A Social Psychological Cybernetics Model of Entrepreneurial Community-based Tourism Initiatives

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Abstract

Although community-based tourism (CBT) is an established topic in research and practice, the literature on it in the context of social entrepreneurship still lacks theoretical foundations and empirically tested models to help relevant stakeholders develop effective strategies. Therefore, the purpose of this study is to develop and empirically test models suitable for developing both the supply-side and the demand-side aspects of CBT. This study examines the roles of various critical success factors in the CBT initiatives and the use of socio-psychological cybernetics theories of behaviors that can capture the behavioral dynamics of the supply-side and the tourist behavioral domains of CBT management. Data was collected from community members and tourists visiting the communities of Doi Chang and Huay Nam Kuen villages in Chiang Rai province to experience CBT. Using a structural equation modeling (SEM) analysis, a deductively proposed socio-cybernetics CBT management model on the supply side and a Stimulus-Organism-Response (S-O-R) model on the demand side were validated. Both models fulfill the absolute and incrementally fit statistics requirements of SEM. As a result, the study contributes both theoretically and practically. The most important practical implication is to guide communities in the design and successful implementation of CBT projects by addressing the structural strengths and weaknesses and stressing the socio-psychological domains. In addition, deontological, virtue- and utilitarian aspects of implications were established. The socio-cybernetics CBT model hence illuminates the dynamics of social emergence of a typical community in its evolution.

Keywords: social psychology, community-based tourism, cybernetics, theory of planned behavior, social entrepreneurship

บทคัดย่อ

ถึงแม้ว่าการท่องเที่ยวโดยชุมชน (CBT) จะมีการวิจัยและการปฏิบัติมามากพอสมควร แต่ในมุมมองเกี่ยวกับผู้ประกอบการทางสังคมนั้น ยังขาดการค้นคว้าทางทฤษฎีและการทดสอบแบบจำลองในเชิงปริมาณที่จะสามารถช่วยให้กลุ่มภาคีผู้มีส่วนได้เสียต่างๆ สามารถพัฒนายุทธศาสตร์ได้อย่างมีประสิทธิภาพ การศึกษาครั้งนี้จึงมีวัตถุประสงค์เพื่อพัฒนาและทดสอบแบบจำลองในเชิงปริมาณเพื่อให้มีการพัฒนาได้อย่างเหมาะสมทั้งในด้านอุปสงค์และด้านอุปทานของการท่องเที่ยวโดยชุมชน โดยใช้การวิเคราะห์ปัจจัยด้านจิตวิทยาสังคมและปัจจัยความสำเร็จที่สำคัญอื่นๆ ของการจัดการการท่องเที่ยวโดยชุมชน รวมไปถึงการใช้ทฤษฎี “การศึกษาเชิงวิทยาศาสตร์ในการควบคุมและติดต่อสื่อสารระหว่างกันของคน” ในเชิงจิตวิทยาสังคมของพฤติกรรมเพื่อสร้างและพัฒนากรอบแนวคิดที่จะสามารถวัดผลแรงขับเคลื่อนในพฤติกรรมของภาคผู้ประกอบการอันเป็นด้านอุปทาน และขอบเขตพฤติกรรมของนักท่องเที่ยวของการท่องเที่ยวโดยชุมชน วิธีการศึกษาได้ทำการเก็บข้อมูลจากสมาชิกในชุมชนและนักท่องเที่ยวผู้มาเยี่ยมชมชุมชน 2 แห่ง คือ หมู่บ้านดอยช้างและหมู่บ้านห้วยน้ำกึม จังหวัดเชียงราย การวิเคราะห์ข้อมูลด้านอุปทานใช้การวิเคราะห์โมเดลสมการโครงสร้าง (SEM) รวมถึงแบบจำลองนิรนัยรูปแบบการจัดการการท่องเที่ยวโดยชุมชน ส่วนด้านอุปสงค์ใช้การวิเคราะห์แบบจำลองการกระตุ้นทางการตลาดและการตอบสนอง (S-O-R Stimulating-Organism-Response) ผลการศึกษาพบว่าแบบจำลองทั้งสองนี้สามารถตอบสนองต่อการวิเคราะห์โมเดลสมการโครงสร้างได้แม่นยำและเหมาะสมกับข้อกำหนดทางสถิติได้เป็นอย่างดี ดังนั้นการศึกษาครั้งนี้จึงมีคุณค่าทั้งในเชิงทฤษฎีและเชิงปฏิบัติ กล่าวคือ ในทางปฏิบัติเป็นการให้แนวทางสำหรับชุมชนในการออกแบบและการดำเนินงานสู่ความสำเร็จของการท่องเที่ยวโดยชุมชน ที่สำคัญคือการที่สามารถระบุถึงจุดแข็งและจุดอ่อนเชิงโครงสร้างโดยให้ความสำคัญกับเงื่อนไขด้านจิตวิทยาสังคม นอกจากนี้ผลการศึกษายังพบมุมมองด้านการกระทำที่พึงกระทำ (deontological) คุณธรรม (virtue) และการถือประโยชน์เป็นสำคัญ (utilitarian) แบบจำลองที่พบในโครงการวิจัยนี้จึงช่วยให้สามารถเข้าใจแรงขับเคลื่อนทางสังคมที่สำคัญของการจัดการโดยชุมชน

คำสำคัญ: จิตวิทยาสังคม การท่องเที่ยวโดยชุมชน การศึกษาเชิงวิทยาศาสตร์ในการควบคุมและติดต่อสื่อสารระหว่างกันของคน ทฤษฎีพฤติกรรมที่ถูกวางแผนไว้ล่วงหน้า ผู้ประกอบการทางสังคม

Introduction

Community-based tourism (CBT) is widely recognized as a rural development strategy (Tolkach and King, 2015) that can have positive impacts on the quality of life of the residents (Kim, Uysal and Surgy, 2013), and serve as an experiential space for tourists and the public to recognize the community's inherent values (Sin and Minca, 2014). Nevertheless, the benefits of CBT projects may not be sustainable (Kunjuraman and Hussin, 2017) if the focus is on industry development rather than on community empowerment, ignoring the internal dynamics of the community. Thus, an endogenous-driven social entrepreneurship (SE) initiative was adapted for implementing CBT projects. In particular, the socio-psychological aspects of the social resources are emphasized in the SE concept, extending the research beyond functional and tangible resources (Sangchumnong, 2018). Moreover, extant literature is limited in quantitatively survey-based theory building and theory testing approaches in the studies. Thus, the purpose of this research is to study the role played by the socio-psychological and other critical success factors in the CBT initiatives, and the use of socio-psychological cybernetics theories of behaviors to guide the organization and development of conceptual frameworks that can capture the behavioral dynamics of the supply-side and the tourist behavioral domains of CBT management.

The proposed frameworks can function to help the communities succeed in their CBT projects and sustainability goals that engage relevant stakeholders, community members, and tourists, and encourage them to channel their efforts towards accomplishment.

Literature Review

The literature review combines the three contextual themes of the research, namely "social," "entrepreneurship," and "community-based tourism," as shown in Figure 1. In this way, it helps identify a possible point of entry for new insights and provides additional contributions to

the extant literature. Organizations such as Ashoka have demonstrated the power of social entrepreneurship in the ability to create sustainable value for the people (Thatchenkery, Avital and Cooperrider, 2010). Nevertheless, to realize sustainable value creation, communities must balance the rising expectations of the tourists and the sustainability-enabled resources available to the communities. Without this balance, Zhexembayeva (2010) argues that the initiatives would not be sustainable. Consequently, the road to sustainable value would, as inferred from Thatchenkery, Avital and Cooperrider (2010) and Zhexembayeva (2010), overlap socially embedded resources and entrepreneurship-focused customer values and thus, community development for CBT and tourist value management, in the consideration for the CBT initiatives, as shown in Figure 1.

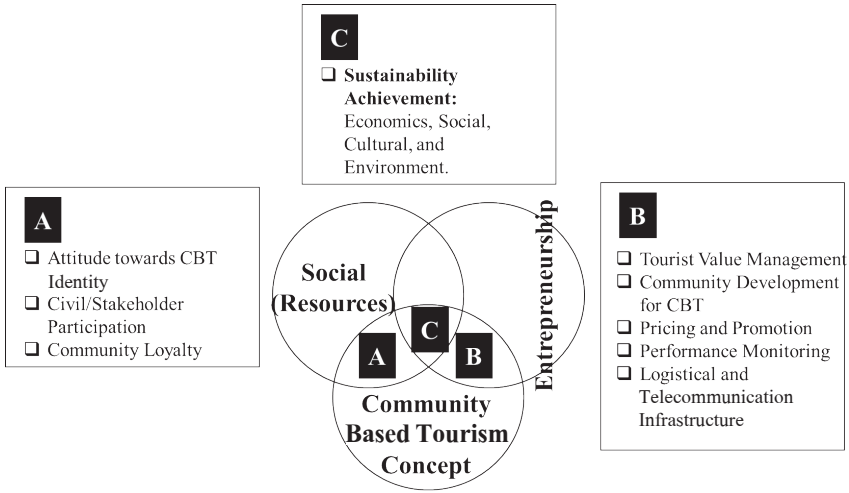

Figure 1 The social + entrepreneurship + CBT concept schemata

Figure 1 demonstrates that the members of communities are situated in specific geophysical and cultural environments which share common socio-psychological endowments capable of propelling the CBT efforts to a sustainable level – economically, socially, culturally, and environmentally.

A useful way to trigger social change through social entrepreneurship-enabled CBT projects may involve adjusting shared schemes (first-order change), or perhaps new shared schema (second-order change), as advocated in Lewin (1951), by centering on community identity. From the discipline of strategic management, "identity" is paramount because it has a stabilizing effect in providing the communities with "something to aim for" (Lovas and Ghoshal, 2000: 885). Nevertheless, Sillince and Simpson (2010) caution that the strategists must be aware of the possible weakness of stabilization-preserved factors in impeding effective change. However, in the CBT case, community identity is of marketable value which is enacted by its cultural and social heritage significance (Alzaizeh et al., 2016). Thus, an identity-based attitude, which serves to achieve a more indigenous/endogenous-oriented development, plays a central role in this study's socio-psychological cybernetics approach to CBT.

From a social-psychological cybernetics aspect, community identity and its associated attitude, serve the "autogenesis" function of CBT that aims to "create, organize, and prioritize according to some cognitive interests associated with self-identification that permeates the cognitive system for a given operative context" (Yolles and Gerhard, 2014: 96). In addition, according to social representation theory, community identity helps the community and its members to create order in their world through their system of values and behaviors (Pachmayer, Zhao and Andereck, 2015). Rooted in identity, as advocated in the theory of planned behavior (Ajzen, 1991), it would help shape the attitude of what the communities think, what they would bring to, and how they would respond to tourism, and thus sustainability achievement, leading to the following hypotheses:

H1: The attitude towards CBT identity is a significant predictor of tourist value management.

H2: The attitude towards CBT identity is a significant predictor of community development for CBT.

H3: The attitude towards CBT identity is a significant predictor of sustainability achievement.

While H1 and H2 highlight the strategic and marketable role of the identity-rooted attitude contributing towards business model design and implementation (Aung and Tan, 2016), which intercept both TPB and social cybernetics, H3 aligns the two autogenesis elements, as outlined in Table 1.

As presented in Table 1, another important element of the autogenesis function of CBT apart from representing the collective norm of the communities, is community loyalty, which serves to manifest trust and engagement. As Papke (2014: 107) states, "if one trusts in the process, the intended outcome will be reached." Similarly, as evidenced in Russell (2000), a tourism project cannot be termed a CBT unless it has the support and participation of local people, and thus, community loyalty is assumed to play a significant predictive role in CBT business development and tourist value management domain of CBT business model, leading to H4-H5, as follows:

H4: Community loyalty is a significant predictor of tourist value management.

H5: Community loyalty is a significant predictor of community development for CBT.

According to the socio-cybernetics theory, the "autopoiesis" function of CBT initiative is aimed to establish the "elaborated figurative (or strategic) schemas to a set of possible operative actions that conform to these schemas under the given context" (Yolles and Gerhard, 2014: 96-97). To succeed in CBT, by exploiting the theory of planned behavior in conceptualizing the elements of the CBT's autopoiesis function, three important "perceived behavioral control" constructs are assumed important, namely performance monitoring, civil or stakeholder participation, and logistical and telecommunication infrastructure. While performance monitoring highlights the attention attitudes (Tan and Anomasiri, 2017), the latter two are particularly important in supporting the community's developmental efforts. Civil or stakeholder participation is observed by Seebohm, Gilchrist and Morris (2009) as highly effective in developing a community for a common purpose, and

logistical and telecommunication infrastructure is a factor observed in actual field observation and in-depth interviews in this research. To be specific, these three elements play the "perceived behavioral control" roles, manifesting the signification of a context for perceived efficacy (Krueger and Carsrud, 1993), leading to the following hypotheses assumed:

H6: Performance monitoring is a significant predictor of tourist value management.

H7: Performance monitoring is a significant predictor of community development for CBT.

H8: Civil or stakeholder participation is a significant predictor of community development for CBT.

H9: Logistical and telecommunication infrastructure is a significant predictor of community development for CBT.

Based on the socio-psychological cybernetics and theory of planned behavior, "behavior," which describes the business model for CBT, is a means of turning the strategies of CBT into operative structures. The autopoiesis function of the business model serves to deliver values to tourists and to meet the sustainability goals of CBT, which incorporates pricing and promotion as an effective push factor. In view of the socio-ecological resilience theory (Ruiz-Ballesteros, 2011), the sustainability goal of the business model is much more significant in the experience of community-based tourism, as it provides the contextual foundation and serves as critical resources and systems of resilience for the communities' sustainable functioning. Sustainability is an ultimate autogenesis goal constitutive of the economic (i.e. equal distribution of income), socio-cultural, and environmental benefits of CBT initiatives. As a result, the last four hypotheses are raised:

H10: Community development for CBT is a significant predictor of tourist value management.

H11: Tourist value management is a significant predictor of sustainability achievement.

H12: Community development for CBT is a significant predictor of sustainability achievement.

H13: Pricing and promotion are significant predictors of sustainability achievement.

In sum, the conceptual model is shown in Figure 2, which depicts the proposed socio-psychological cybernetics model of CBT and adapts the theory of planned behaviors, field observation and in-depth interviews for assisting in the constructs' identification.

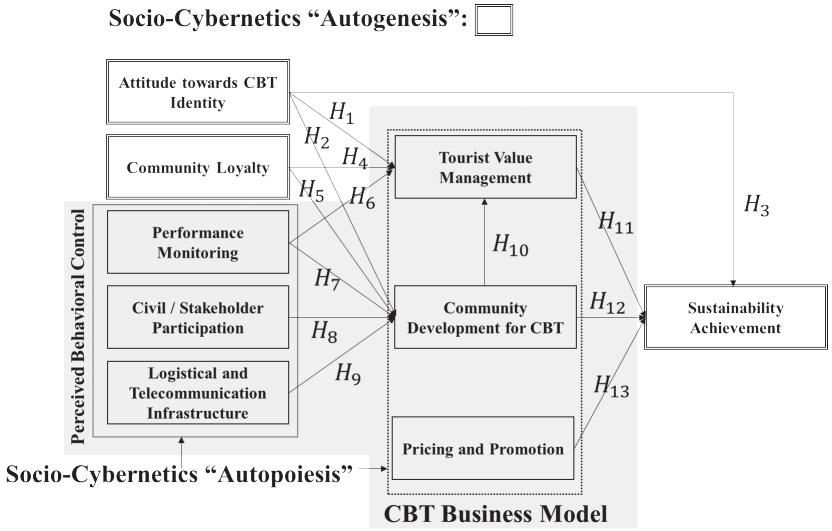

Figure 2 The socio-cybernetics conceptual model for CBT management

To study tourist behavior, the stimulus-organism-response (S-O-R) paradigm (Mehrabian and Russell, 1974) is adapted, as the stimulus in a typical community-based tourism (CBT) program is very much induced by community environment. Stimulus functions affect the tourists' internal states, represented by cognitive learning and satisfaction, which in turn cause approach or avoidance responses (Viera, 2013). Three stimulus elements are assumed, namely destination personality, functional and experiential values received by the tourists, and tour guide roles. As the supply-side aspect of CBT has

identity-uniqueness as a thrust for commitment and business model design, destination personality can stimulate tourists' cognitive learning and satisfaction. In a CBT context, tourists play a role in co-creating value with the community through tour guides (Tan, 2017) with the help of the value proposition (Holttinen, 2014) derived from both the functional and experiential values. In other words, three hypotheses are assumed:

H1: Three stimuli, namely destination personality, tour guide role and tourists' perceived values of CBT, represented by functional and experiential values, can significantly predict tourist learning.

H2: Destination personality, tourist learning and tour guide roles are the significant predictors of tourist satisfaction.

H3: Destination personality, tourist learning, tourist satisfaction and tour guide roles are the significant predictors of tourist loyalty.

The overall tourist behavior framework is given in Figure 3, which is linked to the supply-side of CBT model through tourist value management.

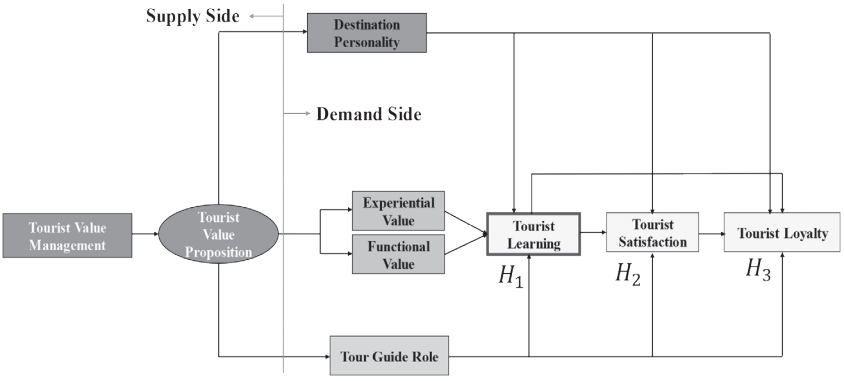

Figure 3 Tourist behavior framework for the CBT

Research Method

Data Collection

Data collection spanned a period of one year, 2017, to study the socio-psychological and technical factors describing the social entrepreneurship-driven CBT initiatives in both communities, Doi Chang and Huai Nam Kuen villages. The researchers spent the first half of the year on field observations and in-depth interviews to explore possible factors which became keywords to guide the literature review, leading to measurement instrument design to serve a cross-sectional quantitative-based survey of the community members. Based on the given supply-side study, and during the latter half of the year, the researchers finalized the survey instrument for studying tourist behaviors. Nevertheless, for tourists, the questionnaires were left with the community which took a period of six months. A total of 89 community members (44 from Huai Nam Kuen, and 45 from Doi Chang) participated in the empirical validation of Figure 2 and a total of 106 tourists participated in that of Figure 3. The community participants had roles related to CBT, such as marketing; serving as local guides, and providers of homestays, logistics, cultural dance, food, agricultural products, heritage management, medicinal issues, infrastructural management, and other relevant aspects of CBT.

Communities

Chiang Rai province has an abundance of unique communities. Doi Chang and Huai Nam Kuen villages are targeted under the research fund of Mae Fah Luang University that aimed to study how these communities make use of social entrepreneurship to help them initiate CBT projects. Doi Chang village currently has 1,224 households, with a population of 3,913, and is located 1,200-1,800 meters above sea level. The community members mainly belong to Akha, Lisu and Yunnan Chinese ethnic groups. Currently, there are eight homestays and two village stays working with CBT. The area for coffee cultivation is about 5,000 rai, with income per person estimated at around 63,000 baht/person/year.

Huai Nam Kuen village has a total of 151 households located at approximately 1,178 meters above sea level, with Muang ethnicity. Currently, the village has 10 homestays to service the CBT initiative. The village prioritizes tea cultivation, in Wiang Pa Pao district, spanned a total area of 10,269 rai. The tea species are Oolong about 42 rai, and Assam tea at around 10,254 rai. The income level is about the same as that of Doi Chang village, at 63,000 baht/person/year.

Measurements

The measurement instrument was separated into supply-side and the tourist behaviors aspects of CBT, in a format that asked personal details in the first section, and items that describe the constructs of the research in the second section. The construct measurement scales were arranged in five Likert scale, ranging from 1 (strongly disagreed), to 2 (disagreed), 3 (neutral), 4 (agreed), and 5 (strongly agreed). The survey instrument for tourist behaviors can be conveniently located and adapted in the extant literature such as by referring to Aung and Tan (2016) for the tourism business model, Tan (2017) for tour guides and tourist learning, and Tan et al. (2017) for destination personality, satisfaction and loyalty. However, the supply-side aspect of CBT used a simultaneous literature review, field observations and interviews. The latter two are methodological contributions that aim to detect various important aspects that could be integrated into the questionnaire design and act as a pilot study. Together with the literature review, it leads to a socio-psychological cybernetics theory of application which also adapts and expands the theory of planned behaviors.

Validity and Reliability

The questionnaire instrument was designed, pilot tested and analyzed based on the scale construction guideline recommended by Hinkin, Tracey and Enz (1997), constituting seven rigorous steps, namely: 1) item generation, 2) content adequacy assessment (test for conceptual consistency of items), 3) questionnaire administration, 4) factor analysis

to reduce the set of items, 5) internal consistency assessment to determine the reliability of the scale, 6) construct validity, and 7) the model validation survey. The essence of the survey instrument for the supply-side aspect of the CBT management is shown in Tables 2 and 3 in the Appendix, which also presents the post-data collection statistics, including mean and standard deviation of the constructs, and quality of measurement indicators represented by convergent and discriminant validity, and reliability measures. Although these indicators are procedures for answering specific questions about measures of a construct, Schwab (2006: 91) notes that "their value to construct validation," nevertheless, "depends on the definition of, and the theoretical surrounding the construct" as narrated in the literature review section. Table 2 indicates that the instrument meets the reliability and convergent validity with acceptable value of 0.7 for factor loading, and the average variance extracted more than 0.5 (Fornell and Larker, 1981), and Cronbach's alpha more than 0.6 for newly developed instrument (Nunnally, 1978). Table 3 confirms the discriminant validity with the square root of AVE for each construct exceeding the shared correlations with other constructs (Fornell and Larckers, 1981).

Research Findings and Discussion

First, the perceptions of the community members of the two communities, Doi Chang and Huai Nam kuen villages, are presented, being followed by those of the tourists going to these communities. The demographics variables were not presented, as the article aims to study the general validity of the proposed conceptual models and the theoretical explanation taken, but the sample is represented by the community members who are directly involved with CBT activities. As shown in Figure 4 and Tables 3 and 4, the results indicate that all the 13 stated hypotheses, except H7, and with H9 and H10 significant to 0.1, were supported, with R^2 at 0.71-0.72, signifying a very high ability to explain the variability of the dependent variables (Hair et al., 2009). Table 4 provides the model fit summary, which shows an excellent model fit,

with p not significant, at 0.474, and Chi-Squared/df below the threshold of 5 (Kenny and McCoach, 2003). The absolute fit is also evidenced in the **root mean square error** of approximation (RMSEA), at 0, and the standardized root mean residual (SRMR), calculated to be 0.0166, which does not exceed the recommended |4| (Hair et al., 2006: 748). The incremental fit indices, which "assesses how well a specified model fits relative to some alternative baseline model" (Hair et al., 2006: 749), such as NFI (Normed Fit Index), CFI (Comparative Fit Index), TLI (Tucker Lewis Index), all indicate good fit. Specifically:

- The values of 0.28, 0.32, 0.27 and 0.21, representing the significant standardized Beta weights, are the contribution of attitude towards CBT identity, tourist value management, community development for CBT, and pricing and promotion, on sustainability achievement. These weights lead to $R^2 = 0.71$, which indicates 71 percent of the variance in sustainability achievement is accounted for. Pricing and promotion are important elements of marketing which link to tourist value perceptions and provide the necessary motivational stimuli to attract tourists to experience CBT.
- The values of 0.41, 0.21, 0.29, and 0.17, representing the significant standardized Beta weights, are contributions of attitude towards CBT identity, community loyalty, performance monitoring, and community development for CBT, on tourist value management, accounting for 71 percent of variance. While performance monitoring manifests the community's cognitive and behavioral learning efforts, identity-rooted attitude and community loyalty constitute the social capital which represents the socially altruistic resource (Ridley-Duff and Bull, 2011).
- The values of 0.15, 0.39, 0.52, and 0.11, representing the significant standardized Beta weights, are contributions of attitude towards CBT identity, community loyalty, civil participation, and logistical and telecommunication infrastructure, on community development for CBT,

accounting for 72 percent of variance. It is obvious that stakeholder participation provides the heterogeneity advantage which allows the community to be able to access resources and integration of local and professional knowledge (Luyet et al, 2012). Thus, the SE-driven CBT initiative needs to acknowledge greater stakeholder inclusivity, representing the relational aspect of social capital. While civil networks can be perceived as the structural dimension of social capital, the identity-rooted attitude and community loyalty represent the contextual aspect of the social capital (Ridley-Duff and Bull, 2011). It also infers the role of mutual learning, reciprocity and shared commitment needed for the community to feel confident in moving the CBT initiative forward.

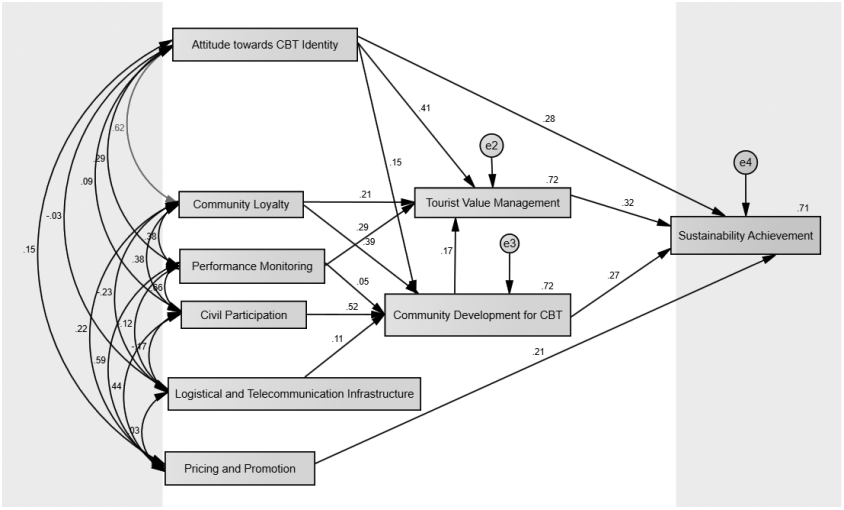

Figure 4 The validated socio-cybernetics CBT management model

Figure 5 is an expanded version of Figure 4 that extends the detailed behavioral characteristics of CBT management with impact on the different domains of sustainability achievement.

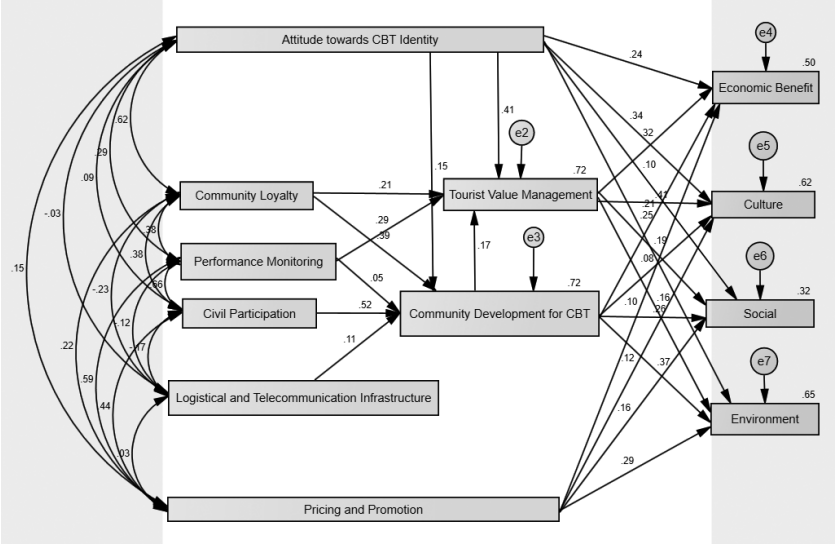

Figure 5 The expanded model for CBT management

While the social aspect has lower variance predictability, at 0.32, the others fall in the range of 0.50-0.65. Table 1 sheds light on the lower level of benefits especially in areas of infrastructure development, at mean 3.386 and 3.727 for local road conditions and overall improvement, and in medical and education improvement, at mean of 3.79, 3.42, and 3.64 for educational, medical and health-related areas. Obviously, as shown in Table 1, the sustainability achievements in areas of economics, cultural awareness, cultural maintenance, sense of love and caring for the ecological environment, the quality-of-life and sense of belonging issue, have mean above 4 of the five Likert scale (at agreeable level). Another obvious weakness lies in the waste and water management systems within the communities, and the new knowledge acquired through tourist interactions, with mean below 4.

The validated tourist behavior framework is given in Figure 6, with the model fit statistics presented in Table 6, which fulfills the absolute-fit (i.e. standardized root mean residual, SRMR, at 0.0166 and the incremental fit indices (i.e. NFI=0.99, CFI=1.0, TLI=0.999). While

confirming the four stated hypotheses, Figure 6 highlights the significant roles of the "competence" aspect of destination personality, and the "care and interactional" roles of tour guides. "Competence" signifies that the place is "reliable and the people truly know what they are good at," and "shows the optimistic spirit in the CBT development and its progress." Through the tour guides' focusing on systematic presentation of destination attractions to the tourists (interactional role) and in responding to the physical and psychological needs of the tourists (caring role) (Tan, 2017), tourist learning is facilitated, which also yields satisfaction and further positive word of mouth (PWM). The latter is a significant characteristic of tourist loyalty. The predictive strengths of the variance of key "organisms," represented by tourist learning and tourist satisfaction, and "response" depicted in positive word of mouth (loyalty), are, in general, high, between 0.67-0.79.

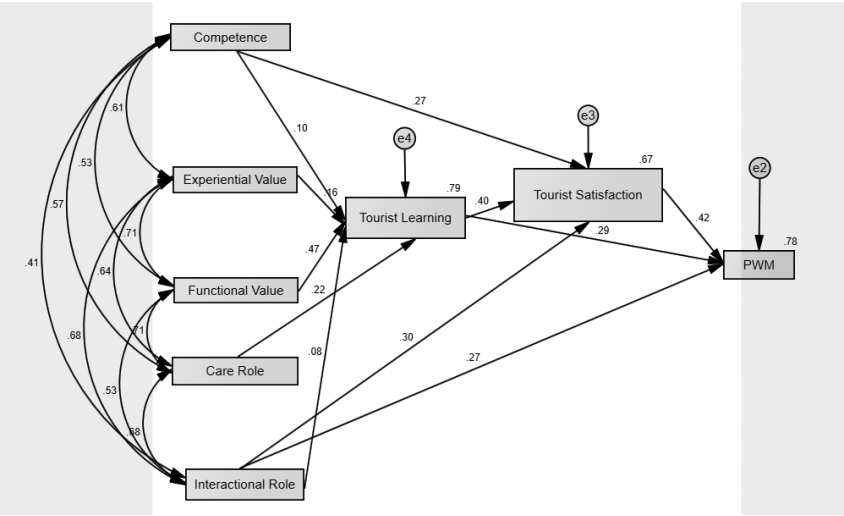

Figure 6 The S-O-R tourist behavior model for the SE-supported CBT

Moreover, the validated model allows the communities to visualize the CBT market conceptually and see prospects for future development.

Conclusion

The research proposes a socio-psychological model of cybernetics to guide communities in the design and successful implementation of community-based tourism (CBT) projects. To succeed, the communities need to exert simultaneous efforts on both the autogenesis (goals and identity oriented) and autopoiesis (behaviors) functions of CBT which can adapt the concepts advocated in the theory of planned behaviors.

In particular, regarding the behaviors, three important "perceived behavioral control" factors are shown to significantly predict the performances of the business model constitutive of tourist value management and community development for CBT, namely: performance monitoring, civil/stakeholder participation, and logistical and telecommunication infrastructure. Socio-psychological factors, such as identity-rooted attitude, community loyalty, along with technical and relational resources play important roles in establishing confidence as well as the synergy needed for moving the CBT projects forward towards success.

On the sustainability achievement aspect, the most significant improvement areas relate to economics, cultural awareness of the community members, cultural maintenance, sense of love and caring for the ecological environment, and quality of life. At the same time, the areas that need to be improved include systematic waste and water management, infrastructural development, and knowledge acquisition through tourist interactions.

Clearly, with mean value of the attitudes towards CBT in the range 4.22-4.35, and community loyalty with mean 4.05-4.16, communities would have unique identity-differentiated value propositions to offer to the tourists and visitors. These socio-psychological variables serve not only to guide the development of a community-based tourism business model, but also to enable tourists and visitors to develop impressions and perceptions of destination personality to influence tourist learning and satisfaction. Towards this end, the social psychological cybernetics model is used as a value base for community-based tourism, leading to an S-O-R (stimulus-organism-response) model of tourist

behaviors. In other words, the identity-rooted values of the community provide an investment direction on the supply side and tourist motivation for experiences and learning on the demand side.

Implications

Numerous implications are made possible in the supply-side of CBT. First, the communities can use the validated model to lead an effective change involving CBT initiatives, both in development and tourist behavioral management.

Second, as advocated in the "social + entrepreneurship + CBT" schemata, the socio-psychological aspects of social capital play a significant predictive role in moving CBT towards sustainable success. Social resources include identity-rooted attitudes, community loyalty, attention-based performance monitoring efforts, civil/stakeholder participation and infrastructural readiness at telecommunication and logistical domains.

Third, on the ethical or social responsibility front, the model involves three dominant views of ethical theories, namely (1) deontology, which uses business model concepts aiming to deliver valuable experience and social innovations; (2) a virtue theory that prioritizes attitudes of preserving cultural heritage and making local identity as the value base for the CBT and further initiatives to tourists; and (3) a utilitarian mission that is sustainability driven. These ethical and social responsibility engines are the thrusts behind the foundation of solidarity, social entrepreneurship and innovation-driven expansion.

Fourth, the structural elements of the model present an important contribution that illuminates the five levels of social emergence of the community as described by Sawyer (2007), namely: 1) the individual level constituting of the attitudes of the community members; 2) the interaction level which involves community solidary and loyalty driven by common identity in the collective efforts; 3) the ephemeral-emergent level which indicates an emergent initiation as evidenced by the community development effort towards a common goal, namely CBT;

4) the stable-emergent level which sees the emergence of the business model and the continuing investments of CBT; and 5) the social-structure level, where the CBT context becomes the new language of livelihood in the community.

Relating to the tourist behavior aspect, the S-O-R model is simple as the communities can devise stimulation strategies by using tour guide roles, destination personality and value propositions to stimulate tourist learning and alter attitudes and perceptions, and thus, shape tourist responses. The role of tourist learning reinforces the idea that strong destination brands can be facilitated by developing tourists' knowledge and their positive memorable experiences to establish the information to brand node as ways to leverage brand association (Keller, 1993) through learning and values exposure. The S-O-R, in the lens of branding, can be interpreted to embrace both the indirect approach through tourists developing favorable attitudes towards CBT, and the direct approach that measures tourist loyalty.

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Appendix

Table 1 The socio-psychological and cybernetics model elements

Socio-Psychological Cybernetics Model Elements		
Cybernetics	**Theory of Planned Behavior (TPB)**	**Elements**
Autogenesis	Attitudes and norms	Attitude towards CBT Identity Community loyalty Sustainability achievement
Autopoiesis	Perceived behavioral control Behaviors	**Perceived behavioral control:** Performance monitoring Civil/stakeholder participation Logistical and telecommunication infrastructure **Behaviors (CBT business model):** Community development for CBT Tourist value management Pricing and promotion
Outcome: Sustainability achievement		

Table 2 Reliability and convergent validity assessment

Construct	Items	Mean Value	Standard Deviation	Indicator Reliability Factor Loading	Convergent Validity Average Variance Extracted (AVE)	Construct Reliability Cronbach's Alpha
Attitude towards CBT identity	Sense of belonging linked to culture and heritage	4.23	0.77	0.707	0.709	0.863
	Part of who we are displayed in rural livelihoods	4.35	0.82	0.721		
	Have unique features and values to offer to tourists.	4.22	0.78	0.728		
	CBTs allow others to learn community's uniqueness	4.24	0.74	0.682		
Performance Monitoring	Regularly monitors: - tourist feedback - community's quality of life - impact of CBT	 3.37 3.45 3.50	 0.92 0.88 0.82	 0.939 0.902 0.877	0.833	0.899
Community Loyalty	Share proudly CBT value with friends outside community	4.05	0.82	0.897	0.848	0.910
	CBT a part of my values	4.15	0.70	0.802		
	Proud to tell others about CBT	4.16	0.78	0.847		

Table 2 Reliability and convergent validity assessment (cont.)

Construct	Items	Mean Value	Standard Deviation	Indicator Reliability Factor Loading	Convergent Validity Average Variance Extracted (AVE)	Construct Reliability Cronbach's Alpha
Civil or stakeholder Participation	Outside advisory: -Sufficient number -Helpful to CBT development -Provide useful suggestions	 3.06 3.34 3.37	 0.96 0.95 0.94	0.869	0.693	0.775
	Government role: -Attend to community's needs -Never delay in assistance -Provide technical support	 2.78 2.86 2.89	 1.245 1.116 1.165	0.854		
	Stakeholder support: -Financial support (private) -Technical support (private) - Financial support (NGOs) -Technical support (NGOs)	 2.772 2.72 2.784 2.73	 1.191 1.103 1.108 1.107	0.770		
Logistical and Telecommunication Infrastructure	Sufficient quality road conditions	2.806	1.163	0.914	0.835	0.776
	Sufficient quality telecommunication infrastructure	3.48	0.83	0.914		
Pricing and Promotion Strategy	Pricing to satisfy tourists	3.466	0.921	0.862	0.743	0.654*
	Promotional campaign to generate awareness	3.443	0.969	0.862		
Tourist Value Management	CBT tourist values: -To impact memorable experiences. -Useful knowledge relating to livelihood means, cultural and heritage values. -To provide emotional aspects -Educational	 3.988 3.954 3.954 3.909	 0.809 0.771 0.709 0.753	 0.900 0.868 0.863 0.862	0.7862	0.817
	Tourist interpretation (Tour guide trained to interpret): -significance of culture and livelihood styles -Farming practices and products	 3.466 3.443	 0.921 0.969	 0.916 0.916		
	Tourist learning: -How community conserves environment to benefit farming -Non-farming products	 4.148 4.171	 0.735 0.761	 0.942 0.942		
	Innovation: -Continue to improve CBT services -Means to foster better relationships i.e. Facebook -Focus on tourist value -Incremental innovation -Serves customer needs	 3.91 3.83 4.147 3.886 3.932	 0.954 0.937 0.766 0.779 0.674	 0.903 0.863 0.767 0.739 0.739		
Community Development	Leadership: -Dedication -Empathic listening -Inspiring other members	 2.83 2.96 3.39	 1.03 1.07 1.11	 0.926 0.914 0.887	0.66	0.846
	Training members: -To benefit tourists -To deliver quality	 3.40 3.36	 0.811 0.873	 0.938 0.938		
	Tour guide training: -Systematic training -Competence -Caring attribute	 2.82 2.96 3.39	 1.03 1.07 1.19	 0.947 0.903 0.843		

Table 2 Reliability and convergent validity assessment (cont.)

Construct	Items	Mean Value	Standard Deviation	Indicator Reliability Factor Loading	Convergent Validity Average Variance Extracted (AVE)	Construct Reliability Cronbach's Alpha
	Community practice:					
	-Have sense of belonging	3.716	0.883	0.947		
	-Duties assigned according to ability	3.693	0.914	0.903		
	-Regular meetings	3.773	0.867	0.843		
	Information sharing:					
	-The job scopes	3.92	0.761	0.993		
	-Relating to CBT project	3.93	0.754	0.993		
	CBT assessments:					
	-Role designated	3.34	1.081	0.937		
	-Aim for continuous improvement	3.38	1.031	0.911		
	-Procedure improvement	3.40	1.035	0.869		
	CBT decision making:					
	-In team	3.82	0.824	0.882		
	-Accountability	4.11	0.850	0.852		
	-Benefiting everyone	3.83	0.761	0.808		
	-Satisfying community	3.84	0.828	0.806		
	Funding for CBT:					
	-Creative ways to fund needed	3.647	0.858	0.937		
	-Financial commitment of members needed	3.795	0.846	0.937		
Sustainability Achievement	As a result of CBT:				0.677	0.837
	Economic:					
	-Better earning	4.034	0.718	0.928		
	-Enjoy larger profit	4.079	0.681	0.853		
	-Additional commercial benefits.	4.091	0.737	0.839		
	Cultural – cultural awareness:					
	-Preserve culture/heritage	4.00	0.758	0.938		
	-Increase awareness of role	4.148	0.719	0.938		
	Cultural – maintenance:					
	-Maintain lifestyles	4.181	0.735	0.961		
	-Not negatively influencing children	4.25	0.683	0.961		
	Cultural – new knowledge					
	-Acquire knowledge	3.84	0.800	0.888		
	-Gain valuable experience	3.806	0.828	0.888		
	Environment – waste and water management:					
	-Systematic on waste	3.318	1.023	0.952		
	-Systematic on water	3.386	0.999	0.952		
	Environment – sense of love and care for environment:					
	-for natural environment	4.204	0.729	0.878		
	-improve awareness.	4.170	0.681	0.868		
	Social – Infrastructural development:					
	-Local road condition	3.386	1.097	0.868		
	-Overall improvement	3.727	0.854	0.868		
	Social – Medical and education improvement:					
	-Improvement in education	3.79	0.818	0.851		
	-Improvement in medical	3.42	0.991	0.838		
	-Improvement in health	3.64	0.860	0.837		
	Social – quality of life and sense of belonging:					
	-CBT pride in the community	4.454	0.741	0.878		
	-CBT develops members	4.034	0.749	0.825		
	-CBT gives sense of belonging	4.102	0.743	0.795		

Table 3 Discriminant validity based on Fornell-Larcker criterion analysis

	1	2	3	4	5	6	7	8	9
1	**0.787**								
2	0.288	**0.913**							
3	0.617	0.383	**0.920**						
4		0.663	0.381	**0.833**					
5					**0.914**				
6		0.590		0.441		**0.862**			
7	0.704	0.592	0.693	0.392		0.372	**0.887**		
8	0.451	0.580	0.679	0.703		0.444	0.668	**0.812**	
9	0.652	0.582	0.631	0.376		0.487	0.768	0.697	**0.822**

Note: 1=Attitude towards CBT identity; 2=Performance monitoring; 3=Community loyalty; 4=Civil participation; 5=Logistic and telecommunication infrastructure. 6=Pricing and promotion; 7=Tourist value management; 8=Community development; 9=Sustainability achievement. Only ** Correlation significant at the 0.01 level (2-tailed) is presented in the off-diagonal. The bold diagonal elements represent Square Root of AVE.

Table 4 Model fit summary for the socio-cybernetics CBT management model

Model Fit	Chi-Squared	df	p	Chi-Squared/df	NFI	TLI	CFI	RMSEA	SRMR
	9.624	10	0.474	0.962	0.981	1.003	1.000	0.000	0.0166

Note: Chi-Squared is result of Chi square test; df = degrees of freedom; NFI = Normed Fit Index; TLI = Tucker Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Root of Approximation; SRMR = Standardized root mean residual.

Table 5 Hypothesis testing results for the socio-psychological cybernetics CBT management

Hypothesis	Path Coefficient, Beta	t-value	Results
H1	0.41	5.628	Supported
H2	0.15	1.876	Supported
H3	0.28	3.260	Supported
H4	0.21	2.353	Supported
H5	0.39	4.739	Supported
H6	0.29	4.151	Supported
H7	0.05	0.649	Not Supported
H8	0.52	6.288	Supported
H9	0.11	1.751*	Supported*
H10	0.17	1.877*	Supported*
H11	0.32	3.121	Supported
H12	0.27	3.266	Supported
H13	0.21	3.077	Supported

*Significant to 0.1., else to 0.05.

Table 6 Model fit summary for S-O-R model of tourist behaviors towards CBT

Model Fit	Chi-Squared	df	p	Chi-Squared/df	NFI	TLI	CFI	RMSEA	SRMR
	7.184	7	0.410	1.026	0.990	0.999	1.000	0.016	0.0166

Note: Chi-squared is result of the Chi square test; df = degrees of freedom; NFI = Normed Fit Index; TLI = Tucker Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Root of Approximation; SRMR = Standardized root mean residual.