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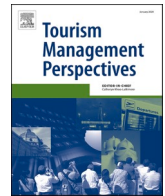
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The influence of tourists' monetary and temporal sunk costs on destination trust and visit intention

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ABSTRACT

Although the phenomenon of sunk costs is common in tourism situations, tourism research has largely ignored its effect on tourists. Drawing on prospect theory, cognitive dissonance theory, and signal theory, this study proposed that monetary sunk cost and temporal sunk cost both have significant impact on potential tourists' visit intention. Four scenario-based experiments were performed to test hypothesized relationships. Findings revealed that monetary sunk cost has a negative effect on visit intention, while temporal sunk cost has a positive effect. Good destination reputation attenuates the effects, and destination trust mediates the relationship between sunk cost and visit intention. These studies extend existing theoretical applications by identifying the conditions under which sunk cost can influence tourists' visit intention, and provides relevant practical suggestions for tourism product suppliers and local government departments.

1. Introduction

Tourism consumption differs from material purchase in terms of characteristics such as mobility, intangibility, and variability, and as a result potential tourists often bear higher risks in relation to tourism products than other products (Su, Cheng, & Swanson, 2020). For example, tourists make much of their purchase decisions, in the form of reservations, at home, but they actually consume tourism products in the tourism destination (Park & Jang, 2014). Such purchases involve two types of sunk costs: money paid for the product and time, the period between making the reservations and beginning the trip. When an unexpected situation such as the COVID-19 pandemic or Tsunami happens, tourists tend to cancel or change their tourism reservations. However, many tourism service providers (e.g., airlines and travel agencies) often impose penalty fees for cancellations or changes without understanding on the effects of sunk costs on tourists (Park & Jang, 2014). Given the higher uncertainty and risk levels of tourism consumption, it is important for tourism service providers and destinations to understand the influences of sunk costs on tourists' decision-making processes and behavioral intentions.

The existing literature on sunk costs shows that there are systematic differences between people's valuation of money and time, and the effect of monetary sunk cost differs from the effect of temporal sunk cost on

individuals' behaviors (Okada & Hoch, 2004; Pandey & Sharma, 2019). Yet, previous studies on tourist behaviors have not paid enough attention to the differences and their effects (Pandey & Sharma, 2019), even though it is understood that the temporal factor affects tourism products more than most other products (Sirakaya & Woodside, 2005). Moreover, the underlying psychological mechanism behind tourists' responses to sunk costs is still unclear. In the tourism context, the off-site and temporary nature of tourism activities enhances tourists' perceived risk regarding a given destination; fostering destination trust in a tourism context therefore becomes increasingly important (Su, Lian, & Huang, 2020). Given many studies have demonstrated the significant impact of destination trust on tourists' behavioral intentions (Su, Lian, & Huang, 2020), this study explores the mediating role of destination trusts between sunk costs and visit intentions.

According to signal theory, destination reputation could be construed as a signal that decreases tourists' risk-taking behaviors, which includes information about the quality of destination products and services. Indeed, destination reputation moderates the effect of tourists' DSR motive attribution on visit intention (Su, Lian, & Huang, 2020). Tourists also tend to consider destinations with a better than average reputation to be more reliable, credible and competitive (Su, Hsu, & Boostrom, 2020). Hence, regardless of whether the sunk costs that tourists have incurred are high or low, a good reputation may

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preserve visit intentions to a particular destination. To the contrary, if a destination has an average reputation, sunk cost may outweigh destination reputation in determining the tourist's intention to visit the destination. However, to the best of our knowledge, very few studies have explored the relationship between sunk cost and tourists' visit intentions to destinations with different reputations.

Therefore, this study seeks to investigate the influence of tourists' monetary and temporal sunk costs on destination trust and visit intention, using samples of Chinese tourists. Furthermore, this study examines whether the reputation of a destination moderates the effects of sunk costs on visit intentions towards the destination among Chinese tourists. We conducted this study in the context of the Chinese tourism market for two reasons. First, previous studies of sunk costs were primarily undertaken in western countries and only a few studies have been conducted in the eastern contexts (Guan, Ma, & Bi, 2021; Park & Jang, 2014). Since traditional Chinese values stress modesty and prudence, Chinese consumers may be more risk averse than other western cultures (Hofstede, 2001). Given the high risk and uncertainty associated with tourism consumption, the effects of sunk costs on Chinese tourists' decision-making processes warrant further investigation. Second, China has the largest domestic tourism market in the world and generates more outbound tourism than any other country in the world (Zhou, 2019). While the global tourism industry is still battered by the COVID-19 pandemic, China's domestic tourism market exhibited a world-leading post-pandemic recovery in 2021 (Xinhua, 2021). Studying how sunk costs impact Chinese tourists' behavioral intentions could provide useful insights for better understanding tourists' decision-making process in the post-pandemic era.

This study contributes to the literature in three ways. First, we examine, respectively, whether the present (vs. absent) monetary sunk cost and high (vs. low) temporal sunk cost influence potential tourists' visit intention. Second, we test the mediating role of destination trust between sunk cost and visit intention. Third, we explore the boundary conditions of destination reputation (average vs. good) in the effect of sunk cost on potential tourists' visit intentions. These findings can help tourism product suppliers to formulate better product reservation and cancellation policies and help local government departments to strengthen guidance and support for tourism product suppliers.

2. Literature review and hypotheses development

2.1. Prospect theory and the monetary sunk cost

Prospect theory was first developed by Kahneman and Tversky (1979) as a descriptive model of decision-making in relationship to risk. The theory suggests that individuals' decisions are not made based on absolute terms, but in relation to reference points and that loss relative to the reference point has a greater impact than gain—that is, that individuals are loss averse (Kahneman & Tversky, 1979). The prevalence of dynamic pricing practices in the tourism industry may intensify the importance of reference points. Research also shows that tourists are more sensitive to loss than gain (Huang, Ma, & Wang, 2021; Viglia, Mauri, & Carricano, 2016).

Arkes and Blumer (1985) proposed that sunk cost is an influential factor during the decision-making process. The concept was later applied to business economics (McAfee, Mialon, & Mialon, 2010) and behavioral sciences (Sweis et al., 2018). Monetary sunk cost has been the focus of most research on the subject (Navarro & Fantino, 2009; Pandey & Sharma, 2019), including studies showing sunk monetary costs affect economic decisions (Emich & Pyone, 2018), mental budgeting (Soster, Gershoff, & Bearden, 2014), and vacations (Soster, Monga, & Bearden, 2010), as well as other decisions (Dai & Fishbach, 2013; Soster et al., 2014; Sweis et al., 2018). In the tourism domain, tourism product suppliers seek to clarify future consequences by imposing charges for customer cancellations to minimize their revenue loss in the event of unexpected situations (Park & Jang, 2014). When purchasing

tourism products, individuals usually consider cancellation charges as a hypothetical scenario, so that they may not view them as sunk costs until the cancellation penalty is imposed when an unexpected situation interrupts their travel plan (Park & Jang, 2014). However, the tourism industry is highly exposed and vulnerable to a range of natural and human-made disasters that can interrupt a tourist's travel plans, with corresponding sunk costs that may influence potential tourists' behavioral intention (Guan et al., 2021). In line with Park and Jang (2014), in examining the impact of monetary sunk cost we define it as the amount of monetary cost tourism product suppliers impose for cancellations or changes in tourism consumption.

In what is known as the sunk-cost effect, people tend to persist in an endeavor once they have invested in it (Arkes & Blumer, 1985). For example, the sunk cost effect prompts people to seek future benefits from an endeavor already underway (Soster et al., 2010). In an interpersonal context, people change their choices in response to other people's past investments (Olivola, 2018). However, tourism destinations that experience a crisis are vulnerable to trip cancellations and sudden drops in demand (Hajibaba, Boztug, & Dolnicar, 2016). Because the crisis that prompted the cancellation was unexpected, tourists may not perceive the cancellation penalty as a sunk cost until it is imposed (Park & Jang, 2014). In this situation, as payment of the cancellation fee is obligatory, tourists lack a sense of personal responsibility and there is no sunk cost effect (Navarro & Fantino, 2009).

Prior research has demonstrated that high travel costs decrease willingness to travel (Whitehead & Wicker, 2018). Prospect theory posited that this effect does not reflect individuals' use of an absolute number they are willing to spend, but rather the cost in relation to reference points (Kahneman & Tversky, 1979). Deciding to pay a particular price is coded as a gain when costs are less than the reference point and as loss when costs are higher than the reference point (Park & Jang, 2014). Moreover, one of the main tenets of prospect theory is loss aversion, which indicates that the loss relative to the reference point has a greater impact than the gain (Kahneman & Tversky, 1979). Viglia et al. (2016) demonstrated that the principle of loss aversion applied to travelers as well. In this case, once tourists had been charged fees due to an emergency, they will factor in that fee as a loss in considering booking prices and assume that they may be charged such a fee again. Thus, the increased travel costs decrease tourists' willingness to travel (Whitehead & Wicker, 2018). In contrast, if there is no charge for potential tourists to cancel their plans, then there is no loss and they may maintain their intention to visit the destination when they travel again. Thus, we hypothesize the following:

H1a. The presence of monetary sunk costs leads to lower visit intention than the absence of monetary sunk cost.

2.2. Cognitive dissonance theory and the temporal sunk cost

In 1957, Leon Festinger put forward the cognitive dissonance theory, which stated that cognitive dissonance is a feeling of psychological discomfort experienced when individuals hold two or more inconsistent beliefs, ideas, or values at the same time. He argued that cognitive dissonance leads people to engage in "psychological work" to restore inner harmony. Subsequent research supports Festinger's view, showing that people may change their attitude or their evaluation of the outcome of their behavior following an action that is inconsistent with their beliefs (Aronson & Mills, 1959; Dai & Fishbach, 2013). Park and Jang (2014) applied cognitive dissonance theory to tourism. They found that the longer the time period between making travel plans and traveling, the more likely it is they will retain their plans when they encounter unexpected weather conditions. They explain that the experience of waiting increases the perceived value of the destination and that this creates an increased willingness to devote further resources to the destination.

The phrase "Time is money" implies that time is a scarce resource

(Bornemann & Homburg, 2011). Waiting can be a temporal sunk cost, one that affects the value evaluation of the thing consumers are waiting for and their behavioral decisions (Arkes & Blumer, 1985; Dai & Fishbach, 2013; Sweis et al., 2018). In the tourism context, because of the spatial and temporal separation between purchasing and experiencing, unexpected situations that lead to changes of travel plans may mean the waiting time before traveling becomes a temporal sunk cost (Park & Jang, 2014). Temporal sunk cost significantly affects behavioral intention (Park & Jang, 2014; Sweis et al., 2018). However, the tourism literature rarely mentions such costs. Researchers have not focused on how temporal sunk costs affect potential tourists' responses to a destination after canceling travel or examined the psychological mechanisms behind the relationship between temporal sunk cost and tourists' behaviors. This study addresses the impact of temporal sunk costs on tourists' destination trust and visit intentions, examining the temporal gap between purchasing and cancellation triggered by external objective reasons such as typhoons (Park & Jang, 2014), dividing temporal sunk costs into two levels, namely, high and low (Navarro & Fantino, 2009). In line with Dai and Fishbach (2013), high temporal sunk cost refers to a waiting period of up to 48 days, while low temporal sunk cost refers to a waiting period of 6 days.

There are systematic differences between spending time and spending money. Okada and Hoch (2004) identified three aspects that drive these differences. First, money payments and ticket prices can be easily compared, but the evaluation of the value of time is more difficult. Second, a temporal budget is usually softer or at least more elastic than a monetary budget. For example, Soman (2001) suggested that people find it easier to ignore temporal sunk costs than monetary sunk cost. Third, compared with monetary loss, people are more inclined to attribute the loss of time to external factors and not their own failures, and are more likely to continue investing in time. For example, people may be more likely to continue to invest time in a business that is still losing money if they have been running it for a period. If consumers are more likely to justify a loss of time than of money, then we can expect them to be more willing to take risks when investing time than when investing money (Okada & Hoch, 2004). Therefore, temporal sunk costs may have different impacts than monetary sunk costs (Pandey & Sharma, 2019).

Cognitive dissonance theory provides additional indication of how temporal sunk costs are likely to affect tourism behavior. It suggests that people will engage in "psychological work," such as by changing their beliefs or increasing their valuation of a particular result, to rationalize their behavior when they confront psychological dissonance (Aronson & Mills, 1959). Kroesen, Handy, and Chorus (2017) suggested that when people learn that they use transportation more than they think they should, they change their opinion instead of their behavior. Hence, when unexpected events interrupt long-awaited travel, in order to adjust their inner discomfort, people start to work on themselves. People may further increase their visit intentions to rationalize the temporal sunk cost they have already paid. That is, they may think, "I really wanted to go and that's why I waited so long!" The more temporal sunk costs they have paid, the greater their intention to visit may be. This would align with behavioral sciences research showing that the more waiting time people have invested in a purchase the greater their patience and the more they are willing to pay (Dai & Fishbach, 2013). Because waiting is mentally costly, people who have waited may tend to justify their spending by amplifying the perceived value of the result and enhancing patience. Redelmeier, Shafir, and Aujla (2001) also demonstrated this, finding that people often treat information they have waited longer to obtain as more useful. Thus, this study hypothesizes:

H1b. High temporal sunk costs lead to higher visit intention than low temporal sunk costs.

2.3. The mediating role of destination trust

Trust is born of confidence in the reliability and integrity of another

party (Morgan & Hunt, 1994; Tang, Zhang, & Akram, 2019; Tourigny, Han, Baba, & Pan, 2019). Alexopoulos and Buckley (2013) conceptualized trust as the willingness of one vulnerable party to maintain positive expectations about the intentions or behaviors of another under uncertain conditions. The importance of trust in the consumption of tourism and hospitality is widely recognized (Artigas, Yrigoyen, Moraga, & Villalón, 2017). Destination trust is a multidimensional concept consisting of visitors' perceptions of the destination's competence, benevolence, and credibility (Su, Lian, & Huang, 2020). In this study we test destination trust as a mediator and define it as potential visitors' perception that service quality is high and based on consideration of the desires of tourists in their chosen destination.

As prospect theory suggests, tourists are reference dependent (Kahneman & Tversky, 1979). Hence, having been charged a cancellation fee in the past may trigger a feeling of loss when potential tourists consider traveling again (Park & Jang, 2014). Moreover, loss aversion may magnify the sense of loss (Viglia et al., 2016). This magnification is likely to seriously undermine tourists' trust towards the destination (Tang et al., 2019), thereby reducing visit intention (Su, Lian, & Huang, 2020). By contrast tourists who did not face a cancellation fee, even if they canceled their reservation near to the time of the trip, may continue to trust the destination and maintain the intention to visit for future travel. Thus, we proposed the following hypothesis:

H2a. Destination trust mediates the relationship between monetary sunk costs and tourists' visit intentions.

The intangibility and variability of tourism products increase the importance of trust, and a recent study has also shown that trust has a significant mediating effect on tourists' behavior (Su, Lian, & Huang, 2020). Research in the field of behavioral sciences shows that people can regard waiting as a sunk cost (Arkes & Blumer, 1985; Dai & Fishbach, 2013). Likewise marketing literature suggests that those who have waited for a product for a period of time might perceive the product as more valuable. A related explanation touches upon sunk-cost effects: when consumers have waited some time and thus have paid some temporal sunk costs, they tend to justify further temporal cost, assessing the value of a product as higher and further increasing their expenditures (Koo & Fishbach, 2010).

The process also coheres with the predictions of cognitive dissonance (Festinger, 1957); according to cognitive dissonance theory, psychological dissonance motivates individuals to justify their negative experience (e.g., waiting) by raising the perceived value of waiting's outcomes (Dai & Fishbach, 2013). Specifically, waiting usually is a negative experience, and people's choices and judgments reflect their desire to justify the negative experience (Loewenstein & Prelec, 1991). Once people have waited, they wish to justify the negative experience by boosting the perceived value of an outcome. Therefore, in this study, we hypothesize that, in order to justify the sunk cost of waiting time they have already paid, potential tourists tend to increase the perceived valuation of destination tourism products. As Dai and Fishbach's (2013) research suggests, they enhance their trust in the destination, which improves their visit intention. Psychology scholars came to similar conclusions that when people have waited for a while to attain information, they often consider the information more useful and credible, which increases their tendency to make decisions based on it, even to the point of making decisions they consider undesirable (Redelmeier et al., 2001; Van de Ven, Gilovich, & Zeelenberg, 2010). Thus, we proposed that trust is a mediator between temporal sunk costs and tourists' visit intentions. The following hypothesis is put forward:

H2b. Destination trust mediates the relationship between temporal sunk costs and tourists' visit intentions.

2.4. Signal theory and the moderating role of reputation

Signal theory originated from the study of market interaction in the

context of asymmetric information between buyers and sellers, and is now widely used in the field of management (Spence, 1973). The main insight of signal theory lies in the identification of various signals that reduce uncertainty in the context of information asymmetry by indicating the quality of focused objects (Bergh, Connelly, Ketchen, & Shannon, 2014). Su, Lian, and Huang (2020) found that in the face of information asymmetry, tourists can use destination reputation as a signal, because it conveys information about the quality of destination products and services to potential tourists, thereby reducing their perceived risks and enhancing their trust in the destination.

Reputation is the sum of the relationship between an organization and its internal or external stakeholders (Fombrun & Riel, 1997, p. 10). Also, reputation is customers' overall evaluation of a firm's actions, formed through advertising, word-of-mouth, and personal experience (Mitra & Golder, 2006). However, previous tourism literature has mainly focused on the image of a destination and has seldom considered the influence of destination reputation (Su, Huang, & Hsu, 2018). Su, Lian, and Huang (2020) argued that destination reputation is an integration of trust and goodwill of the destination stakeholders, including the residents, tourists and tourism service operators. Destination reputation is based on information about destination products and services. And based on the signal theory, a good destination reputation tends to strengthen tourists' trust and travel intention (Su, Lian, & Huang, 2020).

The existing literature has demonstrated that destination reputation could impact tourists' perceived value, including perceived benefit and perceived cost (Choi, Jee, & Min, 2018). Thirumaran, Mohammadi, Pourabedin, Azzali, and Sim (2021) found that destination reputation has an important influence on tourists' travel decisions. Oh, Kim, and Chung (2013) also revealed that retailer reputation moderates the relationship between monetary value and customers' repurchase intention for private brands. In this vein, we proposed that the destination reputation could moderate the relationship between monetary sunk cost and tourists' visit intentions. On the one hand, for a destination with a good reputation, regardless of whether they pay the monetary sunk cost, tourists are more likely to have high visit intentions. This is because tourists are inclined to discount or ignore negative information or reactions about an organization with a favorable reputation (Hu, Lai, & King, 2020). On the other hand, when a destination has an average reputation, this creates an ambiguous and unhelpful signal. In this situation, the present monetary sunk costs will have a negative impact on potential tourists' intention to visit; when there is an absence of monetary sunk costs, tourists may think that the destination considers their well-being, and therefore maintain their intention to visit. Hence, we propose the following hypotheses:

H3a. When a tourism destination's reputation is good, monetary sunk cost has no significant influence on visit intentions.

H3b. When a tourism destination's reputation is average, the presence of monetary sunk costs leads to lower visit intention than the absence of monetary sunk cost.

Previous studies have shown that a favorable reputation takes a long time to build and maintain (Logsdon & Wood, 2002). A company's reputation directly influences consumers' affective attitudes and perceptions towards the company (Marin, Ruiz, & Rubio, 2009). Customers openly use reputation as a signal to judge perceived quality of products (Cretu & Brodie, 2007). Mitra and Golder (2006) showed how brand reputation impacts consumers' evaluation of products' perceived quality. Specifically, if there is a decrease in product quality, reputation determines how quickly consumers perceive this change and therefore change their behavior.

Given the mobility and uncertainty of tourism consumption, tourists bear higher levels of risk than when purchasing ordinary retail products (Park & Jang, 2014). According to signal theory, they use destination reputation to decrease their risk; thus, destination reputation has an important influence on tourists' behavioral intentions (Su, Lian, &

Huang, 2020). Therefore, when a destination has a good reputation, tourists tend to have high intention to visit the destination regardless of whether the temporal sunk cost is high or low. However, when a destination has an average reputation, the signal of destination products and services is ambiguous and unclear, which may unhelpful for traveling decision-making. In this situation, cognitive dissonance theory suggests the higher the temporal sunk cost paid already, the stronger psychological dissonance consumers feel when a travel plan is interrupted, and they may increase their visit intention to justify their invested temporal sunk cost. Hence, when a destination has an average reputation, higher temporal sunk cost may promote higher visit intention. Based on the discussion above, we propose:

H4a. When a tourism destination's reputation is good, temporal sunk cost has no significant influence on tourists' visit intentions.

H4b. When a tourism destination's reputation is average, the high temporal sunk costs lead to higher visit intention than the low temporal sunk costs.

3. Overview of studies

The theoretical model is illustrated in Fig. 1. Our hypotheses were tested using four scenario-based experiments. In Study 1a, we manipulated monetary sunk cost to test whether present (vs. absent) monetary sunk cost influenced potential tourists' visit intention (H1a) and examine whether destination trust mediated the impact of monetary sunk cost on visit intention (H2a). In Study 1b, we manipulated temporal sunk cost to test whether high (vs. low) temporal sunk cost influenced potential tourists' visit intention (H1b) and examine whether destination trust mediated the impact of temporal sunk cost on visit intention (H2b). Then, Study 2a (manipulating destination reputation and monetary sunk cost: present vs. absent) and Study 2b (manipulating destination reputation and temporal sunk cost: high vs. low) examined whether destination reputation determined the effect of monetary (H3)/temporal (H4) sunk cost on potential tourists' visit intentions.

The data collection for the four studies was all conducted through an online survey platform (Credamo.com) in October 2021. A questionnaire survey was administered to participants from throughout China; each participant was compensated with a small incentive. Unqualified samples were deleted according to the results of screening question to ensure the quality of the questionnaire. The specific demographic characteristics of the samples were shown in Table 1. According to the 2021 China's domestic tourism report by the Data Center of the Ministry of Culture and Tourism, urban young and middle-aged residents (aged 25–44) with bachelor's/associate's degree are the main group (more than 50%) for domestic tourism market. The report is released by China's official data center for tourism industry, the most reliable data source for the state of the Chinese travel market. The fact that the sample characteristics of this study match the findings of China's 2021 tourism report indicates good representativeness of the current Chinese travel market.

To test H1a and H1b, we performed one-way analysis of covariance (ANCOVA) to test the main effects. Using G*Power 3.1 software (Faul, Erdfelder, Buchner, & Lang, 2009), we found that the minimum total sample size required was 128 with the effect size of 0.25, significance level of 0.05, the power of 0.8, and the number of groups as 2. Hence, we consider a sample of 130 participants is adequate for Study 1a and Study 1b. To test H2a and H2b, we conducted a parallel mediation analysis via bootstrapping with 5000 replications and a 95% confidence interval (CI; Hayes, 2013). In Study 2a and 2b, we performed two-way ANCOVA to verify the moderating effects (H3, H4). The G*Power 3.1 software showed that the minimum total sample size required remained at 128 when the number of groups changed to 4. Therefore, we consider a sample of 180 participants for Study 2a and Study 2b is sufficient.

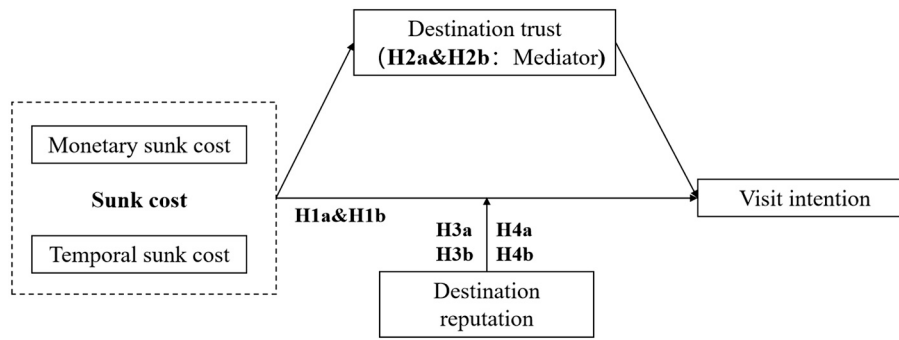


Fig. 1. The conceptual model.

Table 1
Participants' demographic profiles.

	Study 1a		Study 1b		Study 2a		Study 2b	
	n	%	n	%	n	%	n	%
Gender								
Female	75	57.7	65	50.0	108	60.0	95	52.8
Male	55	42.3	65	50.0	72	40.0	85	47.2
Age								
18 to 24	17	13.0	27	20.8	47	26.1	40	22.2
25 to 44	102	78.5	99	76.1	123	68.3	125	69.4
45 to 64	11	8.5	4	3.1	10	5.6	15	8.3
65 or older	0	0.0	0	0.0	0	0.0	0	0.0
Monthly income								
<¥2000	8	6.2	19	14.6	19	10.6	26	14.5
¥2000 to 4999	16	12.3	19	14.6	38	21.1	31	17.2
¥5000 to 7999	32	24.6	39	30.0	45	25.0	41	22.8
¥8000 to 9999	44	33.8	31	23.9	43	23.9	31	17.2
≥¥10,000	30	23.1	22	16.9	35	19.4	51	28.3
Level of education								
Less than high school	3	2.3	4	3.1	2	1.1	8	4.4
High school/ Technical school	11	8.5	10	7.7	10	5.6	7	3.9
Undergraduate/ Associate degree	103	79.2	99	76.1	150	83.3	155	86.1
Postgraduate degree	13	10.0	17	13.1	18	10.0	10	5.6

3.1. Study 1a

Study 1a aimed to test the impacts of monetary sunk cost on potential tourists' visit intention (H1a) and reveal the mediating effect of destination trust (H2a).

3.1.1. Materials

The experimental scenario we designed is based on the research of Park and Jang (2014). It read as follows:

Due to sudden thunderstorm at the destination, tourists are required (or not) to pay a cancellation fee for canceling the previously purchased products. After the thunderstorm is resolved, the tourists are considering whether to continue to the destination.

Appendix A provides more details. We also implemented the experimental scenario to control complex manipulated variables, eliminate interference factors, and better facilitate the investigation of relationships between the variables (Bitner, 1990).

3.1.2. Procedure

A total of 130 participants were asked to read and imagine how they would feel in the scenarios presented and to complete a three-part

questionnaire. In order to ensure participants could accurately understand all scales, we used a formal back-translation process (Su, Cheng, Wen, Kozak, & Teo, 2022). First, scenario authenticity was tested using 7-point items from Yi, Gong, and Lee (2013): In real life such a scenario could happen (1 = strongly disagree, 7 = strongly agree). Results showed that participants rated the situation as realistic, with a mean value significantly higher than 4 ($M = 5.740, SD = 1.061, t = 18.689, p < 0.001$). Second, participants' destination trust was measured with three items adapted from former studies (Su, Lian, & Huang, 2020) using a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree; Cronbach's $\alpha = 0.924$). The dependent variable, intention to visit (Su, Lian, & Huang, 2020), was measured with four items on a 7-point Likert scale (Cronbach's $\alpha = 0.948$). Risk propensity (Meertens & Lion, 2008) was measured using three items on a 7-point Likert scale (Cronbach's $\alpha = 0.767$). Third, respondents were asked to answer several demographic questions. The mean score of each scale was utilized in subsequent analysis. Appendix C provides more details about the descriptive statistics of all scales.

3.1.3. Results

A one-way ANCOVA was conducted. Monetary sunk cost was the independent variable, and visit intention was the dependent variable. Risk propensity, monthly income, gender, age, and level of education as the control variables were included as covariates. The results showed that there was a significant difference in potential tourists' visit intention ($F(1,123) = 55.169, p < 0.001, \text{partial } \eta^2 = 0.310$) between the groups exposed to the monetary sunk cost condition ($M = 3.812, SD = 1.607$) and those exposed to the cost absence condition ($M = 5.589, SD = 1.056$) of monetary sunk cost. Hence, the main effect (H1a) was verified.

Bootstrapping mediation tests with 5000 replications and a 95% CI were conducted (Hayes, 2013) with the five control variables were added as covariates. Destination trust was added as the mediator between monetary sunk cost and visit intention ($b = 1.700, SE = 0.233; 95\% \text{ CI: } 1.260 \text{ to } 2.181$). The direct effect of monetary sunk cost on visit intention was found to be not significant ($b = 0.165, SE = 0.171; 95\% \text{ CI: } -0.174 \text{ to } 0.503$; details in Fig. 2). Findings suggest that destination trust fully mediates the main effect of monetary sunk cost on visit intention. That is, H2a was supported.

3.1.4. Discussion

Study 1a revealed the negative effect of present (vs. absent) monetary sunk cost on potential tourists' visit intention. The findings of Study 1a confirmed that destination trust mediated the impact of monetary sunk cost on visit intention. Given travel sunk cost includes both monetary and temporal sunk costs, it is necessary to investigate the effects of both types of sunk costs on tourists' visit intentions. The following section presents Study 1b with a focus on the impacts of temporal sunk cost on tourists' visit intention.

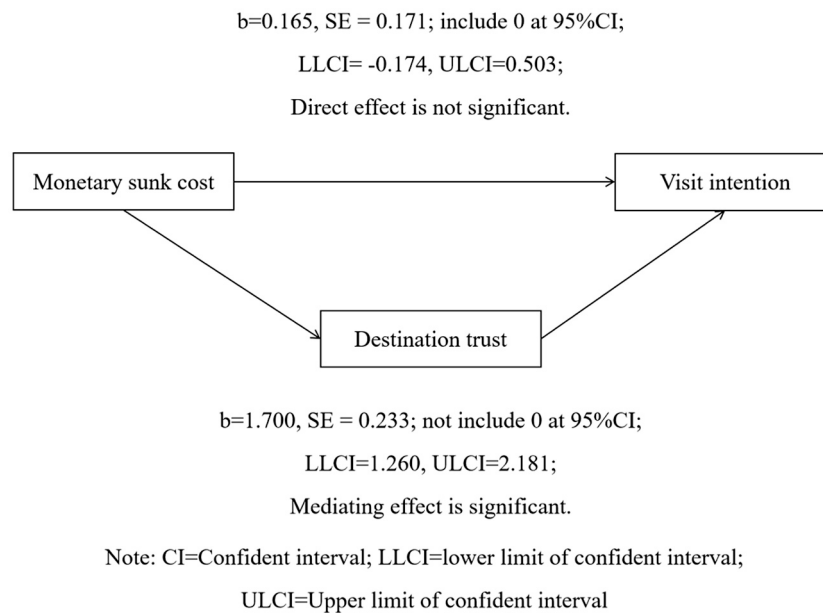


Fig. 2. Mediating role of destination trust between monetary sunk cost and visit intention.

3.2. Study 1b

Study 1b explored the impact of temporal sunk cost on visit intention to test H1b. It also investigated the mediating effect of destination trust between temporal sunk cost on visit intention to test H2b.

3.2.1. Materials

The experimental scenario we designed is based on Park and Jang (2014) and Dai and Fishbach (2013). It reads as follows:

Potential tourists are unable to travel due to a sudden thunderstorm at their destination after waiting 6 (48) days. After the crisis is resolved at the destination, they are considering whether to continue to the destination.

Appendix A has more details.

3.2.2. Procedure

Study 2 was conducted with another group of 130 Chinese tourists. Participants were asked to read and imagine themselves in the scenarios and to complete a four-part questionnaire. First, a scenario authenticity test (Yi et al., 2013) showed that participants perceived the situation as realistic ($M = 5.620$, $SD = 0.866$, $t = 21.265$, $p < 0.001$). Second, based on Dai and Fishbach (2013), a manipulation check was included ("waiting 48/6 days to travel feels like: 1=a short period, 7=an extremely long period"; "waiting 48/6 days to travel is: 1=very easy for me, 7=very difficult for me"; Cronbach's $\alpha = 0.850$). The manipulation of the temporal sunk cost (high vs. low) was successful (M high = 5.669, $SD = 0.792$; M low = 4.015, $SD = 1.668$; $t = 7.223$, $p < 0.001$). Third, participants' destination trust (Cronbach's $\alpha = 0.883$), intention to visit (Cronbach's $\alpha = 0.924$) and risk propensity (Cronbach's $\alpha = 0.787$) was measured in the same way as in Study 1a. Next, respondents were asked to answer several demographic questions. The mean score of each scale was utilized in subsequent analysis.

3.2.3. Results

A one-way ANCOVA with temporal sunk cost as independent variable was conducted, with visit intention as the dependent variable and the same five control variables as in Study 1 as the covariates. The results showed that there was a significant difference in potential tourists' visit intention ($F(1,123) = 6.258$, $p = 0.014$, partial $\eta^2 = 0.048$) between the groups exposed to the high ($M = 5.685$, $SD = 0.904$) and low ($M =$

5.162, $SD = 1.479$) temporal sunk cost. Hence, the main effect (H1b) was verified.

Mediation analysis was conducted via bootstrapping with five control variables (Hayes, 2013). PROCESS Model 4 revealed destination trust as the mediator between temporal sunk cost and visit intention ($b = 0.462$, $SE = 0.196$; 95% CI: 0.090 to 0.859). The direct effect of temporal sunk cost on visit intention was found to be not significant ($b = 0.102$, $SE = 0.128$; 95% CI: -0.150 to 0.355; Fig. 3). Findings suggest that destination trust fully mediates the main effect of temporal sunk cost on visit intention. That is, H2b was supported.

3.2.4. Discussion

The findings of Study 1b confirmed the positive effect of high (vs. low) temporal sunk cost on visit intention. This demonstrated that temporal sunk cost influences tourists' visit intentions by a different mechanism than monetary sunk cost. While Study 1a revealed the negative effect of monetary sunk cost (present vs. absent) on visit intention, Study 1b showed that the impacts of temporal sunk cost (high vs. low) on visit intention could be positive. Furthermore, the results of Study 1b confirmed that destination trust plays a similar mediating role between temporal sunk cost and visit intention. Given other variables (e. g., destination reputation) may moderate the relationships between sunk cost and tourists' visit intentions, we conducted two more experimental studies to examine the moderating effect of destination reputation. These are presented in the following sections.

3.3. Study 2a

The purpose of Study 2a was to examine whether destination reputation moderated the effect of monetary sunk cost on potential tourists' visit intentions, testing H3a and H3b.

3.3.1. Materials

The part of the experimental scenario indicating destination reputation (see Appendix B) is based on the research of Su, Lian, and Huang (2020). The part of the scenario related to monetary sunk cost scenario is the same as in Study 1a.

3.3.2. Procedure

Firstly, 180 participants were asked to read and imagine themselves in the scenario describing destination reputation. They rated the

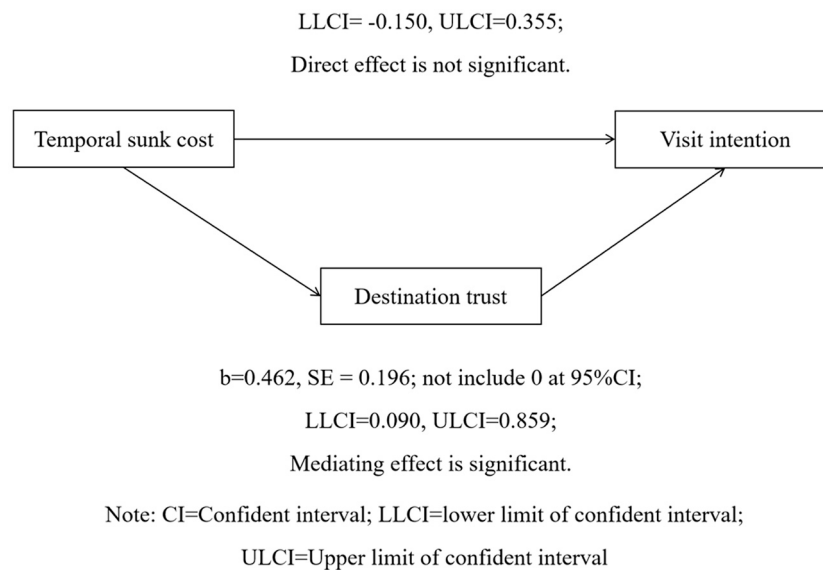


Fig. 3. The mediating role of destination trust between temporal sunk cost and visit intention.

destination reputation on a three-item scale by Walsh, Mitchell, and Jackson (2009) on a 7-point scale (1 = strongly disagree, 7 = strongly agree; Cronbach's $\alpha = 0.946$). The manipulation of the destination's reputation (good vs. average) was effective (M good = 6.089, SD = 0.618; M average = 2.993, SD = 0.867; $t = 27.596$, $p < 0.001$). Then, participants read the scenario material regarding monetary sunk cost and completed the same questionnaires as in Study 1a. The scenario passed an authenticity test (M = 5.41, SD = 1.076, $t = 17.519$, $p < 0.001$). Participants' destination trust (Cronbach's $\alpha = 0.933$), intention to visit (Cronbach's $\alpha = 0.947$), risk propensity (Cronbach's $\alpha = 0.714$), and several types of demographic information were collected.

3.3.3. Results

A two-way ANCOVA was performed with monetary sunk cost and destination reputation as independent variables, potential tourists' visit intention as the dependent variable, and five control variables as the covariates. The finding indicated that the main effect of the monetary sunk cost on the visit intention was negatively significant ($F(1, 171) = 40.812$, $p < 0.001$, partial $\eta^2 = 0.193$), replicating study 1a and

supporting H1a. Moreover, a statistically significant interaction ($F(1, 171) = 19.443$, $p < 0.001$, partial $\eta^2 = 0.102$) was identified (see Fig. 4). In the average destination reputation, the present (vs. absent) monetary sunk cost group's visit intention was significantly lower (M present = 2.744, SD = 1.188; M absent = 4.511, SD = 1.495; $F(1, 83) = 59.476$, $p < 0.001$, partial $\eta^2 = 0.417$). In the good destination reputation, there is no significant difference in two levels of visit intention (M present = 5.200, SD = 1.204; M absent = 5.528, SD = 0.848; $F(1, 83) = 3.791$, $p > 0.050$, partial $\eta^2 = 0.044$). Thus, H3a and H3b are supported.

3.3.4. Discussion

The results of Study 2a demonstrated that destination reputation moderated the effect of monetary sunk cost on tourists' visit intentions. When destination reputation is average, the presence of monetary sunk cost could lead to a lower level of visit intention. However, when destination reputation is good, the presence or absence of monetary sunk cost do not significantly influence tourists' visit intention. In order to examine whether destination reputation plays a similar moderating role between temporal sunk cost and visit intentions, we conducted Study 2b, as described in the following section.

3.4. Study 2b

The objective of Study 2b was to explore how destination reputation moderates the effect of temporal sunk cost on potential tourists' visit intentions, testing H4a and H4b.

3.4.1. Materials

The experimental scenario related to destination reputation in Study 2b was adapted from Su, Lian, and Huang (2020). The part of the scenario related to monetary sunk cost scenario is the same as in Study 1b (see Appendix B).

3.4.2. Procedure

Another group of 180 participants were asked to read and imagine themselves in the scenario describing destination reputation and to rate the destination reputation (Cronbach's $\alpha = 0.946$). As before, the manipulation of the destination's reputation (good vs. average) was effective (M good = 6.152, SD = 0.490; M average = 3.033, SD = 1.012; $t = 26.315$, $p < 0.001$). Then, participants read scenario material related to temporal sunk cost and completed subsequent questionnaires (same as Study 1b). The scenario authenticity test (M = 5.65, SD = 1.086, $t =$

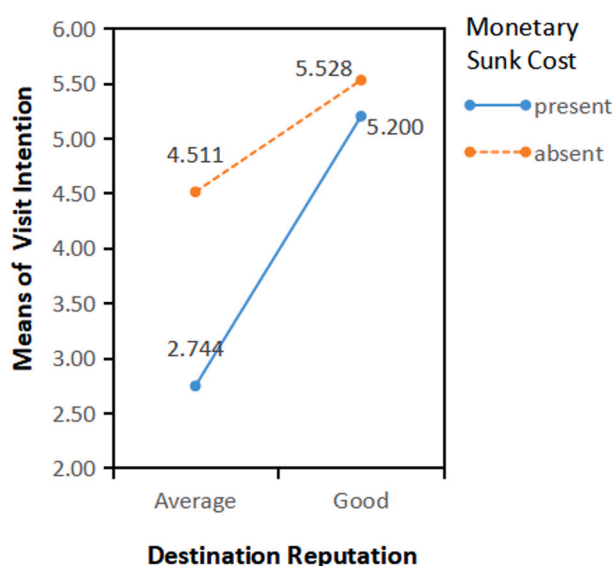


Fig. 4. Moderating effect of destination reputation.

20.392, $p < 0.001$) and manipulation test of the temporal sunk cost (high vs. low) were successful (M high = 5.650, SD = 0.938; M low = 3.600, SD = 1.832; $t = 9.451$, $p < 0.001$; Cronbach's $\alpha = 0.888$). Then participants' destination trust (Cronbach's $\alpha = 0.934$), intention to visit (Cronbach's $\alpha = 0.938$), risk propensity (Cronbach's $\alpha = 0.711$), and several types of demographic information were collected.

3.4.3. Results

A two-way ANCOVA was conducted with temporal sunk cost and destination reputation as independent variables, potential tourists' visit intention as the dependent variable, and five control variables as the covariates. The finding indicated that the main effect of the temporal sunk cost on the visit intention was positively significant ($F(1, 171) = 4.202$, $p = 0.042$, partial $\eta^2 = 0.024$), replicating Study 1b and supporting H1b. Furthermore, a statistically significant interaction ($F(1, 171) = 9.131$, $p = 0.003$, partial $\eta^2 = 0.051$) was identified (see Fig. 5). In the average destination reputation scenario, the high (vs. low) temporal sunk cost group's visit intention was significantly higher (M high = 4.722, SD = 1.277; M low = 3.761, SD = 1.548; $F(1, 83) = 9.006$, $p = 0.004$, partial $\eta^2 = 0.098$). In the good destination reputation scenario, there is no significant differences in two levels of visit intention (M high = 5.333, SD = 1.475; M low = 5.417, SD = 0.697; $F(1, 83) = 0.941$, $p > 0.050$, partial $\eta^2 = 0.011$). H4a and H4b are supported.

3.4.4. Discussion

The results of Study 2b showed that destination reputation also moderated the effect of temporal sunk cost on potential tourists' visit intentions. These findings supplement Study 2a to provide a comprehensive evaluation on the moderation mechanism of destination reputation between the types of sunk costs and visit intention.

4. Conclusions and implications

4.1. General discussion

This research investigated how the monetary or temporal sunk cost is influencing tourists' visit intention towards the tourism destination. Specifically, we hypothesized that present (vs. absent) monetary sunk cost will have a more negative effect on tourists' visit intentions; while high (vs. low) temporal sunk cost will have a stronger positive effect on tourists' visit intentions. All four studies supported our hypotheses. The findings of Study 1a showed that the present (vs. absent) monetary sunk

cost would significantly reduce potential tourists' visit intentions towards a destination. This is consistent with past research (Hajibaba et al., 2016). Study 1b supported the notion that when tourists invested more in temporal sunk cost, they were inclined to develop higher visit intentions. Augmenting the results of Park and Jang's (2014) research, it further explored tourists' visit intention towards a destination after an unexpected cancellation. Study 1a and 1b demonstrated that destination trust fully mediates the main effect of (monetary and temporal) sunk cost on visit intention. Study 2b's examination of the moderation effect of destination reputation (good vs. average) on the relationship between monetary sunk cost and tourists' visit intentions found that present (vs. absent) monetary sunk cost can significantly weaken potential tourists' visit intention under the condition of an average destination reputation. However, when a destination's reputation is good, tourists have a similar level of visit intentions regardless of the presence or absence of monetary sunk cost. Study 2a revealed destination reputation has a moderating effect on the relationships between temporal sunk cost and visit intention. We found that high (vs. low) temporal sunk cost can significantly strengthen tourists' intentions to visit under the condition of an average destination reputation. However, when a destination's reputation is good, tourists who face a high temporal sunk cost would have a similar level of visit intentions as their counterparts who face a low temporal sunk cost. Table 2 provides hypothesis testing results, and the following sections discuss theoretical contributions and managerial implications of this study.

4.2. Theoretical contributions

Existing research on travel costs has studied the influences of monetary costs or opportunity costs on tourists (e.g., Hu & Yang, 2020; Whitehead & Wicker, 2018). However, few studies have investigated the impact of sunk costs on tourists' responses (Park & Jang, 2014), even though sunk costs are extremely easy to incur in the context of tourism. Hence, this research extended the concept of sunk cost to the tourism field, precisely describing and defining the sunk cost phenomenon in the tourism context. Moreover, it clarified the different effects of monetary sunk cost and temporal sunk cost on tourists' visit intentions: monetary sunk cost negatively affects tourists' visit intention while temporal sunk cost positively affects visit intention. These findings deepen our understanding of sunk costs in the tourism field and enrich the application context of the sunk cost.

This study examined the underlying mechanism behind the relationship between sunk costs and visit intentions, which is still largely unknown (Park & Jang, 2014). Most previous studies of sunk cost discuss it in relation to individuals' behavioral intention without considering mediators (e.g., Park & Jang, 2014; Soster et al., 2014). Due to the spatial and temporal separation from residential area during travel, trust is a very important variable in tourists' choices (Artigas et al., 2017). Hence, this study expands our understanding by revealing the mediating role of destination trust between sunk costs and visit intentions.

The findings of this study also revealed the moderating role of destination reputation on the impacts of sunk costs on tourists' visit intentions towards a destination. Tourism research generally considers the

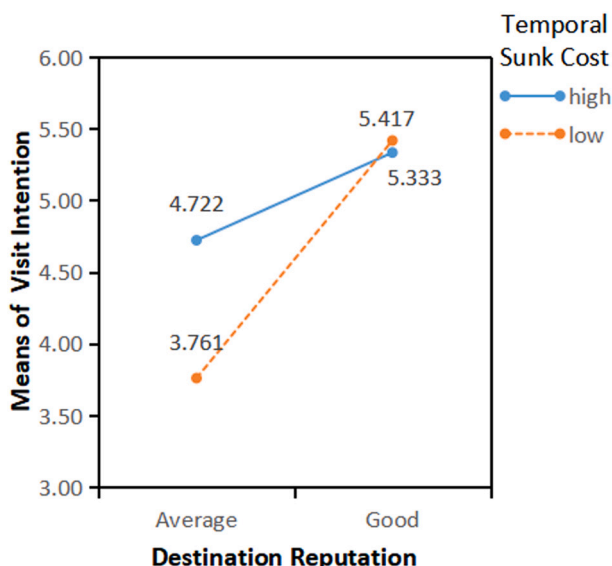


Fig. 5. Moderating effect of destination reputation.

Table 2 Outcomes of hypotheses tests.

Hypothesis	Predicted relationships	Finding
H1a	Monetary sunk cost → Visit intention	Support
H1b	Temporal sunk cost → Visit intention	Support
H2a	Monetary sunk cost → Destination trust → Visit intention	Support
H2b	Temporal sunk cost → Destination trust → Visit intention	Support
H3a & H3b	Destination reputation × Monetary sunk cost → Visit intention	Support
H4a & H4b	Destination reputation × Temporal sunk cost → Visit intention	Support

construct of destination reputation to be a mediator (e.g., Su et al., 2018). However, few studies have investigated the moderating role of destination reputation between sunk costs and tourists' responses (Su, Lian, & Huang, 2020). To address this gap, this study examined the moderating effect of destination reputation. Findings indicate that temporal and monetary sunk costs have differing effects on tourists' visit intention when levels of destination reputation differ, which further refined the boundary conditions of sunk costs on tourists' visit intentions in tourism research.

4.3. Managerial implications

The findings of this research indicate how important it is that destination stakeholders (such as tourism product suppliers and local governments) understand the sunk costs tourists pay before traveling. On the one hand, the findings indicate that charging a cancellation fee will greatly reduce tourists' intention to visit in the future. Therefore, when unexpected situations occur (such as the COVID-19 pandemic or a natural event), both potential tourists and tourism product suppliers are negatively affected. To promote the sustainable development of the tourism industry, the government should encourage local tourism product providers not to charge cancellation fees for reservations. Subsidizing both parties in the event of crisis may be the best way to support the industry. On the other hand, high (vs. low) temporal sunk cost appears to be a predictor of a higher trust and greater likelihood of visiting the destination later. Hence, tourism product suppliers could encourage potential tourists to book local tourism products earlier through promotion, encouraging detailed travel plans, and interacting with tour service providers before the trip. Findings indicate that investing more time waiting to travel may increase tolerance for cancellation fees.

This study has shown that destination trust fully mediates the relationship between sunk cost and tourists' responses. Therefore, regarding the monetary sunk cost, we encourage tourism product providers to guide potential tourists to modify the travel time when they cancel their reservations, to prevent them from canceling reservations, so that the two parties can better reach a consensus. Regarding the temporal sunk cost of time, the tourism product suppliers could encourage potential tourists to book early, so that they can learn more about the tourism destination and strengthen their trust in the tourism destination.

With reference to destination reputation, a good reputation indicates destination products and services are high quality. Therefore, destination management organizations (DMOs) should look for ways to improve their reputation to obtain better responses from tourists. For instance, DMOs can engage in pro-social behavior to build a pro-social reputation to obtain the public trust (Semmann, Krambeck, & Milinski, 2005; Su, Gong, & Huang, 2020). In addition, in the context of new social media, tourists are more inclined to book products through online travel agencies (Liu, Zhang, Law, & Zhang, 2019). DMOs can optimize favorable online ratings and recommendation ratings in order to build a good online destination reputation.

5. Research limitations and future research directions

This study has some limitations that suggest the need for future research. First, this study categorized temporal sunk cost as high or low, in line with Navarro and Fantino (2009). A greater number of time points should be addressed in the future. Additionally, because we focused on comparing temporal sunk cost and monetary sunk cost, we may have missed an interaction effect between monetary and temporal sunk costs on potential tourists' behavior. Future studies might test whether such an interaction effect exists. Furthermore, we used a fictitious destination in the experiment stimulus in order to control for the potential interference of an existing destination-tourist relationship in our experiments. Likewise the experiment participants are all from China. Given the cultural differences between eastern and western

countries, this may impact the external validity of this study. Future studies could include international field experiments to further verify the findings of our study. Finally, Navarro and Fantino (2009) suggested that the impact of sunk time would increase in proportion to the effort and decrease in proportion to the enjoyment attained, but we did not investigate tourists' effort and enjoyment during their sunk time. Future research that included such an investigation might build on our study to provide more information for policymakers and managers.

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Declarations of interest

None.

Credit author statement

Lujun Su, Huixuan Chen, and Yinghua Huang equally contributed to this study.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.tmp.2022.100968>.

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