design of digital media, which caused revenue deceleration in eTravel. A low conversion and high bounce rate significantly impact the revenue of the tourism industry and therefore Thailand's GDP. This research was therefore conducted to understand the cause for this deceleration, and to provide advice for improving guidelines about digital media design such that it can deliver a higher conversion rate. The satisfaction factors of digital media design are the inputs of this research.

b) Conceptual Framework

The conceptual framework illustrates a process about the research information. The framework consists of three parts: input parameters constitute an independent variable, collected from an online survey. The survey data are processed by mathematical methods for quantitative research, and the qualitative research method is used for analyzing the open-end questions answered by the customer. The outcomes of this research focus on customers' experiences and the practical digital media design that informs the conversion rate. A conceptual framework is shown in Fig 1.

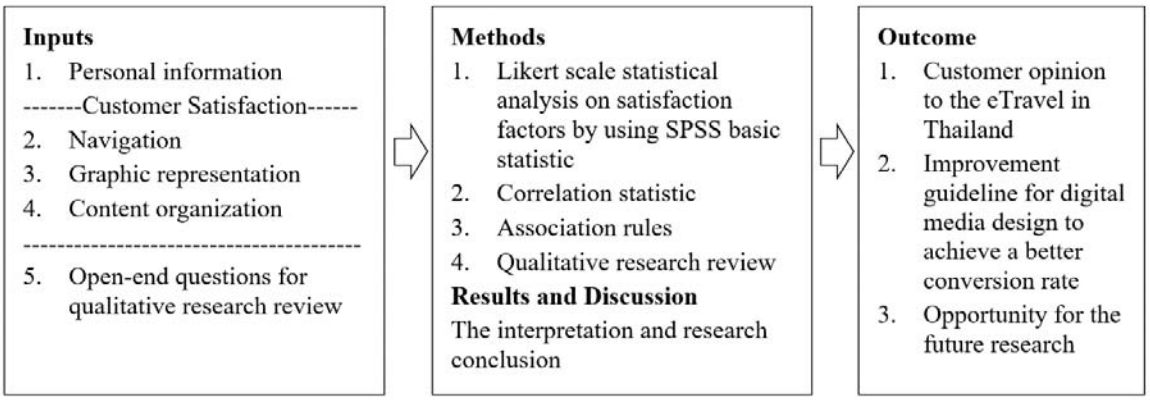

Fig. 1: The conceptual framework shows the research process, information analysis methods, and expected research outcome

The online survey, considered a research tool for gathering tourist feedback and information, is shown in Figure 1. The survey consists of three parts: personal information, a Likert-scale survey (Likert, 1932) which examines satisfaction about digital media design, and the level of customer confidence in purchasing the eTravel. The last part of the survey aims to listen to the feedback and suggestions of the customer. In the Linkert-scale survey, the top three design elements–consisting of navigation, graphical representation, and content organization (Garett et al., 2016)–were selected as the influencing factors on the revenue. A set of five questions were assigned to an individual factor, meaning there were 15 questions in total. Principle Component Analysis, or PCA (L Gewers et al., 2018), played a role in checking the factor loading. It is +0.82 or higher for the factor loading value in all groups. This means that each factor has the proper question loading. Moreover, the internal consistency of a particular factor was also checked by Cronbach's Alpha (CA). The set of questions in the same factor has a Cronbach Alpha value of 0.84 or higher. We validated the question set by launching 100 pilot surveys. The CA shows an excellent internal consistency of the responses. Furthermore, the PCA and CA values confirm the survey quality. The question set is therefore suitable for data collection.

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c) *Data*

In this research, we launched the online survey two times: the first time starting from February 2017 and running until May 2017, and the second time starting from September 2017 and running until January 2018. It intended to capture the level of customer satisfaction in the high season. The website and mobile applications regarding eTravel in Thailand were automatically randomly selected from the pre-defined list. The survey, embedded within a target website or mobile application, was available in a to-be-completed survey pool. We used a paid-for-feedback survey campaign, applying both a social media channel and leaflet, which was redirected to the online survey. The minimum number of survey responses, which are used as the inputs for this research, was calculated from Yamane's formula (Yamane, 1973), where a 95% confidence level and margin of error of ±2% is set, as per standard statistical practice. Regarding the calculation, the number of tourist arrivals to Thailand in 2016 was 32 million (BOT, 2017). Therefore, 2500 surveys were considered to represent all of the visitors arriving in Thailand. We received 2583 survey responses by systematic sampling, but only 2529 responses (those without an outlier) were loaded as the inputs of this research.

In particular sections of the survey, different analysis methods played a role in extracting information to help the researcher to understand customer opinion regarding digital media design and the confidence level in eTravel. In a personal information section, the descriptive statistics allowed us to summarize the thousands of responses in a percentage form. This provides an overview of the population of people who travel to Thailand using eTravel. In the customer satisfaction part of the survey, there were three groups of questions that covered customer satisfaction in relation to digital media design in term of navigation, graphic representation, and content organization. The computer software SPSS was used for statistical analysis of the Likert-scale satisfaction factors. The correlation statistic shows the simple linear relationship between personal information and the influencing factors of tourism revenue and conversion, while the association rule mining method was used to find the conditional relationship between factors relating to conversion. In the last section, the qualitative research method of open-ended questions was used for a feedback review. The information was synthesized into groups of ideas and suggestions. The research results provide improvement guidelines for digital media design, aiming to achieve a better conversion rate.

IV. Results and Discussion

This chapter presents the research results, separated according to the survey sections. The analysis of the results and customer feedback show the current situation of eTravel in Thailand. Quantitative and qualitative research methods provide insight regarding the customer, which may lead to the practical improvement of digital media design. A digital media designer and digital marketing expert could leverage this research work to increase the conversion rate.

Survey Section 1 (personal information): The 2529 survey respondents were tourists who use the services from eTravel. Of the respondents, 62.87% were female, while 12.65% were male. The online feedback came from females in various countries, while the majority of male respondents were from China and India. This information aligns with internet user statistics (Internet Live Stats, 2017). The most respondents were from countries where a high number of internet users are located. As for the age of tourists, the tourists aged between 21 and 30 years old constituted 34.56% of the total sample, which is the majority of tourists who use eTravel. The age range between 51 and 60 years old was 25.34% of the sample, and 20.68% of the sampled tourists were between 31 and 40 years old. For marital status, 64.14% of the respondents were single or divorced, while 35.86% were married. Regarding the educational level, 34.31% of the tourists held an associate degree or lower, 34.23% had completed a bachelor's degree, and 17.84% held a master's or doctorate. Regarding family income, most of the tourists (31.32%) had an annual income between USD 8000 to USD 12,000. A total of 23.21% of the sampled tourists had an income in the range of USD 20,000 and USD 24,000, while 14.82% had an annual income of between USD 36,000 and USD 40,000. Tourists with work experience of 3-5 years constituted the biggest group of eTravel customers (41.27%), while 31.66% of the tourists had work experience of 5-10 years, and 12.07% had less than three years of work experience.

Survey Section 2: Likert-scale of customer satisfaction regarding the digital media design. There were three factors (topics), with 15 questions (components) in total. The results and recommendations were discussed as follows:

1) Navigation factor: The top three influencing components that made the customer satisfied with the digital media design were, first, the digital content is easy to find, with a small number of clicks ($\bar{x}$ = 3.53, SD = 0.25); second, the navigation menu is easy to use, and the wording on the menu is clear ($\bar{x}$ = 3.37, SD = 0.41); and last, the content appears to be in line with customer interests ($\bar{x}$ = 3.13, SD = 0.48).

In this factor, the component that most influenced satisfaction was a small number of clicks and concise content, allowing the customer to easily find the product they are interested in. The number of clicks in navigation directly impacts the satisfaction. According to the satisfaction result, a small number of clicks in the

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content helped the customer to efficiently understand the product online since the search time was reduced. The preferred number of clicks suggested by the customer is a maximum of three. If the number of clicks is higher than three, this generates a greater possibility of failure to convert. Displaying all product details is not preferred at the beginning. The customer is satisfied if the detail is displayed once they click on the product. From the customer suggestions regarding this component, the design of the product title should not exceed 3–5 words and the short description should be less than 15 words. The menu design also impacts satisfaction. A clear and clean design of the navigation menu can promote conversion in eTravel. The wording on the menu should be clear and relate to the content that the customer is searching for. The submenu should remind the customer of its parent menu; that is, where they navigated from. In an image only menu, where the menu displays an image without text, customers preferred to have a short keyword when the mouse is over the image menu. The helpful text pop-up should be visible, with a light or transparent background depending on the design. The helpful text supports the customer to explore the product in the desktop version easily. In a mobile application, the menu size should not exceed the size of the screen. One line per menu item is the suggestion from the survey feedback. Once customers click on the menu, they expect to see the right content. Therefore, page ordering and content management should consider the content quality. Missing content caused by deadlinks and outdated menus also impacts customer satisfaction and trust in eTravel. A Content Management System (CMS) is an option for reducing outdated menu updating because a CMS automatically update links in modified content. More than one wrong navigation prompts a conversion failure. The guidelines and suggestions on this factor align with the research of (Namratha & Adiraju Prasanth, 2018), which states that the human parameters provided by customers can be considered as the input for design. The survey feedback and suggestions are the human parameters by nature and should be treated properly to increase the level of satisfaction.

2) Graphic representation: The three most impactful components of this factor are: first, the media content and textbox design is good enough to make the customer focus on the product ($\bar{x}$ = 4.08, SD = 0.32); secondly, the background color of the digital media makes the customer feel comfortable, so they stay longer on the page ($\bar{x}$ = 3.54, SD = 0.36); and thirdly, the digital media uses a color and font weight that make the content easy to find ($\bar{x}$ = 3.41, SD = 0.47).

Regarding the graphic representation factor, the media content and textbox design are the components that help the customer to concentrate on the product. Customers tend to be satisfied with digital media that has fewer borders. A box-shadow is used to replace the line border. A different background color between two sections helps customers to feel comfortable. However, the different color of the background should not be a contrast. To separate the content, adding a space instead of a border makes the customer stay on the page for longer. However, with a bland design, an accent border can be used to highlight content by adding color to a design. The accent border helps the content to be more interesting. Concerning the media content design, the size of the icon affects customers' focus. Highlighting or blowing up the icon can increase the level of attention to the content. The size of the intended icon is around 20 pixels. Customers confirmed the intended icon size through the post design improvement questionnaire. As for the background color of the digital media, most customers were dissatisfied with content that has gray text on a colored background. However, white text can be used on a colored background, on the condition that the opacity is reduced. The background for an essay or long content should have a light tone, with a contrasting color. However, this depends on the theme of the digital media design. A dark-tone color is an exception in the case that the theme of the digital media is dark. Many font sizes on the same digital media can decrease customer attention. Therefore, color and font weight can be used to create a hierarchy of content. To standardize the design style across the whole cyber site space, Cascading Style Sheets (CSS) is an option for theme control of the digital representation. Colored text is recommended to create a content hierarchy, although colorful text can also impact on satisfaction and website trust (Cyr, Head, & Larios, 2010).

3) Content organization: The top three interesting components that majorly impact satisfaction are: first, the balance between graphics and text ($\bar{x}$ = 3.76, SD = 0.17); secondly, the position of the menu and content to help the customer easily find the product details ($\bar{x}$ = 3.61, SD = 0.42); and lastly, whether the digital media makes it easy for the customer to search for the content on their mobile ($\bar{x}$ = 3.55, SD = 0.51).

This factor shows the satisfaction of the customer regarding the content organization of digital media. A balance of graphics and text is the most influential component in conversion and satisfaction. The customers provided good feedback on graphic content with a short description, while text-only content generates a high bounce rate. As for the advertisement of accommodation on eTravel, content with a warm tone and two-column content organization increases customer satisfaction compared to that with a cool tone, while colorful graphics are better for movies and destination promotions. From the survey, the position of the menu and content is the component that impacts satisfaction directly. A design with the menu on the left

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and the chat box on the bottom-right is the default design, and customers preferred it. The use of a sliding menu and pop-up chat box on the desktop version design was significantly correlated with a low conversion rate. As for the design in the mobile version, having a two-line chat box at the bottom of the screen once the customer expands the chat box is recommended. Thumbnail style content is proper for tour packages and accommodation comparisons. The thumbnail content should fit in a single row. Otherwise, it overwhelms the customer.

Survey Section 3: Open-ended questions for customer opinions and suggestions regarding the digital media design and improvement opportunities for higher satisfaction and conversion.

A group of customers mentioned trust and security about the design of the digital media. The design should consider building trust when customers are entering the payment gateway. Redirecting the customer to payment gateways without notifications may confuse the customer and result in no conversion. The customer must know the upcoming activities and time requirement for transaction processing. Moreover, a frequently asked questions section should include how to check transaction completion. A helpdesk or contact point should be displayed and easily found. In transaction processing, red is a sensitive color that may lead to customer misunderstandings. Therefore, red should be reserved for a wrong event or failure notification only. Broken graphics and unloaded pictures significantly reduce trust in eTravel. Therefore, small file size for graphics can help the website to load faster and can reduce the failure of the picture display on a slow internet bandwidth on the customer side. However, there is a design improvement opportunity for all digital media for customers from China. The customer can purchase a service unintentionally if the content is highlighted by a red ribbon and dragon graphic. This is because of cultural and customer beliefs. Therefore, the theme selection is a component that the designer should consider in this context. The content organization should be aligned within the whole cyber site space. This makes customer navigation easier and faster.

The family income and navigation factors influence conversion, as shown in Table 1. A higher family income implies a higher purchasing power. A female who has high family income contributes to conversion. Therefore, the content and graphic design should consider the sexual preference of the target customer. The senior customer cares about the design and graphics more than the junior customer. This is an opportunity to increase the conversion of the senior customer by improving the design. The customers of eTravel are almost exclusively couples and families. The design of the digital media should be appealing and safe for families, and keywords should be used in the content reflecting the interests of couples and families. As for the design factor, good design in navigation is the most influential factor about conversion. This is about how easily the navigation redirects the customer to the checkout page and product information. Redesigning the navigation is the priority since it increases eTravel conversion. The graphic representation is the second greatest contributor to conversion, while the content organization has the smallest impact. However, all factors of digital media redesign depend on the budget and target customers that the eTravel service provider is targeting.

Not only success in conversion, but also failure to convert, is within the research scope. The association rules show how failure to conversion happens. The items on the left-hand side represent feedback ratings of 1 or 2 on the Likert-scale, while an item on the right-hand side indicates a failure to convert.

The calculation of the rules, as shown in Table 2, is described as follows. Consider rule (α:: Confusing the wording on the menu, α: Large number of clicks) ➔ (failure to convert). The support count of (α: Confusing the wording on the menu, α: Large number of clicks, failure to convert) is 301. In other words, there are 301 survey responses in which the customer says that they are confused by the wording on the menu and experienced a large number of clicks, leading to their decision to not purchase the product. The total number of survey responses is 2529. Therefore, the support value of this rule is 301/2529 = 0.12. The confidence value is calculated by dividing the support count for (α: Confusing the wording on the menu, α: Large number of clicks, failure to convert) by the support count for (α: Confusing the wording on the menu, α: Large number of clicks). Since 789 survey responses contain (α: Confusing the wording on the menu) and (α: Large number of clicks), the confidence for this rule is 301/789 = 0.38. The rule's lift is obtained by dividing the rule's confidence by the support value of (failure to convert). Of the responses, 893 show a failure to convert. The support value of (failure to convert) is 893/2529 = 0.35. The lift for this rule is 0.38/0.35 = 1.08. Typically, a lift value is an indicator that measures the reliability of the association rule. If the lift value is greater than 1, this indicates that the association is reliable. A higher lift value means stronger association rules. If the factors are independent, the lift value will equal to 1. A lift value of less than 1 indicates negative association rules.

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Table 1: Matrix for correlation coefficients (r), showing the simple linear relationships among personal information, three influencing factors regarding revenue, and conversion

Variable	1	2	3	4	5	6	7	8	9	10
1. Gender	-									
2. Age	0.231	-								
3. Marital status	0.154	0.324 *	-							
4. Educational level	0.675 *	0.690 *	0.200	-						
5. Family income	0.681 **	0.743 *	0.891 *	0.654 *	-					
6. Work experience	−0.021	0.754 *	0.452	0.438	0.645 *	-				
7. Navigation	0.882 *	−0.708 *	0.321	0.889 *	−0.013	0.439	-			
8. Graphic representation	0.798 **	0.861 *	0.432 *	0.672 *	0.766 *	0.131	0.690 *	-		
9. Content organization	0.521 *	−0.212	0.032	0.231	0.432	−0.212	0.812 *	0.561	-	
10. Conversion	0.768 *	0.692 *	−0.231	0.443	0.834 **	0.543 *	0.821 *	0.766 *	0.699 *	-

Source: Calculation by using SPSS

*** Correlation is significant at the 0.01 level (2-tailed), *. Correlation is significant at the 0.05 level (2-tailed). Listwise N = 2529*

Table 2: The association rules showing the relationship between the factors in digital media design and failure to convert

Rules	Support	Confidene	Lift
(α:: Confusing the wording on the menu, α: Large number of clicks) ➔ (failure to convert)	0.12	0.38	1.08
(β:: losing focus due to a lot of media components) ➔ (failure to convert)	0.11	0.36	1.01
(β:: color and font weight not proper, (β:: background color not proper) ➔ (failure to convert)	0.14	0.44	1.25
(γ:: hard to find menu, (β:: color and font weight not proper) ➔ (failure to convert)	0.12	0.36	1.02
(α:: incorrect information offered, β: losing focus due to a lot of media components) ➔ (failure to convert)	0.11	0.47	1.33
(γ: content not fit to mobile, β: losing focus due to a lot of media components) ➔ (failure to convert)	0.17	0.69	1.95

Source: Calculation by using SPSS

The minimum support threshold is 0.10, and the minimum confidence for the association rule is 0.30. These parameters were set up following the research of (Liu, Hsu, & Ma, 1999), where α denotes the digital media design group of Navigation, β represent graphic presentation group, and γ is the organization group.

From the results regarding the association rules, we found that six rules contributed to the failure to convert. Improvement opportunities occur according to the rules. The customer is losing focus due to a lot of media components when they search the eTravel service on a mobile, leading to a failure to convert. Therefore, the digital media designer should limit the number of media components. This can help the customer to focus on the page and make a conversion. Another association rule confirmed a cause of the failure to convert, which is the improper text and background color used in the digital media design. This aligns with the discussion in the graphic representation section. Therefore, following the practice mentioned in that section to change the design can help to improve the conversion. The practical improvement of the digital media design regarding other association rules is already addressed in the survey discussion. Designer and marketing experts can use the proposed practice as a reference.

V. Conclusions and Future Works

The poor design of digital media in the Thai market has caused a revenue deceleration in eTravel, and the low conversion and high bounce rate significantly impact revenue. Therefore, the improvement

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of digital media design was the research objective. The research results were used as a key factor to develop media design improvement guidelines. Three design factors were considered. The design improvement guidelines are provided to align with customer needs and aim to increase the conversion rate of eTravel. To prove the effectiveness of practices as per the guidelines, we advised local eTravel service providers in digital media redesign, following the guidelines. Once the practice was applied, the conversion rate was observed for 30 days. eTravel selling increased significantly, up to 42.50% on average, compared to the same month in the previous year. A higher conversion rate is the best evidence of the usefulness of our guidelines. For future work, the study of blockchain technology will further contribute to increasing eTravel revenue.

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