



# An Analysis of the Effectiveness of Information and Communication Technology Technologies in Providing Customer Feedback to Enhance B2C Value Co-creation: A Focus on the Tourism Industry

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## ABSTRACT

Recent tourism research has shown a move towards the perspective on “value-in-use” or “value-in-context” that customers can co-create value through interactions with tourism organizations. As value is co-created through an ongoing interactive learning process, customers are involved in every step of service creation, from jointly defining problems to collaboratively solving them, this is enabled through intense engagement and dialogue possibilities between customers and companies. This study aims to analyse the effectiveness of ICT technologies in providing customer feedback to enhance B2C value co-creation. Information and communication technology (ICT) competences have been deemed essential for the use and execution of digital solutions, including external relationship management, technical proficiency, and planning. The results from this current study indicated a strong positive relationship between customer feedback in a form of transparency and value co-creation. Moreover, this study found that ICT platforms such as social media and emails are the fastest way to exchange digital messages over the internet and are thought to be the most recent, dependable method in marketing and electronic commerce. Furthermore, this study revealed a strong positive relationship between customer feedback in a form of a dialogue and its contribution to value co-creation. Therefore, this study concludes that firms should engage consumers in a dialogue regarding the service provision through the use of ICT technologies in order to enhance value co-creation.

**Keywords:** ICT Technologies, Value co-creation, Tourism, Social Media

**JEL Classifications:** M0

## 1. INTRODUCTION

With the advancements in communication and information technologies, the interaction between customers and organizations is much higher compared to the past. Hamidi et al. (2020), argues that the interaction is no longer solely controlled by the companies, thus, users can now impact companies by simultaneously playing two roles: as value creators and as consumers. Prahalad and Ramaswamy (2004) highlighted the importance of dialogue as a

fundamental component of interactions between businesses and consumers; as dialogue implies interaction, deep engagement, and the capacity and willingness to act on both sides. Establishing an equal environment with well-defined engagement rules encourages active dialog and the development of a shared solution. To achieve value co-creation, customer feedback must be encouraged, such as preferences and opinions about products and services (Chuang, 2018); these conditions explain the importance of investigating the use of ICT technologies to fosters value co-creation.

Information and communication technologies have made it possible for customers to give feedback to business owners in the shortest possible time and business owners are now able to listen to customer’s interests and opinions (Habibi et al., 2015). Corporate decision-makers use the insights generated from social media and other platforms to identify their weaknesses and opportunities based on the rich information they receive from customers and stakeholders, thereby striving for delivery of better services to their customers and stakeholders (Habibi et al., 2015). In the recent decades under technological advancements, some significant changes occurred in the business logic that shifted the value creation process such as changes in corporate behaviour, from traditional company-cantered product systems to customer – centric product and service systems (Hamidi et al, 2020). This has led corporate executives to not only focus on cost, speed and product performance, but also on innovation and creativity to better meet the needs of users of products or services.

Existing research has revealed that in order to achieve value co-creation, customer feedback must be encouraged (Chuang, 2018). Thus, this study aims to contribute to the existing body of knowledge by providing an analysis of the effectiveness of ICT technologies in providing customer feedback to enhance value co-creation in the tourism sector. As it is well known, the world’s largest and highly developed economy sector is the tourism sector. Though the tourism sector is known to be a developed economy sector, there is sparse literature on the impact of ICT in tourism (Qirici et al., 2011), this study aims to address that gap. The theory employed in this current study is the service-dominant logic theory. The study will next outline the theory upon which the research objective is based and offer a review of the literature.

## 2. CONCEPTUAL THEORETICAL FRAMEWORK

### 2.1. Service-Dominant (S-D) Logic Theory

The service-dominant S-D logic is founded upon a definition of service as the application of competencies (knowledge and skills) for the benefit of another party (Evans, 2016). Thus, viewed in this way, service becomes a process whereby something is done for the benefit of another party as opposed to the units of output which are produced (Evans, 2016). This current study employed the service-dominant (S-D) logic to explore value co-creation.

Johnson and Neuhofer (2017), argues that value is something that cannot simply be offered by a provider; however, it is something that emerges through an inherently collaborative effort between consumers and producers. According to Ekman et al. (2019), the service-dominant (S-D) logic was adopted from a goods – dominant (G-D) logic in economics. This logic focused on operand resources, physical goods, the transaction and value that was embedded in the physical good and transferred to the consumer during the exchange (Terblanche, 2014). The Service-dominant (S-D) logic was then originally introduced by Vargo and Lusch back in 2004 and since then it has become the driving paradigm in experience and value co-creation research (Johnson and Neuhofer, 2017). As sustained by the seminal work of Vargo and Lusch (2004), the service-dominant logic extends the value co-creation process to also include how customers personalize value as they consume products and services.

The Service-dominant logic (S-D) paradigm theorizes the joint role of organizations and customers in the value co-creation process (Cabiddu et al., 2013; Shaw et al., 2011). Ekman et al. (2019), argues that the SDL places the customer center stage; such that the customer is always a co-producer, and the enterprise delivers value proposition. Table 1 below consists of the transition, from goods-dominant logic to services-dominant logic.

According to the service-dominant (S-D) logic, for experience and value to happen customers must play an active part in co-creating experience and value with the firm. The founders of the service-dominant (S-D) logic posit that instead of considering value as pre-existing, value can be created and determined by users in the consumption process and through use (Lusch and Vargo, 2006). Consumers are ones that actively co-create value with companies, and they are also the ones who extract value both in context and in use (Johnson and Neuhofer, 2017). For the tourism sector, which is of interest to this study, this basically means that value can be facilitated through value proposition which refers to the application of intangible competences (operand resources) such as human skills and knowledge along with tangible competences (operand resources) such as physical products and equipment (Vargo and Lusch, 2016). Johnson and Neuhofer (2017) posit that based on the service-dominant (S-D) logic consumers and organisations co-create value through an integration of a set of resources. The next section of this study presents the building blocks of interaction for value co-creation.

**Table 1: The transition from G-D logic to S-D logic**

Goods-dominant logic	Services-dominant logic	Transitioning
Making something (goods or services)	Assisting customers in their own value-creation processes	• From: the purpose of firm activity as making something (goods or services) • To: a process of assisting customers in their own value- creation processes
Value as something that is produced	Value as something that is co-created	•From: value as something produced and sold •To: value as something co-created with the customer and other value-creation partners
Customers as isolated entities	Customers in the context of their own networks	•From: customers isolated from each other •To: networks between customers
Firm resources primarily as “operand”	Firm resources primarily as “operand”	•From: primarily tangible re-sources •To: primarily intangible resources
Customers as Targets	Customers as resources	• From: customers as marketing targets •To: customers as resources in creating value
Primacy of efficiency	Efficiency through effectiveness	•From: efficiency of production is paramount •To: increased efficiency delivered through effectiveness in service delivery

Source: Adapted from Evans (2016:p17)

## 2.2. Building Blocks of Interactions for Co-creation of Value: Dialogue, Access, Risk-benefits and Transparency (DART)

How can a system for value co-creation be constructed? The foundational exchanges between the company and its customers that enable co-creation experiences must come first. Value co-creation is based on an individual-centered approach where value is created between firm and provider (Prahalad and Ramaswamy, 2004). In order to explain the process of how value is co-created through interaction, it can be seen from a perspective where interaction consists of four building blocks; dialogue, access, risk assessment and transparency, thus creating what is called the DART-model (Prahalad and Ramaswamy, 2004) (Figure 1). The DART-model is argued to be the most used and most efficient model for explaining interaction within the context of value co-creation (Prahalad and Ramaswamy, 2004; Nur Asnawi, 2020; Andrén and Sjöberg, 2020). The findings from a study conducted by Nur Asnawi (2020), which had an objective of examining the role of the DART (dialogue, access, risk and transparency) model as a determinant of co-creation activities in Islamic banking, revealed that the dialogue and transparency of the DART model positively support co-creation activities.

### 2.2.1. Dialogue

The DART model's first building block suggests that a crucial step in the co-creation process is interaction, engagement, and a readiness to take action on behalf of both the provider company and the customer it serves (Andrén and Sjöberg, 2020). A dialogue is an essential component of the co-creation perspective. When customers and enterprises engage in a genuine dialogue, they are able to better comprehend and hear each other's needs (Nur Asnawi, 2020). Nur Asnawi (2020) asserts that with dialogue, innovation and creation are initiated in product preparation and problem solving. One way to think of markets is as a series of exchanges between a company and its customers (Fagerström and Ghinea, 2013). In co-creation businesses have meaningful conversations with customers that change as they become more sophisticated in order to understand as much as they can about them (Keeys and Huemann, 2017). The information infrastructure needs to be customer-focused and promote active engagement in all facets of the cocreation process, such as information search, configuration of product and service, fulfilment, and consumption

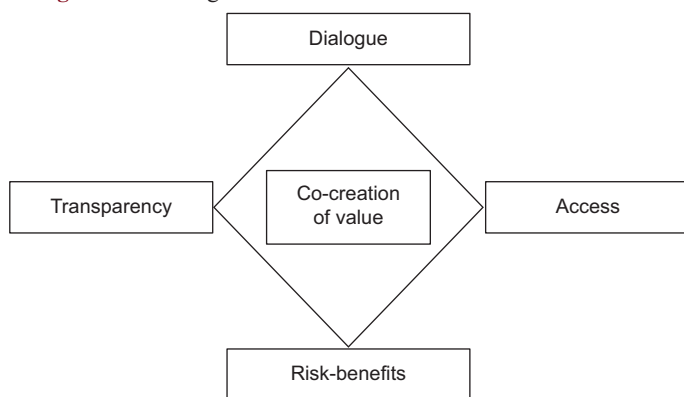
(Rantala and Karjaluo, 2016). Dialogues necessitate active participation, profound engagement, and both parties' ability and willingness to act. Since dialogues are influenced by factors such as spontaneity, mutual interest and individual emotions, the result will vary (Andrén and Sjöberg, 2020). A strength that emerges from participating in dialogues is therefore the potential of creating new perspectives on problems and opportunities, which is an important step in co-creating value (Andrén and Sjöberg, 2020). Nur Asnawi (2020) argues that it is challenging to envisage a dialogue amongst two unequal partners. Thus, in order to have an active dialogue and create a shared solution, the customer and the company need to learn to be equal partners in problem solving (Nur Asnawi, 2020). Conversations need to have clearly stated ground rules and revolve around topics that are important to both the customer and the company.

In many different industries, there is evidence of the transition from the "firm-centric" to the "co-creation" approach of value creation (Wang et al., 2016). Video games, for instance, would not exist without active customer co-creation (Ahrar and Rahman, 2014). Conversely, traditional companies such as John Deere are creating vast networks that enable farmers to exchange experiences, communicate with the company and with one other, and boost production (Keeys and Huemann, 2017). GM's OnStar network serves as another example (Ahrar and Rahman, 2014). People could be able to create their own experiences with the technology. Virtual environments, such as internet and social media, radically change the process and characteristics of interaction between firms and customers during co-creation (Schiavone et al., 2014). Even though technology is essential to at least three of the DART model's four building blocks and cannot exist without it, the model undervalues its importance (Schiavone et al., 2014). This deficiency is especially problematic when value and innovation are co-created in virtual spaces like social media (Wang et al., 2016). The successful utilization of virtual platforms for co-creation necessitates the application of specialized managerial and technological skills and expertise, including risk assessment, dialog, transparency, and accessibility. Therefore, these are likely to play a critical role.

### 2.2.2. Access

Co-creation would be ineffective if customers were not able to access to critical information about products (Schiavone et al., 2014). The term "access" describes the information that businesses provide and the experiences that may be had with them (Keeys and Huemann, 2017). Geographic boundaries around information are rapidly disappearing due to the internet, allowing customers to obtain information about businesses, goods and services, and technology from all over the world (Schiavone et al., 2014). If consumers do not have access to and transparency regarding information, then having a dialogue will be challenging (Russo Spina et al., 2012). Businesses have historically profited from taking advantage of the information asymmetry that exists between them and the individual customer (Wang et al., 2016). Due to the widespread availability of connectivity, a single customer can obtain all the information they require from both the company and the community of other customers (Nur Asnawi, 2020).

Figure 1: Building blocks of interactions for co-creation of value



Source: Andrén and Sjöberg (2020: p12)



### 2.2.3. Transparency

Transparency is the openness of the firm to the outside, providing information about products, services and projects (Schiavone et al., 2014). Transparency is essential to building trust between the business and its customers. Schiavone et al., (2014) argues that to have a meaningful conversation, both transparency and accessibility are essential. Nur Asnawi (2020) argues that the transparency dimension is a contributor to the friendly relationship between organizations and customers. This building block is a compulsory precondition for both dialogue and access to information (Schiavone et al., 2014). The elimination of ambiguity and error-free work are possible with transparency (Kamboj et al., 2018). In summary, successful interactions require transparent information sharing among individuals. Transparency of company information in the value co-creation process can increase consumers' acceptance of the quality of products and services (Kamboj et al., 2018).

### 2.2.4. Risk-benefits

The consumer can clearly evaluate the risks and rewards of a course of action and decision when there is dialogue, access, and transparency. (Rantala and Karjaluo, 2016) argues that businesses that embrace the idea that unique value originates from a tailored co-creation experience stand to gain a great deal more potential for creating value. The relationship between a firm and its customers is highlighted as the primary source of value generation through co-creation (Kamboj et al., 2018). When consumers take on the role of co-creators of value, they seek out as much information as they can regarding the probable risks connected to the manufacture, delivery, and consumption of certain goods and services (Nur Asnawi, 2020). Nur Asnawi (2020) posits that according to a customer-centric perspective, businesses must warn customers of any possible hazards associated with the goods or services they are offering.

## 2.3. Business-to-customer Value co-creation

The creation of economic value has shifted during the last decades from individual contributions by single firms, to the integration of customer knowledge in product development and to the co-creation of value (Hein et al., 2019). Firms are creating value through the use of engagement experiences between customers and firms. Interactions between customers and firm stakeholders are the new locus of value co-creation; thus, firms must be structured to function around these interactions to find opportunities to co-create with customers (Tuan et al., 2019). Ramaswamy and Gouillart (2010), insinuates that firm co-creation has been addressed in the literature in terms of creating an environment that facilitates co-creation; thus, facilitating the co-creation experience with customers requires the firm to design better experiences for employees as well. Consumers are able to co-create value with firms through technological advancements which allows them to gain access to new tools that enable them to co-create value (Ranjan and Read, 2016; Pathak, Ashok, Leng Tan, 2022).

The increased application of technological advancements and customer engagement often occurs in online environments (Zhang et al., 2018). Due to these technological advancements, consumers are now more informed, connected and empowered on a scale

larger than before. The internet technologies allow consumers access to new tools that enable them to co-create with firms. Co-creation has been addressed from the customer's perspective in terms of the stage they go through when participating, what motivates them to participate and their roles in co-creation and participation styles (Rajan and Read, 2016). Rajan and Read (2016), alludes that customers can be involved in marketing and sales, customer service, the deployment of new products as partial employees. The findings from a study conducted by Ramaswamy and Ozcan (2016), which aimed to investigate how brand value co-creation is enacted through brand engagement platforms, embodied in brand experience domains, and emergent from brand capability ecosystems, valorizing outcomes with stake holding individuals, revealed that customers may also be included via self-service technologies, through unique experiences with the firm, by participating in a process to solve their problems and by co-creating the final product. Prahalad and Ramasway (2004), asserts that the level of customer participation in co-creation varies depending on the knowledge and skills of the customer, as well as the complexity of the task at hand. The ability to co-create new goods, experiences, and services is made possible by the new digital means of communication. The next section of this study presents the research methodology.

## 3. RESEARCH METHODOLOGY

This study targeted the game and nature reserves in Mpumalanga. A descriptive quantitative research method was employed to collect data from 23 respondents that form part of the management of the 23 game and nature reserves in Mpumalanga. These respondents were surveyed as part of a quantitative research strategy to gather data, through the use of a systematic sampling method. Selecting a study population that is best relevant for the research at hand is crucial to increasing the likelihood of a successful study. Thus, Mpumalanga's game and nature reserves provided the data for the present study. Questionnaires were utilized because of the nature of the study, which required data to be obtained from the reserves. The sampling unit for this current study were 23 game and nature reserves in Mpumalanga. The researchers employed the Mpumalanga tourism database and statistics for 2020, which indicated that the total number of game reserves and nature reserves in Mpumalanga is 23. This study employed a systematic sampling method which according to Hafidz and Elihami (2021) is much more rigorous and generalizable. Furthermore, Jawale (2012) posit that this procedure is useful when a sampling frame is available in the form of a list. This method is appropriate for this study because the sampling frame is outlined in the below Table 2.

A questionnaire was used as the measuring tool, and its validity was assessed using the EFA (Exploratory Factor Analysis). The EFA was calculated to reduce the number of items in the structural model using the principal component extraction approach. In addition, the EFA assisted in determining the measurement's dimensions. After the factors were extracted, items with loadings  $>0.40$  were considered very significant, which improved their interpretability. To ensure reliability, this study employed internal reliability. The coefficient that was used to measure the internal reliability of the instrument was

**Table 2: Sampling frame**

Game and nature reserves in Mpumalanga	Number of questionnaires distributed to management and positions
1. Sabi sands game reserve	1 (Manager)
2. Sebaka Game reserve	1 (Manager)
3. Blyde River Nature Reserve	1 (Assistant manager)
4. Dullstroom Nature Reserve	1 (Owner)
5. Gustav Klingbiel Nature Reserve	1 (Manager)
6. Kruger National Park	1 (Co-owner)
7. Ligwalagwala Conservancy	1 (Assistant manager)
8. Loskop Dam Nature Reserve	1 (Manager)
9. Marieskop Nature Reserve	1 (Manager)
10. Manyeleti Game reserve	1 (Manager)
11. Mkhombo Nature Reserve	1 (Manager)
12. Mount Sheba Nature Reserve	1 (Co-owner)
13. Mountainlands Nature Reserve	1
14. Mthethomusha Game Reserve	1 (Manager)
15. Nkomazi Game Reserve	1 (Co-owner)
16. Nooitgedacht Dam Nature Reserve	1 (Assistant manager)
17. Mjejane Private Game Reserve	1 (Owner)
18. Londolozzi Game Reserve	1 (Manager)
19. Saragossa Game Reserve	1 (Assistant manager)
20. Songimvelo Game Reserve	1 (Owner)
21. Steenkampsberg Nature Reserve	1 (Manager)
22. Lionspruit Game Reserve	1 (Manager)
23. Verloren Vallei (lost valley) Nature Reserve	1 (Manager)

Cronbach’s alpha coefficient and is usually based on the inter-item correlations (Maree, 2016).

## 4. FINDINGS

### 4.1. Descriptive Statistics

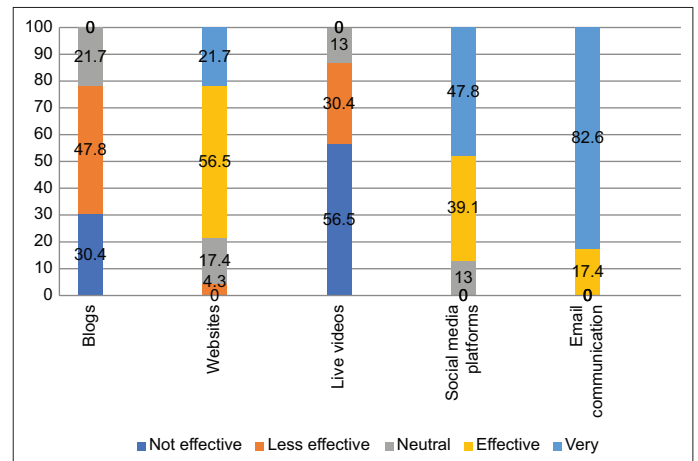
To address the objective of this study the respondents were asked two questions. Firstly, through the use of a Likert scale of 1-5 where 1 = not effective, 2 = less effective, 3 = neutral, 4 = effective and 5 = very effective, the respondents were asked to determine the communication technology tool is more effective in providing customer feedback in their businesses. Secondly, through the use of a Likert scale of 1-5 where 1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree and 5 = strongly agree, the respondents were asked to determine the effectiveness of using ICT technologies in their businesses.

Question 1: Which communication technology tool is more effective in providing customer feedback in your business?

To address this question a 5-point Likert scale was used, where where 1 = not effective, 2 = less effective, 3 = neutral, 4 = effective and 5 = very effective. The Figure 2 below depicts the findings regarding the most effective communication technology in providing customer feedback.

The results showed that 30.4% of the respondents indicated that Blogs were not effective in providing customer feedback, 47.8% said Blogs were less effective, 21.7% remained neutral. Concerning Websites, 56.5% of the respondents indicated they were effective, 21.7% said they were very effective, 17.4%

**Figure 2:** Communication technology tool that is more effective in providing customer feedback



remained neutral, while 4.3% believed they were less effective. In terms of live videos, 56.5% believed they were not effective, 30.4% believed that they were less effective, 13% remained neutral. For social media platforms, 47.8% of the respondents indicated they were very effective, 39.1% indicated they effective, 13% of the respondents were neutral. Regarding email communication, 82% of the respondents agreed that email communications very effective and 17.4% of the respondents found email communications effective in providing customer feedback. A further descriptive analysis on the most effective communication tool in providing customer feedback and presented below.

Based on the above grading table, if respondents obtained a mean score of 2.5 and less, it indicates that their responses were between disagree (not effective) and strongly disagree (or less effective), 2.6-3.5 indicates that they were neutral, while 3.6 and more indicates that the responses of the consumers were between agree (or effective) and strongly agree (very effective). As depicted in Table 4 above, a mean score of 1.91 suggests that majority of the respondents were between not effective and less effective regarding blogs being the most effective communication tool to provide customer feedback (Table 3). The findings also revealed that with a mean score of 3.96, the respondents were between effective and very effective regarding websites being the most effective communication tool. Moreover, with a mean score of 1.57, respondents were between not effective and less effective when it came to blogs being the most effective communication tool. Furthermore, a mean score of 4.35 depicts that the respondents were between effective and very effective regarding social media platforms being the most effective communication tool to provide customer feedback (Table 3). Lastly, with a mean score of 4.83 the respondents agreed that email communications are the most effective in providing customer feedback.

Question 2: What is the effectiveness of using ICT technologies to provide customer feedback in your business?

To address this question a 5-point likert scale was used, where where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree

and 5 = strongly agree. The Table 5 below depicts the findings regarding the effectiveness of using ICT technologies.

Table 5 above depicts the findings regarding the effectiveness of using ICT technologies in tourism businesses. From a total of 23 respondents, 14 (60.9%) agreed that ICT technologies improve the effectiveness of current activities, 8 (34.8%) strongly agreed and only 1 (4.3%) respondent was neutral. Based on the grading table presented above, a mean score of 4.30 suggests that majority of the respondents were between agree and strongly agree regarding the statement indicating that ICT technologies improve the effectiveness of current activities. Moreover, 11 (47.8%) respondents agreed that ICT technologies broaden opportunities, 8 (34.8%) of the respondents strongly agreed and 4 (17.4%) were neutral. The results depict that with a mean score of 4.17 majority of the respondents were between agree and strongly agree. Additionally, the findings also revealed that 14 (60.9%) of the respondents agreed that ICT technologies encourage new activities, 7 (30.4%) strongly agreed and only 2 (8.7%) of the respondents were neutral.

The results indicate that with a mean score of 4.22, a large proportion of respondents were between agree and strongly agree regarding ICT encouraging new activities. Furthermore, 12 (52.2%) respondents strongly agreed that ICT technologies improve flexibility and interactivity, and 11 (47.8%) of the respondents agreed to the statement. The results suggest that with

a mean score of 4.52 the respondents were between agree and strongly agree. Lastly, the findings also reveal that 12 (52.2%) respondents agreed that ICT technologies improve efficiency and competitiveness, and 11 (47.8%) of the respondents strongly agreed. The results suggest that with a mean score of 4.52, the respondents were between agree and strongly agree. The below figure presents the findings regarding the effectiveness of ICT technologies in tourism businesses.

As depicted in Figure 3 above, a large portion of the respondents (70.1%) agreed that ICT technologies improve the effectiveness of current activities. 49.3 % of the respondents strongly agreed that ICT technologies broaden opportunities, 71.5 % of the respondents agreed that ICT technologies encourage new activities. Moreover, a large portion of the respondents were between agree and strongly agree regarding ICT technologies improving flexibility and interactivity. Lastly, 67.4% of respondents agreed that ICT technologies improve efficiency and competitiveness. These results suggest that the respondents found that ICT technologies to be very effective in providing customer feedback.

## 4.2. Inferential Statistics

### 4.2.1. Correlation

As shown in the Table 6 above, there was no statistical relationship between effectiveness of using ICT technology and dialogue ( $r = 0.235, P > 0.01$ ). Also, there was no statistical relationship between the effectiveness of using ICT technologies and access

**Table 3: Descriptive statistics on the most effective communication tool in providing customer feedback**

Descriptive Statistics					
Sample size	n	Minimum	Maximum	Mean	Std. Deviation
The most effective communication technology tool in providing customer feedback in my business are blogs.	23	1	3	1.91	0.733
The most effective communication technology tool in providing customer feedback in my business are websites.	23	2	5	3.96	0.767
The most effective communication technology tool in providing customer feedback in my business are live videos.	23	1	3	1.57	0.728
The most effective communication technology tool in providing customer feedback in my business are social media platforms.	23	3	5	4.35	0.714
The most effective communication technology tool in providing customer feedback in my business are email communications.	23	4	5	4.83	0.388
Valid N (listwise)	23				

**Table 4: Grading table**

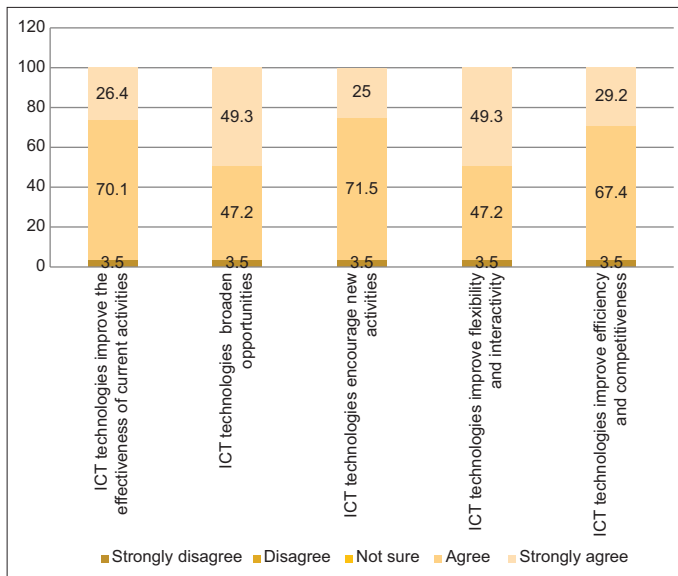
Grading	Mean
Between agree and strongly agree/between effective and very effective	3.6 and above
Neutral/Moderate	2.6-3.5
Between disagree and strongly disagree/between not effective and less effective	1-2.5

**Table 5: Findings regarding the effectiveness of ICT technologies in tourism businesses**

Statements	SD (strongly agree)	D (disagree)	N (neutral) (%)	A (agree) (%)	SA (strongly agree) (%)	Mean	Standard deviation
ICT technologies improve the effectiveness of current activities	-	-	1 (4.3)	14 (60.9)	8 (34.8)	4.30	0.559
ICT technologies broaden opportunities	-	-	4 (17.4)	11 (47.8)	8 (34.8)	4.17	0.717
ICT technologies encourage new activities	-	-	2 (8.7)	14 (60.9)	7 (30.4)	4.22	0.600
ICT technologies improve flexibility and interactivity	-	-	-	11 (47.8)	12 (52.2)	4.52	0.511
ICT technologies improve efficiency and competitiveness	-	-	-	12 (52.2)	11 (47.8)	4.52	0.511

( $r = 0.296, P > 0.01$ ). However, there was a moderate positive relationship between the effectiveness of using ICT technologies and risk assessment ( $r = 0.516, P < 0.01$ ). These findings suggest that the use of ICT technologies has a positive effect on firms informing consumers about the risks and rewards of a service. Additionally, there was a strong positive relationship between effectiveness of using ICT and transparency ( $r = 0.713, P < 0.01$ ). These findings suggest that the use of ICT technologies has a positive effect on the ability of firms to provide information to consumers regarding a service provision. Moreover, the results suggested a strong positive relationship between the effectiveness of using ICT technologies and risk assessment ( $r = 0.601, P < 0.01$ ).

**Figure 3:** Findings regarding the effectiveness of information and communication technology technologies in tourism businesses



**Table 6: Correlations on the effectiveness of ICT technologies in providing customer feedback**

Correlations	1	2	3	4	5
Effectiveness of using ICT					
Pearson correlation	1				
Sig. (2-tailed)					
n	23				
Dialogue					
Pearson Correlation	0.235	1			
Sig. (2-tailed)	0.280				
n	23	23			
Access					
Pearson Correlation	0.223	0.296	1		
Sig. (2-tailed)	0.307	0.171			
n	23	23	23		
Risk assessment					
Pearson Correlation	0.127	0.601**	0.516*	1	
Sig. (2-tailed)	0.564	0.002	0.012		
n	23	23	23	23	
Transparency					
Pearson Correlation	0.416*	0.684**	0.541**	0.713**	1
Sig. (2-tailed)	0.048	<0.001	0.008	<0.001	
n	23	23	23	23	23

\*Correlation is significant at the 0.05 level (2-tailed), \*\*Correlation is significant at the 0.01 level (2-tailed)

These findings suggest that the use of ICT technologies has a positive effect on firms informing consumers about the risks and rewards of a service.

**4.2.2. Sample t-test**

To determine the influence of gender on the variables measured in the study, one sample t-test was used. The results are presented in the Table 7 below.

The results revealed a significant difference in male and female perceptions concerning effectiveness of using ICT technologies in providing customer feedback, at the 1% level of significance. The differences were further assessed by computing *post hoc* Scheffe’s test.

The results showed that while females believed using ICT technologies was more effective in providing feedback, males argued it was ineffective (Table 8).

**5. DISCUSSION**

The findings from this current study revealed email communications and social media platforms were found to be the most effective communication technology tools in providing customer feedback. The findings from this current study are in accordance with the findings from a study conducted by Fuoli et al. (2021), which had an objective of investigating how companies respond to customer complaints on Twitter and found that social media provide businesses with a previously unheard-of chance to communicate with consumers more directly and promote their goods and services. Moreover, the findings from this study corroborate the findings from a study conducted by Hasouneh and Alqeed (2010), which had an objective of examining how response data from direct marketing email campaigns could be utilized in measuring the development of a customer relationship in the context of an end-user loyalty program and found that emails are utilized in communicating with consumers because they provide new insights into the development of a customer relationship.

Based on the findings from this current study the respondents found ICT technologies to be effective in improving the effectiveness of current activities. Confirming the findings from this current study, the findings from a study conducted by Habibi et al. (2015) revealed that ICT technologies has made it possible for customers to give feedback to business owners in the shortest possible time and business owners are now able to listen to customer’s interests and opinions. Additionally, this study revealed that ICT technologies broaden opportunities. In accordance with the findings from this

**Table 7: Sample t-test results**

All Dimensions	T	Df	P
Effectiveness of using ICT technologies	-0.23.083	23	0.000***

**Table 8: Post hoc Scheffe’s test: All dimensions and gender**

Dimensions	Categories of Gender	N	Mean
Effectiveness of using ICT technologies	Male	10	4.1400
	Female	13	4.5077



current study, a study conducted by Ndoya et al. (2023), found that the ICT technology's capacity to perform electronic business transactions, reach a worldwide audience, and receive real-time market information has enhanced economic efficiency and created new markets for developing-nation goods and services. Similarly, the findings from a study conducted by Castro and Nunes (2023), also revealed that ICT technologies in the tourism sector have provided new tools and enabled new distribution channels, thus creating a new business environment. The findings from this current study also revealed that the respondents were of the view that ICT technologies improve flexibility and interactivity. Affirming the findings from this study, the findings from a study conducted by Cabiddu et al. (2013), revealed that the advent of Information and communications technology (ICT) enables the firms to engage in dynamic relationships with their partners, such as sharing knowledge and integrating processes. The findings from this current study further revealed that ICT technologies improve efficiency and competitiveness. Affirming the findings from this current study, a study by Gössling (2021) found that ICT technologies are creating a new global marketplace, which is more competitive due to the fact that these technologies enable all to know the comparative advantages in the market economy.

Based on the correlation analysis, the findings from this current study revealed a strong positive relationship between the effectiveness of using ICT technologies and risk assessment. These findings suggest that the use of ICT technologies has a positive effect on firms informing consumers about the risks and rewards of a service. Additionally, this study found that there was a strong positive relationship between effectiveness of using ICT and transparency. These findings suggest that the use of ICT technologies has a positive effect on the ability of firms to provide information to consumers regarding a service provision. Lastly, the results from a sample t-test revealed a significant difference in male and female perceptions concerning the effectiveness of using ICT technologies in providing customer feedback. These results suggested that while females believed using ICT technologies was more effective in providing feedback, males argued it was ineffective.

## 6. CONCLUSIONS

This study found a strong positive relationship between the effectiveness of using ICT technologies and risk assessment. These findings suggested that the use of ICT technologies has a positive effect on firms informing consumers about the risks and rewards of a service. Additionally, this study found that there was a strong positive relationship between effectiveness of using ICT and transparency. These findings suggested that the use of ICT technologies has a positive effect on the ability of firms to provide information to consumers regarding a service provision. Moreover, the results from this current study indicated a strong positive relationship between customer feedback in a form of transparency and value co-creation. These findings suggested that value co-creation is enhanced when firms grant the consumer a chance to clearly evaluate the risks and rewards of a service provision through a dialogue, access and transparency. Lastly, this study current study demonstrated a significant difference in

male and female perceptions concerning the effectiveness of using ICT technologies in providing customer feedback. These results suggested that while females believed using ICT technologies was more effective in providing feedback, males argued it was ineffective. The current study therefore concludes that ICT technologies are effective in providing customer feedback to enhance value co-creation.

## 7. RECOMMENDATIONS

- 1.1. The findings from this study revealed a strong positive relationship between customer feedback in a form of a dialogue and its contribution to value co-creation. Therefore, this study recommends that firms should engage consumers in a dialogue regarding the service provision in order to enhance value co-creation.
- 1.2. This study found that there was a strong positive relationship between effectiveness of using ICT and transparency. Therefore, this study recommends that firms should utilize ICT technologies to provide consumers with information regarding a service provision, because this has a positive effect on value co-creation.
- 1.3. Based on the findings from this current study, the fusion of information and communication technologies allows tourism firms to become more efficient and competitive. Therefore, this study recommends that firms should utilize information and communication technologies to enhance value co-creation for both the firms and the consumers.

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