

# E-tourism Adoption in Indonesia; A Cluster Identification of Website Level

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**Abstract**—The paper classifies numerous prior studies related to utilization of the internet technology in tourism industries (e-tourism). This conceptual study investigates the level of e-tourism adoption based on the feature of company website. According to previous studies, there are five clusters identified as level of e-travel adoption including as contact method, information, customer service, transaction and links. E-travel adoption of contact method is related to using internet in communicating with supplier and customers without website. Information cluster related to presence website using a static website and for customer service cluster is website to service their customers. For transaction cluster is websites providing e-order or e-payment and for the advance cluster is links related to integrated web systems. In conclude, five clusters of e-travel adoption would be able to improve the business activities of tourism industries. Accordingly, the further research will be conducted the empirical study based five cluster of e-travel adoption in Indonesia context.

**Keywords**— Cluster analysis, E-commerce, Indonesia, Tourism.

## I. INTRODUCTION

**N**OWADAYS, the utilization of information technology has become an integral part in supporting business activities. The successful companies must embrace computer and internet to leverage in order to gain competitive advantage [1]. Business activities employing internet technology as an innovative way to enter the virtual market referred are electronic commerce (e-commerce) presented.

There is various definition of e-commerce including as buying and selling of products, services, information via computer networks, mainly internet[2]-[3]-[4]. E-commerce in this paper stands for electronic commerce defined by [5], it involves much more than electronically mediated financial transactions between organizations and any third-party including non-financial transactions of customer request.

The impact of e-commerce in today's world business model is not only in leveraging information technology to its limits but also to transform the way traditional enterprise think in expanding to new markets [6]. Such online transactions through e-commerce increased significantly in the past decade, that the global landscape is rapidly changing, with developing countries as a group assuming a more prominent role among suppliers, buyers and sellers of online products [7].

The total revenue of e-commerce website adoption has achieved a rapid growth in shortly [8]-[9]. A number of proven and potential benefits are presented by e-commerce [10]-[8]-[9], both B2B and B2C, (e.g. enhanced participation in international value chain, greater market access and space to exchange information, goods and services, and improved internal and market efficiency, as well as cost saving). Nevertheless, despite these benefits, [11]- [12]-[13] found that e-commerce adoption was hindered by a number of constraints (e.g. inadequate ICT infrastructure and use, weak legal and regulatory framework, lack of trained workers, and high switching cost). Some studies suggest that B2B offers greater

potential benefits for small enterprise than other forms of e-commerce [14].

For developing and emerging countries, e-commerce is no longer a new phenomenon, to grow both in volume and geographical boundaries. Information economy report shows e-commerce can be harnessed to support economic growth and sustainable development [15].

Several studies have been conducted on e-commerce however, the understanding of the e-commerce website adoption in the developing countries have not been addressed adequately [7]-[10]-[16]-[17]. The potential development of the internet would be the greatest needed for developing countries, as well as the world's least prepared human, institutional, and physical infrastructure to achieve these advantages [18]. Lacks of these studies apply equally to B2B and B2C e-commerce adoption in developing countries has identified [19], whereas, e-commerce is one of the frontier areas in the tourism sector of developing countries [20].

The study [21] suggested that tourism industry has become a single largest category of products and services sold over the internet. Customers prefer to use e-tourism as it can save their time to purchase and order services since more convenient, also more choices of tourism products [22]. According to [23], tourism sector are highly depending on accurate and up-to-date information to make an order or reservation.

The innovation of e-tourism has gained much intention in recent years [24]. Tourism is one of the significant potential sector to be developed Indonesia [25]. Number of foreign tourists in Indonesia grow up to 10 million, or about 7-8%, the number of tourists (domestic tourism) amounted to 254 million, foreign exchange earnings of US \$ 12.05 billion and local tourism expenditures US \$ 14.4 million, as well as the amount of labor in the field of tourism as 11.3 million people [26]. The development of tourism sector in Indonesia more broadly have an impact on improving the welfare of society, the real economy in the community such as handicrafts, meals, lodging, hotel and so on can be developed, with the rise of the real economic sector was also able to increase the degree of people's lives better clothing, food, shelter, education and health.

The use of Information Technology through e-tourism sector for the development of tourism in Indonesia is still weak, there is no special websites that provide complete information, includes information about the location, price, hotel and a nearby restaurant. In addition, Indonesia also does not have software that can help plan trips tourism based on certain conditions, for example, a budget that is owned by tourists and criteria desired tourist attraction. This phenomenon has an impact for the growth of e-tourism in Indonesia that should the potential to grow rapidly. In addition, especially for tourists who urgently need information and services, will find it difficult, even though Indonesia is a country that has diverse cultural and other tourist attraction, though few tourist do not know of its existence, it is not surprising that Indonesia still lags even with some neighboring countries that have made progress in the field of tourism [27].

There is numerous previous studies related to e-commerce adoption mainly conducted in tourism industry [24]-[25]-[26]-[27]-[28], few research have investigated e-commerce website adoption [29]-[30]. Additionally, huge disparities existed among firms in the tourism industry in terms of penetration and affordability of e-commerce adoption. The further study to elaborate the level on commerce website adoption in the tourism industry is needed. This paper presents the gap through investigating five level of e-tourism adoption based on website clusters.

## II. CLUSTERS OF E-COMMERCE WEBSITE ADOPTION

In the last two decades, various model of e-commerce adoption has been discussed by researchers [30]. Despite of many ways and variety to characterize the types of e-commerce, these previous studies suggest that researchers often model web adoption based on the process, application, and function of the websites. In the mean time, different levels of the web adoption can facilitate kinds of business activities. A few researches of website features in different web adoption clusters had studied.

The prior study [31] have ranked the websites according to e-commerce website evaluation method to assist customers in choosing the best product, service, or information. Content quality, design quality, organizational quality, and user friendliness also proposed by [32] in the website quality evaluation. [33] used the website logs for the assessment of evaluation by combined Grey clustering theory and AHP. Organization's website evaluation also presented by [34] based on AHP model based on technical, commercial and security, and privacy criteria.

In order to identify the different patterns of e-commerce adoption level in organizations, this paper considered five level clusters of e-commerce website adoption related to e-tourism features context. The typical value chain in tourism consists of four components: travel services provider, travel operator, travel agent and traveler [35].

According to prior studies five clusters of web adoption level were considered. There is the website features identification including contact method, information, customer service, transactions/ business online integration, and links to other websites.

### A. Cluster 1 - Contact method

Firms in this cluster do not have websites (0-level). Interactions among suppliers, buyers and consumers to exchange information, products and services occurred by using email account. Its classification according to [36] which categorized internet adoption based on three types: non-adopters (without internet account), adopters with an internet account, and adopters with websites. Similar level also was identified by [29], which classify as an email adoption due to connected to the internet but no company website [37].

*B. Cluster 2 – Information*

This is the first level of web presence. Firms in this cluster have initiatives to make the decision of website adoption, though the implementation is still in process [38]. Firms occupy a domain name or simple website to provide mainly information, catalogues and brochures, hence to show the presence of firm. Firms tending to create static content [29]. The static website is related to publish the basic information of firm product on the web [37]-[40] and informative web only [30] without any interactivity.

*C. Cluster 3 - Customer service*

At this level, firms begin to grow and develop their websites. Individual departments in firm spearhead the initiative of the website adoption in this cluster, in such a way that these firms not depend on business strategy [41]. One of the essential criteria in this cluster is advanced customer service to check the availability of products or services (e.g. ticket and accommodation). Consequently, website features provide search facilities and more comprehensive information and interactive web presence than previous clusters [37]. Firms support their interaction with customers through product information, email support, event, news, and personalized content, as well as interactive content [30].

*D. Cluster 4 – Transactions/ business online integration*

Firms begin to be considered as advanced level of website adoption. Web adoption initiatives in this cluster begin to pull together business models and business processes. Interactive marketing, sales ordering, online communities and secure transactions as additional features make websites features in this cluster become more complex [37]. Firms build relationship and seek new business opportunities by using interactive websites in this cluster [29]. Furthermore, interactive and financial transactions should be facilitated in form of e-payment.

*E. Cluster 5 – Integrated to other websites*

Firms are more likely to actually engage their business activities using the internet [30] and integrated web system [37]. This cluster transforms the overall business models throughout the organization. Transformation starts to take place by introduce content customization, offering and call back services. Therefore, link based activities are central to the organization.

There have explored these Teo and Pian’s clusters then combined with model proposed by [24] to evaluate the chosen criteria in travel agencies in Iran [29]. The result showed that, most Iranian travel agencies are in Cluster 1 (website features of information). Most of the managers do not have a proper understanding to apply more complex of website features. Table 1 shows the clusters of e-tourism website adoption in terms of website features.

TABLE 1.  
CLUSTER BY WEB FEATURES

| Clusters             |   |
|----------------------|---|
| 1 - Contact method   | Firm address/ contact number<br>Email address of webmaster<br>Email address of marketing staff<br>Email address of management staff |
| 2- Information       | Firm overview<br>Financial report<br>Information of product or service<br>Search menu on firm's website                             |
| 3 - Customer service | Frequently asked question (FAQ)<br>Customer service<br>Form of visitor's feedback<br>Guest book<br>Online community                 |
| 4 – Transactions     | Online marketing<br>Online ordering<br>E-payment<br>Electronic integration with suppliers<br>Electronic integration with customers  |
| 5 –Integrated        | Link to other websites  |

Source: [29]-[30]- [38]-[39].

III. CONCLUSION

E-commerce has a tremendous impact on create new business opportunity for tourism industry. It revolutionizes the distribution of tourism information and products. Various researchers have undertaken studies to explore the e-commerce adoption in the tourism sector. Very few researchers investigated e-commerce adoption cluster and specially tourism websites.

The characteristics of firm’s website adoption in many tourism literatures are covered by the category of business size, scope of country and tourism website evaluation model. Only few studies identify e-commerce adoption level that addresses the cluster based on website features.

The primary purpose of this paper is offer a contribution for the literature on the cluster e-commerce adoption to identify recognized clusters. It provides a timely understanding five clusters of e-commerce website adoption especially in tourism industry: contact method, information, customer service, transactions, and links to other websites. Of these clusters, clusters 1, 2, and 3 only focus more on information

distribution. Contrary, the last two clusters are categorized as transactional websites. Firms tend to provide more extensive information and transactions.

Online business transactions, personalized customer service and detail information require technological support for advanced e-tourism website features. Thus, this implies that an advanced website features could facilitate higher level of e-tourism adoption. However, having an advanced website will not always lead to an organization's success. Further work can be done on establishing the extra effort in attracting and retaining customers in order to gain competitive advantage through creating value within adoption of the websites.

The further research is going to investigate the research empirically related to cluster of e-tourism and its relationships to another construct including e-readiness of organization, technology and environment factors.

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