

The Role of Technology in Diminishing Barriers to Co-Creation, a Tourism Companies' Perspective

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Abstract

In the last years, the phenomena of customer co-creation have been receiving great attention in tourism studies. Co-creation is a new practice that can help businesses gain a competitive advantage. Customer co-creation is considered an important tool used in the innovation process. However, the implementation of the co-creation process faces several barriers. Tourism companies can benefit from the rapid technology to limit co-creation barriers. Engaging customers in the value of co-creation with tourism companies is still relatively low in Egypt because of different barriers. The study aims to identify the barriers that tourism companies face to start co-creation. The study also examines how technology could facilitate the co-creation process and limit these barriers. The findings that arise from the qualitative study identified eleven barriers under three categories. The first category, barriers related to the relationship between the customer and the company. The second category, barriers related to the Company. The third category, barriers related to the customers. The findings also revealed

that seven barriers out of eleven may be resolved by technology.

Keywords Tourism Companies, Co-creation, Co-creation Barriers, Technology

1. Introduction

Nowadays, with the rapid change of the tourism market and the sever competition, tourism companies have to develop new products and encourage more participation from their customers. This is especially because tourists have become more demanding and want to be more involved in designing their trips (Berrada, 2017). Tourism companies could offer innovative and personalized products through the value of the co-creation concept (Berrada, 2017). Recently, the traditional approach of delivering the service from the provider to the customer has shifted to close interaction between service providers and their customers. However, tourism companies are still struggling to change to the implementation of co-creation (Vargo et al., 2008). Hence, adoption of the co-creation process and shifting from company-centric to a customer-centric is not easy (Payne et al.

2008). Different studies identified substantial barriers to co-creation that are especially correlated with small tourist enterprises (Chathoth et al., 2014). Barriers such as lack of resources, risk aversion, resistance to change, lack of understanding of the value of innovation, customer activation, the follow-up of the operational efficiency and the risk of giving the customer a high degree of control, limit the ability of the firms to co-create (Wollenick, 2012; Najda-Janoszka, and Kopera, 2014). However, there has not been much attention in previous tourism studies on how to manage or diminish the barriers of co-creation (Chepurna and Criado, (2018). Recently. Technology changed the value creation process and transformed the traditional tourist companies to tourist-centric product and service (Neuhofer et al., 2015). Information communication Technologies (ICT), online communities and mobile applications are considered now the major driving forces for tourism companies that enable new dimensions of co-creation (Neuhofer et al., 2012). Mandolfo et al (2020) pointed out that the increasing importance of the co-creation in recent years can be attributed to the development of ICT-based platforms that lower the barriers for companies to adopt different co-creation activities. Therefore, the aim of the study is to explore how the tourism companies face different barriers to adopt the co-creation process. Specifically, the study aims to gain a comprehensive understanding about the barriers to co-creation from tourism companies' point of view. It also examines how could technology and ICTs diminish the co-creation barriers. Through field interviews, the study highlights which are the barriers to co-creation. Additionally, the study enriches the literature by bringing attention to the role of technology to overcome the barriers to co-creation. The

study also provides managerial implications to support how to throw light on the drivers of customer participation.

2. Literature Review

Tourism co-creation

Vargo and Lusch, (2006) suggested that co-creation is built on two main foundations. The first involves the consumer's participation in the creation of the core offering, and the second is the value which can only be created with and determined by the user in the consumption process and through use (Vargo and Lusch, 2006, p. 284). Co-creation is defined as "the joint creation of value by the company and the customer; allowing the customer to co-construct the service experience to suit his/her context" (Prahalad and Ramaswamy, 2004, p. 8). Zwass (2010, p.13) also defines co-creation as "the participation of consumers along with producers in the creation of value in the marketplace". Roser et al (2013; P3) co-creation is advocated as a means to expand the innovation and value creation capability of the firm, while nurturing customer relationships and lowering the cost of marketing and research & development. Thomas et al., (1999) explained that co-creation includes three dimensions: the content (what is co-created?), the process (the co-creation project setting and the methods that are used) and the people (whom the interaction takes place with). Customers are considered the co-creators in the co-creation or co-creating value process (Thomas et al., 1999). Zwass, (2010) defined four types of co-creators: (1) The world, every customer can contribute to the co-creation process if he/she has the ability. (2) Prequalified individuals, the customer that has previous experience and his/her contribution could be valuable. (3) Community members, A specific trusted community member that has

an interest in the same field of the company/business. (4) Skilled contributors, an individual that has certain skills which were predefined by the company/business. In the tourism context, tourism providers need to understand that co-creation not only depends on tourist's participation, but also on tourist providers' effort to take part in the co-creation process (Thi Pham & Truong-Dinh, 2018). Tourism providers include tourism business organizations and destination management (Thi Pham & Truong-Dinh, 2018). The authors considered tourism co-creation as a marketing tool and this needs tourist engagement and interaction (Thi Pham & Truong-Dinh, 2018). Tourism co-creation is defined "as the tourist's interest in the mental and physical participation in an activity and its role in tourist experiences" (Prebensen et al., 2016, p. 1). Payne et al. (2008) suggested that the concept of tourism co-creation stems from tourism companies seeking tourists to work with them to co-develop tourism activities. According to Grisseman and Stokburger-Sauer, (2012) customer's co-creation of tourism experiences is considered another perspective of co-creation, and this occurs before, during and after the travel. Creating new products or service development needs changes in management and staff mentality and competencies are necessary to implement tourism co-creation (Thi Pham & Truong-Dinh, 2018). The greater the tourists' involvement in the process of co-creating their tourism services, the more they will be satisfied (Shaw et al., 2011). To engage customers in the co-creation process, firms need to access a higher degree of customer information (Chathoth et al., 2014). Furthermore, sharing this information needs transparency and willingness to engage in the co-creation process from both parties; firms and customers (Chathoth et al., 2014).

Prahalad and Ramaswamy (2004) developed the DART model to explain the co-creation value. The authors noted that firms can facilitate customer engagement in the co-creation process through four acts, "creating dialogue, granting access, making them share the risk, and providing transparency" (Prahalad & Ramaswamy, 2004, p. 9). Yi and Gong, (2013) also developed a scale to assess customer co-creation behaviors that included two dimensions. The first is customer participation behavior, which includes in turn information seeking, personal interaction, information sharing and responsible behavior. While the second dimension is customer citizenship behavior, this includes feedback, advocacy, helping and tolerance. Customers' willingness to participate in co-creation depends on sharing resources and information between firms and customers (Vargo and Lusch, 2006). Schwetschke and Durugbo (2018) considered value co-creation plays an important role in small- and medium-sized service companies. Different studies investigated value co-creation between service providers and customers and confirmed that it depends on the combination of individuals, technologies, organizations, and shared information (Rajala et al., 2015; Vargo et al., 2008). Tourism companies, through the Internet, could cooperate with tourists to qualify tourism products and improve their services (Berrada, 2017).

Barriers to co-creation

Companies must engage customers through co-creation activities. However, many businesses are still lagging behind and failing to include customers in their innovation decisions (Chathoth et al., 2014). Agrawal et al., (2015) mentioned in their study that the barriers to co-creation must be well investigated. Pera et al (2016) concluded that trust and openness are considered challenges

for companies to enable co-creation. Many studies referred that shifting to co-creation approach depends on the openness of both the customers and companies (Grönroos and Voima, 2013; Rod et al., 2014). Camison and Monfort-Mir, (2012) suggested that the small size of the firms and the limited resources are the main obstacles to innovation. Chathoth et al., (2014) identified four categories of barriers: consumers, technology, strategy, and management structure and culture. The Barriers that are related to consumers included risk perception of consumers, consumers' lack of previous knowledge about the service, consumer's dissatisfaction and lack of consumer interaction due to the absence of convenient platforms. The Barriers that are related to technology included the absence of the role of information technology and lack of technology integration. The Barriers that are related to strategy included lack of information sharing, lack of innovation of management and the level of control of the service brand. The Barriers that are related to management structure and culture included lack of flexibility, traditional marketing methods, geographical context, the management style and failure to define the role of employees and customers. Sjödin et al., (2017) identified three main barriers that are likely to prevent service providers to engage in the co-creation process. The barriers are operational cultural resistance, loss of operational know-how and risk of operational conflicts. Chepurna and Criado, (2018) study also detected different barriers to co-creation and categorized these barriers under two categories: barriers that are related to customers and barriers that are related to companies. The barriers that are related to customers included lack of trust, technology anxiety, no shared values, skepticism, the impact of social influences and technology-

perceived ease of use. The barriers that are related to companies; included a task layout that facilitates customer decisions, no offline meeting to encourage customers to engage in co-creation online, personal availability of customers. Hvolkova et al., (2019) identified different barriers to innovation such as managerial behavior, lack of qualified employees, unsupportive organizational environment and the resistance to change in leadership and employees. Ghatak, (2020) study explored the barriers to customer engagement in value co-creation in service industries. The study identified twenty-six barriers from the literature review and expert opinion. The study also developed a structure model and the analysis produced ten barriers. These barriers are lack of training and education at the top management level, lack of trust and commitment at the customer level, lack of developing strategies during the phases of the co-creation process, lack of using IT and the integration tools with customers and the lack of rewards and recognition system that motivates employees to interact with customers. Schüler et al., (2020) divided barriers to co-creation into two categories: functional and psychological. Functional barriers include the risk barrier and resisting innovation. Psychological barriers include consumers' fear of failure, in terms of their ability to make decisions in the co-creation process and being able to co-create new products. Mandolfo et al., (2020) also defined two types of barriers, economic barriers and noneconomic barriers. Economic barriers include the consumer's time that he/she spent in the co-creation process and the effort required for information seeking. The noneconomic barriers include the potential risk, the cultural and behavioral adjustments and loss of effort that arise from participation in the co-creation process.

The role of Technology in co-creation process

Franke and Schreier, (2010) suggested that there are some tools that support the co-creation process in any firm such as; the strategic intention, resources (e.g, technology) and the firm's arrangement. Prahalad and Ramaswamy (2004) confirmed that technologies and Internet-based platforms facilitate the dialog with consumers. Many studies confirmed that technology facilitates the co-creation process between actors, generates innovative ideas and plays a vital role in co-creative relationships between customers and businesses (Cabiddu et al., 2013; Gemser and Perks 2015; Sigala, 2015). Neuhofer (2016) referred that customers are more connected than ever due to the impact of ICTs that can provide customers a system for interactions. This system gives more leverage to customers, motivates them to develop closer ties with the company and encourages them to co-create their experiences with each other. Accordingly, there are different examples of how DMOs encourage tourist to co-create and implement innovative practices by using ICTs (Neuhofer, 2016). Sweden, Thailand and Puerto Rico used travel communities to foster tourists to share their images, stories, videos and create their pre- and post-travel experiences (Buhalis and Wagner, 2013). Tourists not only co-create with destinations, KLM Airlines also encourage customer co-creation by using ICTs to facilitate the consumer's engagement and enhance their flight experience (Neuhofer, 2016). Tourism companies could benefit from the participation of the tourists through different online platforms and their engagement in online communities to design and co-create tourism services and enhance the tourism experience (Neuhofer et al.,

2012). ICT Technologies and social media enabled tourists to give feedback to tourism suppliers and made tourism managers respond to their customers' needs and opinions (Hamidi et al., 2019). Neuhofer and Buhalis (2013) developed a paradigm that lean on how tourists through technology could enhance the co-creation of tourism experiences and cause a significant impact on tourism marketing. Neuhofer and Buhalis (2013) proposed that Technology enables tourists to become co-marketers, co-producers and co-designers of their tourism experiences. This study confirmed that the increase of ICTs has its influence on tourist's creation of experiences. Tourists use ICTs for information search, travel planning and booking. Hernández-López and Del Barrio-García, (2018) study also proved that to enable tourists who are interested in ecotourism to co-create with tourism providers, there is a need to provide them with online platforms. Their study confirmed that online platforms provide tourism destinations with competitive advantages and encourage ecotourism users to develop new products and services.

3. Methodology

The study used a qualitative method for gathering data. In general, qualitative data is based on small samples (Saunders *et al.*, 2009). The purpose of qualitative research is to extend the information gained from studies and theories are based on similar situation (Saunders *et al.*, 2009). One of the advantages of qualitative methods is the development of profound insights and rich, highly reliable data (Saunders *et al.*, 2009). The in-depth semi structured interviews were chosen to achieve the study objectives. The aim of the interviews was to define the barriers of co-creation process and the role of technology and ICTs in decreasing these barriers. Brinkmann and Kvale, (2015). suggested that the size of the

sample (number of interviewees) very much depends on the purpose of enquiry. They added that the common number ranges between less than 10 and more than 15 (Brinkmann and Kvale, 2015). The in-depth interviews were conducted with Twelve travel agencies' managers. The participants have prior long experience of using ICTs and social networking to promote their products and services. These interviews were conducted in January to February 2021. Every interview lasted 20 minutes and all interviews were recorded. The in-depth interviews were conducted as a private meeting and some of them were via Zoom application due to the COVID-19 pandemic. The interviews were semi-structured with open-ended type of questions. Questions for the interviews were decided in advance based on previous literature and the discussions were informal and facilitated. The participants were given freedom to express their views and their opinions. The participants were given also a brief description about the aim of the study, the concept of co-creation, the benefits of ICT to co-creation in tourism industry and the barriers that affect customer's co-creation.

Validity and reliability

Applying qualitative interviews grantee that the validity will be greater than other types of methods. This high validity comes from sufficient questions that assess how the theories are linked to reality. In addition, interviews explain the questions if they are not well understood. Concerning the reliability, Because of the qualitative nature of this kind of methods, the study informed the participants in the interviews the aim of the study. The results are mostly representing the selected tourism companies. If other studies choose to increase the number companies, they will most likely achieve

different outcomes. The interviews' questions were revised and merged to be understandable and the questions that were addressed in the interview are as following: (1) How often do you get feedback from your customers on your products/ services?

(2) Do you collaborate with your customers to create new products/services together? If you do to what extent do you engage customers in the co-creation?

(3) What are the barriers to co-creation process? Are these barriers because of the strategy of your company or the resources (financial and human) that do not support the co-creation process?

(4) How can technology facilitate your customers' engagement in the co-creation process?

Findings and analysis

The demographic characteristics are presented in table 1 referring to the interviewees that are representing the companies by the code C for ethical reasons.

Table 1. Demographic profile of interviewees

Company	Gender	Position/Title	Work experience
C1	Male	Owner & General Manager	18 Years
C2	Male	Marketing Manager	10 Years
C3	Male	Owner & General Manager	22 Years
C4	Male	Owner & General Manager	15 Years
C5	Female	Marketing & Public Relations	24 Years
C6	Female	Marketing Manager	8 Years
C7	Male	General Manager	20 Years
C8	Male	General Manager	11 Years
C9	Male	General Manager	20 Years
C10	Male	Marketing Manager	9 Years
C11	Female	Marketing Manager	14 Years
C12	Male	Marketing Manager	16 Years

1/ Customer feedback

The data revealed that all the Interviewees consider their customers' feedback to improve the quality of their products and services. That was demonstrated from the quotes of the managers of (C1, C3, C4, C7, C10, C12). As they explained that they get customers' feedback by posting a link or an online survey on their Facebook page to get their feedback. While the manager of (C3) commented that his company like to ask customers about everything and he admitted that some of their suggestions improved their services. The managers of (C3) and (C10) supported the same idea and confirmed that the feedback from customers is beneficial because it provided the company with new travel ideas and inspired the aspects that need improvements. According to the interviewees, they always benefit from their customer' feedback.

2/Collaborating with customers in co-creation

The data revealed that none of the interviewees adopt a strategy of engaging the consumer in a specific co-creation program. As demonstrated by one of the managers (C7) that the company has the lowest level of engaging customers in developing their services. The manager of (C9) confirmed that setting a co-creation program and letting customers to be involved is considered the hardest way to develop their services.

3/ Barriers to co-creation process

The interviews explored the barriers that prevent implementing co-creation by the tourism companies. The interviewees discussed different obstacles that cause co-creation failure. The study at the end arranged these barriers and grouped them into categories as following:

3/1 Barriers related to the relationship between the customer and the company

3/1/1 Lack of Customer's interaction

The owner of (C1) explained that the interaction between customers and the company needs to be processed in order to co-create and acknowledged that customers don't like to be asked too many questions. This was also mentioned by the manager of (C5) who found integrating a wide network with customers is a big challenge. The managers of (C4) and (C10) also pointed out that co-creation needs a lot of information from customers and they usually do not prefer the regular dialogues and long meetings with them.

3/1/2 Lack of Trust between the company and the customer

Two of the Interviewees (C9) and (C11) stated that one of the biggest barriers is the lack of trust between customer and company. They explained that customers will not share their ideas and co-create, before they firstly trust the company. Accordingly, the managers of (C3) and (C5) commented that most of people don't trust to give their personal details and the lack of trust towards the company can negatively affect customer's participation in co-creation. The manager of (C7) pointed out that implementing co-creation needs a trusting environment between the company and the customers. He added that engaging customers in the co-creation, does not mean that they would complete the process or give the right piece of information.

3/2 Barriers related to the Company

3/2/1 Lack of realized value of co-creation from companies

To implement the decision making of the co-creation process, companies have to realize the importance of co-creation. According to the representative of (C12) co-creation won't get more customers or more revenue. The

managers of (C3) and (C6) pointed out that they have so many marketing activities on social media and they do not want to spend extra time on projects that might succeed or might fail. The managers (C7) and (C8) discussed the value of co-creation and it would satisfy many customers, but cannot let them design or co-create. The managers of (C8) and (C9) were not convinced of co-creation and acknowledged that they have to test it first and prove it will succeed. The managers of (C1) and (C5) confirmed the same point of view that co-creation is not a very good idea. Additionally, two of the managers of (C11) and (C4) agreed that there is no time for co-creation and it would take much time.

3/2/2 Lack of Company's resources

All the managers of the twelve companies agreed that one of the biggest concerns for not going through co-creation is the lack of company resources. The manager of (C1) mentioned that many companies must use efficient resource allocation due to the lack of resources. The manager of (C7) added that customers may ask for money to go through co-creation activities. The manager of (C4) and (C8) illustrated that the main barriers for co-creation are the shortage of finance and qualified staff. The managers of (C5, C6, C10) explained that the insufficient of the human resources and the decrease of willingness of the employees could be the main challenges to companies to go through co-creation. The managers of (C2, C3, C11, C9, C12) also confirmed the same point that the lack of resources has a negative effect on co-creation.

3/2/3 Insufficient IT resources

The managers of (C4) and (C5) highlighted the absence of the required IT facilities for collaboration with customers. They illustrated that co-creation with customers need a website or a closed online community

for customers to co-create. The managers of (C1) and (C6) had the same point that any company need to set up a special platform for co-creation activities. The manager of (C10) added that companies must have the convenient virtual environment for such co-creation activities and the qualified employees.

3/2/4 Management style/strategy

One of the major barriers mentioned by the interviewees is the absence of the culture of co-creation within the owners and the top management. The manager of (C7) stated that every company is looking for profit not setting a new system to develop their services. The manager of (C5) confirmed that setting a co-creation system depends on the owners and how they understand the innovation concept. The manager of (C6) explained that the economic recession and the struggle to find customers are limiting the implementation of new ideas. The managers of (C3, C9, C12) emphasized that the traditional management is the main barrier for not implementing co-creation. They confirmed that co-creation process needs changing in management mindset and requires different strategies.

3/2/5 High costs of co-creation

Six of the Interviewees share the same idea that high costs can generate fundamental barrier to co-creation. The managers of (C1, C11) stated that it won't be comfortable to participate in a kind of activity that would cost the company a lot of money. The managers of (C2, C12) had the same comment that cost of co-creation activities will be out budget. The managers of (C6, C9) mentioned that companies suffer from the current crisis and this need reducing expenses.

3/2/6 Perceptions of risks

One of the major barriers highlighted in the interviews is the co-creation operation risk. Two of the managers (C6) and (C9) described starting a co-creation program is a big risk because the company may lose much in this

program. The managers (C1) and (C8) explained that the co-creation activities need to be examined first, otherwise the company could lose their customers. Moreover, the managers of (C5) and (C7) have also the same point and confirmed that not every company is ready to go for co-creation due to the lack of innovation and the high costs. The managers of (C10) and (C12) believed that co-creation is very risky due to the challenges behind this project beside involving the customers in this process.

3/3 Barriers related to Consumers

3/3/1 Consumers' beliefs/culture towards the value of co-creation

The managers of (C1) and (C5) illustrated an important barrier that could limit the involvement of the customer in co-creation. They explained how this process depends on the customers' culture and their ability to realize the value of co-creation. They stated that the degree of co-creation depends on the degree of the customers' willingness and belief in collaboration. Furthermore, the managers of (C6) and (C8) also discussed the importance of customers' beliefs towards co-creation and clarified that Egyptian customers do not understand the meaning of co-creation.

3/3/2 Type of co-creators (Customers)

The manager of (C6) discussed that companies should be able to define the best types of consumers to co-create. The managers of (C8) and (C11) confirmed the same point that co-creation process needs dealing with certain customers that have their innovative way of thinking and an experience from previous travels. While three of the managers of (C2-C4-C10) highlighted that customers don't have the required skills that qualifies them to co-create and develop innovative tourism products with companies. They added that customers aren't aware enough to know-how to develop new

services or to design innovative products. One of the interviewees (C3) described how the co-creation process needs to pick specific customers that have effective suggestions and do not lose interest quickly. The manager of (C9) commented that the success of the co-creation process depends on the customer that have a long-time relationship with the company.

3/3/3 Lack of customers' motivation

Interviewees discussed how motivating customers to actively involve themselves in co-creation is a very difficult job. One of the managers (C10) explained that customers need real incentives to foster them to co-create. The manager of (C2) added that consumers need a certain level of motivation to engage in co-creation. Two of the interviewees (C3) and (C4) confirmed that the process of co-creating must be payed or must give some benefits or rewards to encourage customers to participate in co-creation. The manager of (C5) suggested that motivating customers is the way to have an active behavior during co-creation.

4/ How can technology facilitate customers' engagement in the co-creation process

All the managers from the twelve companies agreed that despite the use of technology, they believe that the lack of company's resources and the management style/strategy are barriers cannot be solved. While, managers of ten companies believed that high level of technology could solve seven of the barriers that have been identified.

4/1 Barriers that can be resolved by Technology

4/1/1 Lack of Customer interaction

The manager of (C10) agreed that technology could facilitate the collaboration between the company and customers. The managers of (C5, C7, C9) explained that technology could be a great opportunity to offer a unique service, new products and an opportunity to co-create with customers. They added that

after COVID-19, all the interactions with customers became by Internet and social media.

4/1/2 Perceptions of risks

The manager of (C6) stated that using technology could minimize the risk of co-creation because co-designing with customers via the internet will cost less time and money. The manager of (C12) confirmed that co-creating online ensures that all the details will be accurate and removes any errors.

4/1/3 Types of co-creators

The managers of (C6) and (C8) pointed out that Technology can encourage different types of customers to engage and create new services. They added that it could facilitate tracking the suitable type of customers for co-creation. The manager of (C5) described that after COVID-19, technology will establish a solid system for collaboration with customers.

4/1/4 Consumers' beliefs/culture towards the value of co-creation

The Interviewees of (C5) and (C8) confirmed that Technology could ensure high levels of customer engagement and also could change their degree of acceptance of new things. While the managers of (C2) and (C11) added that developing specific applications for co-creation could change customers beliefs.

4/1/5 High costs

The opinion of manager of (C11) was that Internet allows the flow of the information, creativity and partially reduces the cost of co-creation. Similarly, the managers of (C5) and (C12) stated that engaging customers is always associated with high costs. They added that Technology allows customers to customize tourism products and enables companies to reduce the cost in the long term. Finally, the manager of (C9) commented that using technology in co-

creation is a cost-effective solution for innovative tourism services.

4/1/6 Lack of realized value of co-creation from Companies

One of the interviewees (C4) explained that using technology in small companies may help in developing new services. The managers of (C1) and (C3) confirmed that social media can help in managing the of the implementation of co-creation.

4/1/7 Lack of customers' motivation

The managers of (C1) and (C4) mentioned that people may contribute to online co-creation than contributing in physical meetings. The manager of (C3) also had the same point and added that some people may consider co-creation a tool to spend more time on social media.

4/2 Barriers that cannot be resolved by Technology

4/2/1 lack of company's resources

The manager of (C11) mentioned that co-creation activities are too expensive and technology cannot decrease these expenses. The manager of (C4) came up with another point that employees don't have the adequate training to start co-creation with customers online. The manager of (C9) stated that suffering from the lack of staff and high turnover are considered barriers to on-line co-creation. The managers of (C3) and (C12) supported the other managers that employees would take time to adapt to online innovative activities.

4/2/2 The management style/strategy

The managers of (C5) and (C8) explained that traditional management culture cannot be changed by technology or encourage innovation. The interviewees (C6) and (C10) pointed that using technology won't solve lack of flexibility of management, limited resources and high competition. The managers of (C2) and (C7) agreed on the same point that developing new products and co-creation need

different management. The manager of (C1) added that shifting to co-creation needs great changes and technology cannot do these changes.

Discussion

The first question in the study was related to the importance of customer feedback to tourism companies. Eight of the Interviewees confirmed that they conduct surveys to know their customers feedback and the others make some calls to get the feedback. In addition, six companies mentioned that feedback is the primary method for collaborating with customers on developing new products.

For the second question regarding collaboration with customers, none of the interviewees have engaged before in a co-creation process with their customers or adopt a specific co-creation program. In other words, all the Interviewees confirmed that they do not really engage in a co-creation process with their customers but remain on the level of mere customer involvement and do not reach the level of co-creation program.

For the third question, despite the above-mentioned barriers to co-creation, the interviewees have listed a long list of obstacles that cause co-creation failure. For example, the mentality of customers, the unprofessionalism of some of the managers of small tourism enterprises, the lack of innovation, bureaucracy, a lack of willingness to cooperate from customers, and a sense of despondency of employees in the tourism industry. Regarding the barriers to co-creation in tourism companies, the findings reveal eleven barriers that are organized in three categories as shown in Table 2.

Table 2 Findings of Barriers categorized into three groups

Categories of barriers	Barriers
Barriers related to the relationship between customer and the company	Lack of Customer interaction
	Lack of Trust between the company and the customer
Barriers related to the Company	Lack of realized value of co-creation from Companies
	Lack of Company's resources
	Management style/strategy
	High costs of co-creation
	Perceptions of risks
Barriers related to the Consumers	Insufficient IT resources
	Consumers' beliefs/culture towards the value of co-creation
	Type of co-creators (Customers)
	Lack of Customers' motivation

The study identified three categories of barriers. The first category is the barriers related to the relationship between the customer and the company. The second category is the barriers related to the Company. The third category is the barriers related to the customers. These findings are consistent with Bharti et al., (2014) study that confirmed that both the customer and the company are the main actors in the co-creation process and the facilitation of the process depends on both them. The findings also were consistent with Chathoth et al., (2014) study which used semi-structured interviews and defined different barriers such as the willingness to encourage consumers, the culture of tourism companies, lack of acceptance from customers, lack of trust between customers and service providers, cost, the needed resources for the co-creation process, organizational resistance, communication between customers and employees, leadership that encourages the process. The authors added that one of the primary barriers to engage in the co-creation process is the lack of successful structured technology and the inability to provide convenient platforms to interact with

consumers. The findings were close to Najda-Janoszka, and Kopera, (2014) study that identified different barriers for innovation in small and medium size tourist enterprises. Their study defined that the main barrier is the lack of financial resources. The findings were also close to Pikkemaat et al (2018) study that explored the barriers for innovation in destination management organizations and SMEs in Tyrol, Austria. By conducting interviews, their results revealed that the style of business management, human resources and the willingness to cooperate are the main barriers for innovation in the Tyrol destinations. Also, Schüler et al., (2020) in their study used semi-structured interviews and their findings revealed that customers' motives and concerns regarding their privacy are the main barriers for co-creation.

Regarding the fourth question that is related to the role of technology in diminishing co-creation barriers in tourism companies, the findings revealed seven barriers to co-creation that could be diminished by using technology. These barriers are lack of Customer interaction, perceptions of risks, Types of co-creators, consumers' beliefs/culture towards the value of co-creation, high costs, lack of realized value of co-creation from companies and lack of customers' motivation. These findings are largely similar to previous studies on the role of social media in facilitating tourist interaction. Tussyadiah & Zach, (2013) proved that Tourism companies could integrate tourists in the co-creation process through social media. Neuhofer, (2016) study also proved that technology facilitates the co-creation process through social networking sites which allow tourists to co-create. The findings were also consistent with Chathoth et al., (2014) study which confirmed that

tourism companies need to consider how to use technology effectively to engage customers in co-creation. The authors also indicated that technological infrastructure would facilitate tourism co-creation regarding risk perception and Lack of consumer interaction (Chathoth et al., 2014). The findings of Schüler et al., (2020) study indicated that when it comes to online co-creation, customers co-create differently. The findings were consistent with Mandolfo et al., (2020) study that confirmed that the internet could facilitate co-creation regarding enhancing customer engagement, persistence, speed, and cost savings. The findings also revealed that barriers such as lack of company's resources and the management style/strategy cannot be solved by technology.

Conclusion and Recommendations

The first aim of the study was defining the barriers to adopting the co-creation process in tourism companies. The study also aimed to define the role of technology in diminishing the co-creation barriers. The findings of the interviews yielded a list of barriers to co-creation, and revealed that barriers to co-creation are associated with three categories, the customer, the company and the relationship between them. Some of these barriers can be overcome by using technology. However, other barriers cannot be changed even with the use of digital methods. These barriers such as the lack of company's resources and management style. The barriers that were identified and could be managed by technology are the lack of customer interaction, perceptions of risks, Types of co-creators, consumers' beliefs/culture towards the value of co-creation, high costs lack of realized value of co-creation from companies and lack of customers' motivation. This leads to conclude that technology could decrease co-creation barriers. Technology is considered a

key driver for co-creation and allow consumers to develop a community without having to be together physically. This community will share the same interests and passion and this would motivate participation in co-creation. Technology enables tourism companies to gain access to a particular audience. In-addition a virtual community can easily be segmented based on common characteristics. Tourism companies could develop digital platforms to facilitate co-creation in relation to lack of financial resources and time pressure. Participation in online co-creation could lower the cost compared to physical co-creation. Online co-creation can limit the time and encourage customers to actively participate.

Theoretical implication

Various studies investigated the co-creation concept in different industries. Limited studies have explored barriers to co-creation and especially barriers to tourism co-creation. The study added a comprehensive knowledge about tourism co-creation and the barriers that arise from implementing this concept. Another contribution of the study is the focus of the importance of Technology in diminishing the barriers to co-creation.

Practical implication

It is important for managers to define the techniques that they can use to help their customers to co-create effectively. Managers must promote co-creation culture between employees. Tourism companies must build platforms and virtual channels to encourage the co-creation process. Managers can benefit from the rise of social media to develop different opportunities for their companies to engage customers and allow them to participate in co-creation activities. Activities such as brainstorming or a contest in which customers could submit innovative tour packages suggestions. This would define

the required skilled customers for the co-creation process. Launching a digital platform would encourage customers to develop new products and to compare between the tourism offers of various competitive companies. Managers have to guide customers to be aware of the co-creation concept and give them clear instructions to participate effectively. Traditional managers must change their mindset to be consumer-centric rather than company-centric. Managers need to be more flexible and adaptive, to create a sincere dialogue, to be open to external comments and to build trust in order to co-create effectively. Co-creation requires employees that are customer-oriented and who can quickly and efficiently respond to customers' needs and wants. Managers could use monetary rewards to motivate customers to participate in co-creation, while technology could trigger customers to collaborate by playing into customers' desire for recognition and appreciation especially on social media. Managers must avoid disappointing customers and involve the customer that trusts the company. Leading participants to focus on positive outcomes instead of receiving critical feedback is very important for the success of the co-creation process. Receiving negative feedback from customers may lead to destroying the whole process and increase the dissatisfaction and withdrawal from customers.

Limitations and future research

The study added to the existing tourism literature and in specific the relationship between co-creation and technology. It is first study that demonstrate the barriers to co-creation process in Egyptian tourism companies and the role of technology in decreasing these barriers. At the same time, the study has some limitations that should be viewed as potential paths for future researches.

Although the study used qualitative method to investigate the barriers to co-creation, there is still need to use quantitative method to generalize the findings and to identify more barriers. Another limitation that Interviewees were geographically limited to Cairo and Alexandria. The interviewees were cautious about their company's information and the real barriers for innovation in every company.

Future research should explore the barriers from the customer's perspective. Since the culture of co-creation needs time to be implemented among tourism companies, future research should focus on the strategies that could manage these barriers. Future studies also should investigate the benefits of online co-creation versus offline co-creation.

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