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# Measuring sustainable tourism attitude scale (SUS-TAS) in an Eastern island context



Cheng-Yu Hsu<sup>a</sup>, Mei-Yen Chen<sup>b,\*</sup>, Gyan P. Nyaupane<sup>c</sup>, Shin-Huei Lin<sup>d</sup>

<sup>a</sup> Wude Primary School, No.32, Jimuwu, Magong City, Penghu County 880, Taiwan

<sup>b</sup> Graduate Institute of Sport, Leisure and Hospitality Management, National Taiwan Normal University; No.162, Sec. 1, Heping E. Rd., Da'an Dist., Taipei City 106, Taiwan

<sup>c</sup> School of Community Resources & Development, Arizona State University; 411 N. Central Ave., Ste. 550, Phoenix, AZ 85004-0690, USA

<sup>d</sup> Department of Leisure Management, National Pingtung University; No.51, Minsheng E. Rd., Pingtung City, Pingtung County 90004, Taiwan

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#### ABSTRACT

The concept of sustainability has been widely accepted in tourism to mitigate the detrimental effects of mass tourism. However, developing a valid scale and testing it in cross-cultural settings is critical in evaluating sustainable tourism outcomes. This study examines the validity of the Sustainable Tourism Attitude Scale (SUS-TAS) in an Eastern island context. We adopted competing models testing, cross-cultural validity examination, and multigroup confirmatory factor analyses. Data were collected from three archipelagoes in Taiwan. A seven correlated-factor model was identified as the best-fitting model. Cross-cultural validity demonstrates that SUS-TAS shares the same psychometric properties originally found in Choi and Sirakaya (2005), and multigroup confirmatory factor analyses support the concept that SUS-TAS has the same cognitive framework across the three groups. The findings suggest that SUS-TAS can be used to assess resident attitudes toward sustainable tourism in an Eastern island context. Implications for future research and managerial practice are discussed.

#### 1. Introduction

Sustainable tourism development is crucial for island destinations (Prayag, Dookhony-Ramphul, & Maryeven, 2010). Islands, especially in coastal areas, have fragile environments that are threatened by major hazards related to the sociocultural, environmental, and fragile ecosystems resulting from tourism development, including large amounts of waste disposal, the destruction of coastal environments, the transformation from fishery to tourism, and the decline in traditional agricultural values and important landscapes and ecosystem functions. In addition to environmental destruction, these hazards can severely impact residents' cultural heritage and identity. In addition, unmanaged growth in traditional tourism in coastal areas poses unpredictable hazards to island destinations' economies, socioculture, and ecosystems. Although tourism contributes to the economy and the wellbeing of island communities by providing economic opportunities, tourism development in general has negative social and environmental impacts, including creating pollution, waste, and greenhouse gases (Legrand, Chen, & Sloan, 2013). Therefore, developing sustainable tourism in island destinations is imperative (Briguglio, Butler, & Harrison, 1996; Britton, 1982; García-Falcón & Medina-Muñoz, 1999; Twining-Ward &

#### Butler, 2002).

Sustainable tourism indicators provide a useful tool for monitoring and managing tourism sustainably (Choi & Sirakaya, 2005, 2006). Understanding residents and other stakeholders, including tourists, tourism industry practitioners, and local governments, in terms of their views and priorities have become important subjects in sustainable tourism research (Prayag et al., 2010; Sirakaya-Turk & Gursoy, 2013; Theuns, 2002). Residents play an important role among all stakeholders. Nelson, Butler, and Wall (1993) note that residents' participation in decision-making is a key indicator of successful sustainable tourism. However, past research on sustainable tourism has not reached a consensus on the clear nature, target, idea, and applicability of the concept, thus hindering the transformation of traditional tourism into sustainable tourism (Bramwell & Lane, 1993; Butler, 1999; Harrison, 1996; Stabler, 1997; Wheeller, 1993). Research on finding and testing a measuring tool for sustainable tourism appears necessary not only to facilitate an understanding of sustainable tourism but also to enhance sustainable tourism development, especially at island destinations.

Choi and Sirakaya (2005) developed a Sustainable Tourism Attitude Scale (SUS-TAS), which is a new paradigm to implement sustainable tourism principles that focuses on the residents for tourism planning

\* Corresponding author. E-mail addresses: meiyentw@ntnu.edu.tw (M.-Y. Chen), gyan@asu.edu (G.P. Nyaupane).

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and management. SUS-TAS in not only a potential instrument for measuring community attitudes toward sustainable tourism development but also building the connection with existing theories, including social exchange theory. From a theoretical perspective, it is necessary to continually replicate the accurate data covariance matrix to refine an existing model to improve its model fit (Fornell & Larcker, 1981; Raykov & Marcoulides, 2001). Scale validation is the first step for testing and developing a theory (Hinkin, Tracey, & Enz, 1997). For scales validation, SUS-TAS has been tested in cross-cultural settings, including America (U.S.), Europe (Turkey), and Africa (Cape Verde) (Ribeiro, Pinto, Silva, & Woosnam, 2018; Sirakaya-Turk, Ekinci, & Kava, 2008: Sirakava-Turk & Gursov, 2013: Yu, Chancellor, & Cole, 2009; Zhang, Cole, & Chancellor, 2014). Further examination of the higher-orders of SUS-TAS, however, was not consistent and the reason might be due to the difference in culture and stage of development (Ribeiro et al., 2018; Zhang et al., 2014). From a practical perspective, despite its usefulness and potentials, reliability and validity of SUS-TAS is warranted before it is applied to a new cross-cultural setting (Ribeiro et al., 2018; Sirakaya-Turk et al., 2008). Yet, SUS-TAS has not been tested in an Asian island context and this study aims to fill the gap.

Given the rich marine resources and historical and cultural remains of small islands, the Taiwanese government has implemented regulations to protect unique cultural and ecological resources. In 1989, the Island Building Regulations were promulgated in Taiwan to develop and promote the islands, maintain the natural environment, preserve cultural characteristics, and enhance island residents' wellbeing. However, without the support and active participation of the island residents, the development of sustainable tourism is ineffective (Andereck & Nyaupane, 2011; Nicholas, Thapa, & Ko, 2009). Further, developing tourism would bring about various changes, both positive and negative, in residents' lives (Milman & Pizam, 1988; Perdue, Long, & Allen, 1990) and requires regular assessment and monitoring using a valid measurement tool. Therefore, this study aims to examine the validity of the SUS-TAS using three tropical island archipelagoes of Taiwan as a study context: Penghu, Kinmen, and Matsu. The next section reviews the existing literature on the development and validation of a sustainable tourism attitude scale.

#### 2. Literature review

### 2.1. Social exchange theory and The Sustainable Tourism Attitude Scale (SUS-TAS)

Social exchange theory (SET) a social-phychological theory, is particulary useful to understand the process of exchanging resources between individuals and groups and it has been used as an effective and comprehensive framework to analyze residents' attitudes toward sustainable tourism development (Ap, 1990; Choi & Murray, 2010; Hsu, Chen, & Yang, 2019; Lee, 2013; Ribeiro et al., 2018). SET is also the most common framework applied in resident attitudes research due to its explanatory power, as it can differentiate residents' perceived benefits and costs as an antecedent for future tourism development (Hadinejad, Moyle, Scott, Kralj, & Nunkoo, 2019).

Based on social exchange theory, residents' attitudes toward sustainable tourism are affected by the perceived benefits and costs from tourism (Poudel, Nyaupane, & Budruk, 2016). Tourism scholars have empirically tested that the residents tend to support tourism if the perceived benefits (positive impacts) are higher than the costs (negative impacts) (Ap, 1990; Choi & Murray, 2010; Choi & Sirakaya, 2005; Gursoy, Jurowski, & Uysal, 2002; Lee, 2013; Nunkoo & Ramkissoon, 2011).

The SUS-TAS was developed by integrating sustainability, the new environmental paradigm (NEP), social exchange theory (SET). The sustainable tourism paradigm is guided by the principle of balancing utilitarian paradigm and its consequences to the environment, the NEP revolves around conservation of resources and enhancement of the quality of life, and the SET focuses on the exchange between costs and benefits (Choi & Sirakaya, 2005). Tourism scholars (including Sirakaya and assoicates) further underscore the importance of the SET framework and analyzed the correlationship between the SUS-TAS dimensions on residents' intentions to support sustainable tourism development.

Choi and Sirakaya (2005) followed the seven steps of the scale-development process set forth in Churchill (1979): (1) Define measurement targets; (2) Collect measurement construct items; (3) Finalize scale items and scale types; (4) Purify measurements (assess reliability and validity); (5) Replicate the study; (6) Refine scale measurements using a new sample (using confirmatory factor analysis to reevaluate the reliability and validity of the scale); and (7) Develop norms (forming standards and norms for decision makers). Using steps 1 to 4, Choi and Sirakaya (2005) successfully developed the SUS-TAS in a North American context. Based on an explanatory factor analysis, seven constructs (44 items) were identified to measure SUS-TAS, which included (1) perceived social costs; (2) environmental sustainability; (3) long-term planning; (4) perceived economic benefits; (5) ensuring visitor satisfaction; (6) a community-centered economy; and (7) maximizing community participation. Subsequent researchers have taken the confirmation from steps 5-6 of the SUS-TAS, as described in Churchill (1979), to conduct a cross-cultural sample verification using data on Turkish residents (Sirakaya-Turk et al., 2008). Researchers have also performed validity verification and scale simplification using data from an American sample (Sirakaya-Turk & Gursoy, 2013; Yu et al., 2009; Zhang et al., 2014).

SUS-TAS has been further verified and widely used by subsequent researchers (Hung, Sirakaya-Turk, & Ingram, 2011; Kvasova, 2011; Prayag et al., 2010). More recently, Ribeiro et al. (2018) validated the SUS-TAS in an African island context. They examined and compared several versions of the SUS-TAS (i.e., one factor, second-order, 21-item, 27-item, 33-item, and 44-item models). Their results indicate that the original 44-item scale that includes seven dimensions has sound psychometric properties. The seven dimensions are further divided into two higher orders: perceived tourism impacts and expected tourism sustainability. However, the SUS-TAS has not been validated in the eastern island context, which differs in various aspects, including culture, nature, geography, and history. This study was conducted in Taiwan, an island state in the Asia Pacific.

The Asia Pacific region has become the world's second largest tourist-receiving region and listed as one of the fastest tourism growing region (UNWTO, 2018). The tourism industry has a great contribution toward Taiwan's economic growth, as it has exceeded the agriculture sector in terms of its contribution to GDP (Chen & Chiou-Wei, 2009). According to the UNWTO (2018) report, international tourist arrivals to Taiwan were 10.7 million in 2017. Tourism accounted for 4.44% (777 billion NTD) of GDP (Taiwan Tourism Bureau, 2018) and contributed 584,500 jobs in 2017 (WTTC, 2019), which is expected to grow by 10,000 every year and reach to 768,000 job by 2028 (National Development Committee, 2019; Taiwan Tourism Bureau, 2018; UNWTO, 2018). Given the growing trend in the Asia Pacific region, Taiwan's tourism industry needs to integrate cultural and natural resources, obtain broader participation from residents, and create the sustainable management of tourism (Taiwan Tourism Bureau, 2001).

This paper utilizes the cultural dimensions theory (Hofstede, 2014) to test and validate whether SUS-TAS developed in an individualist society holds true in a collectivist society. Based on Hofstede's conceptualization of the cultural dimensions of power distance, individualism, masculinity, uncertainty avoidance, and indulgence, significant differences could exist among different cultures in terms of residents' attitudes toward sustainable tourism. For example, compared with the United States, Taiwan is more concerned about social status, more collectivistic, less masculine, less tolerant of uncertainty, more likely to engage in long-term planning, and less likely to be indulgent (Hofstede, 2014). When compared with Turkey, Taiwan is less

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