

# Factors Influencing the Seaside Resort Areas' Service Quality Management: A Case of Chinese Tourists in Southern Region of Thailand

Minyang Zhang<sup>1</sup>, Fuangfa Amponstira<sup>1</sup>

<sup>1</sup> School of Management, Shinawatra University, Pathumthani, Thailand

Correspondence: Minyang Zhang, School of Management, Shinawatra University, Pathumthani, Thailand.

Received: March 23, 2020

Accepted: April 14, 2020

Online Published: April 22, 2020

doi:10.5539/ibr.v13n5p61

URL: <https://doi.org/10.5539/ibr.v13n5p61>

## Abstract

The objectives of this study were to test the influence of factors that influence on the service quality management of seaside resort areas in southern of Thailand. The researcher used the survey questionnaire to collect data from 400 Chinese tourists who visited seaside resort areas in southern region of Thailand. The research employed One-way ANOVA and multiple regression to test variables and to test hypothesis.

The findings revealed that from 3 factors being analyzed using mean value. Service quality factor was the most important to the service quality management of seaside resort areas in southern of Thailand, followed by marketing mix factor, followed by external business factor.

The findings also revealed that from 3 factors being tested including service quality factor, marketing mix factor and external business factor influence on the service quality management of seaside resort areas in southern of Thailand at statistically significant level .05.

**Keywords:** Chinese tourist, seaside resort area, service quality management

## 1. Introduction

Tourism is one of the pillars of the Thai economy and contributes more than 18 percent to its GDP. In 2018, Thailand's total tourism revenue was approximately THB 2.02 trillion. In 2017, southern region of Thailand received 14.14 million international tourists. Among them, the number of Chinese tourists was 3.66 million, ranking first among international tourists (Jones and Salle, 2019). In 2018, the 10 most popular seaside resort areas of Chinese tourists were concentrated in southern Thailand, with Phuket ranking first and most popular among Chinese tourists. Koh Samui and Krabi ranked third and fourth. It means Phuket is the first choice for Chinese tourists to come to Thailand for vacation. In addition, the popularity of the Koh Samui and Krabi in Chinese tourists are also very high. Thailand's seaside resort areas attract a large number of Chinese tourists to come for vacation, sightseeing, leisure, and recuperation.

### 1.1 Statement of the Problem

Nowadays, many Thai seaside resort areas face problems of environmental degradation and declining quality of the seaside resort areas. Moreover, the disaster response capacity is inadequate, and there is a safety risk in the resort area, such as the ship overturning accident occurred in 2018. The official data showed that the number of Chinese tourists going to Phuket fell by 15% - 20% in the fourth quarter. In addition, the tourism market is highly competitive, and Thailand faces increasing market competition among Southeast Asian countries.

### 1.2 Research Objective

To study whether there is a significant relationship between service quality factors and service quality management of seaside resort areas in southern of Thailand for Chinese Tourists.

To study whether there is a significant relationship between marketing mix factors and service quality management of seaside resort areas in southern of Thailand for Chinese Tourists.

To survey whether there is a significant relationship between external business factors and service quality management of seaside resort areas in southern of Thailand for Chinese Tourists.

### *1.3 Research Significance*

This study contributes for managers to enhance the competitiveness of southern Thai seaside resort area, in order to attract more Chinese tourists to Thailand. Improve the service quality of the southern Thai seaside resort, and promote the rapid and stable development of the Thai tourism market.

### *1.4 Research Hypothesis*

H<sub>1</sub>: Service quality factors have a significant relationship with the service quality management of seaside resort areas in southern Thailand for Chinese Tourists.

H<sub>2</sub>: Marketing mix factors have a significant relationship with the service quality management of seaside resort areas in southern Thailand for Chinese Tourists.

H<sub>3</sub>: External business factors have a significant relationship with the service quality management of seaside resort areas in southern Thailand for Chinese Tourists.

## **2. Literature Review**

Service quality factors come from SERVQUAL. SERVQUAL is a multi-dimensional research instrument, designed to capture consumer expectations and perceptions of a service along the five dimensions that are believed to represent service quality (Parasuraman, 1994). Zeithaml et al. (1990) tested the variables into five dimensions, including tangibility, reliability, responsiveness, assurance, and empathy.

The marketing mix is a different component or tool that can be used to influence consumers. Li et al. (2011) demonstrated that "the marketing mix represents the organization's marketing activities and consists of controllable variables that are grouped to meet the needs of the target market. The tourism product marketing mix is roughly the same as the other mixes. The way it meets current and potential customer needs depends on the marketing mix of the organization's products and services. Traditionally, four factors are considered: product, price, promotion, and place, which is the well-known 4P principle. In addition to the traditional 4P, the modern travel industry usually considers three other elements, namely process, people and physical evidence. These three elements are particularly important for tourism marketing.

External business factors are important factors influencing the strategic management of resorts, including both natural factors and human factors. The traditional activities are mainly to enjoy the 3S (sunshine, sea, seaside) waterfront (Li, 2001) to meet the travel needs of tourists for food, accommodation, traffic, shopping, and entertainment. In the second half of the 20th century, resort tourism expanded from the seashore to mountains, forests, lakes, grasslands and villages, and there were resorts with large-scale, mufti-type, rich projects, well-equipped and high-cost franchise holiday tourism.

Chen (2008) mentioned in his research that Pattaya is one of Thailand's famous seaside resorts, and there are a large number of tourists visiting for vacation and entertainment every year. Through an interview with the managers of the national tourism administration of Thailand, the government managers of the Pattaya, the residents and tourists, he learned that Pattaya faces many problems. These problems can be grouped into two parts: the environmental problem and the social problem. In the past, the sewage treatment work in Pattaya was not perfect. Some enterprises and residents even drained sewage directly into the sea. For a while, the seawater was not clear, and the garbage floating on the sea made people feel that it was not in line with a famous seaside resort. Besides, the garbage problem can be said to be the most headache for the local government. On the beach, you can see small vendors everywhere. They sell various Thai snacks, fruits, and drinks. At the same time, garbage is everywhere on the beach. Someone even says that the growth of garbage on the beach is faster than the growth of tourists. Social problems mainly include fighting and theft. Pattaya during the day is sleepy. It became active at night and peaked at midnight. The colorful nightlife makes frequent conflicts among tourists. Bars and streets often fight, and tourists often report to the police for theft. Chen also mentioned that the local government has proposed many ways to try to solve these problems. For example, to solve the sewage problem, the local government set up a department to manage sewage and developed a series of plans and measures to ensure the cleanliness of the sea. In response to social problems, the local government has compiled hundreds of thousands of exquisite albums and millions of posters, which are placed in public areas such as airports and landscapes. At the same time, hundreds of CDs promoting Thai customs have been distributed in public areas. It is hoped that tourists can travel in a civilized way and care for the Thai environment. Besides, the local government of Pattaya also stipulates that bars and nightclubs must be closed after two o'clock in the evening to prevent criminal incidents. To strengthen tourism security, the Thai tourist police patrol the streets without interruption, providing security services for tourists visiting Thailand.

The island of Koh Samet has suffered a certain degree of damage in recent years due to the increase in the

number of tourists. The amount of garbage on the beach is increasing, especially the cigarettes that are randomly discarded, which are too small to be cleaned. Some environmental organizations have repeatedly urged the local government to take practical measures to protect the environment, including stopping over development and stopping littering. The Thai beach smoking ban took effect in February 2018. "Starting February 1, 2018, smoking and cigarette-butt littering are prohibited on beach areas," said Bannarak Sermthong, a director from the country's department of marine and coastal resources (DMCR). "Anyone who wants to smoke must do so in designated smoking areas, not on the beaches," he added. This ban across 24 beaches in 15 provinces, including several in major tourist destinations such as Phuket, Koh Samui, and Krabi, to protect its coastal environment. Those who fail to comply will be subject to a fine of 100,000 baht (£2,241) and a maximum jail sentence of one year, or both (Soo, 2018).

The seaside resort areas of Southeast Asia are world-famous and have always been loved by tourists from all over the world. Tourism development in Singapore, Malaysia, and Thailand is relatively mature; tourism in Indonesia and the Philippines is developing rapidly; development in Brunei is relatively stable; Vietnam is still in its infancy. Southeast Asian seaside tourism attracts many tourists. Convenient transportation has led to more and more tourists from all over the world to choose Southeast Asian destinations (Wang, 2012). The price advantage makes Southeast Asia as the preferred destination. For example, Indonesia is the second-largest destination for Chinese tourists. Compared with high-end islands such as Tahiti and Maldives, Indonesia's biggest advantage is the price. The ASEAN countries are simplifying the entry procedures for Chinese tourists and opening up a "green channel" for Chinese tourists. Thailand has launched visa-free programs for Chinese tourists; Malaysia has launched e-visa and visa-free programs for Chinese tourists; the Cambodian government has also announced three-year multiple-entry visas for Chinese tourists; Laos, Myanmar, Brunei, and other countries have also simplified Chinese tourists visa application process (Fan, 2018). In addition to this, cultural identity is also an advantage of coastal tourism development in Southeast Asia. To better serve Chinese tourists, some travel agencies train Chinese local guides to avoid the embarrassment of travel caused by language problems. The Singapore government has systematically developed tourism resources and laid the foundation for the development of international tourism. Besides, Singapore is also actively creating conditions to develop tourism products such as shopping tours, conference tours, study tours, medical care tours, cruise tourism, and business travel. Singapore's tourism economy has flourished, and its popularity in the international market has benefited from its excellent tourism facilities, high-quality personnel and the support of the National Tourism Administration. More important is the innovative spirit of tourism managers, as one expert said, "Innovation is the life of Singapore's tourism economy." Moreover, Singapore has taken many measures such as organizing various large-scale international exhibitions and continued cooperation with neighboring countries (Gang, 2006). Southeast Asia's seaside resort area is Increasing competitiveness.

### 3. Methodology

This study is a quantitative research using questionnaire. The research target sample is 400 Chinese tourists who have been to or are traveling in the seaside resorts in southern Thailand in the past two years. The content of the questionnaire covers the survey of the expectation and perceived service quality of Chinese tourists of the following three aspects: service quality factors, marketing mix factors and external business factors. Through the data analysis of expectation and perceived service quality of Chinese tourists, we can understand the current service quality management in seaside resort areas in southern Thailand, find out what factors impact service quality management in southern of Thailand and provide some advice to southern seaside resort areas managers.

Table 1. Reliability of all Scale Factors

Cronbach's Alpha	N of Items
.937	67

Table 1 shows the questionnaire was tested for reliability using Cronbach's Alpha which the result was 0.937 presenting highly reliable.

The validity analysis of this research is based on factor analysis. KMO and Bartlett's sphere test is adopted to examine whether samples are suitable for factor analysis, to estimate whether the different measurement items under the same variable can reflect the characteristics of the measured variable more accurately. If the value of KMO is closer to 1, the more common factors between variables there are, and it is more suitable for the factor analysis. If the value of Bartlett's Sphericity Test is less than 0.5, it means the samples are not suitable for the factor analysis. In employed KMO and Bartlett's sphere test to examine the validity of the samples.

Table 2. Validity of All Scales Factors

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.897
Bartlett's Test of Sphericity	Approx. Chi-Square	11181.917
	df	2211
	Sig.	.000

Table 2 shows the value of KMO is 0.897 that is bigger than 0.6. It means the cumulative variance proportion reached the statistical requirements. Bartlett's sphere test has reached a significant level (Sig.<0.05), consequently, the null hypothesis of Bartlett's sphere test should be rejected, the samples can be considered as suitable for factor analysis.

The questionnaire was examined by five experts, including four Thai experts and one Chinese expert in a field of tourism. The Item-Objective Congruence (IOC) was used to evaluate the items of the questionnaire based on the score range form -1 to +1. The items that had scores lower than 0.5 were revised. The items that had scores higher than or equal to 0.5 were reserved. The result of the IOC is that the items had scores over 0.6, so it has high validity.

#### 4. Research Findings

##### 4.1 Demographic Analysis of the Respondents

Majority of the Chinese tourists coming to southern seaside resort areas are female, ages are between 18-24 years old, unmarried, hold bachelor degrees, students, monthly salary between 3,000-5,999 Yuan. Most of the tourists who visit southern seaside resort areas come from East China and North China; they choose to stay in southern seaside resort areas for 2 - 4 days. Before coming to southern seaside resort areas, the Chinese tourists got information about southern seaside resort areas tourism from the websites and other social medias, followed by introduction by friends. Finally, the tourists choose to come to southern seaside resort areas with friends, and they never been to southern seaside resort areas before.

##### 4.2 Summary Descriptive Statistic of Three Factors

Table 3. Descriptive Statistic of Service Quality Factors

	<i>Mean</i>	<i>Std. Deviation</i>	<i>Level</i>	<i>Ranking</i>
Tangibility	3.79	.695	High	5
Reliability	3.85	.676	High	3
Responsiveness	3.89	.714	High	2
Assurance	3.80	.744	High	4
Empathy	4.07	.670	High	1
<b>Average</b>	3.88	.6998	High	--

The results from Table 3 illustrated that from the service quality factors, empathy at high level (mean=4.065, SD=.66975), followed by responsiveness at high level (mean=3.89, SD=.714), followed by reliability at high level (mean=3.8525, SD=.676), followed by assurance at high level (mean=3.7975, SD=.74375), followed by tangibility at high level (mean=3.7875, SD=.69475) respectively.

Table 4. Descriptive Statistic of Marketing Mix Factors

	<i>Mean</i>	<i>Std. Deviation</i>	<i>Level</i>	<i>Ranking</i>
Product	4.06	.709	High	1
Price	3.47	.771	High	7
Place	3.86	.681	High	5
Promotion	3.92	.765	High	3
People	3.89	.658	High	4
Process	3.67	.746	High	6
Physical Evident	3.96	.736	High	2
<b>Average</b>	3.83	.724	High	--

The results from Table 4 illustrated that from the marketing mix factors, product at high level (mean=4.06, SD=.709), followed by physical evident at high level (mean=3.96, SD=.736), followed by promotion at high level (mean=3.92, SD=.765), followed by people at high level (mean=3.89, SD=.658), followed by place at high level (mean=3.86, SD=.681), followed by process at high level (mean=3.67, SD=.746), followed by price at high

level (mean=3.47, SD=.771) respectively.

Table 5. Descriptive Statistic of External Business Factors

	<i>Mean</i>	<i>Std. Deviation</i>	<i>Level</i>	<i>Ranking</i>
Landscape	4.20	.700	High	1
Traffic	3.52	.732	High	4
Shopping	3.67	.752	High	2
Entertainment	3.65	.750	High	3
<b>Average</b>	3.76	.733	High	--

The results from Table 5 illustrated that from the external business factors, landscape at high level (mean=4.20, SD=.700), followed by shopping at high level (mean=3.67, SD=.752), followed by entertainment at high level (mean=3.65, SD=.750), followed by traffic at high level (mean=3.52, SD=.732) respectively.

Table 6. Descriptive Statistic of Willingness

	<i>Mean</i>	<i>Std. Deviation</i>	<i>Level</i>
<b>Willingness</b>	3.803	.500	High

The results from Table 6 illustrated that the willingness of Chinese tourists to introduce others to come to this seaside resort area and the willingness of Chinese tourists to re-visit this seaside resort area again at high level (mean=3.803, SD=.500).

In a short, service quality factor was the most important one to the service quality management of seaside resort areas in southern of Thailand, the satisfaction of service quality factors of Chinese tourists from high to low were empathy, followed by responsiveness, followed by reliability, followed by assurance, followed by tangibility. Marketing mix factor was the second important one to the service quality management of seaside resort areas in southern of Thailand, the satisfaction of marketing mix factors of Chinese tourists from high to low were product, followed by physical evidence, followed by promotion, followed by people, followed by place, followed by process, followed by price. External business factor was the last important one to service quality management of seaside resort areas in southern of Thailand, the satisfaction of external business factors of Chinese tourists from high to low were landscape, followed by shopping, followed by entertainment, followed by traffic.

#### 4.3 Hypothesis Test

To facilitate recording, service quality management is represented by W. The author reduced the of service quality factors with 5 items into 1 new factor and named as SQF; reduced the marketing mix factors with 7 item into 1 new factor that named as MMF; reduced the external business factors with 4 items each into 1 new factor named as EBF.

Table 7. Correlation Analysis among Service Quality Factor, Marketing Mix Factor, External Business Factor and Service Quality Management

		<b>Correlations</b>			
		SQF	MMF	EBF	W
SQF	Pearson Correlation	1			
MMF	Pearson Correlation	.810**	1		
EBF	Pearson Correlation	.702**	.760**	1	
W	Pearson Correlation	.832**	.887**	.807**	1

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

Table 7 shows the results of the two-tailed test between service quality factor, marketing mix factor, external business factor and service quality management are all less than 0.01, which means they correlate each other at the significance level of one percent. Among them, there is significant between service quality factor and service quality management; there is significant between marketing mix factor and service quality management; there is significant between external business factor and service quality management. Therefore, H<sub>1</sub>, H<sub>2</sub> and H<sub>3</sub> can be accepted.

4.4 Regression Analysis

Table 8. Regression Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.832 <sup>a</sup>	.692	.692	.19048
2	.887 <sup>b</sup>	.787	.786	.15851
3	.807 <sup>c</sup>	.650	.650	.20301

a. Predictors: (Constant), SQF  
 b. Predictors: (Constant), MMF  
 c. Predictors: (Constant), EBF

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Between Groups	34.186	41	.834	23.419	.000
	Within Groups	12.746	358	.036		
	Total	46.932	399			
2	Between Groups	38.980	51	.764	33.446	.000
	Within Groups	7.953	348	.023		
	Total	46.932	399			
3	Between Groups	32.223	36	.895	22.089	.000
	Within Groups	14.709	363	.041		
	Total	46.932	399			

Sig<0.05

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.416	.114		3.668	.000
	SQF	.873	.029	.832	29.926	.000
2	(Constant)	.280	.092		3.039	.003
	MMF	.919	.024	.887	38.339	.000
3	(Constant)	1.034	.102		10.119	.000
	EBF	.737	.027	.807	27.216	.000

a. Dependent Variable: Service Quality Management

Table 8 shows that the relationship between service quality factors and service quality management at the level of significance is .000. The relationship between marketing mix factors and service quality management at the level of significance is .000. The relationship between external business factors and service quality management at the level of significance is .000. It supports that H<sub>1</sub> can be accepted with positive correlation, H<sub>2</sub> can be accepted with positive correlation, and H<sub>3</sub> can be accepted with positive correlation.

5. Discussion

This study achieved objectives that there was a significant relationship between service quality factors and the service quality management of seaside resort areas in southern Thailand for Chinese Tourists, there was a significant relationship between marketing mix factors and service quality management of seaside resort areas in southern Thailand for Chinese Tourists, and there was a significant relationship between external business factors and service quality management of seaside resort areas in southern Thailand for Chinese Tourists. The environmental problem and social problem in the seaside resort areas mentioned in the literature review are included in these three factors. The Thai beach smoking ban and other regulations mentioned by the literature review are referred to in service quality factors. Convenient transportation, Thailand's visa-free programs for Chinese tourists, Malaysia's e-visa and visa-free programs for Chinese tourists, etc. are all reflected in service quality factors. Therefore, the service quality management of the seaside resort areas involves these three factors and the relationship between three factors and the service quality all the time in many seaside resort areas. At present, no researcher has systematically studied this topic. This study clearly demonstrates the relationship between these three factors and service quality management.

## 6. Conclusion and Research Implication

### 6.1 Conclusion

This study found out that three factors influenced the seaside resort areas' service quality management, there are service quality factors, marketing mix factor, and external business factors. According to the service quality factors, the satisfaction of Chinese tourists from high to low was empathy, followed by responsiveness, followed by reliability, followed by assurance, followed by tangibility. According to the marketing mix factors, the satisfaction of Chinese tourists from high to low was product, followed by physical evidence, followed by promotion, followed by people, followed by place, followed by process, followed by price. According to the external business factors, the satisfaction of Chinese tourists from high to low was landscape, followed by shopping, followed by entertainment, followed by traffic.

### 6.2 Research Limitations

Some limitations can be identified. The findings from this study apply to Chinese tourists and are not applied to tourists from other countries because they have different expectations and perceptions. And this study only uses quantitative methods and lacks qualitative data, which may cause data limitations.

### 6.3 Research Implication

The findings from this research contribute to the knowledge to find out the new knowledge that for different groups of tourists from different parts of the world, they have different perceptions. For the Chinese tourists, the service quality they needed is different from the tourists from the western countries, so that the services that the seaside resort areas used to provide to the western tourists may not be satisfied by the Chinese tourists. Thus, the following research findings from this study present the service quality management of Chinese tourists who visited seaside resort areas in the southern region of Thailand in the year 2019.

The findings from this research could be beneficial for many parties who are related to seaside resort areas particularly the resort areas located in the southern region of Thailand. First, the contribution for practice, it found that the management of seaside resort areas should improve the staffs' ability to handle emergencies and provide fast services. They must set up a perfect legal framework to protect Chinese tourists. It found that the management of seaside resort areas should strategy plan for the control of the cost of accommodation, food items, transportation, commodities to be more rationalized.

## References

- Chen, Z. W. (2008). *Life structure theory, modern urban recreation planning system and planning research* (Doctoral dissertation). Tongji University, Shanghai, China.
- Fan, Z. Y. (2018). Analysis of the Competitiveness of Coastal Tourism in Southeast Asia in China's Outbound Tourism Market. *Journal of Sichuan Tourism University*, 6, 79-82. Retrieved from <https://kns.cnki.net/KCMS/detail/detail.aspx?dbcode=CJFQ&dbname=CJFDLAST2018&filename=SCPR201806021&v=Mjg4MTdZUjhlWDFMdXhZUZdEaDFUM3FUcldNMUZyQ1VSN3FmWStkckZ5emxWN3ZPTmk3YmZMRzRIOW5NcVks5SFo=>
- Gang, X. (2006). *Southeast Asian tourism development and cooperation research* (Master's dissertation). Jinan University, Guangzhou, China.
- Jones, L. L., & Salle, I. (2019). Thailand hotel market research prepared for S hotels and resorts company limited. *FINAL-Thailand Hotel Market Research*, 1(1), 1-174. Retrieved from [http://webcache.googleusercontent.com/search?q=cache:\\_mpFyad0mNEJ:market.sec.or.th/public/ipos/IPSGetFile.aspx%3FTransID%3D250826%26TransFileSeq%3D58+&cd=1&hl=zh-CN&ct=clnk&gl=th](http://webcache.googleusercontent.com/search?q=cache:_mpFyad0mNEJ:market.sec.or.th/public/ipos/IPSGetFile.aspx%3FTransID%3D250826%26TransFileSeq%3D58+&cd=1&hl=zh-CN&ct=clnk&gl=th)
- Li, X., Lai, C., Harrill, R., Kline, R., & Wang, L. (2011). When east meets west: An exploratory on study on Chinese outbound tourists' travel expectations. *Tourism Management*, 32(4), 741-749. Retrieved from <https://doi.org/10.1016/j.tourman.2010.06.009>
- Li, Z. R. (2001). *Tourism Studies*. Beijing: Tsinghua University Press.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1994). Reassessment of expectations as a comparison standard in measuring service quality: implications for future research. *Journal of Marketing*, 58(1), 111-124. <https://doi.org/10.1177/002224299405800109>
- Soo, K. (2018). *Thailand bans smoking on its beaches*. Retrieved from <https://www.telegraph.co.uk/travel/destinations/asia/thailand/articles/smoking-an-on-thailand-beaches/>
- Wang, L. L. (2012). Phuket— A Free Tropical Paradise. *Foreign Investment in China*, 3(23), 192-194. Retrieved

from

<https://kns.cnki.net/KCMS/detail/detail.aspx?dbcode=CJFQ&dbname=CJFD2012&filename=WQZG01223140&v=MjU0MzZWNY9CTWp6UmFiRzRIOVBPckk1QlpJUjhlWDFMdXhZUZdEaDFUM3UclnNMUZyQ1VSN3FmWStacEZpbm4=>

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1990). *Delivering quality service: Balancing customer perceptions and expectation*. New York, NY: The Free Press.

### **Copyrights**

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).