Engaging Millennials on Using Chatbot Messenger for Eco-Tourism

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Abstract— Special Region of Yogyakarta is known as one of the tourism icons with eco-tourism potential for natural tourism. Most visitors during the previous year visited coastal tourism area such as the South East Coast cluster. This tourism phenomenon is benefitted from word-of-mouth information dissemination turning into peer-reference which motivates individuals to visit the related tourism destination. Millennials as the most internet users, according to Indonesian Internet Service Provider Association, become the largest contributor for spreading tourism information through frequently accessed digital platforms specifically messenger and social media. This study describes chatbot feature on messenger platforms used by millennials to provide information in an interactive manner and defines chatbot's potential as auto-responder which can accommodate requirements of tourism information in the Special Region of Yogyakarta.

Keywords—Tourism Promotion, Eco-Tourism Information, Messenger, Chatbot, Yogyakarta.

I. Introduction

Yogyakarta as an administrative region, as well as a Special Region in Indonesia, has a variety of potentials known to the public one of which is as a tourist destination city. Being widely popular as a tourist destination, Yogyakarta received several awards in the Indonesia Attractiveness Award in 2018 given by the Minister Republic of Indonesia, Tjahjo Kumolo, as the Best City for Tourism in Platinum category and the Best City for Investment in Gold category [1].

In today's digital era, tourism promotion can be carried out with no significant obstacles reflecting on the success of TripAdvisor, a corporation that operates on a website. It is the largest provider of tourism destinations and accommodation reviews and is still operating today. TripAdvisor is one of initial social web sites based on user-generated-content widely adopted by digital platforms at present. A study [2], states that digital media platforms work using algorithms and technological structures determined by Web 2.0. This structure determines how the content is created and displayed but requires users to create, provide input, and update content known as user-generated-content.

User-generated-content features have varied utilities. One of them is generating data by crowd-sourcing-basis with certain markers application to identify and manage similar content, and travel and tourism content. The virtual community of Indonesian tourists also implements similar method through Instagram application based in several cities to promote tourist destinations by uploading photos of tourist attractions using hashtag (#explore-followed with city) such as Yogyakarta with @explorejogja, Bali with @explorebali, Malang with @exploremalang, and Bandung with @explorebandung. Digital platforms' function to share information on tourism can be used as a reference for traveling although the information is limited to the ones which get displayed on the platform and surpass the validation or curation process. Information distribution process, known as 'share' on social media terms, is characterized by one-way communication solely from the digital platform as information provider to the user. When users need further information, they take some follow up activities such as common web surfing via search engine relying on certain keywords. It usually requires further means to identify the validity and reliability of such information. Digital platforms allow internet users to obtain valid information for reference and implement interactivity by adding an auto-responder feature on social media. This auto-responder feature is also used for social networking as a quite reliable alternative of information source with the help of chatbots as auto-responders.

This research reflects on previous studies, particularly this one which examines social media and communication in digital platforms to map the patterns of social media utilization by its users entitled 'Social Media Chatbot for Collaborated Engagement Marketing'. This study [3] describes the use of social media to promote marketing campaign based on consumer involvement and is supported by chatbot features that enable interactivity between chatbot and social media user. This collaborative campaign as a primary research study integrates several digital platform service providers initiated by the top-of-mind brand which encourage consumers to make purchases followed up by validation process through Twitter and is assisted by chatbot as an auto-responder. By the end of this campaign, consumers are benefitted from obtaining rupiahs balance on fintech applications which allow cashless payment. This collaborative campaign involves several corporations, such as convenient stores, Alfamart and Indomaret to escalate Aqua sales, PT. Danone as a digital campaign #AdaAQUA proprietor, Twitter as a digital platform service provider enabling chatbot to

operate on its microblogging platform, and finally GoJek which raises awareness campaign to promote cashless payment application known today as GoPay. This research is an extensive study focusing on social media use to support an integrated campaign involving several producers and service providers.

Based on the previous studies, this research sets in to explore social media chatbot potential especially on messenger platforms. Chatbot enables interactive communication between users and platforms which requires digital platforms to provide non-static content that demands user's suitable knowledge and appropriate ability to curate specific information. Messenger users are encouraged to be able to engage social media as a reliable reference in user-generated-content era. It is initiated in Web 2.0 era in which it enables internet users with any kinds of background including the non-capable to be able to perform as a 'gatekeeper' since digital platforms undermine series of processes to filter, select and curate information provided by the internet. Thus, users switch roles from information recipients to individual or collective 'gatekeepers'. Web 2.0 presence is suspected to have a negative effect regarding authorities of the 'gatekeeping' process through the 'portal' reduction process (gate) which has an impact on decreasing accountability and skills in managing information [2]. The information system built regarding this research allows users to perform 'gatekeeping' process more dynamically with the help of chatbots which work as auto-responders, function as information aggregators, and are needed by messenger users in facilitating convenience of tourism journey.

Chatbots are a form of human-computer dialog system that operate through natural language via text or speech [4]. In general, chatbots on messenger platform indicate the automation process carried out by platform developers or platform programmers to facilitate interactions that occur between platforms and users. Chatbots as well as other technology products come with implementation impacts. Beneficially, chatbots reduce information availability process significantly. On the other hand, information obtained using chatbot technology must be able to respond to reliability, validity and neutrality issues as well as media content in general. Information is provided with chatbot assistance and is challenged with 'independence' matters. It also corresponds with "does information delivered by chatbot, is value-free of even immune from certain interests?". It indicates that chatbot could also be used as an effective digital campaign tool, as stated by [5]. The idea of chatbot implementation is initiated from the policy decisions system provided by social media platforms which later pertain to automation. It means that chatbot programs have many commercial implementations and are often known as virtual assistants or assisting conversational agents [6].

Digital tourism promotion has been initiated by Yogyakarta Province Tourism Office on the official website of https://www.visitingjogja.com since 2016 supported by official Instagram account @visitingjogjacom, YouTube channel known as 'Dinas Pariwisata DIY Pariwisata DIY' and Facebook fan page of https://www.facebook.com/visitingjogjacom/. Static contents are uploaded on those social media accounts as headlines signifying interactivity between users and platform managers (admin) which tends to be limited. This study seeks to offer interactive media providing tourism references using chatbot feature embedded on messenger applications. Thus 'Telegram' messenger platform is offered as a solution for platform managers to provide programmable auto-responder which can be enhanced as comprehensive tourism information.

Eco-tourism initiative is carried out by Yogyakarta Provincial Tourism Office involving all tourism stakeholders to carry out eco-tourism purposes based on tourism principles adopted from The International Ecotourism Society (TIES) i.e. minimizing negative impacts, building awareness and concern for culture and environment, providing positive experiences for tourists and local residents, providing direct financial benefits for conservation, providing benefits and empowerment for local residents, and increase sensitivity to the politic, environment and social climate for the host country [7].

II. IMPLEMENTATION

The objective of this research is elaborating chatbot implementation on social media particularly on messenger platform which interactively provides continuous tourism information especially in Yogyakarta tourism. This research also functions as a preliminary study for further research exploring chatbot potential which corresponds to the need for comprehensive information on a series of *auto-responder interactivity* process and enhances FAQ feature dynamically. Messenger chatbot allows users to obtain on-demand information resembling communication with active entities and form two-way or interactive communication known as programmable interactivity.

This research is conducted by sequence analysis towards a series of processes regarding human (user) with digital messenger platform. It focuses on chatbot implementation and highlights the interactivity dimension between chatbots and Telegram application users. Primary data collection from platform users was done by distributing 'Visit Jogja' chatbot link (https://t.me/visitjogja_bot) towards research respondents selected within specific criteria. Those criteria are active user of Telegram messenger living in Yogyakarta who was born between early 1980s to early 2000s and harnessing 'Telegram' as a messenger platform to acquire tourism information while acknowledging eco-tourism that is fully applicable to complement their own tourism journey especially in Yogyakarta region. Another objective of this research is highlighting interactivity within Telegram conducted by several digital platforms which form an integrated operational system to provide comprehensively programable tourism information.

Chatbot feature implemented in this research is called 'Visit Jogja' which involves series of computational processes integrating diverse digital platform such as Telegram. It is a chatbot operationalization platform which functions as an application in which users could interact with the chatbot itself. Furthermore, chatbots are equipped with information about eco-tourism and eco-tourism clusters as tourism destinations in Yogyakarta which are obtained from crowd-sourcing-based search engines.

Fig. 1. Homepage for messenger chatbot 'Visit Jogja' on Telegram.

The experience of interacting with Chatbot, generally practical, slightly different this finding, a study reveals chatbot capabilities applied on customer care services, emphasizing empathic tones (i.e. *tone-aware chatbots*) to improve user-experience quality, wherein chatbot integrated with social media, enabling customers responds or provide acknowledging information, whereas, this phenomenon are commonly known as *user-generated-content* on microblogging-based social media, Twitter, implemented on 1.5 million Twitter users to generate appropriate response which considered more empathic to replicate customer complaints [8] this finding proof that chatbots are able to create a personal experience for customer care services, as visualized by messenger platform-based information provider services called 'Telegram' shown by Figure 1, allowing messenger users to gain personal experience interacting with chatbots, where chatbots are able to recognize users based on the 'screen name', or 'username', this remarks initial stage user data collection process, where the chatbot records 'nickname' provided voluntarily by users themselves.

Fig. 2. Eco-tourism description menu on 'Visit Jogja' Telegram page

Chatbot 'Visit Jogja' allows users to obtain accurate information as illustrated in Figure 2. Furthermore, it also shows next step following user initial interaction with chatbot in order to get accustomed with chatbot itself. At this stage, users receive introductory information explaining eco-tourism principles fundamentally. It also provides knowledge on eco-

tourism potential, especially on coastal areas tourism destinations. certain kind of Information integrated in the messenger platform assisted the chatbot, originated from number of verified websites and accessible by using search engines based on crowd sourcing. Information about eco-tourism as portrayed in Figure 2 comes from an organization that focuses on eco-tourism itself known as The International Ecotourism Society (TIES, https://ecotourism.org) which is combined with information on coastal tourism as stated by Tourism Statistics in 2017 published by Yogyakarta Provincial Tourism Office [9].

Fig. 3. Tourist destination description menu on 'Visit Jogja' Telegram page
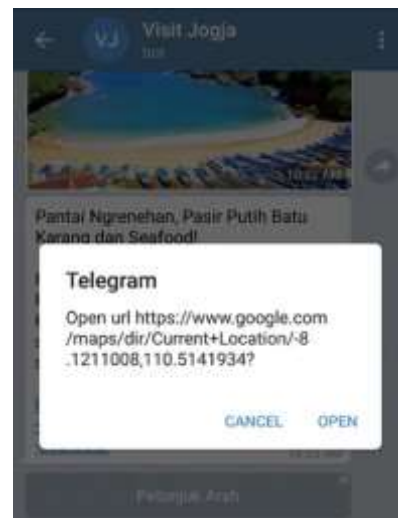

Fig. 4. Tourist destination menu on 'Visit Jogja' Telegram page

Furthermore, 'Visit Jogja' guides users to access tourism destination navigation menu on 'Visit Jogja' page. As a follow-up of description menu, messenger users need to select directions menu for navigational purpose. Thus, it will automatically be directed to location-based-service web page to access the exact tourism destination as a complement of the previous information containing description and

photographs of the precise tourism destinations derived from curated data and portal integration, merging Yogyakarta Tourism Office Official Portal (http://visitingjogja.com), navigational site based on crowd-sourcing (https://www.google.com/maps/) in order to provide collaborative data required by platform users to activate location-based-service and accessing navigation routes to the exact tourism destinations.

III. DISCUSSIONS

The series of messenger chatbot utilization processes begin with user initial interaction with the chatbot itself. It leads to user's information aggregation as user database, as proof of messenger chatbot application, as an active digital entity tool to perform multiple functions, as an auto-responder, and as an information provider. Navigation services also facilitate users with data information collection which prevails as a database for further research or campaign related to tourism studies especially in Yogyakarta. Tourism studies become one of significant assets for economic pace in Yogyakarta region. Tourism Communication reviews several components of tourism communication as follows:
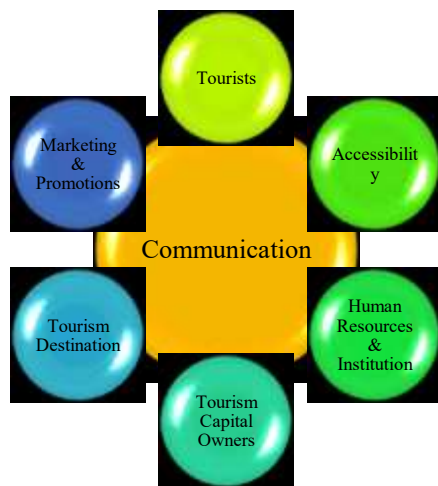

Fig. 5. Tourism Communication Diagram. [10].

Referring to Figure 5, 'Tourism Communication' components diagram discussed in this study is the integration of comprehensive and affordable information available for tourists. It may support the accessibility for tourists who will travel and become part of tourism promotion and marketing. The implementation of tourism involves capital owners, tourists, tourism human resources and related institutions.

IV. CONCLUSION AND RECOMMENDATIONS

Eco-tourism as part of tourism field for the global community is a principle as well as a practice of tourism activities popularly associated with 'green living' or *'eco-friendly'*. Related to this notion, to be able to adapt with the disruptive era, tourism management necessarily perform course shifting to harness digital platform and technology. It eventually expands tourism promotion extent by using internet

technology specifically messenger chatbot which comes with several functions namely: (1) Begin with user-generated-content phenomena, messenger chatbot allows messenger users to gain personalized user experience and to improve quality of chatbot and user interactions (interactivity); (2) Chatbot messenger has the ability to function as a campaign instrument to support a more extensive tourism promotion than conventional media that is generally characterized with one-way-communication; (3) Messenger chatbot is able to perform as an information aggregator which provides users with comprehensive information by automatically switching platforms; (4) Messenger chatbot can be managed as a device to organize conversations generating users' information collected as a database which is beneficial for extensive research or further campaign.

Chatbot messenger especially on 'Telegram' platform which predominantly protects user's privacy has the possibility to be utilized as means to increase tourism awareness intensity on specific campaign, specifically to escalate eco-tourism popularity and implementation. It is relevant and necessary to address considering the fact that Yogyakarta tourism potential requires enhancement over promotion, management, and authorized policies to support the development and preservation of tourism. Education especially related to eco-tourism strongly addresses residents in tourist destination areas to preserve the tourism potential. Travelers are also suggested to be educated about eco-tourism which will eventually have an impact on tourism ecology extrinsically and intrinsically.

ACKNOWLEDGMENT

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