

Visualizing Network Relationships in Tourism: A Methodological Approach to Value Creation with Practical Application

Nozomi Saito ^{*}, Lisa Ruhanen [†],
Koki Kusano ^{*}, Seiko Shirasaka ^{*}

Abstract

In the current dynamic business environment, networks play a crucial role in fostering collaboration, innovation, and value creation across diverse industries. Tourism Business Ecosystems (TBEs), drawing inspiration from the concept of Business ecosystems (BEs), have garnered significant attention for their role in facilitating sustained value creation among the multitude of actors and stakeholders. Yet, there remain gaps in visualizing complex tourism networks holistically and understanding how values are visualized and interconnected within the systems, particularly in developing countries. This study addresses these critical gaps by proposing a descriptive method for visualizing the Value Creation TBE (VC-TBE), focusing on enhancing relationships among various actors and stakeholders and creating new avenues for fostering the growth of business networks. The method is rigorously tested and verified in the context of Uzbekistan's tourism industry, offering valuable insights into the dynamic interplay of business actors and stakeholders crucial for sustainable growth and development.

Keywords: Customer Value Chain Analysis (CVCA), Networks, Tourism Business Ecosystem (TBE), Value Creation

1 Introduction

In the contemporary business environment, the critical role of networks is undeniable. These networks form complex webs connecting diverse actors and stakeholders across different industries, enhancing collaboration, innovation, and value creation. According to Ford & Mouzas, business networking involves “the conscious problem-driven attempts of one or more business actors to change or develop some aspect(s) of the substance of interaction in relationships in which they and others are involved” [1]. Since the mid-1990s, when Moore (1993) introduced the concept of a business ecosystem (BE) to describe the co-evolution and complex interplay between competitive and cooperative business strategies [2], there has been significant research that has focused on understanding and visualizing BEs. These visualizations are critical for comprehensively understanding connections and stakeholders, helping to derive values [3] aiding ecosystem participants in making informed decisions [4], which is essential for fostering sustainable growth and development in a global context.

^{*} Keio University, Kanagawa, Japan

[†] The University of Queensland, Brisbane, Australia

For the tourism industry, the Tourism Business Ecosystem (TBE) is one such approach. This concept has increasingly been the focus of academic research in recent years [5][6][7] and facilitates the co-creation and delivery of sustained value for all partners within the TBE [8][9][10]. Despite the literature on managing tourism destinations within the TBE framework [6][7], a significant gap remains in understanding how values are visualized among the multitude of actors and stakeholders. This lack of understanding underscores the necessity for better insights into the intricate interactions and overall functionality of the network system. Particularly in developing countries, the challenge lies in effectively leveraging these business networks.

Entrepreneurs, especially in developing nations, often face significant hurdles in accessing, building, and maintaining networks [11] due to prevailing gendered social and cultural norms. For instance, patriarchal societal norms significantly restrict networking opportunities for women entrepreneurs [12], with men typically prioritizing networking activities [13]. Additionally, women's networks are often constrained by gender norms that dictate behavior, limiting them mostly to familial connections, while men's networks tend to be broader [14]. This disparity severely impacts women's access to vital resources such as education, credit, and information [14], highlighting the need for strategies to overcome these barriers and improve connectivity among business actors and stakeholders. Utilizing visualizations might be one approach to enhance their ability to engage with and benefit from these networks.

The aim of this study is to design and propose a descriptive method for visualizing the variety of values within the TBE, with a focus on enhancing relationships among various actors and stakeholders. This method has been tested and evaluated in the context of Uzbekistan's rapidly evolving tourism industry, providing valuable insights from a developing country. The significant growth of this sector in the region underscores the critical need to understand and sustain the business networks that support it. Through this approach, the process of value creation within the TBE has been effectively demonstrated and verified, offering valuable insights into the dynamic interplay of business actors and stakeholders that underpin the sustained growth of Uzbekistan's tourism industry. This research provides a novel approach to visualizing the intricate dynamics of value creation within TBEs.

2 Literature Review

2.1 Tourism Business Ecosystem and Network Dynamics

Tourism is a sophisticated and dynamic system [15]. This complexity is compounded by the business volume of tourism, which has made it a major player in global commerce. Consequently, business networks related to the tourism industry have been facing a more competitive and diversified environment [16]. In turn, the tourism business system and the relationship among stakeholders in tourism destination management have become equally complicated, especially from a management perspective [7]. In order to create a picture of the system, a range of academic research based on the TBE has been conducted [5][6][7]. Some of the research focuses on how to co-create and co-deliver sustained value for all network partners within the TBE [8][9][10].

The concept of the TBE draws upon the concept of the Business Ecosystem (BE) so insights can be gained by examining those parent core concepts. BE is an effective management approach to understand the complex network of business relationships within and across different stakeholders [2][7][17]. In addition, in the BE, companies co-evolve capabilities around new innovative

products and services and incorporate the next round of innovation [2][7][17]. These ideas are also essential to understand the complexity of the TBE. TBE represents a dynamic network within the tourism sector, comprising various stakeholders who operate in shared environments [18]. Members of this ecosystem are united by common values, cultural practices, and infrastructures [18]. They possess both the potential and the determination to collaborate, aiming to achieve broader, long-term goals related to regional development and enhanced competitiveness [18].

2.2 Value Creation Among Stakeholders in Tourism

The multifaceted phenomena of value creation in dynamic networks allows value to be viewed and comprehended from a variety of angles. The co-creation of value in these networks is facilitated by the participation of a diverse variety of stakeholders, both traditional and non-traditional [19]. The phenomenon of tourism encompasses a range of observable relationships, including informational, operational, social, and economic aspects [20]. Grönroos (2012) reinterprets the co-creation idea by incorporating other stakeholders in cooperative efforts to create value [21]. As a result, value co-creation involves a wide range of stakeholders beyond only the supplier and consumer [22][23]. Networking is a crucial component of co-creation because it allows the various actors with shared interests in a particular service to eventually contribute to mutual co-creation [24]. Furthermore, the value co-creation approach emphasizes local communities and other stakeholders toward sustainability [25].

2.3 Introducing the Visualization Tool for Stakeholder Relationships

Tools to help stakeholders visualize their environment have been proven to enhance their engagement [26] and allow them to reflect on team member behavior [27]. Therefore, visualizing stakeholder management is a valuable exercise and can be used as a stakeholder engagement strategy [28].

In terms of visualization of networks, studies have identified 42 types (e.g. node network, directed network, chord diagrams, etc.) of incorporating business ecosystem visualizations [29]. Existing representations of the TBE visualizations [5][6] were drawn based on Moore's BE [2], utilizing an onion model. Although these onion models are deceptively simple-looking, they demonstrate a wealth of information about stakeholder relationships structurally and expansion of the business layers from a microenvironment to a macroenvironment. Perfetto & Vargas-Sánchez applied the model to a Smart Industrial Heritage Tourism Business Ecosystem (SIHTBE) combining six sectors including: 1) technological change, 2) research insights, 3) changes in tourism customer demand, 4) competition/cooperation between organizations, 5) social change, and 6) policies and legal environment [6]. This application of the model highlights potential actors or areas which may be contracted and involved in collaboration [6]. Nevertheless, both diagrams could be improved upon to more accurately visualize existing and potential networks among actors and stakeholders which are significant to enhance value co-creation.

Customer value chain analysis (CVCA) is another approach that can be employed to address the conspicuous absence of a descriptive approach to visualizing the relationships among actors and stakeholders in the TBE. CVCA developed by Donaldson et al. is an original methodological tool for visualizing value exchanges among stakeholders to analyze existing social systems and designing new social systems [30]. It can provide visualization of exchanges of values such as money, goods, services, information, etc. among stakeholders. In addition, through the visualization of CVCA, what kinds of values are exchanging as benefit to whom and what kinds of

stakeholders are providing values are clarified. Therefore, CVCA was designed to investigate the value relationships, or value propositions, among the various stakeholders and then evaluate their needs.

While networks in business are one of the chief success factors in the tourism industry, a review of the literature revealed that little research has focused on visualizing the TBE and the underlying networks in practice. Moreover, previous research has not expanded upon how to visualize the value exchanges among actors and diverse stakeholders or how to expand value creation within the TBE. In order to approach these three research gaps, a descriptive method for visualizing the value co-creation tourism business ecosystem was proposed, the Value Creation Tourism Business Ecosystem (VC-TBE). This study presents a novel approach to visualizing the value co-creation transposed upon the TBE. It does this by establishing an alternative approach to harnessing existing visualizations.

3 Research Methodology

To address these research gaps, a descriptive method for visualizing the VC-TBE was proposed. This study introduces a novel method for visualizing multitude value creation among actors and stakeholders within the TBE framework. It achieves this by proposing an alternative strategy that enhances the use of existing visualizing theoretical framework (SIHTBE) and tool (CVCA). Building on the SIHTBE diagram, presented by Perfetto & Vargas-Sánchez [6] (Figure 1), and the Donaldson et al. [30] CVCA diagram (Figure 2), the proposed model in this study visualizes the entire network system, focused on incorporating the functions and value exchanges among actors and stakeholders. Furthermore, it highlights existing networks and supports the creation of new ones.

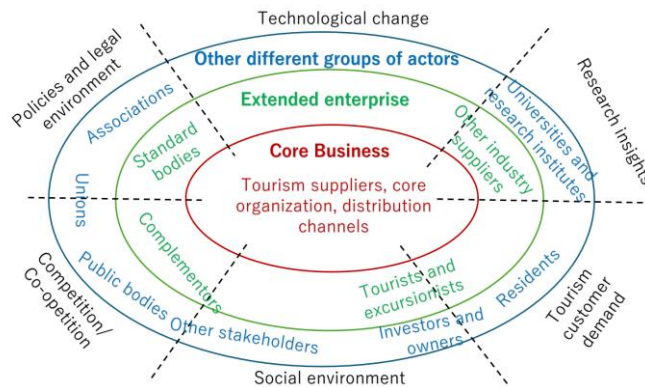


Figure 1: The Smart Industrial Heritage Tourism Business Ecosystem (SIHTBE)

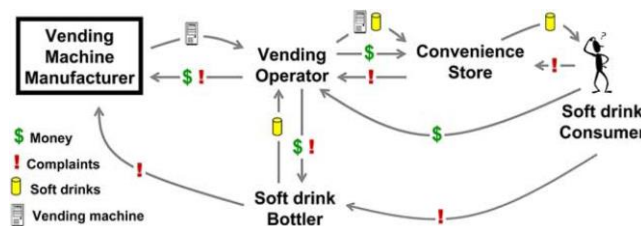


Figure 2: The Tool of Customer Value Chain Analysis (CVCA)

3.1 The Design and Proposed Descriptive Method for Visualizing the VC-TBE

The process of a designed and proposed method for visualizing the VC-TBE that was applied through a workshop with participants from Uzbekistan including entrepreneurs. An illustration of each step of below is provided in Figure 3.

Stage 1

Step 1: Choose ONE tourism product or service which is located in the “Core Business” (red on the SIHTBE framework). Then, put it on the top right of the paper.

Step 2: Write down actors and stakeholders related to the tourism product and service which is chosen in Step 1. At least, it might be helpful to focus on “key stakeholders”. Write a sticky note for EACH actor and stakeholder. Draw simple illustrations or icons which symbolically represent the idea.

Step 3: Position each sticky note of the actors and stakeholders listed in Step 2 on the SIHTBE framework diagram. Don’t think too much, you can change this later.

Step 4: Categorize the type of value exchanges between each actor and stakeholder with icons. They should represent what is being traded/gained. Draw a directional arrow which represents the value flow between each actor and stakeholder. Then, circle the most important value in red.

Step 5: Add keywords to describe values which are difficult to express with icons.

Step 6: Look over the entire TBE framework diagram and check the flow of value between each actor and stakeholder. Is there a flow cycle? Are there any one-way directional arrows? Is there a leak (any planes where there are no connective arrows)? If necessary, clarify the situation or issues with a few key words or a simple sentence.

Step 7: Repeat Step 2 to Step 6 until no further information is available. THEN

Stage 2

Start the steps again from Step 2. Utilizing the SIHTBE framework as a reference, write down actors and stakeholders related to the tourism product and service which is chosen in Step 1. Write stakeholders in the existing business. Write a sticky note for EACH actor and stakeholder. Draw simple illustrations or icons which symbolically represent the idea.

Then, repeat Step 3~6 as in the first stage until no further information is available.

Step 8: Based on the diagrams developed through the process thus far, consider ways to strengthen and develop the tourism business by utilizing existing relationships with stakeholders. To do this, based on directional arrows which represents the value flow between each actor and stakeholder as “Relationship with existing minimal stakeholders” as black arrows and values, “Relationships with existing stakeholders” as blue arrows and values, record potential values which will enhance and develop the tourism business in “red” lettering.

Step 9: Finally, consider ways to create new tourism businesses by utilizing existing relationships with stakeholders. To do this, add and record “Relationships with new stakeholders” as “red” sticky notes to enhance and develop potential tourism business as red arrows and values.

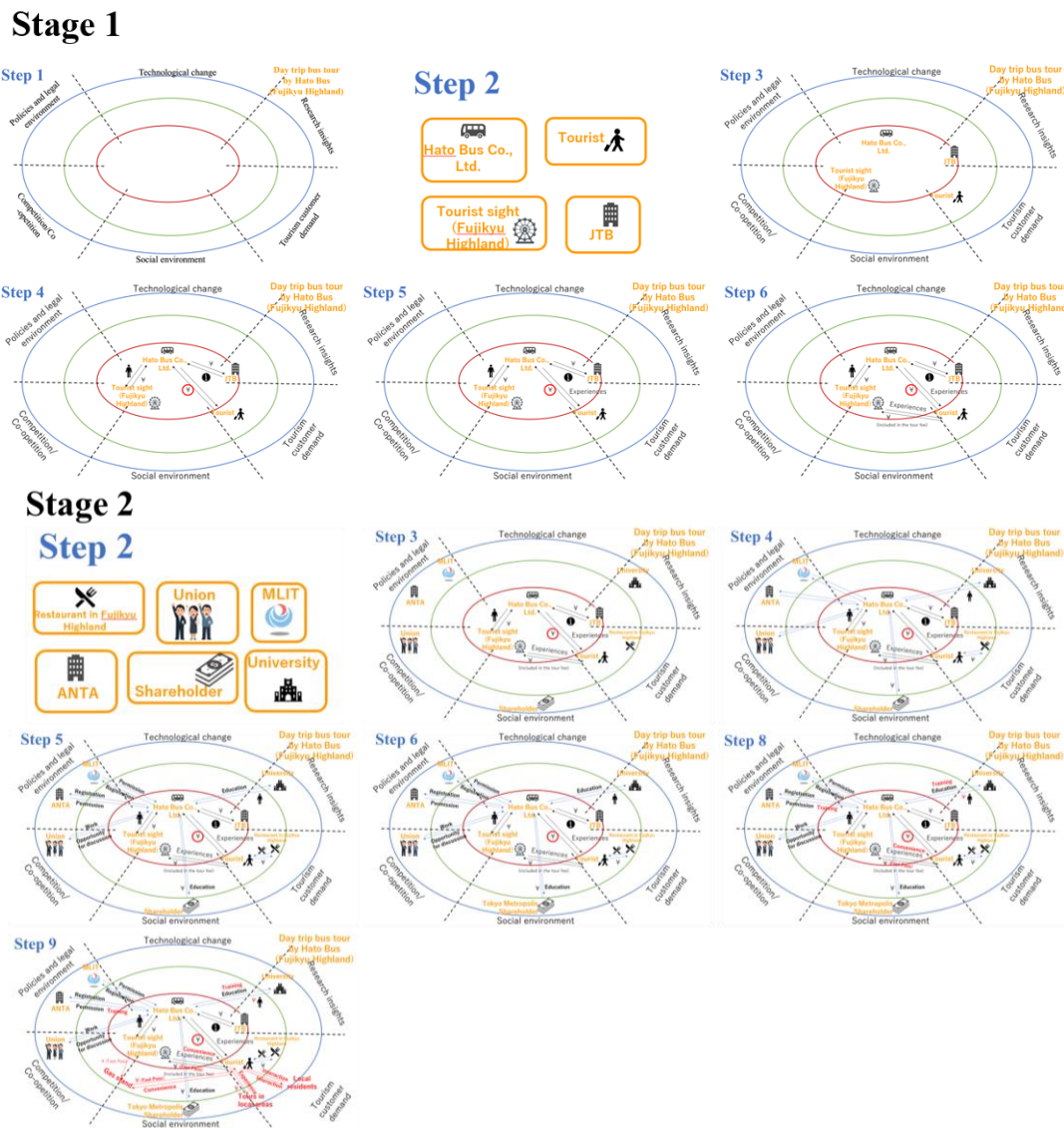


Figure 3: The Process of a Designed and Proposed Method for Visualizing the VC-TBE

3.2 Verification of The Proposed Descriptive Method for Visualizing the VC-TBE

Workshops were held with two main objectives. The first was to evaluate the effectiveness of the newly designed and proposed descriptive method for visualizing the VC-TBE, as previously described. This method was implemented in a pilot test to gauge its practical application. The second objective was to use the method in a prototyping phase, aimed at identifying valuable insights and addressing any problems to enhance its functionality.

Uzbekistan is land-locked country whose tourism industry has been targeted to attract foreign currency. As a result, the number of international tourists in 2019 surged by more than 300 percent over three years since 2016 [31]. This growth has fostered numerous opportunities in the tourism sector. Therefore, Uzbekistan has been selected as a case study from among developing countries due to its rapidly expanding tourism industry, which requires an understanding of and support for the dynamic interactions between various business networks and stakeholders. The workshop

took place in January 2020 in Tashkent, Uzbekistan. With support from the Uzbekistan-Japan Center for Human Development (UJC) in Tashkent, a non-profit organization offering a range of programs including business training, Tashkent was selected as the initial location for the workshop. Participants attended two, 3 hour workshops over two consecutive days. On the first day, participants learned about the TBE and SIHTBE frameworks and how to use and write the CVCA tool. On the second day, utilizing the process delineated in the nine steps above, participants followed the instructions and produced diagrams individually. Instructions were delivered in spoken Japanese and translated live into Russian during the workshops.

Participants were recruited through a random sampling method, utilizing the UJC's database of formal network connections. Emails were dispatched to individuals listed in the database, which consists of those who have shown interest in business training and have attended related business activities in the past. This particular workshop appealed to individuals eager to understand the tourism business network system and address related business challenges involving stakeholders. As a result, the workshop attracted a diverse group of attendees varying in gender, educational background, professional status, industry sectors, and overall work experience (see Table 1).

Data collection was conducted using two methods: an online questionnaire and participant workshops. The questionnaire encompassed demographic questions and was distributed to participants of the workshops. Additionally, during the workshops, participants were asked to create diagrams individually following the guidelines of the proposed descriptive method.

The questionnaire utilized a seven-point Likert scale (ranging from 1, "strongly disagree," to 7, "strongly agree") for its items, which was deemed an effective measurement tool to minimize respondent frustration. It included five questions that evaluated the outcomes of employing the proposed descriptive method and eight questions probing the reasons for their responses and improvements for the workshop, along with a section for open-ended comments. Furthermore, twenty-five handwritten outputs in Russian were collected from workshop participants. These documents were subsequently digitized and translated into English for further analysis. These data were crucial for assessing the effectiveness of the proposed descriptive method for visualizing the VC-TBE and the implementing workshop.

Table 1: Workshop Participant Profile

Participants	Gender	Highest level of Education	Occupation	Type of Occupation	Total Work Experience
P1	Male	Master or PhD	Unemployed · Retired	Manufacturing · Production	25
P2	Female	High school	Self employed	Sales	10
P3	Male	University	Company employee	Sales	7
P4	Male	University	Self employed	Technology · Research	5
P5	Female	University	Company employee	Sales	5
P6	Female	Master or PhD	Civil servant	General Affairs	8
P7	Female	Master or PhD	Self employed	Others	3
P8	Male	High school	Self employed	Service	4
P9	Female	University	Self employed	Service	5
P10	Male	Master or PhD	Self employed	Service	7
P11	Male	University	Self employed	Sales	20
P12	Female	University	Self employed	Service	5
P13	Female	University	Self employed	Service	6
P14	Female	University	Professional	Sales	2
P15	Female	Master or PhD	Self employed	Planning · PR · Marketing	3
P16	Female	Master or PhD	Self employed	Planning · PR · Marketing	4
P17	Female	University	Professional	Sales	10
P18	Female	University	Self employed	Sales	14
P19	Male	Master or PhD	Company employee	Manufacturing · Production	15
P20	Male	University	Self employed	Sales	14
P21	Male	University	Professional	Service	20
P22	Female	Master or PhD	Self employed	Service	17
P23	Male	University	Self employed	Manufacturing · Production	14
P24	Female	University	Company employee	Planning · PR · Marketing	10
P25	Male	Master or PhD	Self employed	Service	20

4 Result and Discussion

The following results presented here derive from implementing the previously proposed descriptive method in a workshop focused on visualizing the VC-TBE in Uzbekistan. Based on analysis of the questionnaire data and workshop outputs, key findings are detailed and explained. Discussion sections have been added to enhance understanding of the findings, explore implications, examine limitations, and suggest future research areas. These discussions aim to contextualize and deepen the insights gained from the workshop, providing a richer interpretation of the data.

4.1 The Crucial Role of Visualization in the VC-TBE Success

The results from our novel visualization method showcased during the workshop underscore the significant impact of visualization on the success of the VC-TBE. Participants were positive about effectiveness of the proposed descriptive method for visualizing the VC-TBE: 32% of participants strongly agreed, 60% agreed, and 8% somewhat agreed that all participants could visually represent their own VC-TBE. As some respondents noted, “Visualization, experience and practical skills are interconnected that is why I think that we can visually represent the ecosystem” (P12). However, some participants highlighted problems including: “Not everything could be explained through icons” (P19), and “It's difficult to represent all the subjects without practice” (P20). From the gender perspective, surprisingly, no significant gender differences were observed. This visualization method was found to be easy to use across diverse groups, showing no impact from gender, education level, industry sector, or professional experience.

During the prototyping phase of the workshop, two significant insights emerged, highlighting the balance between user-friendliness and the inherent challenges therein. Firstly, an unexpected variance was observed in the workshop outputs related to participants' understanding of the instructions. Participants with a deeper grasp of the subject matter successfully identified a broad array of relevant stakeholders and values, fully utilizing all six categories of the TBE framework with illustrative stakeholder examples. Conversely, those with a more limited understanding faced difficulties, often only employing a few categories of the TBE framework and identifying fewer stakeholders and values. Notably, while connections indicating value flows were marked, the descriptions often remained incomplete and skewed towards monetary, human, and informational values, neglecting other value types. Secondly, specific challenges arose during Step 3 of the workshop, which involved positioning actors and stakeholders within the VC-TBE framework. The feedback from participants was mixed: 4% strongly agreed, 32% agreed, and 28% somewhat agreed that the task was manageable, whereas 4% were neutral, 20% somewhat disagreed, and 12% disagreed, finding the task confusing or difficult. This was prominent among self-employed participants, suggesting a disconnect between academic theory and practical application. Representative comments included: “It was little bit difficult to divide by categories” (P7).

4.2 The potential for Practical Business Planning and Expansion through VC-TBE

The application of the VC-TBE framework demonstrated significant potential for aiding participants in the planning and expansion of both existing and potential tourism businesses. The following are the key findings from the workshop. The majority of participants (36% strongly agree, 60% agree, and 4% somewhat agree) reported that they were able to identify ways to enhance and develop tourism businesses by leveraging existing stakeholder relationships through the prescribed method. Participants were also able to articulate, in writing, how they could strengthen stakeholder ties within existing tourism enterprises. Supportive comments include: “Method

helps to link new participants (stakeholders) for new ideas” (P7), and “You always need to search for new opportunities for diversification of business and competition” (P11).

Regarding visualization of new business interactions, a majority (40% strongly agree, 52% agree, and 8% somewhat agree) successfully used the method to visually represent interactions among stakeholders in new business ventures related to tourism. Participants were also able to articulate, in writing, what kinds of new businesses they came up with. Comments further supporting this finding include: “It's important to know exactly the role of each person, organization - then it is easy to understand how they are connected” (P18), and “Arrows let visually see interrelations between participants and which services are being exchanged by market players” (P24).

Despite the positive feedback, challenges in detailing value exchanges were identified in fully articulating the flow of values between actors and stakeholders. Although most participants believed they could trace the flow of values (20% strongly agree, 68% agree, and 8% somewhat agree), 80% of the outputs were incomplete, lacking either arrows, values, or both. Additionally, while 56% of participants found it difficult to complete their drawings to the expected standard, 44% were able to follow all instructions correctly and create their original VC-TBE diagrams.

4.3 Strengthening VC-TBE: Linking Theory to Real-World Applications

These findings illuminate the critical balance between creating a user-friendly approach that accommodates diverse participants and addressing the complexities inherent in applying theoretical frameworks. The insights point to the need for clearer, more intuitive guidance and possibly tailored training to enhance understanding and application across varying levels of participant expertise. Moreover, the findings indicate that the instructions and guidance provided to facilitators concerning of the workshop, specifically Step 3 which entailed positioning actors and stakeholders within the VC-TBE framework, should be amended and clarified to improve participants' comprehension. These two points could help bridge the gap between theoretical constructs and their practical utility, making the workshop tools more accessible and effective for all participants.

Furthermore, the results affirm the effectiveness of the proposed descriptive method not only in enhancing and developing existing businesses but also in creating new opportunities through the visualization of the tourism business system. The VC-TBE framework holds promise as a practical tool for business planning and expansion. However, the research also uncovered that while participants adeptly identified stakeholders and generated new business ideas, they encountered obstacles in depicting the value exchanges involved. Utilizing the SIHTBE template helped in stakeholder identification, enabling effective use of the framework. Yet, difficulties in generating certain actors, stakeholders, and values arose from a misalignment with actual conditions, particularly the situation in Uzbekistan. A more contextual approach, perhaps tailored to reflect specific local values, might simplify the process of describing value exchanges and provide clearer guidance. Conversely, the use of sticky notes proved beneficial in generating ideas, suggesting that adding the option of writing "new business ideas" of sticky notes can significantly enhance the conceptualization and communication of business models. In addition, using these new red sticky notes support to increase value exchanges and value creations in the VC-TBE.

5 Conclusion, Limitations and Future Research

This study presents a novel approach to visualizing the intricate dynamics of value creation within TBEs, addressing significant gaps in existing literature. Through the implementation of the proposed descriptive method of the VC-TBE, participants were able to effectively visualize and enhance their understanding of the complex network of stakeholders and value exchanges inherent in the VC-TBE framework. The findings underscore the crucial role of visualization in facilitating understanding and practical application of theoretical constructs, particularly in strategic planning and business expansion. While the proposed method demonstrated promising results, challenges such as the need for further customization and clarification were identified, suggesting avenues for future exploration and refinement. Overall, the study contributes to advancing knowledge in the field of TBEs and underscores the vital role of visualization tools for stakeholders in the tourism industry to navigate and leverage their networks for sustainable growth and development.

Moving forward, future research should involve strategies for addressing theoretical and practical applications of the tool with a wider array of stakeholders in the field, conducting longitudinal assessments to verify the accuracy of the results. This approach will assist aspiring entrepreneurs to confront the limitations of their networks by leveraging the upgraded version of the VC-TBE. A keen focus on gender inclusivity, particularly on empowering women, is central to this strategy. Furthermore, exploring the feasibility of generating innovative business concepts utilizing the enhanced VC-TBE in developing countries holds immense promise, offering invaluable insights into fostering entrepreneurship and driving economic progress in the tourism industry.

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