



Predicting determinants of hotel success and development using Structural Equation Modelling (SEM)-ANFIS method

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HIGHLIGHTS

- A theoretical model is developed to find the relative importance of determinants of hotel success and development.
- Technology Organization Environment (TOE) and Human Organization Technology (HOT) fit models are integrated.
- A two-stage methodology of (SEM)-ANFIS is used for data analysis.
- Human is found to be the most important dimension influencing hotel success and development.
- Customer satisfaction is found to be the most significant predictor of hotel success and development.

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ABSTRACT

This study aimed to identify the relative importance of the Critical Success Factors (CSFs) that contribute to the success and development of hotel industry in Malaysia. Drawing upon Technology-Organization-Environment (TOE) and Human-Organization-Technology (HOT) fit models, this study developed a theoretical model to predict the significant factors that contribute to the success and development of hotel industry. A two-stage Structural Equation Modelling (SEM)-Adaptive Neuro-Fuzzy Inference Systems (ANFIS) method was applied to test the research model and reveal the importance level of factors in the model. SEM analysis showed that the use of IT, financial performance, benchmarking, service standardization, top management support, customer satisfaction, service quality, hotel interior and exterior design/look, location, employee training and empowerment were significant factors influencing hotel success and development. Moreover, the results of ANFIS showed that customer satisfaction under human dimension was the most critical predictor of hotel success and development.

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1. Introduction

The connection between economic growth and tourism has gained a lot of attention from the governments, practitioners, and

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researchers and it has increasingly become an important source for the world's economic development (Padilla-Meléndez & Garrido-Moreno, 2014; Tang & Tan, 2015). Given the rapid growth in Asian tourism, Malaysia has been considered as one of the most popular tourism destinations that continues to be the second most frequently visited destination in the continent (Musa & Thirumoorthi, 2016; Tang & Tan, 2016). As a matter of fact, the Malaysian government has started to consider tourism as a salient sector which is expected to strengthen the country's long-term economic development with high income level by 2020 (Bhuiyan, Siwar, & Ismail, 2013). In the middle of 1980s, the Malaysian government started to emphasize on the growth of tourism industry.

Then, the Ministry of Tourism and Culture was established in 2004 (Habibi, Rahim, Ramchandran, & Chin, 2009). The government has also designed plans for tourism administration and policy such as the “First Malaysian Plan (1966–1970)” and the “Tenth Malaysian Plan (2011–2015)”. In addition, “Economic Transformation Program (ETP)” has been designed as a comprehensive set of strategies for refining different aspects of the country (Pemandu, 2010). Since hotel sector has increased the competition and customer turnover (Marais, du Plessis, & Saayman, 2017; Padilla-Meléndez & Garrido-Moreno, 2014), this sector is considered to play a vital role in the tourism industry of Malaysia (Teo, Bernhard, & Chee, 2017). Therefore, the Malaysian government and tourism policy makers have spotlighted the operation, development, and service in the hotel sector that are boosted through various strategic plans (Tourism Malaysia, 2017). According to the ETP strategic plan of 2010, the improvement of the hotel rate, mix, and quality has been projected. Meanwhile, the hotel supply has grown dramatically and a large number of hotel projects is expected to enter the market by the end of 2020.

So far, researchers have looked into different areas of tourism industry in Malaysia such as inbound tourism demand (Tang & Tan, 2016), tourism economic growth (Tang & Tan, 2015), urban and rural tourism development (Nair, Munikrishnan, Rajaratnam, & King, 2015; Rasoolimanesh, Ringle, Jaafar, & Ramayah, 2017), tourism sustainability (Ng, Chia, Ho, & Ramachandran, 2017; Thompson, Gillen, & Friess, 2017), and medical tourism (Seow, Choong, Moorthy, & Chan, 2017). However, despite the considerable amount of attention given to the hotel sector, a dearth of studies has been done to identify contributing factors to organizational success and development of hotel industry in Malaysia. Although previous studies have examined different Critical Success Factors (CSFs) in hotel industry (Avcikurt, Altay, & Oguzhan Ilban, 2011; Brotherton, 2004; Brotherton, Heinhuis, Miller, & Medema, 2003; Mardani, Jusoh, Bagheri, & Kazemilari, 2015; Ottenbacher & Gnoth, 2005; Padilla-Meléndez & Garrido-Moreno, 2014; Zhang, Ren, Shen, & Xiao, 2013), the knowledge about CSFs in this industry has been largely limited within Malaysia. Particularly, none of the studies has explained the influence of CSFs on organizational success and development in hotel industry. In fact, developing a theoretical model and investigating the importance level of CSFs are largely overlooked in the previous studies.

1.1. Research objectives and questions

Based on the above discussion, this study aims to identify CSFs and develop a model that incorporates different factors from technological, organizational, environmental, and human perspectives to determine the success of hotel industry in Malaysia. Furthermore, it is obvious that prioritizing the critical factors can help both the government and organization to focus on the most critical factor when assigning their resources through different processes (Fu & Chang, 2016). Therefore, this study employs a new Structural Equation Modelling (SEM)-Adaptive Neuro-Fuzzy Inference Systems (ANFIS) approach to identify and rank the CSFs that can contribute to the development of hotel industry. The use of this particular SEM with soft computing techniques is motivated by many researchers who believe in greater theory building and testing (Ahani, Rahim, & Nilashi, 2017; Liébana-Cabanillas, Marinković, & Kalinić, 2017; Sharma, Joshi, & Sharma, 2016). In the light of this, it is believed that this study can be carried out with strong justifications.

The research questions of this study are: (a) How can a suitable theoretical model be developed to predict the development of hotel industry? (b) How does SEM-ANFIS help identify and rank the most significant CSFs that contribute to the development of hotel

industry?

To answer these research questions, the existing literature of CSFs in hotel industry was reviewed and a total of 12 CSFs were extracted. Next, a theoretical model was developed by integrating Technology-Organization-Environment (TOE) and Human-Organization-Technology (HOT) fit frameworks to predict the significant factors that can contribute to the success and development of hotel industry. Then, SEM was employed to test the theoretical model based on the hotel managers' or owners' perspective. Finally, all significant CSFs of the research model were given as inputs to the ANFIS model to show their level of importance in successful development of hotel industry in Malaysia.

This study can provide useful and updated information for the development of hotel industry in Malaysia. This study is expected to improve the understanding of CSFs for this industry in general. Besides that, it can assist hotel managers, the Malaysian government, and tourism policy makers in determining the CSFs for a successful hotel business that can eventually lead to the high-income nation status by 2020.

The remaining of this paper is structured as follows. Section 2 presents a general background of the tourism industry in Malaysia, the application of CSFs in tourism research, TOE, and HOT-fit theories. Then, Section 3 discusses the hypotheses and model development. Section 4 presents the methodology procedure which includes two-stage SEM-ANFIS. Next, Section 5 discusses the findings, followed by Section 6 discusses the conclusions and implications. The last section highlights the limitations and future research directions.

2. Literature review

2.1. Tourism in Malaysia

Malaysia, formerly known as Federation of Malaya, covers a land area of 329,847 km², neighboring Singapore, Indonesia, Brunei, and Thailand. Tourism development in Malaysia has started since 1960s and increasingly become the second most important sector which contributes to the country's economy (Marzuki, 2010; Musa & Thirumoorathi, 2016). In response to this, the Ministry of Tourism has established various strategic plans for developing a sustainable tourism in Malaysia. As a result, the number of international tourist arrivals increased to 23.6 million. Moreover, the tourism industry increased the revenue by 67.1% with a total of RM53.4 billion during the period 2006–2009. This trend continued to grow with a total of 27.4 million tourist arrivals in 2014 (Musa & Thirumoorathi, 2016; Nair et al., 2015). In fact, the tourism industry intends to attract 36 million international arrivals that are expected to contribute to the country's gross national income by 2020 with RM103.6 billion (Nair et al., 2015). Fig. 1 presents the trend of tourist receipts and arrivals to Malaysia for the period of 2006–2016.

With the continuous growth of tourist arrivals and pressure from incoming hotel supply, the Malaysian government makes every effort to enhance the quality of existing hotels in different destinations on the one hand and focuses on hotel openings to keep pace with high demand on the other hand. Therefore, according to the official reports of “Tourism Malaysia”, the hotel supply has grown from 2370 to 4817 during 2010–2015, with a total of 309,369 rooms were recorded in 2016. In addition, a large number of hotel projects is expected to take place during 2017–2021 (Teo et al., 2017). This may result in stronger competitive pressures to capture the significant share of core customers in the hotel market and give rise to this study which aims to identify the critical factors that support the development of hotel industry in Malaysia.

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