URBAN TRAVELERS' PRO-ENVIRONMENTAL BEHAVIORS

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CERTIFICATE OF ORIGINALITY

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it reproduces no material previously published or written, nor material that has been accepted for the award of any other degree or diploma, except where due acknowledgment has been made in the text.

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ABSTRACT

Travel and tourism accelerate the environmental challenges in many urban destinations. Central to the discussion of tourism-related environmental issues is pro-environmental behaviors (PEBs) at the individual level. Urban areas attract large numbers of tourists, yet tourists are less interested in performing PEBs during travel. Tourist PEB studies have primarily focused on socio-psychological variables, leaving the important contextual force not explicitly examined in detail. This is partly because that the absence of a committed scale to measure the pro-environmental contextual force has hampered the examination. In addition, most existing measurements of PEBs are rooted in Western perspectives and tourism studies tend to state PEBs as a general term. A dedicated scale to represent tourists' specific PEBs is needed.

This thesis comprises two studies to achieve four research objectives. Study 1 aims to 1) develop a scale to measure the pro-environmental contextual force that triggers urban travelers' PEBs, and 2) examine the effect of pro-environmental contextual force on urban travelers' actual PEBs and PEB intention for next visits. Study 2 aims to 3) develop a scale to measure urban travelers' specific PEBs, and 4) establish a comprehensive model to explain urban travelers' specific PEBs. The two studies follow the recommendation of established scale development procedures including domain specification, item pool generation, expert review, item purification, exploratory factor analysis, confirmatory factor analysis, and nomological validation. The main theoretical foundation of this thesis is the Theory of Planned Behavior (TPB), which postulates attitude, subjective norm, and perceived behavioral control (PBC) determine the intention which in turn determines the performance of a behavior.

Regarding the pro-environmental contextual force, nine dimensions are extracted mainly inductively from in-depth interviews using content analysis approach: supportive big environment,

engaging campaign/activity, cost efficiency, environmental quality, facility readiness, policy effectiveness, resident support, signage saliency, and travel partner influence. These nine dimensions and items are tested with empirical data obtained from a large-sample questionnaire survey and are modeled as a second-order reflective-reflective construct. Partial least square structural equation modeling (PLS-SEM) is adopted as the major analytical method and pro-environmental contextual force is evidenced to be a significant antecedent of urban travelers' PEBs. The proposed model exhibited medium-to-substantial predictive power and out-of-sample relevance.

For the scale of urban travelers' specific PEBs, six dimensions are extracted from in-depth interviews and existing literature: donate, learn, reduce, remind, reuse, and shop. These dimensions and measurement items are tested by large-scale survey data obtained from four urban destinations and are found to be a second-order reflective-formative construct. The comprehensive model which includes pro-environmental subjective norm, PBC, pro-environmental habit, and destination satisfaction demonstrates medium-to-substantial predictive power.

Overall, this thesis contributes to the academic knowledge of pro-environmentalism and provides specific guidelines to destination management stakeholders. Specifically, Study 1 clarifies the content of pro-environmental contextual force and develops a valid scale to measure it. Study 1 also verifies that pro-environmental contextual force is a predictor of urban travelers' PEBs. Study 2 develops a scale to measure urban travelers' specific PEBs. Study 2 also establishes a comprehensive model to predict urban travelers' specific PEBs. Practically, destination management organizations, pro-environmental activist groups, and governments can utilize the two new scales to inform green image building and promote PEBs among urban tourists.

Keywords: urban tourism, pro-environmentalism, pro-environment behaviors, contextual force

ACKNOWLEDGMENTS

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CHAPTER 1 INTRODUCTION

This chapter introduces the rationale for conducting this research. It includes the research background, problem statement, research questions, research objectives, the structure of the thesis, research significance, and definition of key terms.

1.1 Research background

1.1.1 Urban tourism

Traveling was performed by over 10% of the world's population annually, forming the largest migration in human history (Budeanu, 2007). Metropolitan cities attract large domestic and international tourism flows with a combination of unique experiences, including shopping, business events, fine dining opportunities, art festivals, theme parks among others (Ashworth & Page, 2011; Dolnicar et al., 2010; Miller et al., 2015; Peeters & Schouten, 2006). These urban experiences and the urban context are distinctive from the offerings of nature-based tourism or daily life. Besides lodging choices, for example, a "shopping heaven" (e.g., Melbourne, Milan, Shanghai, and Singapore) can offer trendy and authentic goods at attractive prices, thus drawing millions of tourists. Urban cities receive large numbers of tourists every year (Miller et al., 2015). For example, two-thirds of tourist nights were spent in urban areas in the European Union in 2014 (Heinze & Dunkler, 2017), 65 million tourists visited Hong Kong in 2018 (HKTB, 2019), and Shanghai had 3.4 billion domestic and 6.9 million international tourist arrivals in 2018 (SHSB, 2019). As a result of the popularity of urban tourism, many city tourism destinations become over-populated (Ashworth & Page, 2011; Peeters & Schouten, 2006). Over-tourism has induced environmental challenges, such as overcrowding, air pollution, and waste overcapacity (Albayrak et al., 2020; Ghobadi & Verdian, 2016; Mayor & Tol, 2010). These problems are detrimental to not only residents' everyday life but also tourist satisfaction (Albayrak et al., 2020).

1.1.2 Pro-environmentalism

As the negative environmental impact of human behaviors is increasingly recognized, pro-environmentalism is on the rise among ordinary people, including tourists. The human race is facing unprecedentedly severe environmental threats, among which global warming, air pollution, waste overcapacity, water shortage, and loss of biodiversity are just a few examples. From 2011 to 2015, the Earth has been recorded the hottest five years in terms of atmospheric temperature in human recording history. In 2016, the World Meteorological Organization estimated the atmospheric temperature had increased by 1.1 °C above the pre-industrial time (before 1750). Rapid climate change disturbs the balance of ecosystems and impairs species' adaptability such that accelerates biodiversity loss on Earth, which in turn shrinks human habitus and risks human security. Consequences on humans include but are not limited to hotter days, food-chain change, water scarcity, and flora and fauna recession or disappearance. Many of these threats stem directly from irresponsible human behavior (Vlek & Steg, 2007).

Tourism is a major contributor to environmental problems. Substantial correlations between tourism and negative environmental effects were found (Ghobadi & Verdian, 2016; Mayor & Tol, 2010). In popular destinations, such as Barcelona, Melbourne, Beijing, and Shanghai, the level of tourist carbon footprint is extremely high. This trend will continue as tourism continues to be one of the fastest-growing industries (PATA, 2018; UNWTO, 2018). According to World Tourism Organization, international tourist arrivals grew 7.0% in 2017, well above its forecast of 3.8% per year for the period 2010 to 2020 (UNWTO, 2018). Demand for hotels in the Asia-Pacific region grew by 5.9% in 2017 and 4.3% in 2018 (PATA, 2018). The influence of tourism on a destination's sustainable development is evident.

1.2 Problem statement

Although the environmental threat to the sustainable development of urban tourism destinations is severe, people have less interest in performing pro-environmental behaviors when they travel (Holmes, Dodds, & Frochot, 2019) even though organizations such as the United Nations Educational, Scientific, and Cultural Organization (UNESCO) started promoting sustainable tourism from the 1990s. Tourists' responses to environmental protection initiatives failed to parallel the efforts of industries and government bodies (Budeanu, 2007; McKercher et al., 2010). Hardeman et al. (2002) revealed that intervention programs aiming at inducing pro-environmental actions from tourists had produced merely a marginal effect. These hardly effective interventions reflect an alarming fact that the academia and industry practitioners poorly understand tourist pro-environmental behaviors (Dolnicar et al., 2008).

Three major gaps have hindered a more complete understanding of tourist PEBs. First, studies on individuals' PEBs are dominated by a handful of psychological or social variables and suffer from low explanatory power (Steg & Vlek, 2009). Researchers point out that other types of key influences such as contextual, habitual, and emotional forces shall be examined in addition to the reasoning forces (Steg & Vlek, 2009). Contextual force means non-volitional forces that are rarely under the control of the individual, such as the local policy and availability of facilities (Stern, 2000; Wu et al., 2021). From a destination management perspective, the understanding of tourists' psychological and social processes involved in pro-environmental actions is merely enough, as these processes are hardly under the control of destinations. What's more in the hands of the destination are the contextual properties of the destination, i.e., the assets, resources, and activities that the destination owns and manages. Thus, insights on how the destination's pro-environmental context influences tourist PEBs are important. However, such knowledge is only limited in the literature. In past studies, the effect of the contextual force that influences tourists' PEBs has not been explicitly examined in detail. This is because of the

lack of a dedicated measurement scale, so researchers have no way to quantitatively measure the pro-environmental contextual force.

Second, the frameworks and models used to explain PEBs in the household or workplace context cannot be generalized to the tourism context. The context matters, as people have different interests and display different behavioral patterns when taking vacations (Dolnicar et al., 2017; Miao & Wei, 2013). Therefore, tourism-specific PEB models must be developed (Dolnicar, 2018). Metropolitan cities serve as gateways and destinations, accommodating large numbers of tourists each year. Yet studies have neglected urban tourism as relevant studies are scant (Miller et al., 2015). A few studies have tried to address tourist intention of choosing green hotels and participation in hotels' green programs (e.g., Han et al., 2011; Han & Kim, 2010; Miao & Wei, 2016), but hotel-based behaviors cannot replace PEBs in the urban tourism context, because urban tourism means much more than lodging and covers a wide spectrum of behaviors outside of hotels.

Urban tourism is unique from other forms of tourism by a few features that characterize urban tourism as a whole. First, significant numbers of urban travelers pay their visits for purposes rather than pure leisure (Edwards et al., 2008). Their primary purposes are often multi-fold and often include shopping, conferences, visiting relatives and/or friends (Edwards et al., 2008). Second, attractions, accommodations, and accessibility in urban destinations are often better developed than in other forms of tourism thus appealing to a wide variety of markets and attracting repeat visitation (Edwards et al., 2008). Third, tourist interaction with residents is inevitable as the two parties often have to share the infrastructure and public resources in cities (Chen & Hsu, 2021; Tung et al., 2020). This nexus can lead to tension that significantly affects residents' quality of life and tourists' experiences (Chen & Hsu, 2021; Tung et al., 2020). Finally, there is a complexity of competing interests where natural environmental factors are generally regarded as less significant while economic factors, cultural

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heritage, and residential factors are more important than in other forms of tourism (Edwards et al., 2008). Increasingly, tourism-induced environmental challenges are reported in urban tourism destinations (Albayrak et al., 2020; Ghobadi & Verdian, 2016; Mayor & Tol, 2010). However, urban travelers' specific PEBs remain a relatively unknown topic in the literature (Miller et al., 2015). This ignorance has impeded accurately targeting behaviors (Blankenberg & Alhusen, 2018).

Third, research on the tourist side is a crucial link in the chain of sustainable tourism management because tourists are a large group to perform PEBs and their preferences can drive businesses to make a change (McKercher et al., 2010). However, tourism scholars tend to treat PEBs as a general term or use one or only a few items to represent the overall concept of environmentally friendly behaviors, thus missing the multi-faceted nature of PEBs. This is because the daily life-based scale is not suitable to measure PEBs in the tourism context (Lee et al., 2013). An extensive literature review reveals that a solid urban travelers' PEB scale is missing in the literature and the detailed picture of urban travelers' PEBs is unclear. In addition, the current knowledge foundation (including the measurement, theory, model, and study context) about pro-environmentalism is largely based on the Western culture, as most studies have been carried out in WIRED (Western, industrialized, rich, educated, and developed) countries where there is a long history of discussion about pro-environmentalism and people are more concerned with environmental sustainability (Balundė et al., 2019; Holmes et al., 2019; Lee et al., 2013). Now the global sustainable development agenda has shifted its focus to the developing world, such as China. These countries have their own philosophies and views on the relationship between humans and nature. They also have their own development routes and goals. The Western-orientated knowledge is subject to questions, such as whether those PEBs and antecedents discovered in the Western world are still relevant in the developing world (Balundė et al., 2019; Holmes et al., 2019; Lee et al., 2013).

1.3 Research questions

To bridge the knowledge gaps identified above, this thesis seeks to answer four questions:

1. From urban travelers' perspectives, what is the composition of the pro-environmental contextual force that affects their performance of PEBs?

2. How does the pro-environmental contextual force affect urban travelers' actual PEBs and PEB intention for next visits?

3. What is the composition of urban travelers' specific PEBs?

4. Together with the reasoning forces (attitude, subjective norm, and PBC), how do habit and destination satisfaction affect urban travelers' specific PEBs?

1.4 Research objectives

The purpose of this thesis is to explore pro-environmentalism among urban travelers. Specifically, this study will achieve four objectives:

1. Develop a scale to measure the pro-environmental contextual force that affects urban travelers' PEBs.

2. Examine the effect of pro-environmental contextual force on urban travelers' actual PEBs and PEB intention for next visits.

3. Develop a scale to measure urban travelers' specific PEBs.

4. Establish a comprehensive model to explain urban travelers' specific PEBs.

1.5 The two-study research design

To achieve the four research objectives, this thesis is divided into two studies. Study 1 aims to develop a scale to measure the pro-environmental contextual force. It will answer research question 1: "from urban travelers' perspectives, what is the composition of the pro-environmental contextual force that affects their performance of PEBs?" and question 2: "how does the pro-environmental contextual force affect urban travelers' actual PEBs and PEB intention for next visits?" Study 2 aims to develop a scale to measure urban travelers' specific PEBs. Study 2 answers research question 3: "what is the composition of urban travelers' specific PEBs?" and research question 4: "together with the reasoning forces (attitude, subjective norm, and PBC), how do habit and destination satisfaction affect urban travelers' specific PEBs?"

1.6 Research significance

This research provides theoretical and practical implications to the academia and destination management organizations. First, this thesis will contribute two important measurement scales to the sustainable tourism literature. As measurement scales are cornerstones based on which quantitative tests can be made and relationships can be tested (Kock et al., 2019), the development of the two scales regarding pro-environmental contextual force and urban travelers' specific PEBs will significantly contribute to the literature of sustainable tourism research and foster theory advancement in this filed. Second, this thesis will extend the Theory of Planned Behavior. By adding pro-environmental contextual force into the model, this thesis will extend the Theory of Planned Behavior in the context of urban travelers' PEBs. This thesis will also examine the collective effects of the reasoning force, habitual force, and emotional force, therefore, establishing a comprehensive model to explain urban travelers' PEBs.

Practically, the findings of this thesis can help destination managers, environmental activists, and governments to promote PEBs among tourists so as to achieve sustainable development in tourism destinations. Study 1 provides knowledge as to what constitutes an urban destination's pro-environmental context and empirically validates the effect of the pro-environmental contextual force in shaping tourist PEBs. The dimensions and items in this scale represent the key areas to focus on if destinations aim at promoting PEBs among visitors. Study 2 will provide a comprehensive picture of the PEBs that urban travelers would like to perform. Based on these dimensions and items, destination managers can fully understand urban travelers' perceptions and interests and can subsequently develop programs to promote targeted PEBs. The knowledge can also help educators to understand people's PEBs during travel thus helping to gradually cultivate pro-environmental habits. In sum, the understanding of urban travelers' PEBs, antecedents, and effects will supply critical knowledge for destination stakeholders involved in designing effective interventions and managing urban destinations toward a sustainable future.

1.7 Definition of key terms

1.7.1 Actual PEBs

Steg and Vlek (2009, p.309) summarized that pro-environmental behaviors are people's actions that "harm the environment as little as possible, or even benefit the environment". Tourist PEBs should be viewed under the broader concept of PEBs. Accordingly, actual PEB means the PEBs urban travelers have actually performed during their visits to a destination. This term is used in a general sense and taps the overall performance of PEBs.

1.7.2 PEB intention for the next visit

An intention is assumed to be an indication of how hard people would try to perform a behavior (Ajzen, 1991). It captures the motivation and is an adjacent variable to predict the occurrence of an action. Accordingly, PEB intention for next visits refers to the intention to perform PEBs when visiting the destination in the future.

1.7.3 Urban travelers' specific PEBs

Based on the definition of PEB (Steg & Vlek, 2009), in this thesis, urban travelers' specific PEBs refer to the series of actions that tourists take to minimize their impact on the environment during visits to urban destinations.

1.7.4 Attitude

Attitude toward a behavior essentially means the degree of the individual's positive or negative evaluation of the behavior (Ajzen, 1991). Attitude in this study means tourist attitude toward PEBs.

1.7.5 Pro-environmental subjective norm

Subjective norm refers to the "social pressure exerted to engage in a particular behavior" (Ajzen, 1991, p.122). Accordingly, pro-environmental subjective norm in this study refers to the perceived social pressure to perform PEBs.

1.7.6 PBC

PBC means ''the perceived ease or difficulty of performing the behavior'' (Ajzen, 1991, p. 122). This concept carries one's assessment of how well one can control the needed resources and opportunities that may facilitate or constrain the actions in a specific situation. In this thesis, PBC means the perceived ease of conducting pro-environmental actions in urban destinations.

1.7.7 Pro-environmental contextual force

Contextual force is "conceived of broadly to include all external sources of support or opposition to behavior, whether physical, financial, legal, or social", "such as physical structures, social institutions, and economic forces" (Guagnano et al., 1995, p.702). Following Guagnano et al. (1995), pro-environmental contextual force in this thesis is defined as the total of external forces that affect tourists' PEBs at an urban destination.

1.7.8 Pro-environmental habit

Ronis, Yates, and Kirscht (1989) stated that "habits are the result of automatic cognitive processes, developed by extensive repetition, so well-learned that they do not require conscious effort" (p. 219). Habit means it is possible to act without conscious control. It indicates a behavioral tendency to exhibit the same response given a stable supporting context. Accordingly, pro-environmental habit in this study refers to the habit of performing PEBs in daily life.

1.7.9 Destination satisfaction

Stedman (2003) postulated that place satisfaction reflects the total feeling about a place including its physical setting, the human interaction, as well as the interpretation of the experiences in this place. Accordingly, destination satisfaction means travelers' overall satisfaction with the urban destination that they visit.

CHAPTER 2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In this chapter, key studies related to urban travelers' PEBs will be reviewed. First, the environmental impact of tourism will be discussed. Then, a theoretical framework (TPB) and its connection to this research will be discussed. Next, studies concerning the main variables (PEB, attitude, pro-environmental social norm, PBC, pro-environmental contextual force, pro-environmental habit, and destination satisfaction) will be discussed. Hypotheses will be developed at the end of the discussion of each variable.

2.1 Impact of tourism on environmental deterioration

Human beings are facing unprecedented environmental challenges. In the 2003 Djerba Declaration, the United Nations World Tourism Organization, the United Nations Environment Program, and World Meteorological Organization (UNWTO-UNEP-WMO, 2008) acknowledged the reciprocal impact between tourism and climate change (Dwyer et al., 2010). While tourism causes climate change, tourism destination competitiveness and tourist expenditure are substantially affected by climate (Dwyer et al., 2010).

Tourism, the largest human movement in history, has significantly impacted the natural environment (Budeanu, 2007; Dwyer et al., 2010; Gössling & Schumacher, 2010). It adds to the global greenhouse gas emissions and environmental deterioration. Intensive tourism-related activities require large volumes of energy directly from fossil fuel (such as long-haul flying) or indirectly from electricity and other resources. This energy consumption causes the emission of greenhouse gases, mainly CO_2, on the road and at the destination. To compete for tourists, destinations race to construct new infrastructures, accommodation, and recreational facilities, resulting in greater energy consumption than similar-sized community activities (Kelly & Williams, 2007). Tourism destinations, especially

small island destinations also rely on extra energy for the import of goods, transportation of water, and the disposal of waste (Becken, Simmons, & Frampton, 2003; G¨ossling, 2002). Ski resorts use chemical catalysts and devices to deliberately create snowflakes to simulate year-round winter and consume enormous energy. Theme parks and resorts use huge amounts of energy and materials to offer large-scale mechanized activities (Becken et al., 2003). Energy is also needed in upstream and downstream departments and agencies (e.g., office administration and marketing) that support the delivery of tourism activities (Becken et al., 2003; Lundie, Dwyer & Forsyth, 2007).

On the individual level, the impact of environmentally harmful behavior penetrates almost every corner of the globe. Miao and Wei (2013) found that individuals became systematically less protective of the environment when they travel. In hotels, guests tend to take longer showers, use more towels, and produce more wastes than needed at homes. In natural areas, garbage such as plastic particles (e.g., bags, bottles, foam boxes) was thrown into mountains and seas. In metropolitan cities, over-tourism was regarded as a threat to the environment (Fedyk et al., 2020).

The unfriendly actions of tourists involve intentional and unintentional elements. Picking parts of plants (Chang, 2010), feeding animals, disturbing wildlife habitats (Alessa, Bennett, & Kliskey, 2003; Ballantyne, Packer, & Falk, 2011; Ballantyne, Packer, & Hughes, 2008; Chen, 2011), and collecting flora and fauna specimens are examples of intended behaviors (Kim, Airey, & Szivas, 2011). Though these actions may not come out of malice, they are deemed detrimental (Chang, 2010). These behaviors can damage the plants, destroy the aesthetic value of the area and incur extra management expenses (Chang, 2010), or at a higher cost, endanger the ecosystem.

2.2 Pro-environmental behavior

Human behaviors have changed the environment (Steg & Vlek, 2009). Humans have heavily exploited the natural resources on the land, in waters and the air, far out of the proportion of us as merely one out of the millions of species on Earth (Gifford & Nilsson, 2014). Over the last decade, sustainability was an important topic in many countries and regions, and this focus is likely to continue in the future. Discussions on how to reduce environmental impact are pronounced. One solution to alleviate the negative impact is to promote PEBs on the individual level. Tourist PEBs have received increased research attention (Miller et al., 2015; Myung et al., 2012).

PEBs are actions that "harm the environment as little as possible or even benefit the environment"(Steg & Vlek, 2009, p.309). A myriad of actions are pro-environmental behaviors such as purchasing eco-certified products, adopting low-carbon emission transport modes (Dickinson et al., 2011; Esparon et al., 2014; Hergesell & Dickinger, 2013; Prillwitz & Barr, 2011), and solid waste recycling (Radwan et al., 2012; Shanklin et al., 1991).

PEB shares similar meaning with a few terms and is used interchangeably in the literature, including environmentally responsible behavior (ERB), environmentally friendly behavior, low-impact behavior, conservation behavior, green behavior, eco-friendly behavior, and ecological behavior (Guagnano et al., 1995; Larson, Stedman, Cooper, & Decker, 2015; Miller et al., 2015; Mobley, Vagias, & DeWard, 2010). Take ERB and ecological behavior as examples. ERB "describes any action that alleviates the adverse environmental impact of an individual or group" (Lee et al., 2013, pp. 465). Ecological behaviors are "actions which contribute towards environmental preservation and/or conservation" (Axelrod & Lehman, 1993; Okumus et al., 2019). In essence, neither ERB nor ecological behavior substantively differs from PEB. According to Cottrell (2003), PEB is a broad concept,

comprised of any acts that protect the environment or reduce the negative impacts of human activities on the environment. These behaviors contribute to environmental preservation or conservation.

Researchers tend to focus on one or only a few highly related PEBs in one study. Rather than seeing pro-environmental actions as an agglomeration, PEBs were regarded as separate behaviors (Bamberg & Möser, 2007; Bissing-Olson et al., 2016; Kiatkawsin & Han, 2017; Miller et al., 2015). Studies of tourist PEBs often adopt this approach, i.e., focus on one or several discrete behaviors. These behaviors included but were not limited to recycling (Han et al., 2018), choice of public transportation (Gärling et al., 2001), littering (Guagnano et al., 1995), pro-environmental products purchase decision (Grimmer et al., 2016), choices of green accommodation (Chen & Tung, 2014; Han, Hsu, & Sheu, 2010), reducing hotel hydro usage (Chan & Lam, 2003; Dolnicar et al., 2017), and reusing towels in hotels (Cvelbar et al., 2017; Goldstein et al., 2008; Mair & Bergin-Seers, 2010).

A few studies also tried to explore the structure of multiple PEBs in different contexts. These studies incorporated a series of PEBs and explored the grouping of them (Gifford & Nilsson, 2014; Larson et al., 2015). These studies helped to portray PEBs in different contexts and delineate green consumers (Bergin-Seers & Mair, 2009; George, 2009; Jensen, 2002; Juvan & Dolnicar, 2016; Lee et al., 2013; Robertson & Barling, 2013), but these studies are rooted in the Western culture and reflect Western values (Lee et al., 2013).

How to measure PEBs remains a highly debated topic in the literature (Lee et al., 2013). Critics question the usefulness of ubiquitous PEB scales, as people's interests and actions would vary across contexts (Gatersleben et al., 2002; Lee et al., 2013; Xu et al., 2020). For example, "use an oven-cleaning spray to clean my oven", as indicated in the General Ecological Behavior Scale (Kaiser, 1998, p.404), is almost an invalid indicator for vacationers. Buying recycled paper was also criticized as contributing very little to solving environmental problems(Gatersleben et al., 2002).

Researchers recognized the need to clarify the conceptualization and measures of PEBs in specific contexts. Kaiser and Wilson (2000) assessed ecological behaviors in the daily life context and discovered six domains: ecological garbage removal, energy conservation, cleaner and spray use, garbage reduction, volunteering in protection activities, and automobile use. Lee et al. (2013) tried to depict and measure environmentally responsible behavior in community-based tourism. Miao and Wei (2013) assessed the dimensionality of pro-environmental behaviors among hotel guests in the United States and revealed four domains: reduce, recycle, reuse, and consumption.

In the literature, PEB tends to be equated to PEB intention. Ajzen and Fishbein (1977) proposed the concept of behavioral intention and argued behavioral intention was a proxy of action (Ajzen & Fishbein, 1977; Ajzen, 1991). In their analysis, the behavioral intention was held as the major determinant of action and was the function of the actor's subjective norm and attitude toward performing the particular action (Ajzen & Fishbein, 1977). An intention captures the motivation and is widely used to indicate an action (Ajzen, 1991). Most PEB studies focus on intention instead of actual behavior (Gkargkavouzi et al., 2019). Very few studies incorporated both PEB intention and actual behaviors in one study (Gkargkavouzi et al., 2019).

2.3 TPB as the theoretical foundation

Intervention measures can be utilized to alter behavioral patterns (Abrahamse et al., 2005; Steg & Vlek, 2009; Swim et al., 2011). To achieve higher effectiveness, practitioners must understand the determinants of PEBs. By doing so they can accurately formulate an intervention and effectively promote pro-environmental behaviors (Steg & Vlek, 2009). Following this logic, theories and frameworks such as the Theory of Planned Behavior (TPB) and Value-Belief-Norm (VBN) were proposed, applied, and extended to explain the determinants and mechanism of human behaviors (Chen & Tung, 2010; Heath & Gifford, 2002; Hinds & Sparks, 2008; Raymond, Brown, & Robinson, 2011).

Notably, TPB is effective in explaining various consumer behaviors (Steg & Vlek, 2009), and figure 1 shows the variables and relationships in TPB. TPB is chosen to guide this research on urban travelers' behaviors because of its fit with the rational characteristic of decision-making involved in urban tourism activities, the congruence with tourists' primarily self-benefiting motivation for tourism, and the efficacy of this model in explaining consumer behaviors.
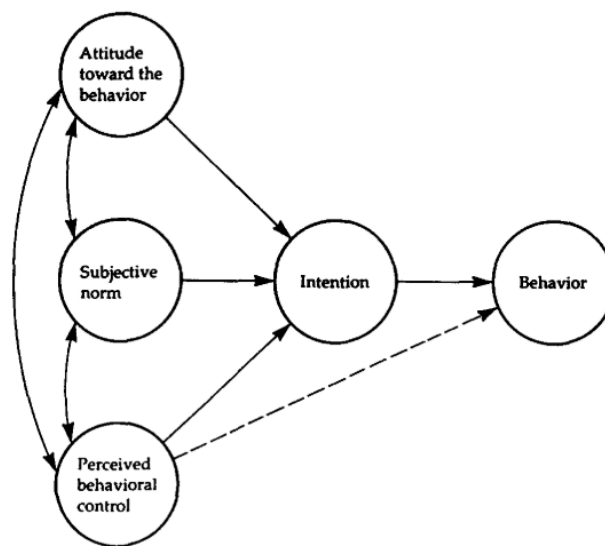
Figure 1: The Theory of Planned Behavior (Ajzen, 1991).

Firstly, TPB is underpinned by the rational behavior assumption that is salient among tourists (Ajzen, 1991; Wattanacharoensil & La-ornual, 2019). TPB is developed on the basis of the theory of reasoned actions (TRA), which postulates that individuals behave rationally in order to achieve favorable results and avoid disappointing important referents (Ajzen, Fishbern, 1975). A behavioral intention is formed when the individual holds a favorable attitude toward the behavior and evaluates that the social norm is in support of it (Ajzen, 1991). Then, the intention to perform the behavior leads to the actual performance of it (Ajzen, 1991). Urban tourism (and travel and tourism in a broader sense)

takes place outside of one's usual environment and usually lasts for a few days, and a series of information searching, planning, and decisions must be made concerning the transportation arrangement, accommodation selection, activity scheduling, budgeting, and many others. Intensive reasoning and deliberate thinking must be activated to finish these tasks (Hsu et al., 2009; Moore et al., 2012; Wattanacharoensil & La-ornual, 2019). Thus, rational cognization plays an important part in the decisions to be made by urban travelers (Wattanacharoensil & La-ornual, 2019).

Secondly, urban tourism is primarily initiated by self-benefiting purposes, and this overall context is congruent with TPB's self-interest assumption. The urban tourism motivation can stem from the desire to experience something different, visit friends or relatives, go shopping, relax, visit cultural/historic sites, attend conferences, and others (Hanqin & Lam, 1999; S. Huang & Hsu, 2009). All these purposes mean to benefit the travelers themselves. Although the decision-making for a particular choice may involve complex processes, the overall trip, and the subsequent actions during the trip are greatly influenced by self-interest motives. Thus a self-interest-motivated theory is suitable to explain urban travelers' PEBs.

Thirdly, TPB remains one of the most-often-used theories to predict individual behaviors in various fileds including PEBs (Han, 2021; Macovei, 2015). TPB stimulated empirical tests in the healthcare field (Godin & Kok, 1996; Sniehotta et al., 2013). Researchers also adopted TPB to analyze consumption-related behavior such as shoplifting (Tonglet, 2002), food choices (Dean et al., 2008; Saba & Messina, 2003), online auctions (Bosnjak et al., 2006), and environmental issues (Hinds & Sparks, 2008). Commentaries and meta-analyses commented positively on the efficacy of TPB in explaining intention and behavior over a wide range of topics (Albarracín et al., 2001; Armitage & Conner, 2001; Conner & Armitage, 1998; Godin & Kok, 1996; Hagger et al., 2016; Han et al., 2010; Han & Kim, 2010; Sheeran & Taylor, 1999; Sheppard et al., 2002; Webb & Sheeran, 2006). In addition,

meta-analysis confirms that the relationships in TPB are robust across behaviors. Hines et al.'s (1987) meta-analysis confirmed the positive relationship between four socio-psychological constructs and PEB thus greatly facilitating the proliferation of scholarly research on PEBs (Klöckner & Blöbaum, 2013; Lee et al., 2013). Twenty years later from Hine et al. (1987), Bamberg and Möser (2007) conducted an extended meta-analysis on PEBs examining eight socio-psychological determinants. Bamberg and Möser (2007) used the pooled correlations to test the postulated structural relations between the eight determinants and PEB intention. These two studies provide support for the efficacy of TPB variables in explaining PEBs.

The major drivers proposed by TPB are found among tourists' decision-making regarding PEBs (Han, 2021). A favorable attitude toward the behavior exists when the person assesses that performing a particular pro-environmental behavior (such as for a green hotel) is worthwhile, thus attitude is part of the decision-making formation (Han, 2015; Han et al., 2011). As tourists associate with other people during the visitation and at other times, they are influenced by other people (Han, 2015; Han et al., 2018). Thus, the subjective norm shall be involved in deciding a pro-environmental action. In addition, performing a PEB requires the person to make efforts, thus an appraisal of his/her ability to perform it is included (Han, 2015).

Some studies commented critically on TPB. A major drawback of TPB is its low prediction power (Armitage & Conner, 2001). TPB was criticized for its over-simplicity of just having three determinants that cannot sufficiently explain human behavior (Sniehotta et al., 2014). TPB has an emphasis on human cognition while other key aspects in human behavioral mechanisms are not acknowledged. For instance, the unconscious influences on behavior (Sheeran, Gollwitzer & Bargh, 2013), the role of emotion (Conner, Gaston, Sheeran, & Germain, 2013), and the role of the behavioral environment. In principle, TPB is an open framework that allows for modification by both adding

predictors and altering paths if the modification can increase the variance explained (Ajzen, 1991; Han & Kim, 2010; Perugini & Bagozzi, 2001). Researchers in various fields have attempted to advance the theoretical sophistication of TPB by adding context-specific variables or altering paths. For example, Taylor and Todd (1995) added relative advantage (perceived usefulness), complexity (ease-of-use), and compatibility (fit to existing value), and formed the Decomposed Theory of Planned Behavior (DTPB). These attempts often contributed to the enhancement of the theoretical mechanism of the model and increased the original model's predictive power in the specified contexts (Garay et al., 2019; Han & Kim, 2010). Scholars stressed the need to extend TPB and asserted the original TPB model missed some essential aspects of decision processes for PEBs (such as past experiences, and emotional factors) (Han, Meng, et al., 2017; Han & Kim, 2010). In view of this critique of TPB, apart from the variables identified in TPB, this thesis will incorporate pro-environmental contextual force, pro-environmental habit, and destination satisfaction to enhance the explanatory power of the proposed research model.

In the meantime, scholars suggested that psychological theories should specify the scope of the intended application, that is, set research in specific contexts (Sniehotta et al., 2014). Hines, Hungerford, and Tomera (1987) also proposed the addition of situational factors to predicting actual PEBs. This is because determinant factors may differ across contexts (Yuriev et al., 2020). For example, PEBs in the work environment are affected by factors that are absent from homes, such as organizational culture, managerial support, colleagues' attitude, and the organization's values (Macovei, 2015). By the same logic, unique contextual factors are involved in urban tourism, such as the absence of colleagues, the unfamiliarity with the destination (especially for first-time visitors), a relaxation tourism motive, and interests for special sites or events (e.g., shopping, attending festivals). These contextual factors may affect urban travelers' PEBs, which need to be investigated (Wu et al., 2021).

In sum, TPB is a general model to explain human behavior. It can be applied to explain behaviors in the urban traveling context. Studies successfully used TPB determinants and their relationships to explain tourist decisions of pro-environmental behaviors (Han, 2015; Han et al., 2010; Heath & Gifford, 2002). Responding to the call for context-specific studies of psychological theories (Sniehotta et al., 2014), the two studies (Study 1 and Study 2) in this thesis builds on the theoretical foundation of TPB and set the examination of TPB in the urban travel context. This thesis acknowledges the parsimony of the original TPB model (Ajzen, 1991), and Study 1 tries to add contextual force in the model, and Study 2 tries to add habit and destination satisfaction in the model. Thus, this thesis is theoretically underpinned by TPB and extends TPB.

2.4 Attitude and pro-environmental behavior

Attitude is the overall evaluation of a specific behavior (Ajzen, 1991). Attitude toward the behavior essentially means to what extent a person evaluates the behavior favorably. It is the general evaluation of the favorableness of a particular behavior (Yadav et al., 2019). Scholars have confirmed the attitude-intention and attitude-behavior associations in studies about green consumption. For example, Nguyen, Lobo, and Greenland (2016) revealed attitude toward environmental protection exerted a significant positive influence on the purchase of energy-saving appliances. In another study of Swiss consumers, Tanner and Kast (2003) revealed consumers' positive attitudes toward environmental protection facilitated green food purchases. In the service sector, Yadav et al. (2019) reported attitudes positively influenced intentions of choosing green hotels. To test the attitude-PEB and attitude-PEB intention associations in the urban tourism context, the following hypotheses are proposed.

H1a: Attitude positively affects urban travelers' actual PEBs.

H1b: Attitude positively affects urban travelers' PEB intention for next visits.

H1c: Attitude positively affects urban travelers' specific PEBs.

2.5 Subjective norm and pro-environmental behavior

Subjective norm refers to the "social pressure exerted to engage in a particular behavior"(Ajzen, 1991, p.122). It comes from an individual's social group and relates to a society's values and expectations (Esfandiar et al., 2019). In major frameworks to predict PEBs, such as TPB, Norm Activation Theory (NAT), and Value-Belief-Norm theory (VBN), subjective norm is a key predictor of an individual's intention.

Subjective norms stem from the recognition of how other people behave. Thus, subjective norms reflect the influence of his/her social community. To comply with the norm of society is a good reason for an individual to act in a certain way (Cialdini & Trost, 1998). People follow norms to reduce the amount of effort in figuring out a new solution (Miller & Grush, 1986). Thus, following the subjective norm could be a justification for taking a particular action.

The effects of subjective norms on behavioral intention and behavior are found among tourists. For example, in a study of bicycle tourism, the standardized regression coefficient of subjective norm on behavioral intention was 0.28 (p<0.01) (Han, Kim, et al., 2017). In another study of green hotel choice, the standardized regression coefficient of subjective norm on behavioral intention was 0.201 (p<0.01)(Han, 2015). Like in other contexts, when tourists travel to urban destinations, important others' influence still exists. In addition, tourists may be surrounded by travel partners and destinations' population, thus are likely to be influenced by their opinions about pro-environmentalism. In view of the empirical evidence and theoretical support of the predictive power of subjective norm on pro-environmental behavior, the following hypotheses are proposed:

H2a: Pro-environmental subjective norm positively affects urban travelers' actual PEBs.

H2b: Pro-environmental subjective norm positively affects urban travelers' PEB intention for next visits.

H2c: Pro-environmental subjective norm positively affects urban travelers' specific PEBs.

2.6 PBC and pro-environmental behavior

PBC essentially means ''the perceived ease or difficulty of performing the behavior'' (Ajzen, 1991, p. 122). This concept carries one's assessment of how much one can control the needed resources and opportunities that may facilitate or constrain the actions in a specific situation. According to Ajzen (1998), PBC was similar to Bandura's (1982) concept of self-efficacy, which indicated people's behavior was affected by their confidence in their ability to perform that behavior. Moreover, Ajzen (1991, p.122) postulated that PBC "is assumed to reflect past experience as well as anticipated impediments and consequences." Thus PBC means the perception of behavioral control, as opposed to actual behavioral control.

Studies showed PBC directly impacted the intention to perform a behavior and the actual performance of that behavior (Baker et al., 2007). The positive perception of an ability to perform the behavior would influence people's behavioral intention (Baker et al., 2007; Cheng et al., 2006). In case people perceive holding little control over performing a behavior due to the lack of availability of necessary resources (e.g., costs or time), their intention to perform the behavior would decrease despite the fact that they uphold a positive attitude or subjective norm toward the action. PBC influenced intention because greater perceived control could prompt greater effort to successfully enact an intention (Conner & Armitage, 1998). Additionally, PBC could directly affect behavior. In a test, Mathieson (1991) found PBC exerted a significant effect on behavior.

When tourists travel out of their usual home or work environments to an urban destination as short-time visitors, it was difficult for them to gain a sense of complete behavioral control (Baker et al., 2007). For example, they may be unsure whether there is eco-friendly transportation in the urban destination, how to take it, and how much does it cost to ride on the eco-bus. A strong effect of PBC is expected when the behavior in question is not under the person's complete volitional control (Baker et al., 2007). Therefore, the variance in a tourist's perceived control over the PEB is likely to significantly influence the person's decision of performing the PEB. To test the effect of PBC on urban travelers' pro-environmental actions, this research proposes the following hypotheses:

H3a: PBC positively affects urban travelers' actual PEBs.

H3b: PBC positively affects urban travelers' PEB intention for next visits.

H3c: PBC positively affects urban travelers' specific PEBs.

2.7 Contextual force and pro-environmental behavior

Field theory is a classic theory for explaining individual behaviors (Zhao et al., 2014). It reveals the general rules of individual behaviors (Eysenck & Lewin, 1952; Lewin, 1951). This theory holds that individual behavior is affected by various kinds of personal (the individual) and contextual forces (the environment) factors (Eysenck & Lewin, 1952; Lewin, 1951). While personal factors refer to individuals' personal predispositions, such as feelings and attitudes, contextual forces can be found in the behavioral environment. Scholars argued that individuals' pro-environmental behaviors are susceptible to the presence of contextual imperatives (Steg & Vlek, 2009; Stern, 2000).

Stern and Oskamp (1987) and Guagnano et al. (1995) specified contextual forces were "conceived of broadly to include all external sources of support or opposition to behavior, whether physical, financial, legal, or social", "such as physical structures, social institutions, and economic

forces" (Guagnano et al., 1995, p.702). These forces are largely beyond the person's willpower and are often out of his/her volitional control when the behavior occurs.

Stern (1999) further clarified that contextual forces of environmentally significant behavior were highly diverse and could include a wide array of attributes such as birth-endowed factors (e.g., cultural background, religion, social class), acquired capabilities (e.g., education, skills), the proximal situation (e.g., urban or rural residence), the policy environment (e.g., energy tax, incentive programs), economic variables, and many others. These contextual factors can pertain to many aspects of the behavior context including physical, legal, political, social, economic, demographical, cultural, and/or technological. Every factor can exert some level of facilitating or constraining influence on people's actions. Collectively, a unique set of facilitators and inhibitors affects the likelihood that an individual will engage in pro-environmental behaviors.

Researchers evidenced that contextual forces could influence consumer behaviors. Contextual forces are termed differently in consumer behavior studies, such as "situational factors"(Lülfs & Hahn, 2013), "situational influences"(Kaiser & Wilson, 2000), "purchase situation" (Grimmer et al., 2016), "setting" (Miao & Wei, 2013), or simply "context" (Onokala et al., 2018). Stern (2000) also acknowledged that external forces and contextual forces were used interchangeably in the literature (p. 417).

Contextual forces are important when the behaviors take place outside the person's usual life environment (Miller et al., 2015). However, contextual forces are under-researched in PEB literature (Steg & Vlek, 2009; Wu et al., 2021). In general PEB studies, some researchers forayed contextual forces, but the contextual force was over-simplified as demographics and social characteristics such as gender, ethnicity, income, and residential area (Tanner et al., 2004). In tourism literature, the examination of the effect of contextual force on tourist PEBs was limited. The contextual force has

been rarely measured and tested, except for several studies in natural parks (Huang et al., 2018; Liu et al., 2019; R. Liu, 2010; Pan & Wang, 2018; Yu et al., 2015).

Contextual forces are a distinct type of determinant and deserve more investigation on their nature, composition, and effect (Blankenberg & Alhusen, 2018; Stern, 2000). Firstly, some scholars emphasize the objective externality (i.e., existing in the environment) while some scholars see psychological variables (e.g., values, willingness to pay) as contextual forces (Ertz et al., 2016; Yadav & Pathak, 2017). This shows a need to further clarify the conceptualization of contextual force. Secondly, contextual forces can be investigated from a perceptual perspective, that is, perceived contextual forces (Ertz et al., 2016; Grimmer et al., 2016; Wan et al., 2014). Ultimately, contextual forces exert effects only when people cognize them (Ertz et al., 2016). As evidenced in several studies, the variance in perceived contextual force causes the variance in pro-environmental actions (Ertz et al., 2016; Liu et al., 2019; Wan et al., 2014). Thirdly, contextual forces in the travel context are rarely studied, so it is unclear what contextual forces have influenced urban tourists' PEBs, to what extent contextual forces exert influence, and how they interplay with psychological forces.

Contextual force can directly prohibit pro-environmental behaviors. For example, people would give up traveling by public transport when no such service was available regardless of how motivated they were (Steg & Vlek, 2009). In contrast, better availability of public transport could increase public transport ridership (Bamberg & Schmidt, 1999). Yu et al. (2015) recorded that in natural scenic areas, the environmental policy and environmental quality had direct effects on tourists' environmentally responsible behavior. Therefore, contextual force is likely to be a direct force in shaping urban travelers' PEBs. Hence, the following hypotheses are proposed.

H4a: Pro-environmental contextual force positively affects urban travelers' actual PEBs.

H4b: Pro-environmental contextual force positively affects urban travelers' PEB intentions for next visits.

2.8 Habit and pro-environmental behavior

Human behavior is influenced by habitual routines (Aarts & Dijksterhuis, 2000). Habit means the automatic and consistent behavioral patterns without purposeful thinking (Klöckner & Blöbaum, 2013). As such, a habit stabilizes behaviors across contexts. Researchers posit habit is an important force in shaping people's future behaviors. Perugini and Bagozzi (2001) contended the role of the automatic process in decision-making could hardly be overstated. Garlling et al. (2001) and Verplanken and Aarts (1999) also point out that automatic choice patterns had a direct determining effect on behavior. Habits could supplement cognitive evaluations (Aarts & Dijksterhuis, 2000; Ouellette & Wood, 1998), or override them in their effect on behavior (Ouellette & Wood, 1998). For repeated behaviors, automaticity played a key role in activating them, sometimes more influential than behavioral intention (Klöckner & Blöbaum, 2013; Ouellette & Wood, 1998).

There was an agreement in earlier studies that habitual responses were non-volitional and unintentional actions because of the quick response and the minimal allocation of cognition needed, but the idea that habit could only represent non-intentional actions was erroneous (Ouellette & Wood, 1998). Later research suggested habits could be part of the intentional action system (Ouellette & Wood, 1998). That is, habits reflect routine, trivial events and represent frequent actions that are intentional (Gregory & Leo, 2003; Ouellette & Wood, 1998). Indeed, many established behaviors in daily life are both automatic and volitional. Example studies include driving, eating healthy food, and recycling (Brug et al., 2006; Ouellette & Wood, 1998). Habits and intention jointly predict action (Ouellette & Wood, 1998). Therefore, habits should be helpful to explain the variance in PEBs together with rational

variables (such as attitude, subjective norm, and PBC). Thus, habit is theoretically compatible with the TPB model.

Scholars pointed out that investigating the correspondence between habit and intention would be of more theoretical and practical relevance (Ouellette & Wood, 1998; Sutton (1998) as in De Bruijn et al., 2007). Studies evidenced that habit strength impacted behavior intention (Brug et al., 2006; Honkanen et al., 2005). Brug et al. (2006) found the habit strength of eating fruit was significantly associated with the intention to eat two or more servings of fruit a day (β=0.11, p=0.00). Honkanen, Olsen, and Verplanken (2005) showed habit strength of eating fish could predict fish consumption intention.

Ouellette and Wood (1998) pointed out that habit strength could influence future behavior because when the behavior was well learned, and the contexts were constant, the initiation and control processes of the performance of the behavior became automatic. Klöckner (2013) conducted a meta-analysis of pro-environmental behaviors and suggested habit was a reliable direct predictor of behaviors. Brug et al. (2006) found habit strength was significantly associated with fruit intake. Danner, Aarts, and De Vries (2008) found habit strength could predict bicycle use. PEB researchers recently started to discuss the influence of habit on personal sphere PEBs (Gkargkavouzi et al., 2019). The study of Onokala, Banwo, and Okeowo (2018) also evidenced the ability of habit strength (of energy use, printing, sustainable consumption, shopping, computer use, light use, and recycling) in predicting PEBs.

Due to the mobility associated with tourism, destinations typically represent new and "unstable" environments for tourists (Liu et al., 2020). Will travelers still execute their home habits when they travel? Scholars of psychology argued that daily routine had a contagion effect and could influence people's behavior when traveling because elements of daily behavior are maintained to keep a sense of comfort, security, and self-identity (Bargh, 2013; Thompson & Tambyah, 1999; Wang, Lehto, & Cai,

2019). People also had a tendency to simplify their decision-making based on their behavioral routine (Aarts et al, 1998). Besides, environmental problems are worldwide issues that needed global actions (Liu et al., 2020). These points imply that pro-environmental habit can be consistent across home and tourism contexts. That is, if people routinely practice PEBs at home, they are very likely to perform them at tourism destinations. Therefore, the following hypothesis is proposed.

H5: Pro-environmental habit positively affects urban travelers' specific PEBs.

2.9 Destination satisfaction

Emotions play an important role in the forming of satisfaction (Mesch & Manor, 1998; Yu & Dean, 2001). The most recent entry of satisfaction in the open encyclopedia defines satisfaction as "a pleasant and positive emotion, feeling, or state of mind" (Wikipedia, 2021). Merriam-Webster dictionary also defines satisfaction as "the quality or state of being satisfied and is a source or means of enjoyment" (Merriam-Webster, 2021). People can feel satisfied when their needs are fulfilled (Wang & Lo, 2002). For example, people can get job satisfaction when they like their work. On the opposite, when falling into dissatisfaction, emotions including complacency, depression, and anguish could be felt (Şahin et al., 2011). Thus, satisfaction is largely an emotional status.

Destination satisfaction is achieved when tourists like the destination (Stedman, 2003). The sense of a place incorporates the physical setting, the human interaction, as well as the interpretation of their experiences, so destination satisfaction reflects the total feeling about the destination (Stedman, 2003). In other words, destination satisfaction reflects the overall favorable impression of the destination derived from visitors' experiences in the destination (Ramkissoon, Graham Smith, et al., 2013).

The feeling of satisfaction influences behaviors (Yu & Dean, 2001). The more a worker feels satisfied with the job, the more likely he/she will stay loyal to the employer (Goffnett et al., 2012). The more satisfied a shopper gets with the shopping mall, the more likely he/she would engage in continued patronage (Sit & Merrilees, 2005). The more satisfied a tourist is with the destination, the more likely he/she will revisit the destination (Yu & Dean, 2001). Due to the influence of satisfaction on the positive outcomes to service providers, guest satisfaction has long been an important aim of service providers including tourism experience providers (Wang & Lo, 2002). Based on the above discussion, satisfaction toward a destination is likely to induce friendly behaviors to the destination. Therefore, the following hypothesis is proposed.

H6: Destination satisfaction positively affects urban travelers' specific PEBs.

2.10 Proposed models of this thesis

Based on the discussion in the above sections, this thesis proposes a research model for Study 1 and a research model for Study 2. As shown in Figure 2, six constructs are included in Study 1: attitude, pro-environmental subjective norm, PBC, pro-environmental contextual force, actual PEBs, and PEB intention for next visits. The relationships among variables are described as follows:

(1) Attitude, pro-environmental subjective norm, PBC, and pro-environmental contextual force positively affect urban travelers' actual PEBs.

(2) Attitude, pro-environmental subjective norm, PBC, and pro-environmental contextual force positively affect urban travelers' PEB intention for next visits.
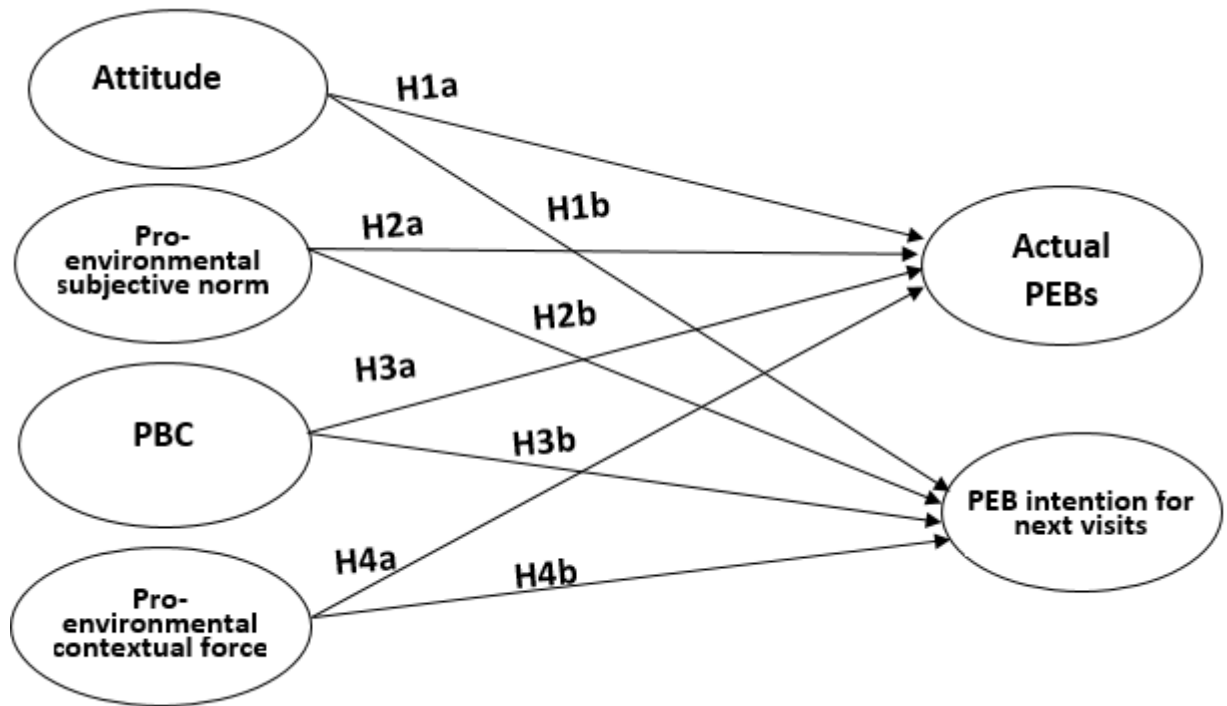
Figure 2: Research model of Study 1.

As shown in Figure 3, six constructs are included in Study 2: attitude, pro-environmental subjective norm, PBC, pro-environmental habit, destination satisfaction, and urban travelers' specific PEBs. The relationships among variables are described as follows: attitude, pro-environmental subjective norm, PBC, pro-environmental habit, and destination satisfaction positively affect urban travelers' specific PEBs.
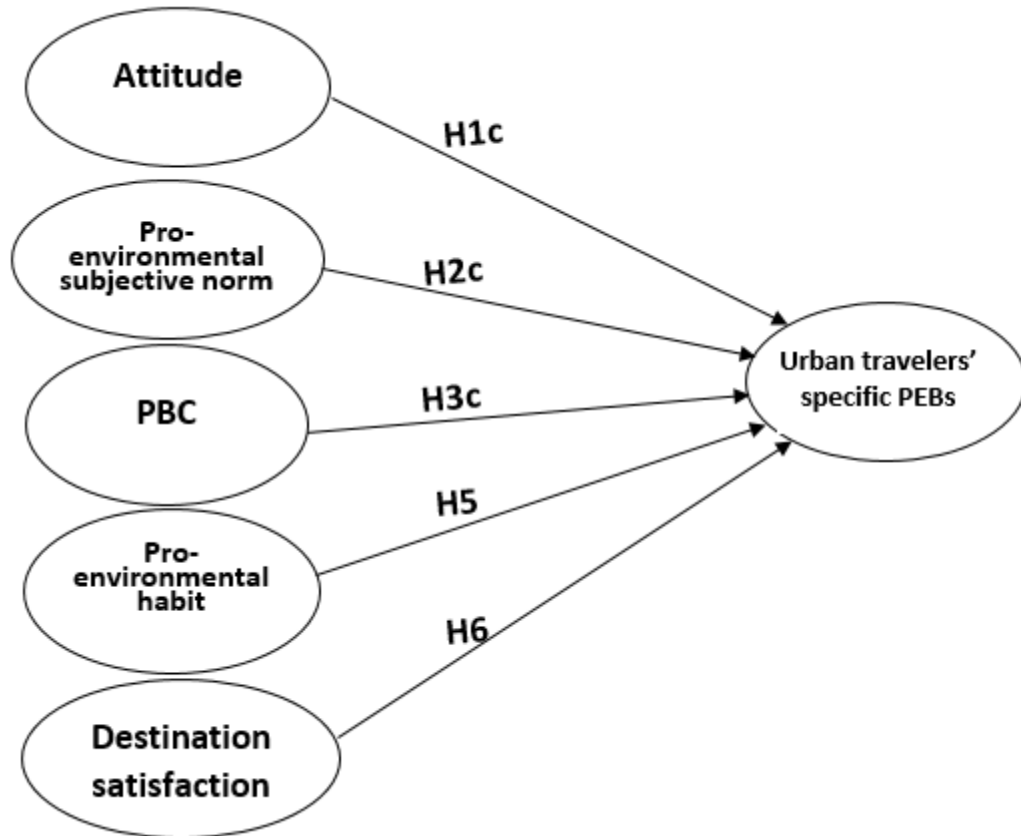
Figure 3: Research model of Study 2.

CHAPTER 3 METHODOLOGY

This chapter explains the methodology of this thesis. The rationale of choosing study sites will be first explained. Then, the procedures of scale development will be presented. Measurement items of study constructs will be introduced. Finally, measures against social desirability bias and common method bias will be explained.

3.1 Study sites

Shanghai is chosen to be the study site of Study 1 for three reasons. Firstly, Shanghai is one of the top 10 cities in the world and the second most popular tourist destination in China (Sugiura, 2020; Wang, 2020). Thus, Shanghai matches the research context. Secondly, environmental awareness in Shanghai is high (Jie, 2019). It is the first city in China to comprehensively implement compulsory household waste separation policies since 2019 (Zhang et al., 2019; Zhu, 2019). Thus, the study of Shanghai will provide timely implications for other cities. Additionally, as the world battled the Covid-19 pandemic in 2020, China's tourism experienced a steady recovery starting from the second quarter of 2020 (Cui, 2020; Pitrelli, 2020). The stable tourism situation allows for interviews, pre-tests, and surveys to be conducted in a post-Covid environment.

Beijing, Guangzhou, Shanghai, and Shenzhen are selected as study sites for Study 2 because of three reasons. Firstly, these four cities constitute the first-tier cities in Mainland China and have large volumes of tourism each year (Wang et al., 2021). Thus, they fit the purpose of this research. Secondly, these four cities span widely across Mainland China. They are located in the North, East, and South of China, and represent different regional cultures (Lin et al., 2020). Although Guangzhou and Shenzhen are not geographically as distant as from other cities, these two cities have distinct local cultures (Lin et al., 2020). While Guangzhou is the center of the traditional Cantonese culture for over 2000 years,

Shenzhen is the window of China's Open Door Policy and has formed its unique modern migrant metropolis culture (Cho et al., 2010; Lin et al., 2020). The geographic and cultural heterogeneity will help to verify the generalizability of the new scale and the model. Thirdly, the steady recovery of tourism in these cities starting from the second half of 2020 makes them suitable for examining tourist behaviors in the post-Covid time.

3.2 Scale development procedures

Though researchers suggested different steps for developing scales, it is common that scale development procedures begin with specifying the domain of the phenomenon under study through a theoretical review of the literature followed by the generation of measurement items (Hinkin, 1998; Morgado et al., 2017). The item pool can be created through a deductive way that relies on past studies, an inductive way that relies on qualitative methods, or a combination of deductive and inductive approaches (Hinkin, 1998; Morgado et al., 2017). The items shall be subject to a series of content reviews, psychometric tests, and refinements. The process can be iterative and typically includes expert review, pre-test, pilot test with a sample from the target population, dimensionality examination, scale reliability examination, reduction of items, confirmatory test, and nomological validation (Hinkin, 1998; Morgado et al., 2017).

Both Study 1 and Study 2 adopt the recommendations by Churchill (1979), DeVellis (2017), and Hinkin (1998) and follow seven steps: 1) determine clearly what it is that you want to measure; 2) generate an item pool to represent the concept; 3) have the initial item pool reviewed by experts; 4) purify the measures; 5) administer items to a sample of the target population and evaluate the items through exploratory factor analysis (EFA); 6) confirm the structure of the scale by confirmatory factor analysis (CFA); and 7) verify the nomological validity of the scale. Figure 4 shows the path of developing the two scales. The results of each step will be elaborated in Chapter 4 and Chapter 5.

Stage	Pro-environmental contextual force	Urban travelers' specific PEBs
Stage 1: Specification of domain	• Literature review of studies on PEB contextual force and relevant theories	• literature review of studies on PEB and relevant theories
Stage 2: Generation of an item pool & format of items	• In-depth interviews/conversations with 59 tourists to varied cities • Content analysis of interview data	• In-depth interviews/conversations with 59 tourists to varied cities • Content analysis of interview data
Stage 3: Expert review	• Initial items scrutinized for content validity and clarity with 2 Ph.D. students and 1 tourist • Have items reviewed by 7 experts from tourism academia, industry, or practice • Content validity check • Relevance, clarity, conciseness of each item • Revision of items	• Initial items scrutinized for content validity and clarity with 3 Ph.D. students • Have items reviewed by 5 experts from tourism academia, industry, or practice • Content validity check • Relevance, clarity, conciseness of item • Revision of items
Stage 4: Item purification	• Pre-test with four past visitors • Content validity check • Questionnaire design, duration, ease of comprehension • Revision of questionnaire	• Pre-test with seven past visitors • Content validity check • Questionnaire design, duration, ease of comprehension • Revision of questionnaire
Stage 5: Exploratory factor analysis	• Pilot test with 330 tourists who visited Shanghai in the past 1 month • EFA • Scale dimensionality analysis • Factor loadings, communalities, and reliability coefficients	• Pilot test with 330 tourists who visited Shanghai in the past 1 month • EFA • Scale dimensionality analysis • Factor loadings, communalities, and reliability coefficients
Stage 6: Confirmatory factor analysis	• The main survey with 600 Chinese tourists who visited Shanghai in the past 1 year • CFA • Reliability coefficients, convergent validity, discriminant validity	• The main survey with 666 Chinese tourists who visited Beijing, Guangzhou, Shanghai, or Shenzhen in the past 1 year • CFA • Reliability, convergent validity, and discriminant validity checks

| **Stage 7:** Nomological validation | • Hypothesis testing • PLS-SEM | • Hypothesis testing • PLS-SEM |

Figure 4. Seven steps of scale development.

3.3 Measurement of other constructs

The measurement scales of attitude, pro-environmental subjective norm, pro-environmental habit, destination satisfaction, PBC, and PEB intention draw upon previously validated scales. All scales comprise multiple items to adequately capture the domains of constructs (Churchill, 1979). The wording of the measures is modified to suit the background of urban tourism. These scales originated in English and are translated into Chinese by three Chinese-English bilingual tourism scholars using a translation committee approach guided by Sperber's (2004) recommendations.

3.3.1 Measures of attitude

The scale of attitude is adapted from the sematic differentiation scales used by Han, Meng, et al. (2017) because it was applied in the tourism context and showed good reliability. Its CR value was 0.97 (Han, Meng, et al., 2017), greater than the recommended threshold of 0.6 (Bagozzi & Yi, 1988). The average variance extracted (AVE) was 0.86 (Han, Meng, et al., 2017), greater than the suggested cutoff of 0.5 (Hair et al., 2010). After minor modification, the items and scoring of the scale are as follows. Att1: For me, acting pro-environmentally is Bad (1) – Good (7). Att2: For me, acting pro-environmentally is Foolish (1) – Wise (7). Att3: For me, acting pro-environmentally is Unpleasant (1) – Pleasant (7). Att4: For me, acting pro-environmentally is Harmful (1) – Beneficial (7). Att5: For me, acting pro-environmentally is necessary (1) – unnecessary (7).

3.3.2 Measures of pro-environmental subjective norm

The scale of pro-environmental subjective norm is adapted from Wang and Zhang (2020). The CR was 0.94, and AVE was 0.80 (Wang & Zhang, 2020). All items are rated from 1 (strongly disagree) to 7 (strongly agree). After modification, the items are as follows. For those who are important to you (such as relatives, friends, or colleagues):

PSN1: they would say/think I should act pro-environmentally. PSN2: they expect me to participate in environmental protection. PSN3: they would prefer/approve of behaving in an environmentally friendly way. PSN4: they appreciate if I perform pro-environmental actions. PSN5: they think that engaging in environmental protection is something that one ought to do.

3.3.3 Measures of PBC

The scale of PBC was based on (Liu et al., 2019) because this scale was tested in the tourism context and showed good reliability and validation. The CR was 0.792. The AVE was 0.560 (Liu et al., 2019). All three items were rated from 1 (strongly disagree) to 7 (strongly agree). After modification for the context of this research, the items of this scale are as follows. During the visitation in this city, PBC1: whether or not I behave pro-environmentally is up to me. PBC2: I am confident that if I want, I can behave pro-environmentally. PBC3: it is easy for me to behave pro-environmentally. PBC4: I can behave pro-environmentally when I want to. PBC5: I have resources, time, and opportunities to behave pro-environmentally.

3.3.4 Measures of pro-environmental habit

The Self Report Habit Index (SRHI) is a widely used scale in past research to measure the habit strength of a particular behavior (Brug et al., 2006; De Bruijn et al., 2007; Honkanen et al., 2005; Lally & Gardner, 2013), so it is adapted for this study. For example, Klöckner and Blöbaum (2010) used 6

items based on SRHI and showed good reliability (Cronbach's alpha=0.73). This habit scale focuses on 5 aspects of a habit (repetition, controllability, the lack of awareness, efficiency, and identity), instead of just an estimation of past behavior frequency (Verplanken & Orbell, 2003). Although used in some previous studies (Miller et al., 2015), a single-item measure of behavioral frequency is subject to reliability concerns and cannot fully capture the whole conceptualization of habit (Verplanken & Orbell, 2003). The SRHI is adapted to measure daily pro-environmental habits, and responses are on 7-point Likert scales anchored at 1 (strongly disagree) and 7 (strongly agree). Higher values in the measure indicate a stronger pro-environmental habit. The measures are as follows. Habit 1: PEB is something I do frequently. Habit 2: PEB is something I do automatically. Habit 3: PEB is something I do without having to consciously remember. Habit 4: PEB is something that makes me feel weird if I do not do it. Habit 5: PEB is something I do without thinking. Habit 6: PEB is something that would require effort not to do it. Habit 7: PEB is something that belongs to my (daily, weekly, monthly) routine. Habit 8: PEB is something I start doing before I realize I'm doing it. Habit 9: PEB is something I would find hard not to do. Habit 10: PEB is something I have no need to think about doing. Habit 11: PEB is something that's typical 'me'. Habit 12: PEB is something I have been doing for a long time.

3.3.5 Measures of destination satisfaction

Three items are adapted from Ramkissoon, Smith, and Weiler (2013). This paper examined the interplay between place attachment, place satisfaction, and pro-environmental behaviors of park visitors (Ramkissoon, Graham Smith, et al., 2013). Place satisfaction represents an overall satisfying emotion and exhibited good measurement quality, as CR=0.83, and AVE=0.62. All items were rated from 1 (strongly disagree) to 7 (strongly agree). After modification to fit the background of this study, the items are as follows. DS1: I believe I did the right thing when I chose to visit this city. DS2: Overall,

I am satisfied with my decision to visit this city. DS3: I am happy about my decision to visit this city. DS4: My experience here exceeded my expectations.

3.3.6 Measures of PEB intention for the next visit

The scale of pro-environmental behavioral intention was adapted from Han et al. (2010) because this scale was tested in a tourism context with good validity. The CR was 0.763. The AVE was 0.735. All items were rated from 1 (strongly disagree) to 7 (strongly agree). After modification, the items are as follows. Intention1: I am willing to behave pro-environmentally during my next trip to Shanghai. Intention2: I plan to behave environmentally during my next trip to Shanghai. Intention3: I will expend effort to behave environmentally during my next trip to Shanghai. Intention4: I will behave pro-environmentally during my next trip to Shanghai. Notably, each item in this scale uses the future tense to indicate an intention to perform PEBs in future trips, which differs significantly from the actual behaviors that have been conducted during past trips, both conceptually and in measurement.

3.3.7 Measures of actual PEBs

Actual PEBs assesses the overall PEBs tourist have performed during the visits. The scale of actual PEBs is based on the study of Liu et al. (2020) because this scale was tested in the tourism context and showed good quality. The CR value was 0.93, and the AVE value was 0.82 (Liu et al., 2020). It contained four items and was rated from 1 (strongly disagree) to 7 (strongly agree). The items are as follows. APEB1: I performed pro-environmental behaviors when traveling in Shanghai. APEB2: I protected the environment when traveling in Shanghai. APEB3: I contributed to environmental protection when traveling in Shanghai. APEB4: I have done my best to protect the environment when traveling in Shanghai. APEB5: I traveled in a sustainable way during my visits to Shanghai.

Notably, this scale emphasizes "actual behavior". Respondents are ensured to understand that they are requested to answer actual actions instead of an intention in three ways. First, at the beginning of this question block on the questionnaire, respondents are clearly instructed to answer what they have actually done during the visits to Shanghai (see section six in Appendix 6). Second, each item in this scale uses the past-tense form or present-complete-tense form for the verb (e.g., "I protected") together with a temporal clause (e.g., "when traveling in") to clearly indicate the actions that happened during the trip, instead of being a wish to act in the future. Third, the questionnaires of all surveys in this thesis are pre-tested every time before distribution. The pre-test respondents are either interviewed or offered open comment spaces to express any confusion about the questionnaire. No problems are reported regarding the understanding of the actual PEBs scale.

3.4 Social desirability bias control

Since social desirability bias may inflate the self-reported PEBs, a few strategies are implemented to minimize its effect (Larson, 2019). Firstly, respondents are assured of anonymity and confidentiality, and no questions are asked about their personal identity (Larson, 2019). Secondly, respondents are assured that the survey would be used only for academic research purposes (Larson, 2019). Thirdly, the survey is conducted online to avoid face-to-face interaction with the respondents. The absence of face-to-face interaction effectively reduces the social desirability bias effect that comes from respondents' desire to show a good image (Larson, 2019). Finally, the wording of questions is neutralized in a way that appears socially acceptable (Larson, 2019).

3.5 Common method bias control

Common method bias is systematic measurement errors that may occur in self-administered questionnaire surveys where the same sources are asked with similarly-formatted questions (Min et al.,

2016). To reduce the possible common method bias, procedural controls are implemented (Min et al., 2016). On the questionnaire, a psychological separation strategy is adopted to divide the whole questionnaire into smaller blocks and each block is arranged on a separate page. Besides Likert scales, semantic differential measures (for attitude) are used in the questionnaire. This methodological separation also helps to reduce common method bias.

3.6 Human subject approval

As this research involves human subjects, ethics were reviewed and cleared by the school research committee and the approval was obtained before the start of the fieldwork. Participants are informed of the research purpose, procedure, and researcher information. Their consent of participation is obtained and they are allowed to stop or withdraw from the research at any time. The approval of human subject ethics can be found in Appendix 1.

CHAPTER 4 STUDY 1

The objectives of Study 1 are to develop a scale to measure the pro-environmental contextual force that influences urban travelers' PEBs, and to examine the effect of the pro-environmental contextual force on urban travelers' actual PEBs and PEB intention for next visits. This chapter presents the process and results of Study 1 according to the sequence of scale development procedures.

4.1 The need for a scale of pro-environmental contextual force

The inconsistency of tourist PEB patterns can be attributed to contextual drivers and barriers (Xu et al., 2020). Since tourism is typified by mobility and the changing context, studies suggest analyzing the contextual force of travelers' PEBs (Wang et al., 2018; Wu et al., 2021). To destination managers, the context or the conditions of a destination are more under their control thus are practical topics (Geller, 1995; Liu et al., 2019; Yu et al., 2015). Research on the pro-environmental contextual force can help explain tourists' actions in different contexts and improve the fit between the intervention measures and the context (Balundė et al., 2019). It also helps to improve the transferability of interventions (Blamey & Mackenzie, 2007). However, a proper tool to measure the contextual force is absent in the literature thus hampers further investigation of its roles.

The need for a pro-environmental contextual force scale was iterated by several scholars, accompanied by the suggestion to investigate the interplay of psychological variables and contextual variables (Liu et al., 2019; Steg & Vlek, 2009; Wang, Zhang, Cao, Hu, et al., 2019). In recent years, a few studies tried to analyze the behavioral context. Among them, four studies led by one scholar probed the link between the perception of the effect of external factors and PEBs (Wang et al., 2018; Wang, Zhang, Cao, Duan, et al., 2019; Wang, Zhang, Cao, Hu, et al., 2019; Wang, Zhang, Sun, et al., 2020; Wang, Zhang, Xiao, et al., 2020). However, the perceived effects of external factors and the contextual

force per se are different concepts. The former reflects to what extent one thinks an external factor is effective, thus, is a judgment about the effect. Wu et al. (2021) postulated that the change of PEB intention is because of the change of behavioral context. But their study only measured a facility-based, general sense of contextual force and did not incorporate contextual force into their model. None of the published studies provided a rigorous conceptualization of the multi-faceted behavioral context nor a comprehensive measurement instrument. The composition and measures of the pro-environmental contextual force are so far ambiguous in the literature and the effect is yet to be tested. In view of these gaps and their significance, this study aims to develop a valid measurement tool for the pro-environmental contextual force through a rigorous procedure.

4.2 Specification of domain

Defining pro-environmental contextual force is an important step in scale development (Churchill, 1979; DeVellis, 2017). PEB, contextual force, and their synonyms were identified in scholarly repositories including Google Scholar and Scopus. Then, relevant papers were filtered and analyzed through content analysis. In the literature, contextual force represents a complex force from the environment and seems multi-faceted. Stern and Oskamp (1987) and Guagnano et al. (1995) suggested that contextual forces "include all external sources of support or opposition to behavior, whether physical, financial, legal, or social" (Guagnano et al., 1995, p.702). Stern (1999) clarified that contextual factors can pertain to physical, legal, political, social, economic, demographical, cultural, and/or technological aspects. Following Guagnano et al. (1995) and Stern (2000), this study defines the pro-environmental contextual force as the total extrinsic force that affects tourist PEBs at the destination.

4.3 Generation of initial measurement items

Semi-structured in-depth interviews were designed to understand urban tourists' views on what contextual forces have affected their PEBs during travel. To ensure the scale represents common contextual forces as opposed to the unique features of one destination, participant experiences to a diversity of urban destinations are needed. In total, 36 participants joined the formal interviews and 23 joined casual conversations from March through October 2020. Participants came from a wide range of backgrounds, including teachers, researchers in different disciplines, salespeople, entrepreneurs, legal consultants, financial consultants, housewives, and a retiree. Their memorable experiences in urban destinations included a wide range of cities, both inside China and around the world. The diversified participant profiles and destinations provided a good foundation for the new scale to apply to a large population and different destinations. Table 1 shows the demographics of participants and their destinations.

Table 1: Profile of interview and conversation participants.

Participant	Type	Gender	Age	Occupation	Nationality	Destination
Participant 1	1	Male	44	Company manager	China	Hangzhou, Hong Kong, Qingdao
Participant 2	1	Male	19	College student	China	Hong Kong, Osaka, Tokyo
Participant 3	1	Female	20s	Kindergarten teacher	China	Hong Kong
Participant 4	1	Female	45	Financial consultant	HK SAR, China	Kaifeng, Shanghai, Wuhan
Participant 5	1	Female	20s	Researcher	China	Hong Kong, Shanghai
Participant 6	1	Male	29	Photographer	China	Shanghai
Participant 7	1	Female	30	Software engineer	China	Huizhou
Participant 8	1	Male	40s	Teacher	Ghana	Hong Kong, Macau
Participant 9	1	Female	25	Travel agent	China	Chaozhou, Xiamen
Participant 10	1	Female	40s	College teacher	China	Hong Kong
Participant 11	1	Male	36	Chef	USA	Israel, Hong Kong, Macau
Participant 12	1	Female	47	Secretary	HK SAR, China	Los Angeles, San Francisco
Participant 13	1	Male	43	Gardener	China	Hangzhou, Yuhang, Zhoushan
Participant 14	1	Female	34	Hotelier	Jamaica	Hong Kong, Singapore
Participant 15	1	Male	27	IT consultant	China	Shanghai
Participant 16	1	Male	44	Lawyer	China	Nanning, Guilin, Hong Kong
Participant 17	1	Female	20s	Research associate	Korea	Hong Kong, Korean cities, US cities

Participant 18	1	Male	27	Engineer	China	Shanghai
Participant 19	1	Female	32	Teacher	China	Changsha
Participant 20	1	Female	33	Visual designer	China	London
Participant 21	1	Female	24	Housewife	China	Fangchenggang, Kuala Lumpur, Manila
Participant 22	1	Female	35	Yoga coach	China	Xiamen
Participant 23	1	Female	34	Freelancer	China	Hong Kong, Japan
Participant 24	1	Female	33	Vocational school	China	Huizhou
Participant 25	1	Female	26	Research assistant	China	Shanghai
Participant 26	1	Male	35	Financial consultant	China	Shanghai
Participant 27	1	Male	32	Government	China	Beihai, Guilin, Guangzhou
Participant 28	1	Female	43	Logistic planning	China	Shanghai
Participant 29	1	Male	44	Salesman	China	Guilin, Hainan
Participant 30	1	Female	26	Government	China	Guangzhou, Nanning, Beihai
Participant 31	1	Male	28	Government	China	Guilin, Sanya
Participant 32	1	Female	41	Government	China	Guilin, Nanning, Wuzhou
Participant 33	1	Female	32	Office clerk	China	Cambodia, Germany, Huizhou, Japan
Participant 34	1	Female	39	Entrepreneur	China	Beijing, Hong Kong
Participant 35	1	Male	28	Engineer	China	Shanghai
Participant 36	1	Male	33	Teacher	Malawi	Hong Kong, Singapore
Participant 37	2	Female	20s	Banker	Ghana	Hong Kong
Participant 38	2	Female	33	Tourism consultant	Thailand	Ho Chi Minh City
Participant 39	2	Male	40	College teacher	China	Hong Kong, Singapore
Participant 40	2	Male	31	Businessman	Taiwan	Hong Kong
Participant 41	2	Male	40s	Hotel manager	Suriname	Amsterdam, Berlin, Hong Kong, London
Participant 42	2	Male	30s	Medical carer	Ghana	Chiang Mai
Participant 43	2	Female	31	Pharmacist	China	Seoul
Participant 44	2	Male	50	Teacher	China	Hong Kong
Participant 45	2	Female	26	Businesswoman	China	Hong Kong
Participant 46	2	Female	30	Middle school teacher	China	Hong Kong
Participant 47	2	Female	24	Ph.D. student	China	Chengdu, Hong Kong
Participant 48	2	Male	30s	Ph.D. student	Nigeria	Hong Kong, Macau
Participant 49	2	Female	39	College teacher	Uganda	Hong Kong
Participant 50	2	Male	29	Software programmer	China	Hangzhou
Participant 51	2	Male	64	Retired	China	Beihai, Beijing
Participant 52	2	Male	52	Veteran soldier	China	Guilin
Participant 53	2	Male	20s	Researcher	Egypt	Hong Kong
Participant 54	2	Male	26	Engineer	China	Hong Kong
Participant 55	2	Male	26	Travel agent	China	Chaozhou, Xiamen
Participant 56	2	Female	45	Marketing	China	Hong Kong, Rome
Participant 57	2	Female	26	Engineer	China	Beijing, Hong Kong, Shenzhen
Participant 58	2	Female	20s	Ph.D. student	China	Shenzhen

Participant 59	2		Female	27	Private company	China	Hong Kong

4.3.1 Qualitative data sampling method

Interviews were conducted at a time during the Covid-19 outbreak (March to October 2020) when travel was restricted and social distancing was strictly enforced. On-site interviews were not feasible. Therefore, most interviews and conversations were conducted online. Participants were recruited through purposive and snowball sampling methods. Purposive sampling entailed judgment (Churchill, 1979; Creswell & Plano Clark, 2007). It aimed at choosing the most insightful respondents for the research questions thus providing the most relevant information (Churchill, 1979; Creswell & Plano Clark, 2007). Snowball sampling was suitable because the researcher could not go to different urban destinations to encounter random participants, thus relying on the recommendation of interviewees for additional participants. Participant selection criteria included the experience of traveling to urban destinations within the past one year; equivalent gender split; diversity of age; and diversity of occupation.

4.3.2 Pilot test of interviews

Before starting formal interviews, pilot interviews were conducted to try the ease of recruiting respondents, the feasibility of interview protocol, and clarity of interview questions. Many ways were tried to recruit participants. Twenty emails were sent to users who posted comments on Booking.com and Dianping.com. This method did not succeed as only one person replied and declined to participate. Recruitment messages were posted on the author's and her supervisor's Wechat communities. Meanwhile, three international students who just arrived in Hong Kong shortly were acquainted with the author through campus social activities. They accepted the interview invitations and provided initial insights regarding their trips to different cities around the world. After pilot interviews, protocols were

adjusted, the duration of an interview was estimated to be 40 minutes, and recording devices were tested and adjusted. The interview protocol is provided in Appendix 2.

4.3.3 Formal interviews and conversations

At the beginning of the interviews, participants were required to recall their recent trips. Specifically, the beginning part inquired about the destinations, duration, accommodation, and travel party of their recent trips. Then, the meaning of pro-environmental behaviors was explained to them to make sure participants understand the topic that they were going to share. To avoid potential social desirability bias, participants were assured that truthful input was good enough. They were assured their inputs would be kept strictly confidential, would only be used for this academic research, and they would be kept anonymous. They could terminate the interview at any time without any consequence. Following that, the first major question asked interviewees to share what pro-environmental behaviors they had performed during their last trips. The second question asked respondents what factors, in general, had promoted them to perform pro-environmental behaviors at the destination. Then, the meaning of contextual forces was explained. The third and fourth major questions asked respondents to identify what contextual forces had influenced their pro-environmental behaviors during their trips and how they were influenced by contextual forces. In case clarification of pro-environmental behavior or contextual force was needed, an explanation was provided accordingly. Interviews were recorded and transcribed verbatim. Besides, detailed notes were concurrently taken to keep track of the dialogue and help ask follow-up questions. For conversations, notes were written down on the same day of the conversation.

Forty-seven interviews and conversations were conducted in Chinese, and the rest twelve were conducted in English, depending on the language skills of the participants. The author of this thesis and

the three external coders are fluent in both Chinese and English, so translation was not needed in the qualitative analysis stage.

4.3.4 Content analysis

Content analysis approach was employed to analyze the qualitative data obtained from interviews (Creswell & Plano Clark, 2007; DeVellis, 2017). Content analysis is a common method in scale development to extract measurement items (DeVellis, 2017). Hsieh and Shannon (2005) suggested content analysis was a useful tool for analyzing interviews given its ability in exploring, partitioning, and categorizing themes. Content analysis in this study involved four stages as follows (Creswell & Clark, 2007).

The first stage of the content analysis was to prepare the collected data for analysis. Based on the principles of inductive inquiries, no categories were imposed on the data (Creswell & Clark, 2007). The second stage involved exploring the data. Based on the overall comprehension, initial ideas of coding were generated. To enhance the validity of codes, two independent coders were invited to code a few interviews. The two external coders were tourism scholars who specialized in qualitative methods. Then codes and themes were compared and discussed. Upon comparison and discussion, codes were refined and all codes were unified among the three coders. Besides, the underlying dimensions among codes, the homogeneity within a dimension, and heterogeneity amongst dimensions were discussed among the three coders. For example, given the uniqueness of promotional activities, this theme was separated from the "Resident support" dimension and was named engaging campaign/activity.

The third stage was to code all the scripts in detail. As suggested by previous studies, manual or electronic coding is a choice of the researcher, depending on the size of the project, fund, and inclination of the coder (Basit, 2003). Manual coding was more advantageous in the study because

multiple coders were involved. Manual coding was free of a computer and software thus more convenient for coding and discussion. Secondly, the use of the software involves a license charge, access to the same software, and familiarity with the functions of the software. Thirdly, the data size is well within the ability of manual coding. Based on the above considerations, manual coding was preferred.

4.3.5 Validity and reliability of qualitative analysis

Qualitative validation and reliability were established through member checking and the multiple coder approach (Creswell & Plano Clark, 2007). Member checking was adopted to ensure validation (Creswell & Plano Clark, 2007). Five participants were invited to validate the content validity. One of them was unavailable. A summary of the findings was sent to the other four participants (Participants 15, 19, 26, and 32). All of them responded that there was no evident discrepancy between the findings and their experiences. Thus, a high level of validation was achieved.

Reliability was ensured through the inter-coder technique (Creswell & Plano Clark, 2007). An additional external coder was invited to independently code 30% of randomly selected scripts under the coding frame. Codes were compared and divergent areas were discussed and resolved. Accordingly, scrutiny and adjustment were made throughout the data, so as to achieve a high level of coding reliability.

4.3.6 Qualitative research findings

Nine dimensions were identified from the content analysis. They are the supportive big environment, engaging campaign/activity, cost efficiency, environmental quality, facility readiness, policy effectiveness, resident support, effective signage, and travel partner influence. The following

sections present the results of the dimensions according to the alphabetical order of the names of the dimensions.

4.3.6.1 Supportive big environment

A macro-environment where the government and media emphasize the importance of sustainability was reported by tourists as a force to elicit pro-environmental actions. A number of participants stated pro-environmentalism is a trend of life nowadays, and keywords such as sustainable development, green lifestyle, and reducing food waste are frequently featured by the country's leaders, thus the "big environment" of sustainable development was sensed by them. Participant 13 said that people now care more about the environment because they are a member of the "big environment". From government to local community, environmental protection was frequently promoted. On the national level, leaders incorporated sustainability as an important developmental direction for the country. All levels of government have work plans on sustainability. Participant 16 thought that nowadays, people knew environmental protection was important.

Some participants expressed that exhibiting pro-environmental behaviors was a way to contribute to society. This idea is manifested in Participant 7's answers: she wanted to help the country. Participant 19 expressed the same idea in another way. She felt indulging herself could bring her comfort, but it was not good for the future generations and "definitely not good for our country" (p.4). Participant 52 felt much money had been devoted to making the environment better. He felt common people would like to support environmental protection because these efforts would benefit everyone.

Participant 22 reinforced the idea of the "big environment" that the whole country promotes pro-environmentalism. She found media coverage discussed many environmental issues. It had become a major topic and an overall trend of life in society. Participant 12 said she read news articles about

plastic garbage and felt bad for the animals who died from swallowing plastic particles. Participant 27 shared that the media discussed a lot of environmentalism. He felt that environmental pollution was very serious. Participant 16 said under the "big environment", people subconsciously engage in pro-environmental actions.

4.3.6.2 Engaging campaign/activity

Different kinds of promotional campaigns and activities were stated as contextual forces to provoke pro-environmental behaviors. Participant 30 shared what she saw in the "Build a Civilized City" campaign ("创建文明城市"). This kind of mega campaign aims at elevating the overall living environment in cities. Metrics are used to assess the improvement, including per capita green space, air pollution indices, energy conservation, and emission reduction (ACCW, 2020). Public service agencies are widely mobilized in cleaning services such as sweeping the dirty areas in markets, reinforcing traffic rules, advocating personal behaviors including no-littering and no-spitting, keeping clean, and voice volume control in public areas. Workers and volunteers are working on the streets. Participants 13 and 30 said these campaigns at tourism destinations influenced their residents and visitors including them. In scenic spots, activities such as zero-garbage campaigns were also advocated (Hu, Zhang, Wang, Yu, & Chu, 2019).

Commercial sectors also initiated different activities to promote pro-environmentalism. Participant 20 remembered that in a café, she noticed a poster calling for reducing the use of straws. She joined this campaign and did not use a straw for her drink. Participant 59 added that after joining the "Monday No Straw" activity in Hong Kong, she also reduced her use of straws at home. Participant 12 noticed her hotel called for recycling moon-cake boxes. Although she didn't send her box at that time, she thought the activity was "very good"(p.3).

Tourists may encounter various kinds of pro-environmental campaigns and activities when they visit cities where people care about the well-being of the environment. These engaging campaigns and activities can raise pro-environmental awareness among tourists, as well as provoke pro-environmental behaviors on site.

4.6.6.3 Cost efficiency

Respondents expressed that they would consider the cost when considering PEBs. Participant 56 stated in her family culture, it was a tradition to be austere. "People can be rich, but shall never be wasteful" (Participant 56, p.2). Respondents found that in many cases, choosing the pro-environmental product/service can save money. In many cases, the cost for the pro-environmental option was not necessarily more expensive or even cheaper, so they would be happy to choose them. Participant 30 said, on the tour in Guangzhou, their choice of using the bicycle was very wise. She recalled it was a quick decision because the shared bicycle was conveniently available and was much cheaper than using a taxi. Participant 17 said, supermarkets commonly charge some money for plastic bags so they used their shopping bags. Participant 7 also said she brought her own water to avoid buying the expensive bottled water at tourist spots, which were often unreasonably more expensive than sold in other markets. To save money was reported as a major reason for choosing pro-environmental products. Thus, cost efficiency is one important contextual factor.

Even though respondents' impression that the eco-labeled products, such as fruits, meat, and food containers were often more expensive, they would still think about choosing them. As participant 39 expressed, their consideration lied in the belief that ecologically friendly products had used fewer harmful ingredients during the process of growing or production. These products were advertised as not harmful to their health, so they could still consider them, but they expected eco-labeled products not to be too expensive.

Participant 3 agreed economic motivation was one of the major considerations and added that rewards could stimulate PEBs. She remembered when she declined cashiers' offer of complimentary bags and tableware (such as spoons), she always got a loud "thank you" from them. Based on her experience of traveling to several cities, Participant 7 suggested that it would be a good idea to give guests some rewards if they declined daily housekeeping. As the pro-environmental alternatives can also benefit the service provider, such as in hotels and buffet venues, guests would be encouraged to be pro-environmental if they get rewarded. These rewards could be small, such as some membership points, coupons, and explicitly expressed appreciation.

4.6.6.4 Environmental quality

The majority of participants expressed that a good environment propels them to treat the environment friendly. Cleanness is a prominent theme in their statements about the perceived environmental quality of a city. Participant 1 said Hong Kong looked clean. He didn't litter in Hong Kong, because "when you are in a clean place, you will automatically want to protect keep it clean" (p.1). Participant 33 noted Japan was extremely clean. She felt the cleanness reflected the Japanese attitude towards the environment, and this perception exerted a regulating influence on her. Just like "act as Romans when you are in Rome", she said must always keep up to the local standard.

Participant 4 found Wuhan is now cleaner than a few years ago when she had a few trips, and the East Lake looks very comfortable. She happily expressed that "the roads are wider, flatter, and cleaner…in a good environment, naturally people have the desire to keep it good" (p. 1). Similarly, Participant 34 was impressed by Beijing's city landscape and planning. She said "Beijing's museums look beautiful. The whole city planning is much better than in my hometown. The areas around Tiananmen are very neat. You won't want to break something that you like. It is sub-consciousness" (p. 2).

In addition to cleanness and tidiness, beauty is an integral part of perceived good environmental quality. Participant 20 mentioned she enjoyed the beautiful natural scenery and never thought about destroying it. Participant 31 mentioned the green plantation invoked people's pro-environmental awareness. Participant 32 used a metaphor to express her opinion that in a nice place, people would appreciate the beautiful environment like appreciating a beautiful girl. No motivation would she have to tamper in a good environment.

On the contrary, the dirty and messy environment leaves a message that it is fine to loosen self-control. "My feeling about Cambodia is very bad. People drop garbage. In that situation, my littering seems not too bad, because all others are like that" (Participant 33, p. 3).

4.3.6.5 Facility readiness

This dimension concerns pro-environmental facilities in the city. When tourists are ready to enact their pro-environmental intention, the necessary infrastructure is indispensable for an action to be carried out. The need for relevant facilities is repeated. Participant 13 expressed that "overall, the hardware is an important external factor. If the facilities are not up to the need, it will affect the overall experience…and reduce the people's awareness of environmental protection." Participant 26 expressed that "there is no garbage bin, so people have to throw garbage to the ground. Without these facilities, it's hard for us to behave properly" (p.2). Participant 7 also expressed that in some crowded scenic areas, garbage bins were insufficient. "People have to go around, and many people are not able to throw the garbage." She pointed out that proper management of facilities is very important for pro-environmental behaviors.

The facility is not only useful as an enabler but also a signal to draw people's attention to environmental protection. As Participant 26 said "because there are facilities, it reminds us to conform

with the rules" (p.2). Participant 33 expressed that in Japan, the well-established garbage sorting stations impressed her. Japan was overall very clean and recycling facilities are conveniently located in the right spots. She also saw pick-up services offered to every household at their doors. She said the advanced facilities signify the Japanese' concern about the environment, which exerted a regulating effect for her to keep it clean.

It's also found that when tourists can conveniently access pro-environmental facilities, they are more willing to choose the pro-environmental alternatives. Participant 30 said in Guangzhou, she chose to use a shared bike instead of calling a taxi, as she saw the bikes were just nearby and ready to use. In contrast, Participant 11, based on his experience in Hong Kong, Macau, and Isreal, summarized that the ease of use of public facilities is important for tourists. He expressed that as a tourist, he had faced many challenges with public transport even though he wanted to use it. There may be a language barrier for tourists. They may not know how to use foreign facilities. An initial investment must be made if a local transport card is to be purchased. In addition, tourists may not know how to use the system. Therefore, he chose private transport, i.e., a taxi, to avoid all the inconveniences. Thus, the friendliness of facilities seems vital.

On some occasions, pro-environmental behaviors are made mandatory when green services/ products are provided. Participant 12 noted that in some scenic spots, tourists have to take the eco-bus because private cars are not allowed. She commented "this practice is very good" (p. 3), as it contributes to the realization of tourists' wish of protecting the natural environment of the scenic sites. Summarized from the interviews, it is found that the availability of facilities are outside tourists' control, and are necessary for acting pro-environmentally in cities.

4.3.6.6 Policy effectiveness

Tourists tend to be careful when traveling, and they can understand the regulations of the destination city. Commonly, respondents said they would abide by local regulations and policies. For example, Participant 2 said obeying local rules was very important as he was a guest and should respect the host community. Apart from respect, respondents also understand there can be a cost for disobeying local regulations. They exemplified that in destinations, such as Singapore, regulatory measures were very stringent, and they didn't want to be caught by the police. Therefore, they were very careful about their behaviors. When respondents traveled to Hong Kong, they learned about Hong Kong's fines for breaking the laws. In Mainland cities, regulations are noted concerning littering, smoking, and protecting precious species and vulnerable areas. Though the specifications and stringency of regulations vary, tourists shared a common agreement of observing local regulations.

Respondents also shared how they learned about local regulations as guests. Participant 2 said he knew it from his friends in Japan. Participant 58 said she learned the garbage separation policy of Shenzhen over casual conversations with her uncle. Participant 16 said their tour escorts told the group certain behaviors may lead to fines in Hong Kong. Participant 4 said warning messages were highly visible and seemed to be posted everywhere such as in signage and broadcasts. Indeed, regulations are made visible to the public and are communicated to the public by multiple means.

4.3.6.7 Resident support

Resident support of pro-environmentalism at the destination was found to be an influencer of a tourist's PEBs. When people visit a destination for tourism, they would pay attention to residents' behaviors and try to understand this city, especially when the cultural distance is salient (Ahn & McKercher, 2015). Participant 2, Participant 23, and Participant 33 felt Japan was a very pro-

environmental country. Its citizens carefully utilized their resources and preserved their environment. Participant 16 had an impression that Hong Kong had always been highly concerned about environmental issues. He expressed that as early as in the British colonization time, Hong Kong had been passionate about preserving the mountains and green areas from development, even though the residents had to sacrifice and endure limited housing spaces. Participant 19 said "I am interested in observing Changsha because it is very different from my hometown. I am curious about everything about it. I wondered what can this city offer apart from my schedule? What is unique in this city?... I noticed Leifeng was an icon of the spirit of this city… environmental protection was also emphasized in its advertisements…"(p.2).

A spill-over was found between residents' pro-environmentalist and tourists' PEBs. As a saying goes "act as the Romans when you are in Rome", participants tended to refer to the acts of local people. When participants perceived the city's shared value, they showed a tendency to conform to it. Participant 3 expressed "I would adapt to the style of the city. To feel its unique charm…Would be happy to adjust myself to fit its requirement, to cooperate with this city" (p.3). Participant 34 observed common residents in Beijing seem to have an austere life. She reasoned that people from a richer city carefully preserve resources, then, herself, from a small county, had no reason to be wasteful. Participant 26 expressed a similar idea that residents in Shanghai had high "qualities". "Their 'qualities' definitely influenced your behaviors" (p.2).

Several participants also expressed the embarrassment of breaking the local norms. Participant 19 described how she was reminded by a student when she accidentally dropped a used tissue paper on the metro in Changsha. Participants 2, 21, and 59 saw people were reminded by locals when they unintentionally dropped garbage on the ground. They felt that locals were concerned and they would like to identify with the values of the host city.

4.3.6.8 Signage saliency

Pro-environmental signage means short messages to incite pro-environmental behaviors. As environmental protection and green lifestyle have become trendy themes in Mainland Chinese societies, pro-environmental signage is posted in populous areas such as public transport terminals, scenic spots, entrances of residence complexes, and government billboards. Signage often conveys messages about what should and should not be done. Participants reported that salient signage could immediately prompt easy pro-environmental behaviors. Signage is instructive and calls for certain actions, such as "leave nothing but your footprint" and "please save paper". Signage can also be a deterrent to harmful behaviors, such as "do not step on grass" and "no smoking here". Some signage is so colloquial that tourists can easily memorize them. One most widespread pro-environmental message is "clear waters and green mountains are silvers and golds" (绿水青山就是金山银山). Participants think that frequent exposure to pro-environmental signage can raise people's awareness about the importance of environmental protection. Participant 26 also said that a sign serves as a manifestation of the agreed rule and can be used to remind others.

4.3.6.9 Travel partner influence

Another dimension of pro-environmental contextual forces comes from other people's behavior. In many cases, tourists travel with partners. They are also surrounded by other tourists, working personnel, residents, and volunteers. Normally, travel partners share certain mutual interests and values. During the travel, they would take other people's choices as references for their own decisions. Participant 13 shared that "travel partners influence each other. This is somewhat an exemplar effect. Some participants will regard themselves as a role model, and take the initiative in modeling for environmental protection" (p.3). Participant 7 mentioned she reminded her travel partners to protect

the environment. Participant 9 agreed that her three travel partners influenced each other when discussing if they should walk a long way to throw the garbage. They also chatted and agreed to release the crabs back to the sea. Family travelers, Participants 1, 3, and 32 said they want to let their children know they should always protect the public assets, thus they do so during the trips.

Participant 1 added that his tour escort was a source of influence for group tourists' behaviors. Participant 16 resonated with this opinion and recalled that his tour guide introduced basic behavioral codes for Hong Kong, including non-littering and non-smoking in forbidden areas. The tour escort also warned disobeying these codes can lead to sanctions. Participant 16 further emphasized that a tour escort's words are very influential because he serves as the head of the travel team. A tour escort helps tourists from the start of the journey, and tourists trust him/her.

Reminders also come from cleaning workers in the destination. In Chinese cities, sanitation workers are often seen in public areas. As Participant 1 indicated, their laborious work aroused people's sympathy. "I know from TV programs that this is a very tiring and low-paying type of work. When you see they are doing the hard work there, you have some feelings in your heart (sympathy). You don't want to create more workload for them. Instead, you would treasure their achievement by doing your part (not littering, etc.) well. Sometimes, I also go to help them" (p. 2). Keeping the environment clean is a way of respecting sanitation workers. They clean up the environment, raise tourists' consciousness by their acts, and in some cases directly criticize tourists' inappropriate actions.

Similar to sanitation workers, volunteers are also seen in cities to clean up, provide instruction, and advocate for environmental protection. They usually dress in uniforms (e.g., red vests) with slogans and prints. When seeing them volunteer their time for the public good, common tourists are aroused to cooperate with their good deeds. Guards are also mentioned as an effective source of reminding.

Participants 7, 21, and 52 indicated when guards are patrolling, tourists are less bold for undesirable behaviors.

From the analysis of the interview data, it is concluded that the above nine aspects can be managed as encouraging of urban travelers' PEBs. In other words, the sense of a supportive big environment, the engaging campaigns/activities, cost efficiency, a high-quality environment of the destination, the ready facilities, effective environmental protection policies, strong local residents' support of pro-environmental actions, salient on-site pro-environmental signage, and the influential reminders of travel partners can elicit PEBs from tourists. Accordingly, items should be crafted in a way that a higher rating for an item indicates a more encouraging contextual force.

4.4 Generation of an item pool

Based on the content analysis of interviews and a few existing studies, items to represent each dimension of the pro-environmental contextual force were generated. To enhance the external validity of the items, in October and November 2020, the items were discussed by a specialist panel. The discussion was moderated by the author and involved two fellow Ph.D. students and one tourist. The two Ph.D. fellows specialized in tourism and were knowledgeable in scale development. The discussion concerned the relevance, adequacy, clarity, and format of each item. In the meantime, the scaling of the measures was also discussed. To stay consistent with previous studies (Liu et al., 2019; Wan et al., 2014), the scaling of items was agreed to be Likert scale, and the anchors were set at 1=strongly disagree and 7=strongly agree (Wan et al., 2014).

Through the panel discussion, the content validity of items was ascertained. The wording of each item was made clear, redundancy was reduced, and the distinction among items was enhanced. Out of this step, a pool of 72 items under 9 dimensions was prepared for expert review as shown in Table 2.

Table 2: Pro-environmental contextual force items for expert review.

1. Cost efficiency
0101. Overall, I think pro-environmental products/services are not more expensive than normal ones.
0102. Overall, I think pro-environmental actions do not cost much money, time, and effort in this city.
0103. Overall, I think acting pro-environmentally in this city can save me money.
0104. Overall, I think acting pro-environmentally in this city can get me some financial reward.
0105. Overall, I think acting pro-environmentally in this city can get me some small gifts.
0106. Overall, I think acting pro-environmentally in this city will get me some honorary rewards.
2. Engaging campaign/activity
0201. Overall, I think the local government organizes a lot of pro-environmental campaigns in this city (e.g., the "establishing clean city" campaign).
0202. Overall, I think the business community holds various activities to support environmental protection (e.g., no utensil default for take-away, paper bag/straw options).
0203. Overall, I think many NGOs organize pro-environmental activities in this city (e.g., clothe recycling).
0204. Overall, I think many communities organize pro-environmental activities in this city (e.g., turning off lights for one hour).
0205. Overall, I think many volunteers organize pro-environmental activities in this city.
3. Environmental quality
0301. Overall, I think this city is clean.
0302. Overall, I think this city is tidy.
0303. Overall, I think this city is beautiful.
0304. Overall, I think this city has a good ecological landscape.
0305. Overall, I think this city has done a good job of greening itself.
0306. Overall, I think buildings in this city harmonize with the natural environment.
0307. Overall, I don't feel environmental pollution in this city.
0308. Overall, I don't feel noise pollution in this city.
0309. Overall, I think the natural environment is well preserved in this city.
0310. Overall, I think there are various kinds of animals and plants.
0311. Overall, I think there are many opportunities to experience nature in this city.
0312. Overall, I think the air quality is good in this city.
0313. Overall, I think the water quality is good in this city.
4. Facility readiness

0401. Overall, I think this city has provided many kinds of pro-environmental facilities (e.g., recycle bins, green buses).
0402. Overall, I think there are sufficient pro-environmental facilities in this city.
0403. Overall, I think it is convenient to find pro-environmental facilities in this city.
0404. Overall, I think pro-environmental facilities are easy to use in this city.
0405. Overall, I think the pro-environmental facilities are well maintained.
0406. Overall, I think there are many opportunities to perform pro-environmental activities in this city.
5. Policy effectiveness
0501. Overall, I think there are clear pro-environmental regulations in this city.
0502. I think this city provides detailed pro-environmental behavioral instructions (e.g., garbage separation guidelines).
0503. Overall, I think the city government has advertised the benefits of protecting the environment.
0504. Overall, I feel the city government's policies have encouraged me to behave pro-environmentally.
0505. Overall, I feel the city government's pots facilitated me to behave pro-environmentally.
0506. Overall, I think this city strictly follows environmental regulations.
0507. Overall, I think environmentally harmful behaviors will be punished in this city.
0508. Overall, I think this city is monitoring the environmental quality.
0509. Overall, I think the city's pro-environmental policies are effective.
0510. Overall, I feel this city has invested a large amount of money in environmental protection.
0511. Overall, I think the city government has done a lot to push environmental protection.
0512. Overall, I think this city has a set of punitive measures against environmentally harmful behaviors.
6. Resident support
0601. Overall, I think this city cares much about the environment.
0602. Overall, I think this city has a tradition to respect the natural environment.
0603. Overall, I feel this city emphasizes environmental protection.
0604. Overall, I think this city upholds a strong pro-environmental value.
0605. Overall, I think residents of this city emphasize obeying pro-environmental behavioral rules.
0606. Overall, I think there are many pro-environmental advertisements and publicity in this city.
0607. Overall, I think the residents of this city are self-motivated to perform pro-environmental behaviors.
0608. Overall, I think the citizens support environmental protection.
0609. Overall, I think residents often talk about topics about environmental issues.
7. Signage saliency
0701. Overall, I think there is a lot of pro-environmental signage in this city.
0702. Overall, I think there are multiple forms of pro-environmental reminders in this city (e.g., mobile phone messages, electronic messages on the screen, print messages).
0703. Overall, I think pro-environmental signage in this city can capture my attention.
0704. Overall, I think the pro-environmental signage conveys clear information.
0705. Overall, I think the pro-environmental signage in this city is easy to understand.
0706. Overall, I think the pro-environmental signage is posted in key areas in this city.
0707. Overall, the pro-environmental signage looks nice in this city.
0708. Overall, the design of the pro-environmental signage has achieved an optimal effect.

0709. Overall, I think pro-environmental signage in this city is encouraging.
8. Supportive big environment
0801. Overall, I feel our top country leaders emphasize sustainable development.
0802. Overall, I feel the government put a lot of effort into leading sustainable development.
0803. Overall, I feel the overall private sector is trying to develop in a sustainable way.
0804. Overall, I feel more and more people recognize sustainable development.
0805. Overall, I feel environmental problems are very severe.
0806. Overall, I feel the media often report environmental problems.
9. Travel partner influence
0901. Overall, I think my travel partners remind each other about environmental protection.
0902. Overall, I think my travel partners are attentive to environmental protection.
0903. Overall, I think tourists in this city pay attention to environmental protection.
0904. Overall, I think this city has lots of workers to maintain environmental quality.
0905. Overall, I think many volunteers are protecting the environment in this city.
0906. Overall, I feel environmentally harmful behaviors will be despised by citizens here.

4.5 Expert review of pro-environmental contextual force items

The initial 72 items were then sent to an expert panel for reviewing the content validity, clarity, conciseness, and adequacy (Churchill, 1979; DeVellis, 2017). The expert panel included two professors, one research assistant professor, two tourism scholars, and two tourists as shown in Table 3. All academicians had expertise in tourism research, scale development, and quantitative methods. The two tourists had recent experience of traveling to urban destinations. Experts rated each item on a 3-point scale from 1 (not relevant at all) to 3 (very relevant). A sample of the expert review form can be found in Appendix 3. The items with a score below 14 were regarded as candidate items for deletion or revision. Experts were also requested to comment on items that they thought problematic and to provide suggestions for improvement. Every rating and comment was considered, but as DeVellis (2017) suggested, the final decision of retaining or deleting an item should be made by the researcher. Based on expert ratings and comments, 8 items were deleted because of low relevance to urban tourism or because they were out of the control of tourists. Three items were rephrased to avoid possible social desirability bias, and examples were attached to six items to enhance clarity. With the assistance of

experts, the content validity of the items was assured. After expert review, 64 pro-environmental

contextual force items were ready for a pilot test with empirical data.

Table 3: Expert panel for the pro-environmental contextual force scale.

No.	Gender	Position
Expert 1	Female	Professor
Expert 2	Male	Professor
Expert 3	Female	Assistant professor
Expert 4	Female	Tourism scholar
Expert 5	Male	Tourism scholar
Expert 6	Female	Tourist
Expert 7	Male	Tourist

4.6 Pre-test and pilot test

A pre-test was conducted before the pilot test. Four tourists who visited Shanghai in the past

one year joined the pre-test. They were interviewed after they finished filling the questionnaires,

regarding the ease of comprehending questions, their logic of answering questions, and any issues with

the questionnaire. Their feedback showed no concern with the questionnaire.

A pilot study shall be conducted to purify the scale (Churchill, 1979; DeVellis, 2017). Because

of budget restriction, the pilot studies of Study 1 and Study 2 shared the same questionnaire, as shown

in Appendix 5. The questionnaire comprised four parts. Part one asked respondents to recall their most

recent trips to an urban destination and answer questions including which city did they visit, the time

of visitation, the main purpose of the trip, whether it was a package tour, the travel party, and the length

of stay. Only respondents who had traveled to Shanghai within the past month, with partners, and had

stayed in hotels for at least two nights were eligible for the pilot test. Part two asked respondents to

continue to recall the most recent trip to Shanghai, and rate the 64 contextual force items based on their

experience in Shanghai. Part three, which was for the pilot study of Study 2, asked respondents to rate

the frequency of performing specific PEBs during the most recent trip to Shanghai. Part four asked respondents' personal particulars, including gender, age, income, and education.

The questionnaires were distributed by a research company under Shanghai Zongyan Technology Co. Ltd., through its online platform (www.wenjuan.com). Zongyan was established in 2008 and provides professional survey services and marketing solutions to industry, academic, and government partners (Zongyan, 2021). The questionnaire site was accessed by 6,742 people. Among them, 5,863 did not pass screening questions, 287 did not finish the survey, 262 people didn't pass attention check questions, and 330 respondents completed the questionnaires. The sample size (n=330) exceeded the minimum 5-to-1 participant-item ratio, thus was sufficient for a pilot study (Hair et al., 2010; Lee et al., 2013). Respondent demographics are shown in Table 4. Half of the participants were male. The majority of them (70%) are between 18 to 40 years old, and 83.9% of them have a personal monthly before-tax income between 5,000 to 15,000 Yuan, and 58.2% of them have a bachelor's degree or above.

Table 4: Respondent profile of pilot studies of Study 1 and Study 2 (n=330).

Variable	Category	Frequency	%
Gender	Male	165	50.0
	Female	165	50.0
	Total	330	100.0
Age	18~30	101	30.6
	31~40	130	39.4
	41~50	79	23.9
	51~60	20	6.1
	61 or above	0	0.0
	Total	330	100.0
Personal monthly before-tax income	3000 Yuan or below	0	0.0
	3001~5000 Yuan	20	6.1
	5001~10000 Yuan	132	40.0
	10001~15000 Yuan	145	43.9
	15001~20000 Yuan	29	8.8
	20001~25000 Yuan	4	1.2

	Total	330	100.0
Education	Primary school	0	0.0
	Middle school	0	0.0
	High/vocational school	11	3.3
	Three-year certificate	127	38.5
	Bachelor's degree	177	53.6
	Master's degree or above	15	4.5
	Total	330	100.0

4.7 EFA for pro-environmental contextual force

4.7.1 Data screening, reverse coding, and descriptive statistics

Following Brown (2006), -/+3 and -/+10 were adopted as thresholds for acceptable skewness and kurtosis. As shown in Table 5, all variables showed acceptable skewness ranging from -2.272 to -0.26 and kurtosis ranging from -0.849 to -8.764. Bartlett's test of Sphericity result was significant (X^2= 5368.511, sig.=0.000<0.5), KMO value=0.929. Thus, factorability was confirmed (Hair et al., 2010).

Table 5: Distribution of variables (n=330).

Item	Mean	Skewness	Kurtosis
Overall, I think there is a lot of pro-environmental signage in this city.	6.14	-0.971	1.669
Overall, I think there are multiple forms of pro-environmental reminders in this city (e.g., mobile phone messages, electronic messages on the screen, print messages).	5.91	-0.683	1.338
Overall, I think pro-environmental signage in this city can capture my attention.	6.12	-0.681	0.090
Overall, I think the pro-environmental signage in this city is easy to understand.	6.30	-0.751	0.364
Overall, I think the pro-environmental signage is posted in key areas in this city.	6.06	-1.284	4.415
Overall, I think this city is clean.	6.22	-0.421	-0.408
Overall, I think the air quality is good in this city.	5.72	-0.738	0.285
Overall, I think the water quality is good in this city.	5.65	-0.774	0.978
Overall, I don't feel environmental pollution in this city.	5.58	-0.673	0.351
Overall, I think this city is tidy.	6.24	-0.723	0.120

Overall, I think this city has done a good job of greening itself.	6.21	-0.677	0.109
Overall, I think buildings in this city harmonize with the natural environment.	5.99	-0.300	-0.776
Overall, I think this city has a good ecological landscape.	6.00	-0.702	0.844
Overall, I think the natural environment is well preserved in this city.	5.95	-0.841	0.793
Overall, I think there are many opportunities to experience nature in this city.	5.79	-0.938	0.690
Overall, I think there are various kinds of animals and plants.	5.58	-0.769	0.523
Overall, I think there are clear pro-environmental regulations in this city.	6.04	-0.460	-0.236
Overall, I think the city government has advertised the benefits of protecting the environment.	6.10	-0.332	-0.702
Overall, I feel the city government's policies have encouraged me to behave pro-environmentally.	6.05	-1.013	2.695
Overall, I feel the city government's pots facilitated me to behave pro-environmentally.	6.02	-0.839	1.135
Overall, I think this city provides detailed pro-environmental behavioral instructions (e.g., garbage separation guidelines).	6.21	-0.498	-0.617
I think this city strictly follows environmental regulations.	6.11	-0.731	0.519
Overall, I think this city has a set of punitive measures against environmentally harmful behaviors.	5.94	-0.645	0.966
Overall, I think environmentally harmful behaviors will be punished in this city.	5.95	-0.594	1.348
Overall, I think this city is monitoring the environmental quality.	6.07	-0.348	-0.669
Overall, I feel this city has invested a large amount of money in environmental protection.	6.05	-0.605	-0.034
Overall, I think the city government has done a lot to push environmental protection.	6.12	-0.573	0.221
Overall, I think this city has provided many kinds of pro-environmental facilities (e.g., recycle bins, green buses).	6.26	-1.003	2.575
Overall, I think there are sufficient pro-environmental facilities in this city.	6.05	-1.226	4.239
Overall, I think it is convenient to find pro-environmental facilities in this city.	6.02	-1.245	4.971
Overall, I think pro-environmental facilities are easy to use in this city.	6.03	-0.452	0.010
Overall, I think the pro-environmental facilities are well maintained.	6.03	-0.545	0.349

Overall, I think my travel partners remind each other about environmental protection.	6.05	-1.069	2.631
Overall, I think my travel partners are attentive to environmental protection.	6.12	-0.426	-0.198
Overall, I feel my travel partners despise intentional anti-environmental behaviors.	6.10	-2.272	8.764
Overall, I think people in this city pay attention to environmental protection.	6.01	-0.260	-0.632
Overall, I think this city has lots of workers to maintain environmental quality.	6.04	-0.477	0.103
Overall, I think many volunteers are protecting the environment in this city.	5.97	-0.666	0.141
Overall, I feel environmentally harmful behaviors will be despised by people here.	6.09	-1.330	4.437
Overall, I feel our top country leaders emphasize sustainable development.	6.30	-0.619	-0.503
Overall, I feel the government put a lot of effort into leading sustainable development.	6.17	-0.369	-0.849
Overall, I feel the Overall private sector is trying to develop in a sustainable way.	6.10	-0.580	0.280
Overall, I feel the media often report environmental problems.	6.06	-0.583	0.009
Overall, I feel the media extensively advertise environmentalism.	6.15	-0.382	-0.472
Overall, I feel the society promotes environmental protection.	6.28	-0.571	0.061
Overall, I feel more and more people recognize sustainable development.	6.31	-0.891	1.289
Young people are more friendly to the environment.	6.11	-0.590	0.459
Overall, I think pro-environmental products/services are not more expensive than normal ones.	5.61	-0.546	0.050
Overall, I think pro-environmental actions do not cost much money, time, and effort in this city.	5.48	-1.059	1.279
Overall, I think acting pro-environmentally in this city can save me money.	5.45	-0.661	0.321
Overall, I think acting pro-environmentally in this city can get me some financial reward.	5.31	-0.740	0.354
Overall, I think acting pro-environmentally in this city can get me some small gifts.	5.27	-0.627	0.492
Overall, I think this city has a tradition to respect the natural environment.	5.92	-0.528	-0.305
Overall, I feel this city emphasizes environmental protection.	6.34	-0.694	-0.327
Overall, I think this city upholds a strong pro-environmental value.	6.28	-0.842	0.456

Overall, I think there are many pro-environmental advertisements and publicity in this city.	6.10	-0.731	0.688
Overall, I think residents of this city emphasize obeying pro-environmental behavioral rules.	6.17	-0.601	0.066
Overall, I think the residents of this city are self-motivated to perform pro-environmental behaviors.	6.14	-0.513	-0.506
Overall, I think the citizens support environmental protection.	6.25	-0.659	-0.098
Overall, I think residents often talk about topics about environmental issues.	5.78	-0.615	0.370
Overall, I think many NGOs organize pro-environmental activities in this city (e.g., clothe recycling).	5.95	-0.506	0.244
Overall, I think many communities organize pro-environmental activities in this city (e.g., turning off lights for one hour).	5.85	-0.499	-0.435
Overall, I think the local government organizes a lot of pro-environmental campaigns in this city (e.g., the "establishing clean city" campaign).	6.12	-0.667	0.461
Overall, I think the business community holds various activities to support environmental protection (e.g., no utensil default for take-away, paper bag/straw options).	6.07	-0.561	0.461

4.7.2 Results of EFA

EFA was conducted to explore the dimensionality of the pro-environmental contextual force. Numerous rounds of extraction and rotation were tried in SPSS 26.0 using methods including Principal Component Analysis and Promax rotation (Hair et al., 2010). Items with low factor loadings (<0.35), significant cross-loadings (both above 0.35), and low commonality (<0.4) were deleted (Hair et al., 2010; Stevens, 2002). As shown in Table 6, after refinement, 42 items were retained, producing a 9-dimension factor structure. Scree inspection (shown in Figure 5) and latent root criterion (i.e., eigenvalue>1) supported the 9-factor solution. This solution accounted for 56.788% of the total variance. Internal consistency was examined using Cronbach's alpha coefficient and 0.6 was used as the threshold for exploratory studies (Hair, 2010; Hair et al., 2019). One factor (supportive big

environment) had an internal consistency of 0.596. Considering the difference from the recommended threshold was tiny (0.004), this factor was retained.
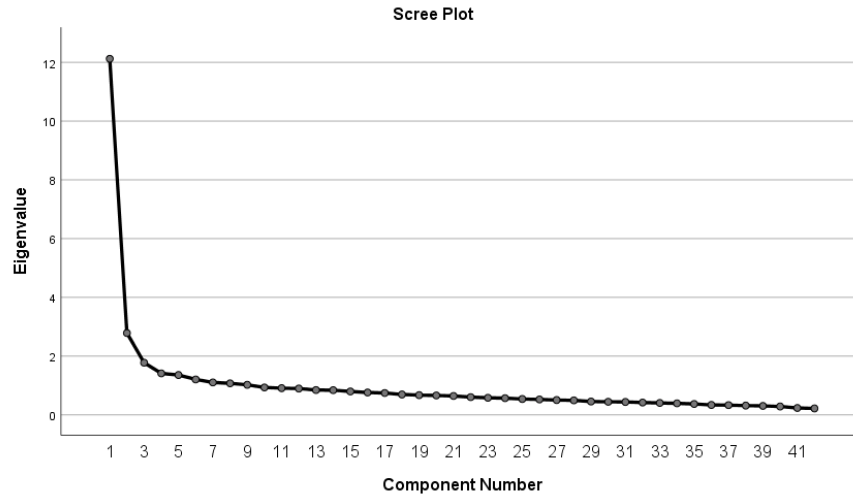
Figure 5: Scree plot of EFA of contextual force (n=330).

Table 6: EFA results of contextual force scale (n=330).

Item	EQ	SS	CE	PE	FR	RS	EC/A	SBE	TPI
There are various kinds of breeding animals and plants	0.839								
Overall, I think the water quality is good in this city.	0.733								
The air quality is good in this city.	0.700								
There are many opportunities to experience nature in this city	0.664								
I don't feel environmental pollution in this city	0.633								
This city has a tradition to respect the natural environment	0.575								
Buildings in this city harmonize with the natural environment	0.498								
There are many pro-environmental advertisements and publicity in this city		0.729							
The pro-environmental signage is posted in key areas in this city		0.676							
There are a lot of pro-environmental signage in this city		0.656							

I think residents often talk about topics about environmental issues	0.570							
I think the local government organizes a lot of pro-environmental campaigns in this city (e.g., the "establishing clean city" campaign).	0.521							
Many communities organize pro-environmental activities in this city (e.g., Turning off lights for one hour).	0.355							
Overall, I think acting pro-environmentally in this city can get me some small gifts.		0.771						
Acting pro-environmentally in this city can get me some financial reward.		0.690						
Acting pro-environmentally in this city can save me money.		0.680						
Pro-environmental products/services are not more expensive than normal ones.		0.668						
Overall, I think this city has lots of workers to maintain environmental quality			0.729					
The city government has done a lot to push environmental protection			0.630					
This city has a set of punitive measures against environmentally harmful behaviors			0.509					
There are clear pro-environmental regulations in this city			0.403					
I feel this city has invested a large amount of money in environmental protection			0.402					
It is convenient to find pro-environmental facilities in this city.				0.784				
Pro-environmental facilities are easy to use in this city				0.648				
The city government has advertised the benefits of protecting the environment.				0.584				
Overall, I think there are sufficient pro-environmental facilities in this city				0.454				
This city has provided many kinds of pro-environmental facilities (e.g., Recycle bins, green buses)				0.352				
This city has done a good job of greening itself					0.668			
This city is clean					0.640			

	CE	EQ	FR	EC/A	PE	RS	SBE	SS	TPI
The citizens support environmental protection						0.539			
Many NGOs organize pro-environmental activities in this city (e.g., Clothe recycling).						0.783			
The business community holds various activities to support environmental protection (e.g., No utensil default for take-away, paper bag/straw options)						0.647			
More and more people recognize sustainable development						0.492			
Overall, I think this city strictly follows environmental regulations.						0.464			
People are interested in environmental protection in Shanghai						0.398			
Our top country leaders emphasize sustainable development							0.796		
The society advocates green life							0.649		
Overall, I feel the governments put a lot of effort into leading sustainable development							0.559		
My travel partners are attentive to environmental protection									0.759
The media often report environmental problems									0.705
Overall, I feel the media often report environmental problems									0.433
My travel partners remind each other about environmental protection									0.424
Cronbach's alpha	0.865	0.817	0.768	0.732	0.712	0.686	0.702	0.596	0.651

Notes: CE=cost efficiency, EQ=environmental quality, FR=facility readiness, EC/A= engaging campaign/activity, PE=policy effectiveness, RS=resident support, SBE=supportive big environment, SS=signage saliency, TPI=travel partner influence.

4.8 Pre-test for the main survey questionnaire

An online pre-test was conducted with 54 respondents to ensure the readability of the questionnaire for the main survey. An open-ended question was designed at the end of the questionnaire to check if respondents experience any problems with the language, logic, and overall design of the questionnaire. The pre-test also helped to make sure the established variables (e.g., attitude and pro-environmental subjective norm) were well translated and fit the context of this study. The profile of the

54 respondents is shown in Table 7. Based on pre-test results, two attention check questions were added. The question with examples was shifted to the first line in the block because this question was informative of the meaning of pro-environmental facilities thus helping with the understanding of the following questions. Construct internal consistency was examined in SPSS. Alpha values ranged from 0.767 to 0.905, all above the recommended threshold of 0.7 (Hair et al., 2010). These positive outcomes allowed for the main survey to proceed. Table 7 shows the alpha values from the pre-test.

Table 7: Profile of pre-test respondents (n=54).

Variable	Category	Frequency	%
Gender	Male	27	50.0
	Female	27	50.0
	Total	54	100.0
Age	18-30	21	38.9
	31-40	20	37.0
	41-50	11	20.4
	51-60	2	3.7
	Total	54	100.0
Personal before-tax income	3000 Yuan or below	5	9.3
	3001~5000 Yuan	11	20.4
	5001~10000 Yuan	16	29.6
	10001~15000 Yuan	15	27.8
	15001~20000 Yuan	5	9.3
	20001~25000 Yuan	2	3.7
	Total	54	100.0
Education	Primary school	0	0.0
	Middle school	0	0.0
	Vocational school	0	0.0
	Three-year diploma	6	11.1
	Bachelor's degree	44	81.5
	Master's degree or above	4	7.4
	Total	54	100.0

4.9 Main survey

Data collection for the main survey was conducted by another online survey company, The Kantar Group Limited, in April 2021. Kantar is a global research company providing insights and solutions to clients over the world (Kantar, 2021). The questionnaire comprised eight parts. Part one asked respondents about their attitude toward PEBs. Part two asked their perceptions of the social norms regarding PEBs. Part three asked respondents to recall their most recent trips to an urban destination and provide the travel information, including which city did they visit, the time of visitation, the main purpose of the trip, whether it was a package tour, the travel party, and the length of stay. These questions made sure the trip was made within the last one year, to Shanghai, and involved commercial accommodation for at least two nights. Part four was the major part of this questionnaire. It contained the contextual force items and asked respondents to rate these items based on the most recent trip to Shanghai. Part five asked respondents to provide their perception of control over performing PEBs in Shanghai. Part six asked about their actual PEBs in Shanghai during the most recent trip. Part seven asked about their PEB intention for the next visit to Shanghai. Part eight asked about respondents' personal particulars, including their age, gender, education, profession, and income. The questionnaire can be found in Appendix 6.

In total, 3,453 attempts were made to access the questionnaire and 604 complete responses were collected. A data cleaning process excluded 4 cases because of unreasonable answers to the open-ended questions. The final usable sample size was 600. The profile of the 600 respondents is shown in Table 8. Females and males were equally represented in the data. While all age groups were represented, the majority (71%) of respondents aged from 18 to 40. Most of them (89.8%) had a three-year or four-year college education. The majority (78.2%) had a personal monthly before-tax income between 5,000 to 20,000 RMB, allowing them to travel domestically.

Table 8: Respondent profile (n=600).

Variable	Category	Frequency	%
Gender	Male	302	50.3
	Female	298	49.7
	Total	600	100.0
Age	18-30	255	42.5
	31-40	171	28.5
	41-50	96	16.0
	51-60	23	3.8
	61-70	46	7.8
	71 and above	9	1.5
	Total	600	100.0
Personal monthly before-tax income	3000 Yuan or below	22	3.7
	3001~5000 Yuan	41	6.8
	5001~10000 Yuan	150	25.0
	10001~15000 Yuan	180	30.0
	15001~20000 Yuan	139	23.2
	20001~25000 Yuan	45	7.5
	Total	600	100.0
Education	Primary school	5	0.8
	Middle school	10	1.7
	Vocational school	26	4.3
	Three-year diploma	113	18.8
	Bachelor's degree	426	71.0
	Master's degree or above	20	3.3
	Total	600	100.0

Table 9 provides a descriptive analysis of all variables used in this study. The descriptive analysis found the 66 continuous variables exhibited a certain level of skewness (from -1.614 to -0.482) and kurtosis (-0.768 to +5.258). This means the data are generally slightly skewed and peaked but are within acceptable levels (Brown, 2006). While the normal distribution of data is desirable, PLS-SEM is a non-parametric test, therefore, does not require normal distribution (Hair et al., 2017).

Table 9: Descriptive analysis of continuous variables in Study 1 (n=600).

Construct	Item	Mean	Std. D	Skewness	Kurtosis
Attitude	For me, performing pro-environmental behaviors is Bad …Good	6.48	0.632	-0.839	-0.139
	For me, performing pro-environmental behaviors is Foolish …Wise	6.48	0.648	-1.020	0.800
	For me, performing pro-environmental behaviors is Unpleasant …Pleasant	6.46	0.699	-1.021	0.188
	For me, performing pro-environmental behaviors is Harmful … Beneficial	6.54	0.621	-1.089	0.523
	For me, performing pro-environmental behaviors is Unnecessary … Necessary	6.54	0.627	-1.051	0.225
Pro-environmental subjective norm	The important people…they would say/think I should act pro-environmentally	6.15	0.708	-0.568	0.436
	…they expect me to participate in environmental protection	6.27	0.813	-1.073	1.331
	…they would prefer/approve of behaving in an environmentally friendly way	6.23	0.757	-1.181	3.183
	…they appreciate if I perform pro-environmental actions	6.25	0.727	-0.948	2.160
	…they think that engaging in environmental protection is something that one ought to do	6.20	0.751	-0.723	0.903
PBC	Whether or not I behave pro-environmentally is up to me	5.85	0.979	-1.468	3.162
	I am confident that if I want, I can behave pro-environmentally	6.21	0.851	-1.171	2.676
	It is easy for me to behave pro-environmentally	6.12	0.766	-0.632	0.116
	I can behave pro-environmentally when I want to	6.12	0.840	-1.057	2.380
	I have resources, time, and opportunities to behave pro-environmentally	5.99	0.952	-1.276	2.561
Actual PEBs	I performed pro-environmental behaviors when traveling in Shanghai	6.10	0.709	-0.791	1.678
	I protected the environment when traveling in Shanghai	6.17	0.799	-0.581	-0.449
	I contributed to environmental protection when traveling in Shanghai	6.06	0.799	-0.584	-0.090
	I have done my best to protect the environment when traveling in Shanghai	6.07	0.828	-0.660	0.029
	I traveled in a sustainable way in Shanghai	5.96	0.879	-0.759	0.468
PEB intention for next visits	I am willing to behave pro-environmentally during my next trip to Shanghai	6.21	0.706	-0.890	1.819

	I plan to behave environmentally during my next trip to Shanghai	6.26	0.780	-0.716	-0.294
	I will expend effort to behave environmentally during my next trip to Shanghai	6.14	0.816	-0.719	0.091
	I will behave pro-environmentally during my next trip to Shanghai	6.09	0.851	-0.770	0.309
Cost efficiency	Overall, I think acting pro-environmentally in this city can get me some small gifts.	5.66	1.241	-0.814	0.431
	Overall, I think acting pro-environmentally in this city can get me some financial reward.	5.36	1.263	-0.826	0.576
	Overall, I think acting pro-environmentally in this city can save me money.	5.60	1.078	-0.976	1.539
	Overall, I think pro-environmental products/services are not more expensive than normal ones.	5.72	0.952	-0.720	0.851
Engaging campaign/activity	Overall, I think Many NGOs organize pro-environmental activities in this city (e.g. Clothe recycling).	6.09	0.694	-0.697	1.388
	Overall, I think the business community holds various activities to support environmental protection (e.g. no utensil default for take-away, paper bag/straw options)	6.08	0.856	-0.558	-0.524
	Overall, I think this city strictly follows environmental regulations.	6.02	0.787	-0.563	0.136
	I see people are interested in environmental protection in Shanghai	5.99	0.866	-0.792	0.907
	Overall, I feel more and more people recognize sustainable development	6.14	0.817	-1.045	1.925
Environmental quality	Overall, I think there are various kinds of breeding animals and plants	6.00	0.849	-1.614	5.258
	Overall, I think the water quality is good in this city.	6.12	0.921	-0.990	0.866
	Overall, I think the air quality is good in this city	5.90	0.951	-1.025	1.394
	Overall, I think there are many opportunities to experience nature in this city	5.87	0.944	-1.160	2.451
	Overall, I don't feel noise pollution in this city	5.68	1.137	-1.167	1.537
	Overall, I think buildings in this city harmonize with the natural environment	6.20	0.829	-0.871	0.798
	Overall, I think this city has a tradition to respect the natural environment	5.96	0.835	-1.003	2.003
Facility readiness	Overall, I think this city has provided many kinds of pro-environmental facilities (e.g. recycle bins, green buses)	6.18	0.690	-0.675	0.967
	Overall, I think it is convenient to find pro-environmental facilities in this city.	6.20	0.796	-0.660	-0.330
	Overall, I think pro-environmental facilities are easy to use in this city	6.07	0.764	-0.482	-0.193
	Overall, I think there are sufficient pro-environmental facilities in this city	6.06	0.825	-0.637	0.082

	Overall, I think the city government has advertised the benefits of protecting the environment.	6.06	0.833	-0.870	1.005
Policy effectiveness	Overall, I think this city has lots of workers to maintain environmental quality	6.14	0.691	-0.641	0.961
	Overall, I think the city government has done a lot to push environmental protection	6.23	0.808	-0.701	-0.278
	Overall, I feel this city has invested a large amount of money in environmental protection	6.07	0.832	-0.698	0.454
	Overall, I think there are clear pro-environmental regulations in this city	6.00	0.872	-1.029	1.954
	Overall, I think this city has a set of punitive measures against environmentally harmful behaviors	5.79	0.950	-0.791	0.688
Resident support	Overall, I think this city has done a good job in greening itself	6.18	0.673	-0.885	2.448
	Overall, I think this city is clean	6.29	0.770	-0.802	0.017
	Overall, I think the citizens support environmental protection	6.12	0.769	-0.757	1.078
Signage saliency	Overall, I think there are a lot of pro-environmental signage in this city	6.17	0.671	-0.551	0.536
	Overall, I think the pro-environmental signage is posted in key areas in this city	6.18	0.789	-0.640	-0.152
	Overall, I think there are many pro-environmental advertisements and publicity in this city	6.13	0.761	-0.653	0.313
	Overall, I think residents often talk about topics about environmental issues	5.82	0.958	-0.758	0.464
	Overall, I think the local government organizes a lot of pro-environmental campaigns in this city (e.g. "establishing clean city" campaign).	6.06	0.840	-0.744	0.521
	Overall, I think many communities organize pro-environmental activities in this city (e.g. turning off lights for one hour).	5.82	0.923	-0.708	0.547
Supportive big environment	Overall, I feel our top country leaders emphasize sustainable development	6.25	0.665	-1.154	4.393
	Overall, I feel the society advocates green life	6.34	0.727	-0.647	-0.768
	Overall, I feel the governments put a lot of effort into leading sustainable development	6.19	0.726	-0.803	1.569
Travel partner influence	Overall, I think my travel partners are attentive to environmental protection	6.15	0.674	-0.975	3.425
	Overall, I think my travel partners remind each other about environmental protection	6.21	0.827	-0.852	0.636
	Overall, I feel the media often report environmental problems	6.12	0.759	-0.847	1.602
	Overall, I feel the young people are getting more attentive to environmental issues	5.90	0.851	-0.981	1.628

Notes: 1=bad/foolish/unpleasant/harmful/unnecessary/strongly disagree, 7=good/wise/pleasant/beneficial/necessary/strongly agree.

4.9.1 Outer model specification

The measurement model was examined through PLS-SEM algorithm with the factor weighting scheme. The maximum number of iteration was set at 300 and the stop criterion at 10^{-7} (Wong, 2019). The algorithm converged in 7 iterations, indicating a stable solution (Wong, 2019, p.19). Figure 6 shows the measurement model. Factor loadings, internal consistency, convergent validity, discriminant validity were examined. Following the recommendation of Hair (2017), 16 items had loadings lower than 0.7, indicating relatively low inter-correlation with other items in the latent construct, thus were removed from the measurement model. Specifically, 1 item under "attitude", 2 items under "pro-environmental subjective norm", 2 items under "PBC", 2 items under "actual PEBs", 1 item under "PEB intention for next visits", 1 item under "supportive big environment", 1 item under "engaging campaign/activity", 2 items under "environmental quality", 1 item under "facility readiness", 1 item under "policy effectiveness", 1 item under "resident support", 1 item under "signage saliency ", and 1 item under "travel partner influence" were deleted. After deletion, 50 items remained in Study 1. Of them, 33 items were in the contextual force construct and 16 items in other constructs (attitude, pro-environmental subjective norm, PBC, actual PEBs, and PEB intention for next visits).

Figure 6: Measurement model of Study 1.

To assist identify the nature of constructs, Confirmatory Tetrad Analysis (CTA) was conducted with 5,000 subsamples with a 0.05 significance level adopted. However, it is important to note the limitation of CTA test. "Deciding whether to specify measurement models reflectively or formatively is not clear-cut" (Hair, Sarstedt, Ringle, & Gudergan, 2018, p.23). As cautioned by scholars, CTA provides complement support to researchers' judgment of model specification and should not override theoretical conceptualization (Hair et al., 2017; Hair et al., 2018). In addition, factor loadings, internal consistency, and convergent validity should be considered (Hair et al., 2017; Kono, Ito, & Loucks-Atkinson, 2018). CTA results showed that most first-order constructs had their tetrads vanished at 0.

Overall, there were no significant differences in item covariance within the constructs although 2 of the 2 tetrads in Cost efficiency, 1 of the 2 tetrads in Policy effectiveness, and 1 of the 5 tetrads in Signage saliency did not vanish at 0. The scale development was guided by the reflective measurement development procedures (Churchill, 1979; DeVellis, 2017). Considering that the majority of tetrads in these three constructs (Cost efficiency, Policy effectiveness, and Signage saliency) vanished at 0, factor loadings in these three constructs were desirable (>0.701), and they had high internal consistency (CR>0.852) and convergent validity (AVE>0.536), they were accepted as reflective measurement models in this study.

To test the second-order structure of the pro-environmental contextual force scale, the repeated indicator approach was used to estimate its higher-order component (Sarstedt et al., 2019). Under this approach, all indicators of the lower-order components were re-used to identify the higher-order component (Sarstedt et al., 2019). As shown in Table 11 in section 4.10.3, the factor loadings on the lower-order constructs were high (>0.7). This implied that the lower-order constructs were highly correlated and the higher-order component of pro-environmental contextual force was reflective of its lower-order constructs. That is to say, pro-environmental contextual force is a second-order reflective-reflective construct. Subsequently, the assessment of pro-environmental contextual force will be divided into two steps: the assessment of the reflective lower-order component and the assessment of the higher-order reflective component (Hair et al., 2019; Sarstedt et al., 2019).

4.9.1.1 First-order component assessment

To check the quality of the reflective measurement scales, internal consistency, convergent, and discriminant validity tests were recommended (Hair et al., 2019; Sarstedt et al., 2019). Composite reliability (CR) is an approach to measuring internal consistency in PLS-SEM. CR overcomes the limitation of Cronbach's alpha ratio which is sensitive to the number of items in the construct (Hair,

2017). A CR value between 0.6 to 0.7 is considered acceptable and 0.8 is desirable (Hair, 2017).

Convergent validity explains the extent to which a measure is related to other measures within the

studied phenomenon (Hair, 2017). The general criteria of convergent validity are factor loadings being

higher than 0.7 and average variance extracted (AVE) being higher than 0.5. Table 10 shows the

assessment results. All constructs exhibited desirable CR (>0.8) and acceptable average variance

extracted (>0.5), indicating good measurement quality. Therefore, the first-order measurement models

are regarded as having good quality.

Table 10: Measurement model assessment.

Construct	Item	Factor loading	CR	AVE
Attitude	For me, performing pro-environmental behaviors is Bad …Good.	0.803	0.845	0.578
	For me, performing pro-environmental behaviors is Unnecessary … Necessary.	0.801		
	For me, performing pro-environmental behaviors is Harmful … Beneficial.	0.725		
	For me, performing pro-environmental behaviors is Foolish …Wise.	0.709		
Pro-environmental subjective norm	…they think that engaging in environmental protection is something that one ought to do.	0.846	0.841	0.639
	The important people…they would say/think I should act pro-environmentally.	0.785		
	…they would prefer/approve of behaving in an environmentally friendly way.	0.765		
PBC	It is easy for me to behave pro-environmentally.	0.801	0.834	0.626
	I have resources, time, and opportunities to behave pro-environmentally.	0.791		
	I can behave pro-environmentally when I want to.	0.783		
Actual PEBs	I performed pro-environmental behaviors when traveling in Shanghai.	0.837	0.859	0.670
	I traveled in a sustainable way in Shanghai .	0.842		
	I have done my best to protect the environment when traveling in Shanghai.	0.775		
PEB intention for next visits	I am willing to behave pro-environmentally during my next trip to Shanghai.	0.852	0.861	0.674

	I will behave pro-environmentally during my next trip to Shanghai.	0.825		
	I will expend effort to behave environmentally during my next trip to Shanghai.	0.786		
Cost efficiency	Overall, I think acting pro-environmentally in this city can save me money.	0.831	0.863	0.612
	Overall, I think pro-environmental products/services are not more expensive than normal ones.	0.798		
	Overall, I think acting pro-environmentally in this city can get me some small gifts.	0.753		
	Overall, I think acting pro-environmentally in this city can get me some financial reward.	0.746		
Engaging campaign/activity	I see people are interested in environmental protection in Shanghai	0.774	0.842	0.572
	Overall, I think many NGOs organize pro-environmental activities in this city (e.g. clothe recycling).	0.772		
	Overall, I think this city strictly follows environmental regulations.	0.746		
	Overall, I feel more and more people recognize sustainable development	0.731		
Environmental quality	Overall, I think this city has a tradition to respect the natural environment	0.774	0.856	0.543
	Overall, I think there are many opportunities to experience nature in this city	0.766		
	Overall, I think the air quality is good in this city	0.741		
	Overall, I think buildings in this city harmonize with the natural environment	0.704		
	Overall, I don't feel noise pollution in this city	0.696		
Facility readiness	Overall, I think this city has provided many kinds of pro-environmental facilities (e.g. recycle bins, green buses)	0.808	0.851	0.589
	Overall, I think the city government has advertised the benefits of protecting the environment.	0.791		
	Overall, I think pro-environmental facilities are easy to use in this city	0.755		
	Overall, I think there are sufficient pro-environmental facilities in this city	0.710		
Policy effectiveness	Overall, I think this city has lots of workers to maintain environmental quality	0.828	0.854	0.595
	Overall, I think there are clear pro-environmental regulations in this city	0.775		
	Overall, I feel this city has invested a large amount of money in environmental protection	0.769		
	Overall, I think this city has a set of punitive measures against environmentally harmful behaviors	0.710		
Resident support	Overall, I think this city has done a good job in greening itself	0.855	0.834	0.715

	Overall, I think the citizens support environmental protection	0.836		
Signage saliency	Overall, I think the local government organizes a lot of pro-environmental campaigns in this city (e.g. "establishing clean city" campaign).	0.762	0.852	0.536
	Overall, I think there are a lot of pro-environmental signage in this city	0.751		
	Overall, I think many communities organize pro-environmental activities in this city (e.g. turning off lights for one hour).	0.731		
	Overall, I think residents often talk about topics about environmental issues	0.713		
	Overall, I think there are many pro-environmental advertisements and publicity in this city	0.701		
Supportive big environment	Overall, I feel our top country leaders emphasize sustainable development	0.894	0.877	0.781
	Overall, I feel the governments put a lot of effort into leading sustainable development	0.873		
Travel partner influence	Overall, I think my travel partners are attentive to environmental protection	0.815	0.828	0.616
	Overall, I feel the young people are getting more attentive to environmental issues	0.788		
	Overall, I feel the media often report environmental problems	0.750		

4.9.1.2 Second-order component specification

The internal consistency reliability (as indicated by CR), convergent validity (as indicated by factor loadings and AVE) of the higher-order component of pro-environmental contextual force were then examined based on the lower-order components (Sarstedt et al., 2019). As shown in Table 11, Internal consistency reliability was 0.948. All the factor loadings ranged from 0.665 to 0.913. The average variance extracted was 0.671>0.5. Thus, the second-order component of pro-environmental contextual force was regarded as having good internal consistency and convergent validity.

Table 11: Higher-order component assessment of contextual force.

Second-order construct	First-order construct	Factor loading	CR	AVE
Pro-environmental contextual force	Cost efficiency	0.665	0.948	0.671
	Engaging campaign/activity	0.879		
	Environmental quality	0.763		
	Facility readiness	0.884		
	Policy effectiveness	0.900		
	Resident support	0.818		
	Signage saliency	0.913		
	Supportive big environment	0.671		
	Travel partner influence	0.836		

4.9.1.3 Discriminant validity

Discriminant validity is an indication of whether a construct captures a unique phenomenon and is distinctive from other constructs in the model (Hair, 2017). "Discriminant validity assumes that items should correlate higher among them than they correlate with other items from other constructs that are theoretically supposed not to correlate" (Zait, Alexandru, & Cuza, 2011, p.217). Fornell-Larcker criterion requires that the square root value of a construct's AVE is higher than its correlation with other constructs. As shown in Table 12, all square roots of AVE values are higher than the correlations with other constructs, indicating conceptual distinctiveness among constructs.

Table 12: Fornell-Larcker analysis of all constructs in Study 1.

	ATT	PSN	PBC	Aps	INT	PCF	CE	EC/A	EQ	FR	PE	RS	SS	SBE	TPE
ATT	0.761														
PSN	0.387	0.799													
PBC	0.264	0.386	0.791												
Aps	0.302	0.398	0.759	0.819											
INT	0.371	0.434	0.707	0.768	0.821										
PCF	0.255	0.438	0.688	0.763	0.665	0.635									
CE	0.019	0.205	0.388	0.394	0.233	n/a	0.783								
EC/A	0.259	0.343	0.642	0.720	0.646	n/a	n/a	0.756							
EQ	0.113	0.348	0.402	0.459	0.359	n/a	n/a	n/a	0.737						
FR	0.289	0.376	0.681	0.733	0.668	n/a	n/a	n/a	n/a	0.767					
PE	0.215	0.400	0.635	0.691	0.611	n/a	n/a	n/a	n/a	n/a	0.772				
RS	0.273	0.402	0.543	0.618	0.557	n/a	n/a	n/a	n/a	n/a	n/a	0.846			
SS	0.210	0.359	0.582	0.651	0.544	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.732		
SBE	0.268	0.386	0.572	0.638	0.666	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.884	
TPI	0.245	0.450	0.616	0.715	0.640	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.785

Notes: APs=actual PEBs, ATT=attitude, CE=cost efficiency, EC/A=engaging campaign/activity, EQ=environmental quality, FR=facility readiness, INT=PEB intention for next visits, PCF=pro-environmental contextual force, PE=policy effectiveness, PSN=pro-environmental subjective norm, RS=resident support, SBE=supportive big environment, SS=signage saliency, TPI=travel partner influence.

4.9.2 Inner model examination

The inner model (Figure 7) estimated the relationships among the latent constructs except for the lower-order components in the higher-order construct (Hair, 2017). In other words, in the structural model, "lower-order components are not considered as part of the model" (Sarstedt et al., 2019, p.200). Figure 7 shows the structural model. PLS-SEM algorithm was calculated with the maximum 300 iterations and 10^{-7} stop criterion. The algorithm of the model terminated at the 6th iteration, indicating a stable relationship (Wong, 2019).
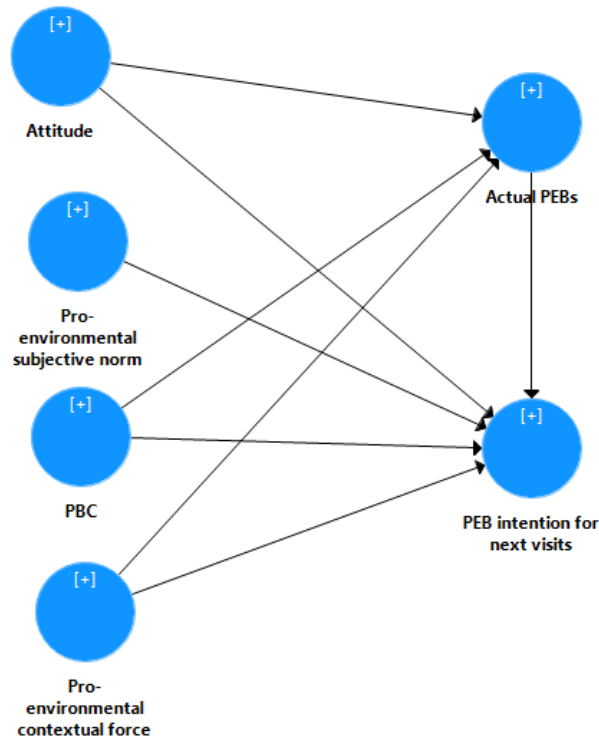
Figure 7: Structural model of Study 1.

Before running structural model estimation, a collinearity test was employed to examine potential collinearity issues. VIF values were far below the threshold of 10, so there was no collinearity concern among predictor variables (Hair et al., 2010). 5,000 subsamples were used in bootstrap to obtain the inferential parameters (Hair et al., 2017). "For the structural model, the most important evaluation metrics are R^2 (explained variance), f^2 (effect size), Q^2 (predictive relevance), and the size and statistical significance of the structural path coefficients" (Hair, 2017, p.131). These aspects were examined. Table 13 shows the results of the analysis.

As shown in Table 13, six of the eight hypothesized relationships were supported by the data. Specifically, attitude (β=0.063, p=0.025), PBC (β=0.406, p=0.000), and pro-environmental contextual force (β=0.476, p=0.000) could significantly predict Actual PEBs. Attitude (β=0.143, p=0.000), PBC (β=0.401, p=0.000), and pro-environmental contextual force (β=0.341, p=0.000) could also

significantly predict PEB intention for next visits. However, the data could not support that pro-environmental subjective norm predicts actual PEBs in Shanghai (β=0.005, p=0.856>0.05) or PEB intention for next visits (β=0.072, p=0.076>0.05).

Further, the effect size (f^2) of each predictor variable was estimated. Effect size tests allow for evaluating the contribution of a predictor variable to the endogenous variable's R^2 (Hair, 2017). When f^2 is lower than 0.02, the predictor variable can be said to have no contribution to the model's R^2. Commonly, 0.02, 0.15, and 0.35 are recommended as the thresholds for small, medium, and large effect sizes (Cohen, 1988; Hair et al., 2017). As shown in Table 13, the effect size of attitude, pro-environmental subjective norm, PBC, and pro-environmental contextual force on Actual PEBs in Shanghai is 0.011 (no effect), 0.000 (no effect), 0.275 (medium to large effect), 0.357 (large effect). The effect size of attitude, pro-environmental subjective norm, PBC, and pro-environmental contextual force on PEB intention in Shanghai is 0.043 (small to medium effect), 0.010 (no effect), 0.203 (medium to large effect), 0.139 (small to large medium) respectively.

Table 13: Collinearity, regression coefficients, the significance of path, decisions, and effect sizes.

Hypothesis	Path	VIF	Beta	T-value	P-value	Decision	Effect size f^2
H1a	Attitude →Actual PEBs	1.200	0.063	2.235	0.025	Supported	0.011
H1b	Attitude → PEB intention for next visits		0.143	4.380	0.000	Supported	0.043
H2a	Pro-environmental subjective norm → Actual PEBs	1.387	0.005	0.181	0.856	Not supported	0.000
H2b	Pro-environmental subjective norm → PEB intention for next visits		0.072	1.775	0.076	Not supported	0.010
H3a	PBC → Actual PEBs	2.012	0.406	9.833	0.000	Supported	0.275
H3b	PBC → PEB intention for next visits		0.401	7.688	0.000	Supported	0.203
H4a	Pro-environmental contextual force → Actual PEBs	2.124	0.476	10.847	0.000	Supported	0.357
H4b	Pro-environmental contextual force → PEB intention for next visits		0.341	6.084	0.000	Supported	0.139

Note: R^2 for actual PEBs=0.702, R^2 for PEB intention for next visits=0.606.

The coefficient of determination (R^2) indicates how much variance in the endogenous variable is explained by its predictors. It is a measure of a model's explanatory power. Because the R^2 value calculation relies on the sampled data, it is also referred to as in-sample predictive power (Hair et al., 2019). The R^2 value is bounded within 0 to 1, and the higher the R^2 the greater the model's explanatory power would be. As a guideline, 0.25, 0.50, and 0.75 are recommended as indications of small, medium, and substantial explanatory power (Hair et al., 2019). In this model, predictor variables (attitude, pro-environmental subjective norm, PBC, and pro-environmental contextual force) explained 70.2% of the total variance in actual PEBs in Shanghai (R^2=0.702) and 60.6% of the total variance in PEB intention in Shanghai (R^2=0.606). Therefore, the predictive power of the whole model could be rated as medium to substantial.

Stone-Geisser's Q^2 value is a measure of how well the model can make an out-of-sample prediction, or the predictive relevance of the model (Hair et al., 2017). Q^2 applies for reflective endogenous variables only (Hair et al., 2017). A larger-than-zero Q^2 value means the model has predictive relevance (Hair et al., 2017). As shown in Table 14, Q^2 values of actual PEBs and PEB intention for next visits in Shanghai are 0.462>0 and 0.399>0. This shows the model can well predict actual PEBs and PEB intention in other samples.

Table 14: Predictive power and predictive relevance.

Endogenous variable	Coefficient of determination (R^2)	Adjusted coefficient of determination (R^2)	Predictive relevance (Q^2)
Actual PEBs	0.702	0.700	0.462
PEB intention for next visits	0.606	0.603	0.399

The notion of model fit (such as CFI and TLI) commonly used in covariance-based structural equation modeling (CB-SEM) is not fully applicable to PLS-SEM (Hair, 2017). Due to its predictive

emphasis, PLS-SEM inner model fit assessment is based on a heuristic ground (Hair, 2017). Nonetheless, standard root means squared residual (SRMR) and root mean square residual covariance (RMS$_{theta}$) can be used to identify possible model misspecifications (Hair, 2017). SRMR is the square root of the difference between the residuals of the sample covariance matrix and the hypothesized model (Parry, 2020). It represents the standardized difference between the observed correlation and the predicted correlation and SRMR<0.08 indicates a good model fit (Hu & Bentler, 1999). In the structural model, SRMR values are 0.073 for the saturated model and 0.074 for the estimated model, both lower than the conservative 0.08 threshold. RMS$_{theta}$ is the discrepancy between the sample covariance and the hypothesized correlations (Hair, 2017). A conservative threshold of RMS$_{theta}$ 0.12 indicates a good model fit (Hair, 2017). In this study, RMS$_{theta}$=0.111<0.12. In short, the hypothesized model exhibits a good fit with the data.

CHAPTER 5 STUDY 2

Study 2 aims to develop a scale to measure urban travelers' specific PEBs and to establish a comprehensive model that includes attitude, pro-environmental subjective norm, PBC, pro-environmental habit, and destination satisfaction to explain urban travelers' specific PEBs. This chapter presents the process and results of Study 2 by the sequence of scale development procedures.

5.1 The need for an urban travelers' specific PEBs scale

Pro-environmentalism emphasized eco-centric values, and adopting PEBs is a viable approach in the day-to-day lives of individuals to reduce environmental degradation (Welsch & Kühling, 2009). Many environmental problems can be alleviated by changing individual behaviors including those related to hospitality and tourism activities (Welsch & Kühling, 2009). Conceptualizing and measuring tourism-specific PEBs are thus critical to understanding tourist PEBs (Lee et al., 2013). Measurement of PEBs remains a highly contentious topic in the literature (Gatersleben et al., 2002; Lee et al., 2013). Critics question the usefulness of ubiquitous PEB scales because people's interests and actions would vary across contexts (Gatersleben et al., 2002; Lee et al., 2013; Xu et al., 2020). For example, "use an oven-cleaning spray to clean my oven" is indicated in the General Ecological Behavior Scale (Kaiser, 1998, p.404), but this item is hardly applicable to vacationers. Buying recycled paper was also criticized as contributing very little to solving environmental problems (Gatersleben et al., 2002).

Most instruments that conceptualize and measure environmentally-friendly behaviors are rooted in Western cultures (Lee et al., 2013; Wu et al., 2021). In PEB literature, Western travelers tend to be the focus population (Balundė et al., 2019; Holmes et al., 2019) while the rising Asian tourists are under-researched. Due to the huge geographical, institutional, social, and cultural disparities across countries/regions, the applicability of the Western scales is in question (Lee et al., 2013; Wu et al.,

2021). Different conditions and social practices may lead to very different even opposite environmental behaviors (Wu et al., 2021), thus invalidating the applicability of a Western PEB scale.

Another limitation is that existing studies tend to overlook the multidimensional nature of PEBs (Ramkissoon, Smith, et al., 2013). Studies often use one or only a few behaviors to represent PEBs thus cannot provide an adequate picture of PEBs (Blankenberg & Alhusen, 2018). Measuring PEB adequately "requires the consideration of more than one or two distinct behaviors" (Blankenberg & Alhusen, 2018, p.2). There is a need for the "development of techniques to support more accurate empirical assessment of pro-environmental behaviors" (Blankenberg & Alhusen, 2018, p.19). More sophisticated studies that cover behavioral clusters can support the understanding of the determinants' effects on different types of pro-environmental behaviors (Blankenberg & Alhusen, 2018).

Though a few PEBs have been assessed for tourists in natural areas (e.g., Ramkissoon, Weiler, & Smith, 2013; Wu et al., 2021), the assessment of PEBs remains a relatively unknown subject for urban tourists. A comprehensive PEB scale in the urban tourism context is missing. So this study aims to develop a valid instrument to assess the multi-dimensional PEBs in urban destinations.

5.2 Definition and dimensions of the urban travelers' specific PEBs

It is important to "define clearly what it is you what to measure" as the definition helps the scale developers and reviewing experts to understand the phenomenon under study (DeVellis, 2017, p.105). It forms the conceptual basis for including and excluding measures. The boundaries of the phenomenon must also be set up so that the scale does not unintentionally measure other domains (DeVellis, 2017). Following the recommendation of Churchill (1979) and DeVellis (2017), the first step is to specify the domain of the construct. Based on the analysis of PEB literature, in this study, urban travelers' specific

PEBs are defined as the series of actions that tourists take to minimize their impact on the environment during their visits to urban destinations.

5.3 Generation of an item pool and the format of measurement

The second step of scale development is to generate items that capture the dimensions specified (DeVellis, 2017). Domain sampling theory holds that it is impossible to exhaust items from the phenomenon of interest (DeVellis, 2017). Therefore, the key to successfully developing a useful scale lies in the researcher's ability to identify representative items for the construct (DeVellis, 2017; Hinkin, 1998). It is important that the selected items adequately capture the essence of the phenomenon (Hinkin, 1998). In view of this, deductive and inductive procedures were both adopted to crosscheck and fully capture the conceptualization of urban travelers' specific PEBs (Churchill, 1979; Hinkin, 1998).

Deductively, the "logical partitioning" technique that entails the theoretical definition of urban travelers' specific PEBs from literature was used for item generation (Hinkin, 1998, p. 106). Specifically, literature related to tourist pro-environmental behaviors was searched in prominent scholarly repositories including Google Scholar and Scopus. Terms related to pro-environmental behavior, and synonyms including ecological behavior, sustainable behavior, and responsible behavior among other variant terminologies were used as keywords. Research articles from scholarly journals including *Annals of Tourism Research, Journal of Sustainable Tourism, Journal of Travel Research, Tourism Management,* and *Tourism Management Perspectives* have addressed the tourist PEBs. In the meantime, measurement items were generated inductively from the 59 interviews and conversations with tourists to supplement existing literature (see Table 1).

Then, content analysis was employed to analyze past studies and interview scripts. As a result, 80 items were extracted. Items were mostly in English. All items were discussed and scrutinized by the

author and a discussion panel composed of three fellow Ph.D. students under the moderation of the author. Discussions were made on every item. Repetitive items were removed or collapsed. Following the recommendation by PEB researchers, cultural factors and urban tourism attributes were considered during this screening process, and irrelevant items were deleted (Lee et al., 2013). The author also translated the items from English to Chinese. Then, the translation was reviewed by two bilingual fellow Ph.D. students in this step to make sure the meaning of items was well maintained. The two Ph.D. students had expertise in Tourism and Hospitality Management. Item categorization was also conducted by the author and the discussion panel to reflect the potential dimensionality of urban travelers' specific PEBs.

This discussion process lasted two months from October to November 2020 and ensured the content validity and language accuracy of items. As a result of this discussion process, 57 items remained. In the meantime, following previous studies (Miao & Wei, 2016; Vagias, 2006), the scaling of the measurement items was agreed to be a 7-point Likert scale of frequency, where 1=never and 7=always.

5.4 Expert review of PEB items

The third step involved a panel of 5 experts to review and assess the 57 PEB items (DeVellis, 2017). As shown in Table 15, the panel reflected perspectives of the academia, industry, and tourists. The tourism scholars in the panel were selected because they were experienced in sustainable tourism, scale development, or quantitative methods. The travel agent was an experienced person in a senior position at an international travel agency. The tourist had travel experience to urban destinations within the past year. They formed a judgment panel of "persons who can offer some ideas and insights into the phenomenon" (Churchill, 1979, p. 67).

Table 15: PEB expert review panel.

No.	Gender	Position
Expert 1	Female	Associate professor
Expert 2	Female	Assistant professor
Expert 3	Female	Post-doctoral fellow
Expert 4	Female	Travel agent
Expert 5	Male	Tourist

Experts were requested to review and "confirm or invalidate your definition of the phenomenon", rate the relevance of "each item is to what you intend to measure" (DeVellis, 2017, p135.), and provide an evaluation of each item's "clarity and conciseness" (DeVellis, 2017, p.135). A fourth important service that the expert panel has provided was "pointing out ways of tapping the phenomenon that you have failed to include" (DeVellis, 2017, p.135). Experts rated every item on a 3-point scale from 1 (not relevant at all) to 3 (highly relevant). A sample of the expert review form can be found in Appendix 4. Based on the expert review, those items with a score below 10 were considered candidate items for deletion or improvement. Experts also provided comments and suggestions for items that they thought problematic. To enhance the content validity of the scale, each rating and comment from experts was considered. However, as DeVellis (2017) emphasized, the final decision to retain or delete an item should be decided by the researcher. Finally, 5 items were deleted because of low relevance to urban tourism or because they were out of the control of tourists. In addition, examples were added to 9 items in brackets to better demonstrate the ideas of the items.

5.5 Pre-test of the pilot study questionnaire

With the 52 PEB items obtained from previous steps, an online questionnaire was designed and pre-tested. The pre-test was conducted to examine the quality of the online survey, including the readability, smoothness of filling the online questionnaire, and length of time required to complete the

questionnaire. Seven tourists who visited urban destinations within the past one year joined the pre-test and were interviewed regarding their rationale for answering questions and any possible issues with the questionnaire. Important improvements were made based on their feedback. Firstly, tourists suggested they could not answer such questions as changing hotel bed sheets daily because they went for day trips. This issue was resolved by adding filter questions to make sure respondents stayed at least two nights in hotels during the visit. Another suggestion was related to the formatting of the questionnaire. Instruction statements and questions were then separated by more space to achieve easier viewing. Finally, respondents pointed out that the 12 negatively worded questions created confusion because the first answers to questions (1=never) also indicated negation. Subsequently, these double-negative questions were rephrased (Azmi, 2020).

5.6 Pilot study

5.6.1 Data screening, reverse coding, and descriptive analysis

In the fifth step, a pilot study shall be conducted to validate the items with empirical data, delete insignificant items, and explore the dimensionality of the scale. Notably, the pilot studies of Study 1 and Study 2 shared the same questionnaire which contained four parts (see Appendix 5). The 52 items of Study 2 were placed in part three of the questionnaire.

As stated previously in section 4.6, the questionnaire was made available online by the survey company (Shanghai Zongyan Technology Co. Ltd.) on their website in January 2021 and was accessed by 6,742 people. The questionnaire received 330 complete responses from people who traveled to Shanghai during the past one month. As shown in Table 4 in section 4.6, half of the respondents are female. The majority of them (70%) are aged between 18 to 40. While over half (58.2%) of them have

a bachelor's degree or above, 83.9% of them have a personal monthly before-tax income between 5,000 and 15,000 RMB.

Twelve questions were reverse-coded to show the same direction of pro-environmentalism. To assist data cleaning, SPSS 23.0 was utilized. Data cleaning incorporated three key aspects: outliers, missing data, and normality check (Hair et al., 2010). For a large set of empirical data, scholars suggested +/-2 and +/-7 as the thresholds for acceptable skewness and kurtosis (Kim, 2013). In the data, skewness ranged from -2.026 to 1.775. Kurtosis ranged from -1.243 to 5.794. All variables fell within the recommended range. The mean, standard deviation, skewness, and kurtosis values are reported in Table 16.

Table 16: Mean, standard deviation, skewness, and kurtosis of the responses (n=330).

Item	Mean	Skewness	Kurtosis
I disturbed creatures and vegetation (reverse code).	6.59	-0.876	-0.307
I picked leaves and flowers (reverse code).	1.29	1.375	0.847
I throw objects to hydro landscapes (e.g., throwing plastic bottles into the lake).	1.23	1.659	1.712
I spit to the ground (reverse code).	1.24	1.775	2.291
I stepped on the grass against the sign (reverse code).	1.40	1.013	0.025
I threw garbage arbitrarily (reverse code).	1.35	1.179	0.377
For a short distance, I reduced car use but walk.	5.64	-0.574	-0.458
For a short distance, I reduced car use but ride a bicycle.	4.54	-0.835	1.045
Prioritize public transport such as bus/metro/coach.	5.51	-0.672	2.221
I shared a private car with many people (family car, Didi) instead of using a car for just one person.	5.44	-1.037	0.994
I turn off the light when sleeping.	6.60	-2.026	4.794
I did not use the lift if go upstairs by one floor.	5.58	-0.897	0.114
I turned off the water tap when brushing my teeth, washing my face, and wash hands.	6.32	-1.517	2.579
In hotels, I had a longer shower than at home (reverse code).	4.94	-0.758	-0.229
I let the water run away until it reached the right temperature (reverse code).	4.74	-0.348	-0.940
I separated garbage throw garbage according to the signs.	6.30	-0.848	0.117
I cleaned the garbage I've created when eating outside.	6.31	-1.550	5.794
When eating, I finished the food on my plate.	6.17	-0.848	0.459

I learned about local pro-environmental facilities.	5.00	0.318	0.223
I tried to learn about local residents' pro-environmental actions.	4.92	0.330	0.333
I abide by local pro-environmental rules (e.g., tourist behavior codes, smoking zone restrictions).	6.28	-0.605	-0.158
I let the hotel change bedsheets daily (reverse code).	4.77	-0.525	-1.064
I let the hotel do full room-cleaning service daily (reverse code).	4.56	-0.373	-1.243
I let the hotel change towel daily (reverse code).	4.69	-0.410	-1.144
I asked for amenities daily (e.g., toothbrush, comb, rub, shaver, nail polisher, shoe cleaner) (reverse code).	5.22	-0.642	-0.616
I reduced the usage of paper (e.g., paper napkin, toilet paper, paper towels).	5.48	-1.088	1.184
I reduced plastic bag usage when shopping.	5.52	-0.827	0.228
I reduced the use of one-time-off eating tools (chopsticks, spoon, plastic straw).	5.21	-0.679	0.015
I looked for ways to reuse one-time-off things (e.g., plastic bags, bottles, combs, and toothbrushes from hotels).	4.89	-0.778	-0.150
When shopping, I avoided excessive packaging (e.g., multi-layered, extravagant packaging).	5.49	-1.101	1.476
I bought in bulk rather than individual-packaged/double packaged products.	5.37	-0.755	0.236
I took/used my own eating tools (e.g., for eating at a restaurant or taking away).	4.71	-0.465	-0.707
I used my own cup/bottle during the trip.	5.69	-1.002	0.866
I brought and used my own toothbrush, toothpaste, comb, shaver, towel, shampoo, or body wash.	5.23	-0.478	-0.448
I took/used my own garbage bag.	5.18	-0.863	0.553
When shopping, I used my own bag.	5.40	-0.938	0.710
I chose to stay at a green hotel.	5.31	-1.153	1.463
Buy eco-labeled products.	5.66	-1.139	1.212
Buy (or use) local products and services on this tour.	5.51	-0.552	-0.023
I purchased biodegradable products (e.g., biodegradable food containers).	5.17	-0.986	1.433
I bought organic food.	5.49	-1.066	1.368
I paid increased fees for newly introduced environmental programs (e.g., hotels/parks' sustainable activities).	4.87	-0.853	0.958
Call for food delivery (Reverse code).	4.70	-0.407	-0.614
I reminded my companions not to feed animals.	5.54	-1.171	1.727
I reminded my travel partners to keep voice low.	5.89	-1.199	2.528
I reminded others (e.g., children, my travel partner) to protect the environment.	5.96	-1.087	1.790
I picked up garbage (such as bottles) left by others.	2.16	0.384	-1.214
I kept my voice low.	5.96	-1.002	1.286
I publicly supported this city's environmental protection (e.g., write a letter, sign on a petition).	3.60	-0.106	0.077

Donate money to support the destination's pro-environmental initiatives.	1.73	1.119	0.952
I reduced visiting my favorite spots because it needed to recover from environmental damage.	4.38	-0.097	-0.823
I volunteered my time to projects that help this city.	3.48	-0.020	-0.371

Note: 1=bad/foolish/unpleasant/harmful/unnecessary/strongly disagree, 7=good/wise/pleasant/beneficial/necessary/strongly agree.

5.6.2 Results of EFA

In the fifth step, EFA was conducted. EFA is suitable for reducing redundant items thus making the scale more parsimonious (DeVellis, 2017). EFA is also critical in exploring the underlying common factors (DeVellis, 2017). Several pre-requisites were examined before performing the analysis. In the first place, items must be conceptually relevant to each other and show substantial correlations (Hair et al., 2010). Secondly, Bartlett's test of sphericity result was significant, indicating that "the correlation matrix has significant correlations" (Hair et al., 2010, p.114). Thirdly, the KMO index was greater than 0.5, meaning the sample was adequate for performing EFA (Hair et al., 2010).

Many rounds of computation were executed in SPSS 23.0 using the Principal Axis Factoring extraction method and Promax rotation method (Hair et al., 2010). Based on scree-plot inspection (as shown in Figure 8) and latent root criterion (i.e., eigenvalue>1), a 7-factor 33-item solution was obtained (Hair et al., 2010, p.119-120). This solution explained 69.277% of the total variance.
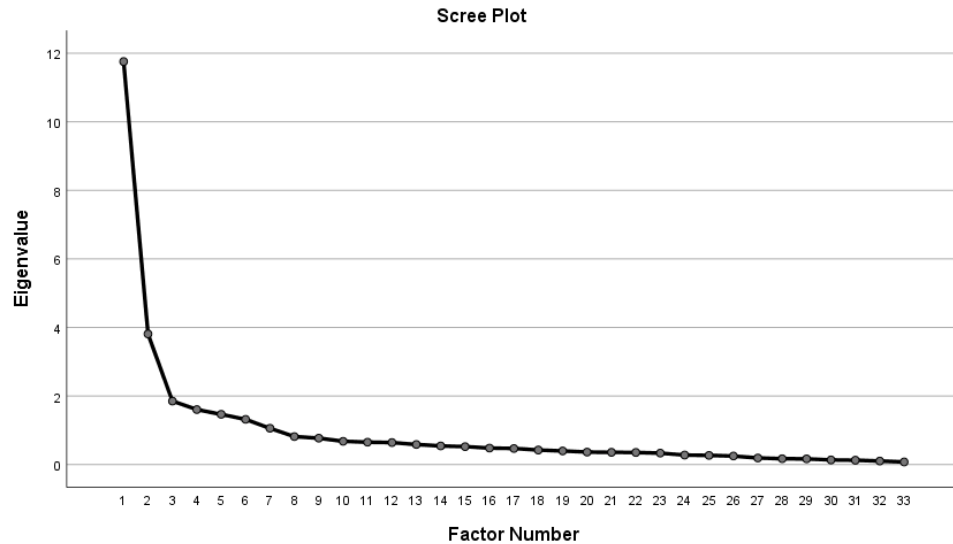
Figure 8: Scree plot of PEB scale EFA (n=330).

During the EFA process, a number of criteria and considerations were employed to decide candidate items for deletion. Firstly, a factor loading indicates the correlation between the original variable and its factor. Higher loadings are more preferable as they are more representative of the factors, and for a sample larger than 200 responses, 0.4 was set to be the threshold for significant loadings (Hair et al., 2010). Variables with loadings lower than 0.4 were deleted. The remaining factor loadings ranged from 0.414 to 0.935. Secondly, cross-loadings occur when a variable loads significantly on two or more factors, causing difficulty in interpretation (Hair et al., 2010). However, cross-loadings were retained if the difference was equal to or above 0.2. Thirdly, communality, or the squared multiple correlations, indicates the size of shared variance accounted for by the factor solution (Hair et al., 2010). Items with communality values below 0.4 were deleted (Costello & Osborne, 2005). The communalities of the remaining variables ranged from 0.355 to 0.817, explaining 35.5% to 81.7% of the variances. Fourthly, scale reliability was acceptable when Cronbach's alpha statistic was equal to or above 0.7 (DeVellis, 2017; Hair et al., 2010). The remaining factors' alpha values ranged from

0.707 to 0.912, showing good internal consistency of sub-dimensions. A summary of EFA results is presented in Table 17. These items were prepared in a subsequent questionnaire for the examination of the nomological validity of the scale.

Table 17: EFA results of PEB (n=330).

Item	Reduce	Shop	Reuse	Donate	Remind	Conserve	Learn
I reduced plastic bag usage when shopping.	0.935						
When shopping, I used my own bag.	0.907						
I took/used my own garbage bag.	0.767						
I reduced the use of one-time-off eating tools (chopsticks, spoon, plastic straw).	0.735						
When shopping, I avoided excessive packaging (e.g., multi-layered, extravagant packaging).	0.697						
I used my own cup/bottle during the trip.	0.654						
I bought in bulk rather than individual-packaged/double packaged products.	0.607						
I took/used my own eating tools (e.g., for eating at a restaurant or taking away).	0.595						
I looked for ways to reuse one-time-off things (e.g., plastic bags, bottles, combs, and toothbrushes from hotels).	0.566						
I paid increased fees for newly introduced environmental programs (e.g., hotels/parks' sustainable activities).		0.928					
I purchased biodegradable products (e.g., biodegradable food containers).		0.850					
I bought eco-labeled products.		0.825					
I chose to stay at a green hotel.		0.777					
Buy (or use) local products and services on this tour.		0.545					
I bought organic food.		0.541					
I let the hotel change towel daily (reverse code).			0.931				
I let the hotel change bedsheets daily (reverse code).			0.917				
I let the hotel do full room-cleaning service daily (reverse code).			0.772				
I brought and used my own toothbrush, toothpaste, comb, shaver, towel, shampoo, or body wash.			0.749				

I asked for amenities daily (e.g., toothbrush, comb, rub, shaver, nail polisher, shoe cleaner) (reverse code).			0.699				
I volunteered my time to projects that help this city.				0.898			
I reduced visiting my favorite spots because it needed to recover from environmental damage.				0.862			
I publicly supported this city's environmental protection (e.g., write a letter, sign on a petition).				0.737			
Donate money to support the destination's pro-environmental initiatives.				0.612			
I reminded my travel partners to keep voice low.					0.809		
I kept my voice low.					0.629		
I reminded others (e.g., children, my travel partner) to protect the environment.					0.589		
I reminded my companions not to feed animals.					0.471		
I did not use the lift if go upstairs by one floor.					0.414		
In hotels, I had a longer shower than at home (reverse code).						0.912	
I let the water run away until it reached the right temperature (reverse code).						0.584	
I tried to learn about local residents' pro-environmental actions.							0.715
I learned about local pro-environmental facilities.							0.694
Cronbach's alpha	0.912	0.900	0.920	0.864	0.707	0.730	0.743

Notes: extraction method: Principal Axis Factoring. Rotation method: Promax with Kaiser Normalization.

5.7 Pre-test of the main study questionnaire

To minimize misunderstanding, an online pre-test was conducted by 80 tourists who visited Beijing, Guangzhou, Shanghai, or Shenzhen during the last year (Creswell & Plano Clark, 2007). An open-ended question was placed at the end of the survey asking about the length, clarity of questions, order of questions, and layout of the questionnaire. The feedback was good. Pre-test data were examined and reliability values of all latent constructs were above 0.7. Screen-out logics of two

attention check questions were set up in the questionnaire. This step ensured the quality of the questionnaire before it was sent to reach a large sample.

5.8 Main survey

Data collection for the main survey was conducted online in May 2021 by a market research company (Kantar). The questionnaire comprised six parts. Part one asked about their attitude toward PEBs. Part two asked their perceptions of the social norm regarding PEBs. Part three asked respondents to recall their most recent trips to an urban destination and provide the travel information, including which city did they visit, the time of visitation, the main purpose of the trip, whether it was a package tour, the travel party, and the length of stay. These questions made sure the trip was made within the last one year, to one of the four cities (Beijing, Guangzhou, Shanghai, and Shenzhen), and involved commercial accommodation for at least two nights. Destination satisfaction and perceived behavioral control over performing PEBs at the destination were also asked. Part four asked respondents to continue to recall the most recent trip to the aforementioned destination, and rate the frequency of performing specific PEBs at the destination. Part five asked about their habit of performing PEBs in daily life. Part six asked about personal particles, including age, gender, education occupation, and income. The questionnaire can be found in Appendix 7.

In total, 4,078 attempts were made to access the questionnaire and 668 complete responses were collected. The data cleaning process excluded two responses because of a missing value in age and a written age of 2 years old. The profile of the respondents is presented in Table 18. Females and males were equally represented in the data. While all age groups were covered, the majority (80.3%) of respondents were aged from 18 to 40 years old. Most of them (93.8%) had a three-year or four-year college education. The majority (85.3%) had a personal monthly before-tax income between 5,000 to 20,000 RMB, allowing them to travel to different cities.

Table 18: Respondent profile (n=666).

Variable	Category	Frequency	%
Gender	Male	333	50.0
	Female	333	50.0
	Total	666	100.0
Age	18-30	270	40.5
	31-40	265	39.8
	41-50	115	17.3
	51-60	10	1.5
	61-70	6	0.9
	Total	666	100.0
Personal monthly before-tax income	3000 Yuan or below	10	1.5
	3001~5000 Yuan	50	7.5
	5001~10000 Yuan	272	40.8
	10001~15000 Yuan	182	27.3
	15001~20000 Yuan	114	17.1
	20001~25000 Yuan	27	4.1
	Above 25000 Yuan	11	1.7
	Total	666	100.0
Education	Primary school	2	0.3
	Middle school	11	1.7
	Vocational school	28	4.2
	Three-year diploma	138	20.7
	Bachelor's degree	482	72.4
	Master's degree or above	5	0.8
	Total	666	100.0

Respondents of the four cities share similar gender and age distributions, as shown in Table 19. The similar demographics allow the 4 sub-samples to be treated as a whole sample. Table 20 provided a descriptive analysis of the main variables of this study. As indicated in Table 20, answers to six questions were reverse-coded to show the same direction of pro-environmentalism with other questions.

The 64 continuous variables exhibited a certain level of skewness (from -1.551 to 0.313) and kurtosis (-1.409 to +7.245). This means the data were slightly skewed and peaked. While a normal

distribution of data is desirable, PLS-SEM is a non-parametric test, therefore, does not require normal distribution (Hair et al., 2017).

Table 19: Sample characteristics across the 4 cities (n=666).

Destination	Female	Male	Average age	Sub-sample size
Beijing	86	86	33.49	172
Guangzhou	86	86	33.63	172
Shanghai	75	75	32.91	150
Shenzhen	86	86	34.72	172
Total	333	333	33.71	666

Table 20: Descriptive analysis of the continuous variables in Study 2 (n=666).

Construct	Item	Mean	Skewness	Kurtosis
Attitude	For me, performing pro-environmental behaviors is Bad …Good.	6.47	-0.791	-0.191
	For me, performing pro-environmental behaviors is Foolish …Wise.	6.46	-1.192	0.822
	For me, performing pro-environmental behaviors is Unpleasant …Pleasant.	6.28	-0.783	0.038
	For me, performing pro-environmental behaviors is Harmful … Beneficial.	6.41	-1.022	0.492
	For me, performing pro-environmental behaviors is Unnecessary … Necessary.	6.53	-1.04	0.368
Pro-environmental subjective norm	The important people…they would say/think I should act pro-environmentally.	6.19	-1.159	3.358
	…they expect me to participate in environmental protection.	6.33	-1.144	1.515
	…they would prefer/approve of behaving in an environmentally friendly way.	6.25	-0.592	0.075
	…they appreciate if I perform pro-environmental actions	6.32	-0.741	0.348
	…they think that engaging in environmental protection is something that one ought to do.	6.28	-0.931	1.670
PBC	Whether or not I behave pro-environmentally is up to me.	6.00	-1.551	3.759
	I am confident that if I want, I can behave pro-environmentally.	6.22	-0.581	-0.232

	It is easy for me to behave pro-environmentally.	6.19	-0.611	0.175
	I can behave pro-environmentally when I want to.	6.24	-0.630	-0.192
	I have resources, time, and opportunities to behave pro-environmentally.	6.10	-1.228	2.701
Destination satisfaction	I believe I did the right thing when I chose to visit this city.	6.34	-1.207	7.245
	Overall, I am satisfied with my decision to visit this city.	6.34	-1.197	2.666
	I am happy about my decision to visit this city.	6.34	-0.887	1.546
	My experience here exceeded my expectations.	6.17	-1.271	3.451
Pro-environmental habit	PEB is something I do frequently.	6.12	-1.119	2.959
	PEB is something I do automatically.	6.18	-0.557	-0.190
	PEB is something I do without having to consciously remember.	6.06	-0.676	0.763
	PEB is something that makes me feel weird if I do not do it.	5.95	-0.894	1.288
	PEB is something I do without thinking.	6.01	-0.949	1.522
	PEB is something that would require effort not to do it.	5.77	-1.305	3.412
	PEB is something that belongs to my (daily, weekly, monthly) routine.	6.07	-0.689	0.264
	PEB is something I start doing before I realize I'm doing it.	6.00	-0.732	1.053
	PEB is something I would find hard not to do.	5.75	-1.347	2.236
	PEB is something I have no need to think about doing.	5.96	-0.657	0.780
	PEB is something that's typical 'me'.	6.16	-0.746	-0.077
	PEB is something I have been doing for a long time.	6.10	-0.767	0.474
Conserve	In hotels, I had a longer shower than at home (reverse code).	4.35	-0.233	-1.409
	I let the water run away until it reached the right temperature (reverse code).	4.39	-0.277	-1.269
Donate	I volunteered my time to projects that help this city.	5.86	-1.420	3.425
	I reduced visiting my favorite spots because it needed to recover from environmental damage.	6.10	-1.192	2.416
	I publicly supported this city's environmental protection (e.g., write a letter, sign on a petition).	5.89	-1.446	3.779
	Donate money to support the destination's pro-environmental initiatives.	5.82	-1.392	2.901
Learn	I tried to learn about local residents' pro-environmental actions.	6.01	-1.333	2.553
	I learned about local pro-environmental facilities.	6.05	-1.275	2.242

Reduce	I reduced plastic bag usage when shopping.	6.07	-1.179	2.565
	When shopping, I used my own bag.	6.02	-1.471	3.962
	I took/used my own garbage bag.	5.84	-1.427	4.280
	I reduced the use of one-time-off eating tools (chopsticks, spoon, plastic straw).	5.95	-1.078	1.754
	When shopping, I avoided excessive packaging (e.g., multi-layered, extravagant packaging).	5.93	-0.905	1.344
	I used my own cup/bottle during the trip.	5.85	-1.092	2.280
	I bought in bulk rather than individual-packaged/double packaged products.	5.95	-0.855	0.857
	I took/used my own eating tools (e.g., for eating at a restaurant or taking away).	5.47	-1.252	1.564
	I looked for ways to reuse one-time-off things (e.g., plastic bags, bottles, combs, and toothbrushes from hotels).	5.52	-1.219	1.704
Remind	I reminded my travel partners to keep voice low (e.g., speaking, phone volume).	6.08	-1.036	2.179
	I kept my voice low.	6.06	-0.664	0.117
	I reminded others (e.g., children, my travel partner) to protect the environment.	6.02	-0.755	0.861
	I reminded my companions not to feed animals.	5.86	-1.450	3.990
	I did not use the lift if go upstairs on 1 floor.	5.69	-1.052	1.525
Reuse	I let the hotel change towel daily (reverse code).	3.67	0.313	-1.145
	I let the hotel change bedsheets daily (reverse code).	3.76	0.224	-1.260
	I let the hotel do full room-cleaning service daily (reverse code).	3.51	0.300	-1.119
	I brought and used my own toothbrush, toothpaste, comb, shaver, towel, shampoo, or body wash.	5.72	-1.211	0.791
	I asked for amenities daily (e.g., toothbrush, comb, rub, shaver, nail polisher, shoe cleaner) (reverse code).	4.07	0.035	-1.283
Shop	I paid increased fees for newly introduced environmental programs (e.g., hotels/parks' sustainable activities).	5.88	-1.230	2.077
	I purchased biodegradable products (e.g., biodegradable food containers).	5.94	-1.108	2.885
	I bought eco-labeled products.	6.03	-1.150	2.691
	I chose to stay at a green hotel.	5.92	-1.270	2.635
	Buy (or use) local products and services in this tour.	5.94	-0.909	1.459
	I bought organic food.	5.82	-0.978	1.417

Notes: 1=bad/foolish/unpleasant/harmful/unnecessary/strongly disagree, 7=good/wise/pleasant/beneficial/necessary/strongly agree.

5.8.1 Outer model specification

Scholars suggest that PEB covers a range of distinct actions (Stern, 2000). Some pro-environmental actions are highly correlated with each other, such as saving water and saving electricity (Miao & Wei, 2013). The homogeneity of actions implies they share an underlying commonality, and they may belong to the same type. Thus, actions are reflections of the shared underlying meaning. This implies the reflective nature of PEBs under the same category. On the other hand, scholars also observed heterogeneity among different types of PEBs. Blankenberg and Alhusen (2018) argued that antecedents will exert varied impact depending on the type of PEBs (Blankenberg & Alhusen, 2018). This characteristic implies that the aggregated effect of different types of PEBs determines the total magnitude of pro-environmentalism. In addition, different types of PEBs are not interchangeable. For example, a person who would like to save water wouldn't necessarily like to donate money to environmental charities. Based on the discussion above, the concept of urban travelers' specific PEBs in the current study is conceptualized as a two-order construct where the observed actions are reflective of the first order PEB types, and the first-order PEB types form the second-order construct. In other words, PEB is a reflective-formative hierarchical model.

To verify the reflective-formative nature of the hierarchical construct of urban travelers' specific PEBs, the disjoint two-stage approach was adopted. Under this approach, reflective and formative assessment criteria were adopted to examine the two levels of indicator-construct relationships (Sarstedt et al., 2019). Studies suggested two approaches of hierarchical model assessment: repeated indicator approach and two-stage approach (Hair et al., 2018; Sarstedt et al., 2019). While the two approaches usually yield highly similar results, the configuration of the structural model shall be considered when choosing the approach (Hair et al., 2018; Sarstedt et al., 2019). Notably, the second-order construct urban travelers' specific PEBs is a formative construct and acts as a dependent variable

in the structural model, so the disjoint two-stage approach is more suitable (Hair et al., 2018; Sarstedt et al., 2019). The disjoint two-stage approach can avoid the swamping effect while maintaining the original information from other first-order constructs (Hair et al., 2018; Sarstedt et al., 2019). Therefore, the disjoint two-stage approach was employed.

5.8.1.1 First-order construct validity

In the first stage of the disjoint two-stage measurement model assessment, the first-order components of PEB were connected with all predictor constructs (attitude, pro-environmental subjective norm, PBC, pro-environmental habit, and destination satisfaction) while the higher-order component of the PEB model was not configured or included (Sarstedt et al., 2019). Since the first-order constructs are all reflective constructs, model assessment at this stage focuses on internal consistency, convergent validity, and discriminant validity (Sarstedt et al., 2019). Twenty-seven items had loadings below 0.7, indicating relatively low levels of correlation so were deleted from analysis (Hair, 2017). Specifically, 2 items under "attitude", 2 items under "subjective norm", 3 items under "PBC", 8 items under "habit", 2 items under "destination satisfaction", 1 item under "donate", 5 items under "reduce", 2 items under "remind", 1 item under "reuse", and 1 item under "shop" were deleted.

As shown in Table 21, the CR values of all first-order constructs are above 0.7, ranging from 0.765 to 0.956. Thus, the reliability of first-order constructs was established. Factor loadings of all items were above 0.7, ranging from 0.701 to 0.967. AVE values were above 0.5, ranging from 0.537 to 0.916. Thus, convergent validity was established.

Table 21: Convergent validity (n=666).

Construct	Item	Factor loading	CR	AVE	Grand mean
Attitude	For me, performing pro-environmental behaviors is Bad …Good.	0.749	0.778	0.539	6.425
	For me, performing pro-environmental behaviors is Unpleasant …Pleasant.	0.742			
	For me, performing pro-environmental behaviors is Unnecessary … Necessary.	0.711			
Pro-environmental subjective norm	The important people…they would say/think I should act pro-environmentally.	0.768	0.790	0.556	6.268
	…they expect me to participate in environmental protection.	0.747			
	…they think that engaging in environmental protection is something that one ought to do.	0.721			
PBC	I have resources, time, and opportunities to behave pro-environmentally.	0.829	0.765	0.620	6.145
	It is easy for me to behave pro-environmentally.	0.743			
Pro-environmental habit	PEB is something I have no need to think about doing.	0.787	0.850	0.586	6.046
	PEB is something I have been doing for a long time.	0.774			
	PEB is something I do frequently.	0.772			
	PEB is something I start doing before I realize I'm doing it.	0.726			
Destination satisfaction	My experience here exceeded my expectations.	0.877	0.798	0.666	6.252
	Overall, I am satisfied with my decision to visit this city.	0.750			
Conserve	I let the water run away until it reached the right temperature (reverse code).	0.967	0.956	0.916	4.371
	In hotels, I had a longer shower than at home (reverse code).	0.947			
Donate	I volunteered my time to projects that help this city.	0.862	0.872	0.695	5.857
	I publicly supported this city's environmental protection (e.g., write a letter, sign on a petition).	0.841			
	Donate money to support the destination's pro-environmental initiatives.	0.796			
Learn	I tried to learn about local residents' pro-environmental actions.	0.907	0.867	0.765	6.029
	I learned about local pro-environmental facilities.	0.841			
Reduce	I reduced plastic bag usage when shopping.	0.751	0.823	0.537	5.845

		0.733			
	I used my own cup/bottle during the trip.	0.733			
	I reduced the use of one-time-off eating tools (chopsticks, spoon, plastic straw).	0.726			
	I looked for ways to reuse one-time-off things (e.g., plastic bags, bottles, combs, and toothbrushes from hotels).	0.721			
Remind	I reminded my travel partners to keep voice low (e.g., speaking, phone volume).	0.819	0.806	0.581	5.967
	I reminded others (e.g., children, my travel partner) to protect the environment.	0.743			
	I reminded my companions not to feed animals.	0.721			
Reuse	I let the hotel change bedsheets daily (reverse code).	0.941	0.955	0.840	3.752
	I let the hotel change towel daily (reverse code).	0.933			
	I let the hotel do full room-cleaning service daily (reverse code).	0.901			
	I asked for amenities daily (e.g., toothbrush, comb, rub, shaver, nail polisher, shoe cleaner) (reverse code).	0.890			
Shop	I chose to stay at a green hotel.	0.766	0.854	0.540	5.917
	I bought eco-labeled products.	0.759			
	I bought organic food.	0.728			
	I purchased biodegradable products (e.g., biodegradable food containers).	0.718			
	I paid increased fees for newly introduced environmental programs (e.g., hotels/parks' sustainable activities).	0.701			

Notes: 1=bad/foolish/unpleasant/harmful/unnecessary/strongly disagree, 7=good/wise/pleasant/beneficial/necessary/strongly agree.

Discriminant validity of first-order constructs was examined using the Fornell-Lacker criterion (Hair, 2017). As shown in Table 22, the square root values are all higher than the correlations between constructs. Thus, discriminant validity is established in this study. Meanwhile, the latent scores of the seven first-order components of PEB (conserve, donate, learn, reduce, remind, reuse, and shop) were obtained and added to the data file as new variables to prepare for stage two analysis (Sarstedt et al., 2019).

Table 22: Discriminant validity Fornell-Lacker criterion (n=666).

	ATT	PSN	PBC	PH	DS	Conserve	Donate	Learn	Reduce	Remind	Reuse	Shop
ATT	0.734											
PSN	0.400	0.746										
PBC	0.206	0.262	0.787									
PH	0.246	0.304	0.528	0.765								
DS	0.184	0.216	0.323	0.444	0.816							
Conserve	-0.009	0.048	0.102	0.165	0.024	0.957						
Donate	0.110	0.400	0.397	0.559	0.288	0.019	0.833					
Learn	0.204	0.398	0.354	0.490	0.327	0.112	0.541	0.875				
Reduce	0.173	0.227	0.446	0.632	0.367	0.063	0.527	0.427	0.733			
Remind	0.226	0.334	0.429	0.560	0.381	0.073	0.540	0.461	0.553	0.762		
Reuse	0.203	0.019	0.107	0.143	0.071	0.639	-0.139	0.057	0.016	0.038	0.917	
Shop	0.195	0.401	0.441	0.574	0.404	0.003	0.691	0.581	0.650	0.506	-0.097	0.735

Notes: ATT=attitude, PBC=perceived behavioral control, PSN=pro-environmental subjective norm, PH=pro-environmental habit, DS=destination satisfaction.

5.8.1.2 Higher-order construct validation

In stage two, the assessment focuses on the formative second-order measurement model. The latent scores of the first-order constructs (conserve, donate, learn, reduce, remind, reuse, and shop) were used as indicators to estimate the second-order measurement model (Sarstedt et al., 2019). Since the higher-order component is formative, stage two examines the significance of the outer weights and collinearity (Sarstedt et al., 2019). Outer weights show whether the first-order components contribute to form the second-order component. As suggested by Hair (2017), 5,000 subsamples were used to obtain stable results. Results showed six of the seven weights were significant, and the weight of "conserve" was insignificant (p-value=0.903>0.05), indicating that the "conserve" dimension did not significantly contribute to the formation of the second-order construct (Sarstedt et al., 2019). Therefore, it was removed from the scale. Figure 9 shows the measurement model of Study 2.
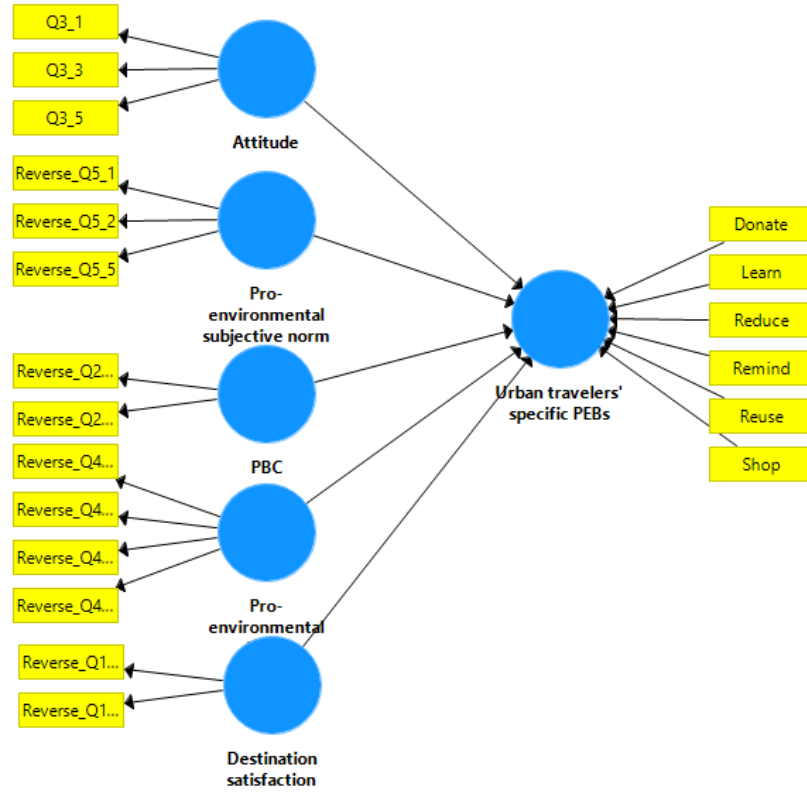
Figure 9: Measurement model of Study 2.

After removal, the six remaining dimensions are presented in Table 23. As shown, all six weights range from were larger than 0.1, and are significant. Outer weights range from 0.174 to 0.296, and p-values range from 0.000 to 0.001. This means the six first-order indicators are supported by empirical data and they form urban travelers' PEBs (Sarstedt et al., 2019). The second-order components of urban travelers' specific PEBs thus show a sufficient level of validity.

Table 23: Second-order construct validity (n=666)

Second-order construct	First-order construct	Observed indicator	Outer weight	T-statistic	P-value	VIF
Urban travelers' specific PEBs	Donate	I volunteered my time to projects that help this city.	0.227	3.706	0.000	2.247
		I publicly supported this city's environmental protection (e.g., write a letter, sign on a petition).				

		Donate money to support the destination's pro-environmental initiatives.				
	Learn	I tried to learn about local residents' pro-environmental actions.	0.174	3.907	0.000	1.689
		I learned about local pro-environmental facilities.				
	Reduce	I reduced plastic bag usage when shopping.	0.296	4.520	0.000	1.978
		I used my own cup/bottle during the trip.				
		I reduced the use of one-time-off eating tools (chopsticks, spoon, plastic straw).				
		I looked for ways to reuse one-time-off things (e.g., plastic bags, bottles, combs, and toothbrushes from hotels).				
	Remind	I reminded my travel partners to keep voice low (e.g., speaking, phone volume).	0.283	5.151	0.000	1.713
		I reminded others (e.g., children, my travel partner) to protect the environment.				
		I reminded my companions not to feed animals.				
	Reuse	I let the hotel change bedsheets daily (reverse code).	0.205	6.269	0.000	1.071
		I let the hotel change towel daily (reverse code).				
		I let the hotel do full room-cleaning service daily (reverse code).				
		I asked for amenities daily (e.g., toothbrush, comb, rub, shaver, nail polisher, shoe cleaner) (reverse code).				
	Shop	I chose to stay at a green hotel.	0.248	3.286	0.001	2.698
		I bought eco-labeled products.				
		I bought organic food.				
		I purchased biodegradable products (e.g., biodegradable food containers).				
		I paid increased fees for newly introduced environmental programs (e.g., hotels/parks' sustainable activities).				

Collinearity issues were examined by variance inflation factors (VIF values). If a high VIF value is present, the first-order constructs are highly correlated and may be tapping the same aspect of the higher-order construct, therefore, a formative specification of the higher-order construct may be inappropriate (Sarstedt et al., 2019; Duarte & Amaro, 2018). To exclude collinearity issues, VIF values are suggested to be lower than 5 (Hair et al., 2017). As shown in Table 23, VIF values range from 1.071

to 2.698, meaning there is no collinearity concern among the first-order components of urban travelers' specific PEBs scale.

5.8.2 Inner model assessment

Now the outer model exhibited reliability and validity, the next step is to test the hypothesized relationships between the new scale and other constructs to examine the nomological validity (Churchill, 1974; DeVellis, 2017). As shown in Figure 10, five predictor variables are hypothesized to predict PEB. Collinearity examination was conducted among the five predictor variables. As VIF values ranged from 1.689 to 2.804, all below 5, collinearity is not a concern in this model. Following the suggestion by Hair (2017), PLS algorithm was run with a path weighting scheme, maximum iteration was set at 300, and stop criterion set at 10^7. Calculation stopped at the 8th iteration, indicating a stable solution (Wong, 2019). 5,000 sub-samples were drawn to calculate the significance level of the paths (Hair, 2017).
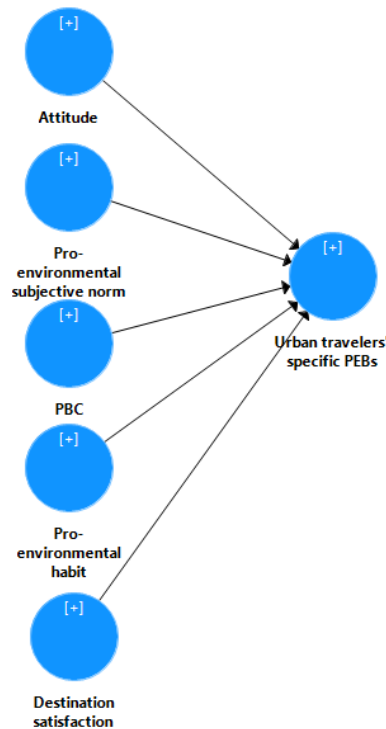
Figure 10: Structural model of Study 2.

Following the recommendations by Hair (2017) and Chin (1998), path coefficients, significant levels, and variance explained by endogenous variables were examined on the model. As shown in Table 24, four of the five hypothesized relationships are supported by empirical data. Specifically, pro-environmental subjective norm (β=0.192, p=0.000), PBC (β=0.167, p=0.000), pro-environmental habit (β=0.528, p=0.000), and destination satisfaction (β=0.124, p=0.000) could significantly predict PEBs. However, the data could not support that attitude could predict PEBs in the four cities (β=0.001, p=0.986>0.05).

Further, the effect size (f^2) of each predictor variable was estimated. Effect size tests allow for evaluating the contribution of a predictor variable to the endogenous variable's R^2 (Hair, 2017). When f^2 is lower than 0.02, the predictor variable can be said to have no contribution to the model's R^2. Commonly, 0.02, 0.15, and 0.35 are recommended as the thresholds for small, medium, and large effect sizes (Cohen, 1988; Hair et al., 2017). As shown in Table 24, the impact of attitude, pro-environmental subjective norm, PBC, pro-environmental habit, and destination satisfaction on the variance explained in PEBs is 0.000 (no effect), 0.074 (small to medium effect), 0.050 (small to medium effect), 0.445 (large effect), and 0.031 (small to medium effect) respectively.

Table 24: Collinearity, path coefficients, t-values, p-values, decision, effect sizes, and model fit.

Hypothesis	Path	VIF	Beta	T-statistic	P-value	Decision	f^2
H1c	Attitude → Urban travelers' specific PEBs	1.225	0.001	0.017	0.986	Not supported	0.000
H2c	Pro-environmental subjective norm → Urban travelers' specific PEBs	1.279	0.192	4.366	0.000	Supported	0.074
H3c	PBC → Urban travelers' specific PEBs	1.428	0.167	4.181	0.000	Supported	0.050
H5	Pro-environmental habit → Urban travelers' specific PEBs	1.623	0.528	13.497	0.000	Supported	0.445
H6	Destination satisfaction → Urban travelers' specific PEBs	1.273	0.124	3.676	0.000	Supported	0.031

Notes: R^2=0.613. R^2 adjusted=0.610. SRMR (saturated)=0.071. SRMR (estimated)=0.071. RMS_{theta}=0.176.

The coefficient of determination (R^2) indicates how much variance in the endogenous variable is explained by its predictors. As a guideline, 0.25, 0.50, and 0.75 are recommended as a small, medium, and substantial explanatory power (Henseler et al., 2009; Hair et al., 2011; Hair et al., 2019). In this model, predictor variables (attitude, pro-environmental subjective norm, PBC, pro-environmental habit, and destination satisfaction) explained 61.3% of the total variance in PEB ($R^2=0.613$). Therefore, the predictive power of the whole model (Figure 10) could be rated as medium to substantial.

The notion of model fit (such as CFI and TLI) commonly used in CB-SEM is not fully applicable to PLS-SEM (Hair, 2017). Similar to Study 1, standard root mean squared residual (SRMR) and root mean square residual covariance (RMS_{theta}) are used to indicate model fit. In the proposed model, SRMR values were 0.071 for the saturated model and 0.071 for the estimated model, both lower than the conservative 0.08 threshold. $RMS_{theta}=0.176>0.12$. In short, the model exhibited a fair fit with the data.

It was noted that the effect of attitude on PEB was weak (beta=0.001, $f^2=0.000$) and non-significant (p=0.986>0.05). To improve the predictiveness of this model, "attitude" was removed from the analysis. PLS-SEM algorithm was computed again with 5,000 subsamples. The results are shown in Table 25.

Table 25: The revised model to explain PEBs.

Hypothesis	Path of revised model	VIF	Beta	T-statistic	P-value	Decision	f^2
H2c	Pro-environmental subjective norm → Urban travelers' specific PEBs	1.128	0.192	4.671	0.000	Supported	0.085
H3c	PBC → Urban travelers' specific PEBs	1.425	0.167	4.105	0.000	Supported	0.050
H5	Pro-environmental habit → Urban travelers' specific PEBs	1.613	0.529	13.619	0.000	Supported	0.448
H6	Destination satisfaction →Urban travelers' specific PEBs	1.270	0.124	3.690	0.000	Supported	0.031

Notes: $R^2=0.613$. R^2 adjusted=0.611. SRMR (saturated)=0.071. SRMR (estimated)=0.071. $RMS_{theta}=0.191$.

In the revised model, the four predictor variables (pro-environmental subjective norm, PBC, pro-environmental habit, and destination satisfaction) can significantly predict PEB, with small to medium and large effects (f^2 values range from 0.031 to 0.448). The variance explained by this model is medium to substantial (R^2=0.613, adjusted R^2=0.611). Therefore, the revised model is considered better than the original model.

CHAPTER 6 DISCUSSION AND IMPLICATIONS

This chapter provides a review of the four research objectives of this thesis and presents a discussion on how the objectives are addressed. Findings will be discussed with reference to the existing literature. Subsequently, academic contributions and practical implications will be discussed.

6.1 Research objective 1: To develop a scale to measure the pro-environmental contextual force that affects urban travelers' PEBs.

Study 1 followed the steps recommended by Churchill (1979), Hinkin (1998), and DeVellis (2017) to develop a tool that can measure the contextual force that influences urban travelers' PEBs. During this process, a mix-method research design was adopted and the research consists of qualitative exploration and quantitative validation. The process went through domain specification, item generation, expert review, item purification, EFA, CFA, and nomological validation (Churchill, 1979; DeVellis, 2017; Hinkin, 1998). As a result, the pro-environmental contextual force concept was verified as a second-order construct that consists of nine first-order constructs. The following paragraphs provide academic discussions regarding the nine first-order constructs, according to the alphabetical order of the nine constructs.

The first dimension of pro-environmental contextual force is "cost efficiency". This study affirms "cost efficiency" is a very important pro-environmental contextual force though the effects of financial rewards were reported differently in PEB literature (Stern, 2000). For example, Steinhorst and Klöckner (2018) found economic incentives reduced the performance of PEBs. Delmas, Fischlein, and Asensio (2013) found monetary measures were effective in reducing energy consumption. The inclusion of the cost efficiency component is consistent with Stern's (2000) comprehensive view of pro-environmentalism that suggested financial resources can affect personal capabilities. As indicated

by the items, a cost can take the forms of monetary cost, saving, rewards, or gifts. As tourists care about cost efficiency during travel (Clavé et al., 2015), cost plays an important role in shaping their behaviors.

The second dimension of pro-environmental contextual force, "engaging campaign/activity", refers to pro-environmental activities and events held at the destination. This finding corroborates prior research that highlighted the usefulness of pro-environmental activism (Massung, Coyle, Cater, Jay, & Preist, 2013; Stern, 2000). As noted by Stern (2000), campaigns and activities are effective tools to advocate pro-environmental awareness, the coordinated efforts in campaigns and activities can be highly engaging as organizers use various approaches (such as competition and entertainment) to proactively invite people to join. In popular tourism areas, scholars also observed that well-designed activities are effective in promoting pro-environmental intentions (Hu et al., 2019). Massung et al. (2013) added that through stimulating participants' intrinsic and extrinsic motivations, a lasting effect can be achieved.

Third, this study agrees that "environmental quality" is a basic pro-environmental contextual force in a tourism destination. This dimension is in line with destination image studies that emphasized tourists' interest in the tangible attributes of destinations (Kim, 2020; Morrison, Pearce, Lang, Leary, & Moscardo, 1996). The geological environment is a source of the attractiveness of destinations thus influences the motivation, behavior, and experience of visitors (Kim, 2020; Morrison et al., 1996). The discovery of this dimension is supported by environmental research that emphasizes the interaction between tourists and the natural environment (Lee & Jeong, 2018; Liu et al., 2019; Pan & Wang, 2018). The label of "environmental quality" is inherited from nature-based tourism studies as the measurement items are largely similar (Lee & Jeong, 2018; Liu et al., 2019).

Fourth, "facility readiness" is confirmed to be an important pro-environmental contextual force to influence urban travelers' PEBs. The criticality of the facility is supported by literature on recycling

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behavior and travel mode choices (Chen & Tung, 2010; Heath & Gifford, 2002; Pan & Wang, 2018). Facility readiness is important firstly because the unavailability of it can deter a pro-environmental action from happening. Apart from the existence of pro-environmental facilities (Chen & Tung, 2010; Pan & Wang, 2018), the current study found the abundance, convenience, and ease of use of facilities are important aspects of this dimension, as they collectively reflect the user-friendliness of facilities.

The fifth dimension of "policy effectiveness" is in line with the findings in resident PEB studies (Kalantari et al., 2007; Wan et al., 2014). This dimension is supported by the comprehensive view of pro-environmentalism (Stern, 2000). Although residents presumably have a better understanding of their cities' regulations and policies, tourists expressed their sensitivity toward local policies. Indeed, tourists want to have good experiences in the destination and try to follow local rules and regulations.

Sixth, the dimension of "resident support" concerns the local norm of pro-environmentalism at the destination. In cities, outstanding greening work reflects the strong demand and support of locals. The dimension of resident support indicates a spillover effect of pro-environmentalism between residents and tourists. Tourism literature repeated the differences and conflicts in host-guest relationships (Iverson, 2010; Tsaur et al., 2018). In much contrast, this study found tourists respect the host community and try to identify with the destination's pro-environmental efforts. Destinations are suggested to take advantage of this shared value in their governance agenda.

The seventh dimension of "signage saliency" highlights the value of informational interventions (Bolderdijk et al., 2013; Pan & Wang, 2018). As a basic way of mass communication, signage includes banners, labels, posters, slogans, and other visual messages. Effective signage is motivating when they trigger pro-environmental values (Bolderdijk et al., 2013). Well-designed signage conveys clear notification of prompts and warnings. Therefore, signage exposure directly impacts visitors' cognition and action (Pan & Wang, 2018).

The eighth dimension of pro-environmental contextual force "supportive big environment" represents a perceived government emphasis on pro-environmentalism. In previous studies, there are indications of the importance of this dimension among residents. Lavergne, Sharp, Pelletier, and Holtby (2010), for example, observed that the government approaches toward environmental regulations had an impact on citizens' pro-environmental motivations. Another study also stressed the role of the government and the importance of adopting integrated measures across the whole governance system (Lucas et al., 2008). This dimension is influential as strong institutional leadership would guide the actions of private sectors and individuals (Lucas et al., 2008; Revell, 2013).

The ninth dimension identified in the pro-environmental contextual force scale is travel partner. As the name indicates, it relates to whom they travel with. Previous studies showed travel parties do have an impact on tourist choices and activities (Ahn & McKercher, 2015; Rashidi & Koo, 2016). Notably, travel partners' influence is different from pro-environmental subjective norm in that the latter relates mostly to the important ones in the usual (e.g., home, workplace) environment (Han, 2015; Wang & Zhang, 2020). While colleagues and neighbors form a normative force to influence people in day-to-day life, a vacation trip distances them from homes and offices. In addition, a vacation is typically regarded as an indulging time and people tend to get unleashed from the obligatory norms at home (Dolnicar & Leisch, 2008). However, travel partners are a proximal source of influence from the travel companions thus are less possible to be absent unless it is solo traveling.

Moreover, the structure of the nine dimensions of pro-environmental contextual force was examined. After two rounds of abstraction, nine first-order constructs remained in this scale, and are highly correlated. Pro-environmental contextual force is found to be a second-order reflective-reflective construct. Each lower-order construct consists of 2 to 5 reflective observable indicators. They function as a holistic measurement scale.

6.2 Research objective 2: To examine the effect of pro-environmental contextual force on urban travelers' actual PEBs and PEB intention for next visits.

Hypothesis 1a "attitude positively affects urban travelers' actual PEBs" and hypothesis 1b "attitude positively affects urban travelers' PEB intention" are both supported by the empirical data ($\beta=0.063$, $p=0.025$; $\beta=0.143$, $p=0.000$). Tourists who think PEBs are good, necessary, beneficial, and wise to do are more likely to take action to protect the environment during travel, and their willingness to do it during the next visit is also stronger. These results are in line with TPB and previous studies (Ajzen, 1991; Han, Meng, et al., 2017; Liu et al., 2019).

Hypothesis 2a "pro-environmental subjective norm positively affects urban travelers' actual PEBs" and hypothesis 2b "pro-environmental subjective norm positively affects urban travelers' PEB intention for next visits" are both not supported by data at alpha=0.05 ($\beta=0.005$, $p=0.856>0.05$; $\beta=0.072$, $p=0.076>0.05$). These results are inconsistent with TPB but show a similar pattern with a recent study. Liu et al. (2020) found that subjective norm was not significantly associated with tourists' pro-environmental behaviors and proposed future research to explore the reasons. This study can provide some insights into this query. Subjective norms represent the normative influence from the people that they think are important. When operationalizing this concept, the subjective norm is often referred to as the influence of important people such as friends, colleagues, and families. In the qualitative stage of Study 1, participants were inquired why they did pro-environmental behaviors during travel. The influence of the important ones was not reported as a prominent driver. Instead, travel partners were identified as a major source of influence on PEBs during travel. The weak influence of pro-environmental subjective norm is further reflected in the quantitative stage of this study, where the regression coefficients of pro-environmental subjective norm on actual PEBs and PEB intentions are both low, and the p-values are both insignificant ($\beta=0.005$, $p=0.856>0.05$; $\beta=0.072$, $p=0.076>0.05$).

Thus, this study suggests that during travel where travelers are away from their usual environment (e.g., home and office), people are physically detached from the source of the usual norms, therefore the influence of it is reduced.

Upon closer examination, pro-environmental subjective norm show differentiated effects on actual behavior and future behavioral intention. The regression coefficient is smaller and the p-value is less impactful on actual behavior ($\beta=0.005$, $p=0.856$) than on intention ($\beta=0.072$, $p=0.076$). In other words, pro-environmental subjective norm's influence is even weaker on actual PEBs than on PEB intention. Statistically, pro-environmental subjective norm's effect on PEB intention can be significant if the threshold is set to be 0.1. This finding is in harmony with previous studies that found subjective norm is a significant predictor because most previous studies looked at intention instead of actual behavior (e.g., Han, Meng, et al., 2017; Liu et al., 2019).

Hypothesis 3a "perceived behavioral control positively affects urban travelers' actual PEBs" and hypothesis 3b "perceived behavioral control positively affects urban travelers' PEB intention for next visits" are supported by empirical data ($\beta=0.406$, $p=0.000$; $\beta=0.401$, $p=0.000$). This means urban tourists who perceive possessing a high level of control over pro-environmental behaviors are more likely to practice pro-environmental behaviors in Shanghai. Moreover, their intention to perform PEBs in the next trips is also higher. These findings are in line with TPB (Ajzen, 1991). Moreover, these findings are in line with studies in nature-based tourism contexts (Liu et al., 2019).

Hypothesis 4a postulates that pro-environmental contextual force exerts a direct effect on urban travelers' actual PEBs. Hypothesis 4b postulates that pro-environmental contextual force exerts a direct effect on urban travelers' PEB intention for next visits. These two hypotheses are supported by empirical data ($\beta=0.476$, $p=0.000$; $\beta=0.341$, $p=0.000$). The increase in pro-environmental contextual force will lead to the increase of visitors' pro-environmental actions and future pro-environmental

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intentions. In the case of Shanghai, these results indicate Shanghai's pro-environmental image promotes visitors' pro-environmental behaviors. Specifically, tourists who perceive Shanghai as a strong pro-environmental context are more likely to carry out pro-environmental actions on their side, and they are also more inclined to behave pro-environmentally in their next trips. These findings verify the effect of Shanghai's efforts in going green. Shanghai is the earliest city in China's Mainland to implement a series of mandatory pro-environmental measures starting from 1st July 2019. Its measures and experiences thus can benefit other fast-developing cities.

In previous PEB studies, scholars tend to emphasize the role of psychological factors and underestimate the influence of external forces (Walton & Austin, 2011; Wang et al., 2018). However, this study evidenced a highly significant association between pro-environmental contextual force and PEBs. The effect size of the pro-environmental contextual force is larger than those of attitude and pro-environmental subjective norm. Therefore, this study challenges previous assertions in literature that external influences are trivial and "psychological factors contribute more to the understanding of the mechanism of pro-environmental behaviors" (Li, Zhao, Ma, Shao, & Zhang, 2019, p.31) and highlight the effect of the contextual force in a destination. These findings are in line with the coherent view of environmentalism (Stern, 2000), and stress the role of the behavioral context in influencing PEBs.

Finally, PLS-SEM analysis shows the proposed model has substantial explanatory power (R^2 of actual PEBs=0.702; R^2 of PEB intention=0.606), predictive relevance (Q^2 of actual PEBs=0.462>0; Q^2 of PEB intention=0.399>0), and good model fit (SRMR=0.073<0.08, RMR_{theta}=0.111<0.12). These results are supportive of the extension of the TPB model.

6.3 Research objective 3: To develop a scale to measure urban travelers' specific PEBs.

Study 2 followed the steps recommended by Churchill (1979), Hinkin (1998), and DeVellis (2017) to develop a tool that can measure urban travelers' specific PEBs. A mix of deductive and inductive approaches was adopted and the research was based on literature and tourist input. The process consists of domain specification, item generation, expert review, item purification, EFA, CFA, and nomological validation (Churchill, 1979; DeVellis, 2017; Hinkin, 1998). Urban travelers' specific PEBs scale was verified as a reflective-formative two-order construct model that consists of six first-order constructs. The following paragraphs provide discussions on the six first-order constructs. The sequence of the discussion is based on the alphabetical order of construct labels.

First, donating to pro-environmental initiatives is reported among urban tourists' specific PEBs. The mean value of this dimension (5.857) is the fourth-highest in the scale. As the items show, urban tourists have opportunities to join destinations' sustainable programs, such as spending time, taking part in pro-environmental activities at scenic spots, and publicly supporting these initiatives (e.g., through posting on social media). This finding is consistent with the study of Ramkissoon, Smith, et al. (2013) that proposed park visitors can be motivated to donate to the park's protection programs.

The second component of the scale connotes travelers' efforts to learn the local pro-environmental actions including residents' pro-environmental behaviors and facilities when they have vacations in cities. The mean value (6.029) of this dimension is the highest among all dimensions, indicating a high level of performance of learning behavior among tourists. This dimension of PEBs was repeated in tourist interviews. Particularly when tourists sensed a cultural difference in the destination, they expressed a pronounced curiosity to understand local actions and rules. Although pro-environmental knowledge learning is rarely addressed in tourism literature, studies argued knowledge is a premise to drive pro-environmental intentions (Wurzinger & Johansson, 2006). As survey results

have validated, learning the destinations' pro-environmental facilities and residents' pro-environmental actions is an important way to show their friendliness to the local environment.

Third, "reduce" connotes the reduced use of non-essential disposable items such as plastic bags, one-time-use tableware, avoiding excessive packaging, and bringing their personal cups or bottles. The mean value (5.845) of this dimension is the fifth-highest compared with other dimensions. This dimension of behaviors is discovered from interviews. These items reflect a desire to only use "the things that I really need", thus, is a reflection of a minimalist lifestyle during travel (Becker, 2021). "Take and use my own cup/bottle" is reported by a few tourists although this item was not found in previous literature. The discovery of this dimension indicates a pro-environmental trend that is opposite to the conventional harm-and-offset approach (Becker, 2021). Reducing the usage from the beginning saves the cost of handling the garbage and offsetting the consequences in later stages. This finding is consistent with the discussion that frugality is closely related to pro-environmentalism (De Young, 1996; Holmes et al., 2019).

Fourth, "remind" means persuading others to protect the environment, including not to be loud, to protect the environment, and not to feed animals. The mean value (5.967) is the second-highest in this sample, indicating that tourists are very happy to remind partners of pro-environmentalism during their trips to urban destinations. These items reflect the influence of pro-environmental tourists on their travel partners. This category of persuasive actions was supported by (Lee et al., 2013) study, although they addressed persuasive actions as a general rather than tourism-specific environmentally friendly behavior.

Fifth, urban travelers have chances to reuse amenities in hotel rooms. The mean value (3.752) of this dimension is the lowest compared with other dimensions but is still above the mid-point (4) of the 7-point scale. As the items indicate, tourists can cancel the daily change of towels, bedsheets,

amenities, and housekeeping services. Thus, this dimension supports previous scholars' emphasis on the promotion of pro-environmentalism in hotels (Miao & Wei, 2016). When traveling to a metropolis, seeking commercial accommodation is inevitable for most travelers, therefore, hotels become a major venue for them to perform PEBs.

Finally, urban travelers' specific PEBs pertain to shopping. The mean value (5.917) of this dimension is the third-highest among all dimensions. Metropolis' shopping opportunities are an important source of attractiveness and are a prominent characteristic of urban tourism (Caldeira & Kastenholz, 2018). In retail sectors, the availability of eco-labels enables tourists to differentiate environmentally friendly merchandise. As the items show, pro-environmentalism can be realized through choosing green-certified products, biodegradable products, locally produced products, and paying more for the destinations' green programs during travel. This finding is supported by Karlsson and Dolnicar (2016) and (Lee et al., 2013) that green certification is an effective way to promote pro-environmentalism.

6.4 Research objective 4: To establish a comprehensive model to explain urban travelers' specific PEBs.

The nomological validity of the new urban travelers' PEBs scale was validated in the relationship web with attitude, pro-environmental subjective norm, PBC, pro-environmental habit, and destination satisfaction. A large sample of tourists recalled their actual pro-environmental behaviors during their most recent trips to one of the four cities during the past year. A comprehensive model was established to explain urban travelers' specific PEBs.

H1c in the model postulates that "attitude positively affects urban travelers' specific PEBs". This hypothesis is not supported by the empirical data ($\beta=0.001$, $p=0.986>0.05$). Attitude is an

insignificant and ineffective predictor (f^2 =0.000<0.02) of pro-environmental actions in the four cities. This finding supports the questioning of the predictive power of attitude on behavior. As Gupta and Ogden (2006) pointed out, despite consumers expressing concerns for the environment, they are unwilling to purchase higher-priced pro-environmental products. Huffman et al. (2014) also summarized, in studies that evidenced statistically significant relationships between attitudes and behaviors (including behavioral intention), the magnitude of the effects is often low.

This finding also reinforces the call to differentiate pro-environmental intention and actual pro-environmental behaviors (Juvan & Dolnicar, 2016), as the discrepancy between behavioral intention and actual behavior is increasingly documented (e.g., ElHaffar et al., 2020). While attitude can predict behavioral intention in many cases, the effect on actual behavior is in question (ElHaffar et al., 2020). Future research can focus on identifying factors that influence the attitude-behavior relationship in the context. For example, in the recycling context, Huffman et al. (2014) found social influence and worldview strengthen the attitude-behavior relationships. It would be interesting to identify possible moderators of the attitude-PEB relationship in the urban tourism context.

H2c postulates that "pro-environmental subjective norm positively affects urban travelers' specific PEBs", and H3c postulates that "PBC positively affects urban travelers' specific PEBs". These two hypotheses are supported by the empirical data (β=0.192, p=0.000; β=0.167, p=0.000). These results are consistent with previous studies on PEB intention (e.g., Han et al., 2010; Kiatkawsin & Han, 2017).

H5 postulates that "pro-environmental habit positively affects urban travelers' specific PEBs". This hypothesis is supported by the empirical data (β=0.528, p=0.000). This finding is consistent with Miller's (2015) argument of the predictability of habit although he also agreed urban travelers exhibited reduced PEBs when they are traveling in Melbourne compared to at home. These two studies (Miller

(2015) and the current study) confirm that habit remains a strong predictor of PEBs during urban traveling. The effect of pro-environmental habit is found to be the largest, compared with attitude, pro-environmental subjective norm, PBC, and destination satisfaction in this study. This implies the importance of habit in explaining tourist PEBs and supports psychologists' argument that habit predicts pro-environmental actions (Ouellette & Wood, 1998; Steg & Vlek, 2009). Therefore, the pro-environmental habit should be considered when trying to explain individuals' PEBs. As evidenced in this study, pro-environmental habit activates PEBs no matter the behavioral context is home or travel. This highlights the importance of cultivating pro-environmental habits. Therefore, pro-environmental education shall be provided to children as early in life as possible, so as to cultivate a habit that will benefit the environment all the way along with his/her life.

H6 postulates that "destination satisfaction positively affects urban travelers' specific PEBs". As expected, this hypothesis is supported by the empirical data ($\beta=0.124$, $p=0.000$), and the feeling of destination satisfaction is an effective predictor of PEBs. This result is consistent with Ramkissoon, Weiler, and Smith's (2012) study that discussed how the satisfactory feeling toward a national park would promote the intention to protect the park's resources.

6.5 Contributions

6.5.1 Academic contributions

The findings of this thesis provide implications to tourism academics, industry practitioners, destination management organizations, and government officials, regarding the managing of tourism destinations for a sustainable future. This thesis expanded the scope PEB research to urban tourism. As urban traveling constitutes to be a major part of global mobility, urban travelers' PEBs deserve more attention than it has obtained (Miller et al., 2015).

6.5.1.1 Academic contributions of Study 1

Study 1 contributes a reliable and valid measurement scale – pro-environmental contextual force to the literature. In past studies, the conceptualization and measurement of pro-environmental contextual force remained elusive, although it was argued to be an important force in shaping PEBs (Walton & Austin, 2011; Wang et al., 2018). No study was found to have clarified the details of pro-environmental contextual force such as the dimensionality, the measures of each dimension, or have empirically tested its effect on tourist PEBs. Without sufficient insights from past studies, item extraction started inductively from scratch. Tourist interviews were adopted and analyzed to identify the dimensions and generate items for pro-environmental contextual force. Through a rigorous seven-step procedure suggested by Churchill (1979) and DeVellis (2017), this study elucidated the meaning of pro-environmental contextual force, developed valid and reliable items to measure it, discovered its two-order structure, and provided the first test of its role in the shaping of PEBs. This multidimensional multi-item measurement instrument is more insightful than one-dimensional or single-item measures because it can more sufficiently capture the essence of the pro-environmental contextual force and can avoid the limitations brought up from measuring by only one item (Lee et al., 2013; Nagy, 2002). Measurement development study is fundamental work for knowledge generation and is the basis for theory testing (Kock et al., 2019). This new scale forms a cornerstone for testing the causal effects of pro-environmental contextual force and its interplay with other variables in future research. Thus, this research significantly contributes to the understanding of pro-environmentalism.

In addition, Study 1 is among the first attempts to explicitly add the contextual force to the TPB framework. Based on TPB, Study 1 constructs a model that can substantially explain tourist PEBs (R^2=0.702 for actual PEBs, R^2=0.606 for PEB intention), thus contributing to the extension of the Theory of Planned Behavior. In this study, pro-environmental contextual force is evidenced to be an

effective predictor of tourists' actual PEBs and PEB intention for next visits. Pro-environmental contextual force and PBC are the strongest predictors of actual PEBs, followed by attitude and pro-environmental subjective norm. Similarly, PBC and pro-environmental contextual force are the strongest predictors of PEB intention, followed by attitude and pro-environmental subjective norm. These results imply that stronger effects come from the context (i.e., pro-environmental contextual force) and the perceived ability to perform a behavior in that context (i.e., PBC). The findings highlight the key role of the destination context in shaping tourist PEBs. Therefore, in future academic studies, PEBs studies shall incorporate the contextual force in the analysis to achieve higher explanatory power.

6.5.1.2 Academic implications of Study 2

Study 2 elucidated the composition and measurement of urban travelers' specific PEBs. It's critical to adequately understand and measure PEBs as measurement is a foundation of testing determinants and effects (Blankenberg & Alhusen, 2018; Kock et al., 2019). Past studies tend to use general PEB scales or treat PEB as a general term. However, general PEB scales may not be relevant across contexts (Xu et al., 2020). Therefore, it is important to identify specific, relevant, and significant pro-environmental behaviors before studying the determinants and outcomes (Blankenberg & Alhusen, 2018). In addition, in the existing literature, almost all rigorously developed PEB scales are rooted in the Western socio-cultural background while the pro-environmental actions of the rising Asian tourists are under-researched (Balundė et al., 2019; Holmes et al., 2019). Study 2 represents the first endeavors to develop a detailed tourist PEB scale in a non-Western context.

This urban travelers' specific PEBs scale differs from the generic PEB scales in three aspects. First, this scale fits the urban tourism context. The generic PEB scales are composed of items to reflect PEBs in daily life instead of during travel and tourism. Many of the items are hardly applicable in the tourism context, such as using oven cleaning spray, using chemical insecticide, driving at speeds under

100 kph (Kaiser, 1998), purchasing a solar panel, and buying domestically grown wooden furniture (Kaiser & Wilson, 2004). Therefore, generic scales cannot properly represent urban tourists' actions. As the items and dimensions of this new scale are extracted from first-hand interviews in addition to past studies, they reflect the latest and most typical behaviors of urban travelers. For example, the "shopping" dimension reflects a characteristic of urban tourism that shopping is a critical source of attractiveness (Ashworth & Page, 2011). The "learning" dimension reflects the intensive host-guest interaction and cultural assimilation in urban tourism (Chen & Hsu, 2021; Tung et al., 2020).

Second, this scale is comprehensive. It covers six dimensions and twenty-one items. While most existing studies measure tourist PEBs in a general sense or use one or only a few behavioral items in their measurement (e.g., Han et al., 2018b; Han & Kim, 2010; Liu et al., 2019; Ramkissoon, Graham Smith, et al., 2013), this scale covers all major domains of urban travelers' PEBs, thus providing a comprehensive picture of PEBs to the literature. To the best of the author's knowledge, this scale is the first to comprehensively measure urban travelers' PEBs and provides the opportunity to explore determinants' differentiated effects on different behavioral clusters (Blankenberg & Alhusen, 2019).

Third, this scale incorporates non-Western perspectives on PEBs. While most existing scales are rooted in Western societies (Lee et al., 2013; Wu et al., 2021), this scale was developed in a non-Western society and reflects several core values that are most prominent in societies influenced by the Confucian culture, including the enthusiasm for education, frugality, and collectivism. The "learning" dimension of the scale reflects the emphasis on self-improvement in Confucianism where education is greatly valued and self-improvement is expected to last along with a person's life (Bahtilla & Xu, 2021; Kim, 2007). By life-long learning in and out of school, one can achieve the "true self" that acts well and integrates into society (Bahtilla & Xu, 2021, p.5). As the ancient Chinese saying goes "it is better to travel ten thousand miles than to read ten thousand books (读万卷书不如行万里路)", traveling is

regarded as a means of expanding people's horizons and exploring new knowledge. Thus, "learning" is regarded as an integral part of tourism experiences (Fu et al., 2017). With a desire to improve the "self" through traveling, tourists are ready to explore pro-environmental facilities and actions in different places.

Items in the "reduce" and "reuse" dimensions reflect the appreciation of living a humble life and the Confucian virtue of long-term perseverance (Fu et al., 2017; Liebman, 2019; L. Lin et al., 2013; Wang et al., 2016). The items "I used my own cup/bottle during the trip" and "I looked for ways to reuse one-time-off things (e.g., plastic bags, bottles, combs, and toothbrushes from hotels)" were not found to have been reported in existing PEB literature. These items originated from tourist interviews and were retained after multiple rounds of tests. They represent the deeply engrained thrift culture, which is largely opposite to the popular "throw away" culture in the affluent industrialized countries (Hellmann & Luedicke, 2018).

The "reminding" dimension reflects a collectivist orientation of interpersonal relationships (Wang et al., 2016). People from collectivist societies tend to have social values that emphasize what is best for the community. Cooperation, interdependence, and obedience are important principles in socialization (Bahtilla & Xu, 2021; Keshavarz & Baharudin, 2013). Helping others and asking for help from others are not only encouraged but viewed as essential. So friendly reminding companions to protect the environment is well accepted and regarded as an important pro-environmental action.

Study 2 also contributes a comprehensive model to explain urban travelers' specific PEBs. Research of PEBs in the urban tourism context has been limited. Study 2 focuses on this distinctive form of tourism and empirically verifies that the normative force (pro-environmental subjective norm), reasoning force (perceived behavioral control), habitual force (pro-environmental habit), and emotional force (destination satisfaction) collectively elicit the performance of urban travelers' specific PEBs.

Compared with TPB, this model is a more comprehensive one to explain the actual occurrence of specific PEBs among urban travelers. This framework is a response to the call for a more comprehensive understanding of PEBs antecedents thus contributing to PEB research (Blankenberg & Alhusen, 2018).

6.5.2 Practical implications

6.5.2.1 Practical implications of Study 1

The findings of this thesis are indicative of metropolitan destinations that are receiving large volumes of tourists. Study 1 provided knowledge as to what constitutes an urban destination's pro-environmental context and enables destinations managers to specifically examine their destination's environmental friendliness. The nine aspects and thirty-three items are the key areas to focus on if local stakeholders aim to improve the destination's pro-environmental context. With the knowledge discovered, businesses, pro-environmental groups, and government bodies can specifically inspect these aspects and accordingly create an encouraging pro-environmental context.

Specifically, policies and regulations are good regulating tools of tourists' behaviors. Most tourists will search for information about the city before visitation. If pro-environmental regulations are emphasized in various information channels such as visitor guidelines, brochures/websites, and information centers, advocacy of them would be wider. In tourism situations where policies and regulations are less familiar to visitors, the good environment per se is a reflection of the local standard and is a de facto reminder of environmentally friendly actions. Thus, creating an appealing city environment is necessary. Broken window theory suggests that people are more likely to protect the environment when they see it is well protected (Lang et al., 2010). In paid touristic spots, the surroundings are usually well-designed and maintained to stay attractive. However, the city's general

environmental quality, such as the public space, air quality, the water of inner-city rivers and lakes, and architectures also affect tourists' impression of the city's environmental quality, therefore, should be highlighted in destination marketing materials. Tourism board, city planning department, and city government should work together to make the city look beautiful. Similarly, the greenery and cleanliness of the city is another manifestation of its environmental standard.

Secondly, salient signage is a highly effective reminder. Tourists, as temporary visitors, may not fully know what actions are improper in this city. A visual cue serves as a timely reminder to them. City government and tourism service sectors (such as hotels and restaurants) are suggested to explicitly encourage pro-environmental actions with straight signage. Posters, banners, pictures, and slogans shall be made understandable in addition to being abundant. Though campaigns and activities are not staged specifically for tourists, they are interested in local life. As found in this study, local people's pro-environmental activities are noted by tourists. Therefore, the invitation and involvement of tourists in pro-environmental campaigns and activities can enhance tourists' awareness, as well as increase tourists' experience in the destination.

After the green image is established, facilities and alternative options are very critical for tourists to perform actual pro-environmental behaviors. It can be the last obstacle to action. During the qualitative research stage, participants reported that sometimes they had to throw garbage outside the dust bins because the dust bins were full. This reminds us that in popular scenic areas, in particular, facilities management shall monitor the large volume of tourists and consider the even larger demand for pro-environmental facilities during peak seasons. Besides, pro-environmental groups shall work to convey a key message that many pro-environmental alternatives do not cost more. For example, using a shared bicycle is more cost-efficient than hiring a taxi. A pro-environmental option can be

accompanied by appreciation because small rewards increase identification and can stimulate pro-environmental intention in the future.

Finally, travel partners' reminders and the supportive big environment are effective contextual forces. Though these two dimensions are less under the control of a destination, pro-environmental travelers can perform their friendly actions thus spreading the notion that environmentalism is trendy and cool. The supportive big environment forms on the basis of top leaders' advocacy and government's effort. Destination managers can integrate their policies and practices into the big environment, such that a synchronized effect can be expected.

The second-order reflective-reflective structure of pro-environmental contextual force also implies that a destination should holistically improve its environmental friendliness, as the nine domains are highly correlated with each other and influence each other. This inter-connectedness indicates that different divisions (e.g., policymaking, facility management, publicity, business sectors) should closely collaborate to boost the effects from different divisions.

Cross-destinations, the pro-environmental contextual force scale can serve as a guideline for destination managers to compare their green destination images. Once the scale is used to evaluate different cities, the results can indicate a destination's relative position on the global map. Accordingly, destination managers can understand their comparative positions and learn from best-performing destinations.

6.5.2.2 Practical implications of Study 2

Study 2 provides a tested repository of most likely behaviors for destination managers and private sectors (such as restaurants, hotels, and attractions) to use. A way to solve the problems of low tourist participation in pro-environmental programs is to target acceptable behaviors (Kiatkawsin &

Han, 2017; Miller et al., 2015). The private sector can utilize this scale to design new and suitable sustainable programs. For example, a new item in the scale is that many tourists would like to "take and use my own cup/bottle". Therefore, hotels, restaurants, and conference venues can widely install drinking water dispensers. This approach provides an opportunity to respond to tourists' preferences thus improving satisfaction as well as saving costs for bottled water. Another example relates to the activities that tourists are happy to join and publicly share their participation in destinations' pro-environmental programs on social media. Hotels, restaurants, and resorts can utilize tourists' desire of sharing so as to expand the influence of the pro-environmental programs and their brand images.

Destination managers must understand travelers' perceptions of practicable PEBs. As the 21 items show, tourists embrace pro-environmentalism even while traveling and can be green tourists, but the realization of green practices needs more cross-sector facilitation. Therefore, cues of pro-environmentalism shall be provided, policies and facilities shall be established to facilitate tourists. For hotels and tourist attractions that are already doing so, this study provides a confirmation that they are doing the right things. Destination managers shall also understand that tourists may come from a very different culture with different levels of pro-environmentalism but they commonly have a wish to conform with local customs and rules. As evidenced in this thesis, tourists showed a high tendency for learning and reminding others about local pro-environmental actions and facilities. The high level of learning behaviors implies the necessity to clearly inform tourists of local rules, facilities, and green programs. Tourist recognition of eco-certificates reinforces the need to establish a trustable green labeling mechanism for tourism products such as locally made souvenirs, organic restaurants and food, green hotels, and biodegradable products.

Study 2 also provides implications for climate change educators, such as governments around the world, environmental NGOs, and those who work under the framework of UNESCO's Education

for Sustainable Development. It's important to note that the dimensions of PEBs are associated with different levels of likelihood to perform. Since lower-effort PEBs can spill over on high-effort PEBs (Ramkissoon, Smith, et al., 2013), it would be helpful if educators arrange PEBs exercise in sequence. One approach is to gradually encourage PEBs according to the inclination to perform. As indicated by Study 2, learning and reminding behaviors are more frequent and accepted, so learning and reminding behaviors can be firstly encouraged to initiate the trajectory and get tourists on the track. When pro-environmentalism is more established, the encouragement of challenging PEBs such as reusing hotel amenities can follow. This progressive approach can also be used to develop people's pro-environmental habits.

CHAPTER 7 CONCLUSION

This chapter presents the conclusion of this thesis. First, an overview of each chapter of the thesis will be presented. Then, the limitations of this research will be discussed. Finally, suggestions for future research will be provided.

7.1 Overview of the thesis

Chapter 1 introduces the research background and explains the rationale for conducting this research. Despite the rising call for investigating PEBs beyond psychological factors, research in this area remains limited. Knowledge about the nature of pro-environmental contextual force, the magnitude of the effect of pro-environmental contextual force, and how these forces collectively shape PEBs is needed to help understand and promote urban travelers' PEBs. In the meantime, the detailed composition of urban travelers' PEBs is also unclear in the literature, and the habitual and emotional drivers are yet to be integrated into models to explain urban travelers' specific PEBs. These gaps lead to the objectives of the present study: 1) develop a scale to measure the contextual force that affects urban travelers' PEBs; 2) examine the effect of pro-environmental contextual force on urban travelers' actual PEBs and PEB intention; 3) develop a scale to measure urban travelers' specific PEBs; and 4) establish a comprehensive model to explain urban travelers' specific PEBs. The two-study design is explained. The significance of the research and the definition of key variables are presented.

Chapter 2 reviews existent studies on PEBs. Urban tourism is found to be a large and distinct form of tourism but a less studied area. Tourist pro-environmentalism is found important because tourists exhibit significantly different behavioral patterns from home. TPB is identified to be a useful framework in this study but needed to be modified. Each core variable is discussed in this chapter and thirteen hypotheses are proposed. Subsequently, conceptual models are established and presented.

Chapter 3 explains the methodology of the current research. The whole research is divided into two studies. Study 1 centers around the development of a scale to measure contextual force, and Study 2 centers around the development of a scale to measure urban travelers' specific PEBs. Scale development procedures recommended by Churchill (1978) and DeVellis (2017) are adopted. Because of the paucity of research on the contextual force, this study adopts an inductive approach of scale development and started from interviews with tourists (Hinkin, 1998). Content analysis approach is adopted to identify the dimensions and measurement items from tourist interviews. Panelist discussion and expert review techniques are employed to enhance the content validity of measurement items. A pilot test is conducted to purify the measurement items with empirical data. Following that, the main survey is conducted to collect data to validate the nomological validity of the newly developed contextual force scale. Upon the recommendation of Hair (2017), hierarchical measurement construct validation procedures are followed to examine the validity of the second-order contextual force scale. Lastly, the PLS-SEM approach is adopted to analyze the relationships among attitude, pro-environmental subjective norm, PBC, pro-environmental contextual force, actual PEB, and PEB intention for next visits.

The scale development of urban travelers' specific PEBs is a mix of deductive and inductive approaches. Studies of discrete PEBs and tourist interviews have been used to generate items that can represent Asian tourists' pro-environmentalism. A pilot test is conducted to collect tourists' responses for the purpose of item purification. Then, the main survey employs data from tourists who have visited Beijing, Guangzhou, Shanghai, and Shenzhen in the past year. This survey provides empirical data to validate the nomological validity of the newly developed urban travelers' specific PEBs scale. Hierarchical measurement construct validation procedures are employed to validate the second-order urban travelers' PEB scale, and PLS-SEM is employed to examine the proposed model.

Chapter 4 presents the details of the process and results of Study 1 (scale development for contextual force). In the qualitative inquiry, 59 tourists have joined the interviews and conversations and a content analysis identified the nine dimensions of the contextual force. Each dimension is represented by measurement items developed at this stage. In the quantitative stage, 330 questionnaires have been filled by tourists who visited Shanghai in the past month. EFA results in nine dimensions with highly correlated measurement items. Another questionnaire is designed, pre-tested, and distributed to collect data on the relationships between attitude, pro-environmental subjective norm, PBC, pro-environmental contextual force, actual PEB, and PEB intention for the next visits. PLS-SEM analysis shows that the pro-environmental contextual force scale is a second-order reflective-reflective measurement model, and it merges well TPB variables in predicting actual pro-environmental behaviors and PEB intention. Six of the eight hypothesized relationships are significant. The predictor variables explain 70.2% variance in actual PEBs and 60.6% of the variance in PEB intention. The model fit is good.

Chapter 5 presents the details and results of Study 2 (scale development for urban travelers' specific PEBs). Based on literature analysis and 59 tourist interviews and conversations, seven dimensions of PEBs have been identified. Items are extracted from the literature review and tourist input to reflect these dimensions. These items are scrutinized by a discussion panel and an expert panel to ensure the content of the items. Then, 330 tourists to Shanghai have joined the pilot study. After purification by EFA on the pilot study data, 33 items remain in the scale. Another survey is conducted to validate the urban travelers' specific PEBs scale and to examine the relationships of urban travelers' specific PEBs with other variables. CFA is conducted and urban travelers' specific PEBs are confirmed to be a second-order reflective-formative measurement scale. Four of the five hypotheses are supported by the empirical data provided by the 666 tourists. Pro-environmental subjective norm, PBC, pro-

environmental habit, and destination satisfaction can significantly predict urban travelers' specific PEBs. The predictive power of the model is 61.3%, and the model fit is acceptable.

Chapter 6 discussed the findings and contributions of Study 1 and Study 2. Discussions are made according to the research objectives. The results of hypothesis testing are discussed in view of previous research. Inconsistency with previous studies (including the insignificant effect of pro-environmental subjective norm on actual PEBs in Shanghai, and the insignificant effect of attitude on urban travelers' specific PEBs) is noted, and reasons and academic implications are discussed. Practical implications are also provided to destination managers, industry practitioners, pro-environmental groups, and pro-environmental educators.

7.2 Limitations and suggestions for future research

This research is not without limitations. The first limitation is related to the external validity of the new scales. Although large samples are used in Study 1 and Study 2, the data largely reflect the views of Chinese tourists, especially in the quantitative validation stage. While the findings are highly relevant to the large Chinese domestic and international travel market, the scales' external validity shall be tested in other cities and other cultures to confirm the external validity. For Study 1, the pro-environmental contextual force has been validated only with Chinese tourists to Shanghai. The measurement is developed based on the qualitative inputs of multi-national tourists who paid visits to cities around the world. This diverse foundation supports the applicability of the new scale to many urban destinations around the world. However, the scale is refined only with Chinese visitors to Shanghai. The refinement would be imperfect unless it is tested in diverse countries. Because only one study site is adopted, the external validity of the pro-environmental contextual force scale and the generalizability of the model is not examined in this thesis. After more tests in different contexts, the validity of the pro-environmental contextual force scale can be consolidated. Future studies can

examine the pro-environmental contextual force in other cities (including Chinese and international) to verify the external validity of the new scale and the robustness of the model.

Study 2 involves four study sites, so the urban travelers' specific PEB scale and the proposed model are tested in four different cities which enhances the ground for the external validity. However, all four cities are located in China Mainland. While the generalizability is assured in the Chinese context, how well can the scale apply in other cultures and how well the model can perform in other societies need to be validated in future research. Nonetheless, this thesis provides a solid stepping stone for scholars who are interested in tourist pro-environmentalism. When applying these two scales to different cultures, contextual adjustment is a good idea. In future research, it would also be interesting to compare the effect of the pro-environmental contextual force and urban travelers' specific PEBs in different cultural backgrounds and destinations of varying levels of urbanization.

Second, this research relies on self-administered questionnaires as the instrument of data collection. Behavioral patterns are self-reported in this thesis. Although multiple measures have been applied to minimize possible social desirability and common method biases, the limitation of self-reported data cannot be completely removed. In the future, researchers can adopt more objective data, such as those from big data and observation to triangulate the findings.

Third, the nomological validity of the contextual force scale and urban travelers' specific PEB scale is examined by cross-sectional questionnaires. Tourist motivation, perception, and behaviors are inquired at the same time point. While one year's lead time is accepted in existing studies, the recall of their experiences can incur memory bias. Future research can employ longitudinal research design to track behavioral changes and influence factors at different time points, so as to obtain an understanding of tourist PEBs from a temporal perspective.

Fourth, although TPB is a widely applied theory to guide the study of human behaviors and has been used as the main theoretical foundation for this research, other theoretical perspectives such as those revolving around pro-social behaviors, goal-directed behaviors, and conflicting motivations can also effectively explain PEBs (Han, 2021; Liebe, 2010). Future studies can examine tourist PEBs based on theories and models such as the Model of Goal-directed Behavior (Perugini & Bagozzi, 2001), Norm Activation Model (Schwartz, 1977), Value-Belief-Norm theory (Stern et al., 1999), and Social Dilemma Framework (Hardin, 1968). It would also be interesting to examine the interaction effect of variables from different theories and see if the merge of different theories can enhance the explanatory power of the research model.

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APPENDICES

Appendix 1: Approval of Human Subject Ethics.

THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

To	Hsu Cathy Hui-chun (School of Hotel and Tourism Management)
From	SONG Haiyan, Chair, Departmental Research Committee
Email	hmsong@	Date	14-Apr-2020

Application for Ethical Review for Teaching/Research Involving Human Subjects

I write to inform you that approval has been given to your application for human subjects ethics review of the following project for a period from 02-Mar-2020 to 31-Aug-2021:

Project Title: Pro-environmental behaviors of urban travelers

Department: School of Hotel and Tourism Management

Principal Investigator: Hsu Cathy Hui-chun

Project Start Date: 02-Mar-2020

Reference Number: HSEARS20200414001

You will be held responsible for the ethical approval granted for the project and the ethical conduct of the personnel involved in the project. In case the Co-PI, if any, has also obtained ethical approval for the project, the Co-PI will also assume the responsibility in respect of the ethical approval (in relation to the areas of expertise of respective Co-PI in accordance with the stipulations given by the approving authority).

You are responsible for informing the Human Subjects Ethics Sub-committee in advance of any changes in the proposal or procedures which may affect the validity of this ethical approval.

SONG Haiyan

Chair

Departmental Research Committee (on behalf of Human Subjects Ethics Sub-Committee)

Appendix 2: Interview protocol.

The following scripts were used as guidelines in the semi-structured interviews with tourists regarding influential contextual forces and their specific pro-environmental behaviors during their visits to urban destinations.

Question 1: Please think of your most recent experience of traveling to a city. Pro-environmental behavior means any behavior that tourists do to reduce the negative impact on the environment or contribute to the protection of the environment. Did you do any pro-environmental behavior at the destination? If yes, what pro-environmental behaviors did you do?

The interviewee is likely to talk about several behaviors during Question 1. Mention those behaviors to the interviewee to get them into the context for question 2.

Question 2: You mentioned you did some pro-environmental behaviors. What factors prompted you to those behave pro-environmentally (or not) at that destination?

After Question 2, explain to participants that contextual force means any force existing in the environment that promotes or prohibits the performing of their pro-environmental behaviors. They are forces other than personal factors (such as your education and your habit).

Question 3 and 4: Were there any contextual forces that have prompted or prohibited you to behave pro-environmentally at the destination? If yes, what were these contextual forces and how did contextual forces affect your pro-environmental behaviors?

This question will be explained if the interviewee does not understand it. Clarification of the question will be made based on the interviewee's reaction.

Appendix 3: Expert review form for contextual force scale.

Dear Expert Panel Member:

I am developing a scale to measure the "pro-environmental contextual force" that can influence tourists' pro-environmental behaviors (e.g., saving electricity, recycling, reducing waste, green buying) when they travel to urban destinations. It can be any influence existing in the environment other than the individual's personal quality and is often out of his/her volitional control. I've identified the following items to measure the pro-environmental contextual force.

In my future questionnaire, these items will be rated on 7-point Likert scales from 1=strongly disagree to 7=strongly agree by tourists. I would like you to help me rate the relevance and comment on the clarity of each item. Please put an "x" in the appropriate box and give your reason/comment/suggestion about each item.

Item	Not relevant	Somewhat relevant	Very relevant	Reason /comment /suggestion
1. Cost efficiency				
0101. Overall, I think pro-environmental products/services are not more expensive than normal ones.				
0102. Overall, I think pro-environmental actions do not cost much money, time, and effort in this city.				
0103. Overall, I think acting pro-environmentally in this city can save me money.				
0104. Overall, I think acting pro-environmentally in this city can get me some financial reward.				
0105. Overall, I think acting pro-environmentally in this city can get me some small gifts.				

0106. Overall, I think acting pro-environmentally in this city will get me some honorary rewards.				
2. Engaging campaign/activity				
0201. Overall, I think the local government organizes a lot of pro-environmental campaigns in this city (e.g., the "establishing clean city" campaign).				
0202. Overall, I think the business community holds various activities to support environmental protection (e.g., no utensil default for take-away, paper bag/straw options).				
0203. Overall, I think many NGOs organize pro-environmental activities in this city (e.g., clothe recycling).				
0204. Overall, I think many communities organize pro-environmental activities in this city (e.g., turning off lights for one hour).				
0205. Overall, I think many volunteers organize pro-environmental activities in this city.				
3. Environmental quality				
0301. Overall, I think this city is clean.				
0302. Overall, I think this city is tidy.				
0303. Overall, I think this city is beautiful.				
0304. Overall, I think this city has a good ecological landscape.				
0305. Overall, I think this city has done a good job of greening itself.				
0306. Overall, I think buildings in this city harmonize with the natural environment.				
0307. Overall, I don't feel environmental pollution in this city.				
0308. Overall, I don't feel noise pollution in this city.				
0309. Overall, I think the natural environment is well preserved in this city.				
0310. Overall, I think there are various kinds of animals and plants.				
0311. Overall, I think there are many opportunities to experience nature in this city.				
0312. Overall, I think the air quality is good in this city.				
0313. Overall, I think the water quality is good in this city.				

4. Facility readiness				
0401. Overall, I think this city has provided many kinds of pro-environmental facilities (e.g., recycle bins, green buses).				
0402. Overall, I think there are sufficient pro-environmental facilities in this city.				
0403. Overall, I think it is convenient to find pro-environmental facilities in this city.				
0404. Overall, I think pro-environmental facilities are easy to use in this city.				
0405. Overall, I think the pro-environmental facilities are well maintained.				
0406. Overall, I think there are many opportunities to perform pro-environmental activities in this city.				
5. Policy effectiveness				
0501. Overall, I think there are clear pro-environmental regulations in this city.				
0502. I think this city provides detailed pro-environmental behavioral instructions (e.g., garbage separation guidelines).				
0503. Overall, I think the city government has advertised the benefits of protecting the environment.				
0504. Overall, I feel the city government's policies have encouraged me to behave pro-environmentally.				
0505. Overall, I feel the city government's pots facilitated me to behave pro-environmentally.				
0506. Overall, I think this city strictly follows environmental regulations.				
0507. Overall, I think environmentally harmful behaviors will be punished in this city.				
0508. Overall, I think this city is monitoring the environmental quality.				
0509. Overall, I think the city's pro-environmental policies are effective.				
0510. Overall, I feel this city has invested a large amount of money in environmental protection.				
0511. Overall, I think the city government has done a lot to push environmental protection.				
0512. Overall, I think this city has a set of punitive measures against environmentally harmful behaviors.				
6. Resident support				

0601. Overall, I think this city cares much about the environment.				
0602. Overall, I think this city has a tradition to respect the natural environment.				
0603. Overall, I feel this city emphasizes environmental protection.				
0604. Overall, I think this city upholds a strong pro-environmental value.				
0605. Overall, I think residents of this city emphasize obeying pro-environmental behavioral rules.				
0606. Overall, I think there are many pro-environmental advertisements and publicity in this city.				
0607. Overall, I think the residents of this city are self-motivated to perform pro-environmental behaviors.				
0608. Overall, I think the citizens support environmental protection.				
0609. Overall, I think residents often talk about topics about environmental issues.				
7. Signage saliency				
0701. Overall, I think there is a lot of pro-environmental signage in this city.				
0702. Overall, I think there are multiple forms of pro-environmental reminders in this city (e.g., mobile phone messages, electronic messages on the screen, print messages).				
0703. Overall, I think pro-environmental signage in this city can capture my attention.				
0704. Overall, I think the pro-environmental signage conveys clear information.				
0705. Overall, I think the pro-environmental signage in this city is easy to understand.				
0706. Overall, I think the pro-environmental signage is posted in key areas in this city.				
0707. Overall, the pro-environmental signage looks nice in this city.				
0708. Overall, the design of the pro-environmental signage has achieved an optimal effect.				
0709. Overall, I think pro-environmental signage in this city is encouraging.				
8. Supportive big environment				
0801. Overall, I feel our top country leaders emphasize sustainable development.				

0802. Overall, I feel the government put a lot of effort into leading sustainable development.				
0803. Overall, I feel the overall private sector is trying to develop in a sustainable way.				
0804. Overall, I feel more and more people recognize sustainable development.				
0805. Overall, I feel environmental problems are very severe.				
0806. Overall, I feel the media often report environmental problems.				
9. Travel partner influence				
0901. Overall, I think my travel partners remind each other about environmental protection.				
0902. Overall, I think my travel partners are attentive to environmental protection.				
0903. Overall, I think tourists in this city pay attention to environmental protection.				
0904. Overall, I think this city has lots of workers to maintain environmental quality.				
0905. Overall, I think many volunteers are protecting the environment in this city.				
0906. Overall, I feel environmentally harmful behaviors will be despised by citizens here.				
Any other comments and suggestions?				

Thank you!

Appendix 4: Expert review form for urban travelers' specific PEBs scale.

Dear Expert Panel Member:

I'm developing a scale to measure pro-environmental behaviors in the urban travel context. The following items are extracted from literature and tourist interviews. I would like you to help me assess the relevance of each item. Please put an "x" in the appropriate blank and give your comments if there is any issue with the item.

Item	Not relevant	Somewhat relevant	Very relevant	Reasons /comment /suggestion
I threw garbage arbitrarily (reverse code).				
I picked leaves and flowers (reverse code).				
I disturbed creatures and vegetation (reverse code).				
I stepped on the grass against the sign (reverse code).				
I spit to the ground (reverse code).				
I throw objects to hydro landscapes (e.g., throwing plastic bottles into the lake)(reverse code).				
I kept my voice low.				
For a short distance, I reduced car use but walk.				
For a short distance, I reduced car use but ride a bicycle.				
Prioritize public transport such as bus/metro/coach.				
I shared a private car with many people (family car, Didi) instead of using a car for just 1 person.				
I switch off the AC whenever leaving the room over 10 minutes.				
I turn off the light when sleeping.				
I did not use the lift if go upstairs by one floor.				
In hotels, I had a longer shower than at home (reverse code).				
I let the water run away until it reached the right temperature (reverse code).				

I turned off the water tap when brushing my teeth, washing my face, and wash hands.				
I chose low-carbon and energy-saving transport mode.				
I saved electricity.				
I saved water.				
I separated garbage throw garbage according to the signs.				
I cleaned the garbage I've created when eating outside.				
When eating, I finished the food on my plate.				
I learned about local pro-environmental facilities.				
I tried to learn about local residents' pro-environmental actions.				
I abide by local pro-environmental rules (e.g., tourist behavior codes, smoking zone restrictions).				
I let the hotel do full room-cleaning service daily (reverse code).				
I let the hotel change towel daily (reverse code).				
I let the hotel change bedsheets daily (reverse code).				
I asked for amenities daily (e.g., toothbrush, comb, rub, shaver, nail polisher, shoe cleaner) (reverse code).				
I practiced waste reduction activities				
I reduced the usage of paper (e.g., paper napkin, toilet paper, paper towels).				
I reduced plastic bag usage when shopping.				
I reduced the use of one-time-off eating tools (chopsticks, spoon, plastic straw).				
I looked for ways to reuse one-time-off things (e.g., plastic bags, bottles, combs, and toothbrushes from hotels).				
When shopping, I avoided excessive packaging (e.g., multi-layered, extravagant packaging).				
I bought in bulk rather than individual-packaged/double packaged products.				
I used my own cup/bottle during the trip.				
I took/used my own garbage bag.				
I took/used my own eating tools (e.g., for eating at a restaurant or taking away).				
I brought and used my own toothbrush, toothpaste, comb, shaver, towel, shampoo, or body wash.				

When shopping, I used my own bag.				
Buy eco-labeled products.				
I bought organic food.				
I purchased biodegradable products (e.g., biodegradable food containers).				
I purchased refillable products.				
I chose to stay at a green hotel.				
Buy (or use) local products and services on this tour.				
I paid increased fees for newly introduced environmental programs (e.g., hotels/parks' sustainable activities).				
Donate money to support the destination's pro-environmental initiatives.				
Call for food delivery (reverse code).				
I reminded my companions not to feed animals.				
I reminded my travel partners to keep voice low.				
I volunteered my time to projects that help this city.				
I publicly supported this city's environmental protection (e.g., write a letter, sign on a petition).				
I reduced visiting my favorite spots because it needed to recover from environmental damage.				
I picked up garbage (such as bottles) left by others.				
Any other comments and suggestions?				

Thank you!

Appendix 5: Questionnaire for the pilot studies of Study 1 and Study 2 (n=330).

<h2 style="text-align:center">游客行为调查</h2>

本问卷中，只要离开常住地 24 小时以上休闲度假，探亲访友，出差开会，参加教育，培训等都算旅游。

"环保行为"是指广义的、对环境有益处的行为，例如节约水电、不乱扔垃圾、垃圾分类、不打扰动物、购买环保标签产品、为环境基金捐款等。"环保行为"的同义词是：亲环境行为、爱护环境的行为。"环保政策"则是指对环境有益处的政策，例如垃圾分类政策、禁止采摘花朵规定、废水废气管理办法等。

匿名问卷，信息保密，仅做学术研究，答案无对错优劣之分，请按实际情况认真填写。

答题需 15 分钟。谢谢！

第一部分：出游信息
过去一个月内，你去过 以下哪个城市旅游？
1= 北京 2= 长沙　3= 广州 4= 深圳 5= 大理 6= 杭州 7= 上海 8= 厦门 9= 成都 10= 南京
11= 苏州 12= 西安 13= 青岛 14= 昆明 15= 三亚 16= 天津 17= 重庆 18= 武汉 19= 哈尔滨 20= 济南
21= 以上都没去过

在上一题中，您点击了上海。	
请问您最近一次是什么时候去上海的？请填写： ____（年）____（月）。	
在酒店住了几晚？	1=没住酒店 2=1 晚（退出） 3=2 晚 4=3 晚或以上
同行一共有几个人？	1=我自己一个人去 2=2 个人去 3=3 个人或以上
这次去的主要目的是？	1=休闲度假 2=公务出差/开会 3=探亲访友 4=教育培训 5=其他（请填写）：
是旅行社跟团游吗？	1=跟团

| | 2=不跟团 |

第二部分：对上海的评价。

您在第一部分提到与同伴去过上海旅游，住酒店 2 晚（或以上），请回忆在上海的体验，评价上海的特征。1=非常不同意，4=中立， 7=非常同意，数字越大，同意程度越高。

总体来说，我觉得：	非常不同意			中立			非常同意
上海有尊重自然的传统	1	2	3	4	5	6	7
上海很重视环境保护	1	2	3	4	5	6	7
上海推崇绿色环保的价值观	1	2	3	4	5	6	7
上海有很多关于环保的广告宣传	1	2	3	4	5	6	7

请继续评价上海的特征。

总体来说，我觉得：	非常不同意			中立			非常同意
上海市民非常尊重环保行为规则	1	2	3	4	5	6	7
上海市民自觉地做出环保行为	1	2	3	4	5	6	7
上海市民很支持环境保护	1	2	3	4	5	6	7
上海市民常常讨论环保方面的话题	1	2	3	4	5	6	7

请继续评价上海的特征。

总体来说，我觉得：	非常不同意			中立			非常同意
上海有许多公益机构组织的环保主题活动（例如衣服回收）	1	2	3	4	5	6	7
上海有许多民间自发的环保行为（例如参与"熄灯一小时"）	1	2	3	4	5	6	7
上海有许多由政府牵头的与环保相关的行动（例如"创建卫生城市"等）	1	2	3	4	5	6	7
上海的工商行业举办各种活动支持环保（例如外卖默认免餐具、提供纸袋/纸吸管选项）	1	2	3	4	5	6	7

请继续评价上海的特征。

总体来说，我觉得：	非常不同意			中立			非常同意
在上海经常看到环保标语	1	2	3	4	5	6	7
上海有多种形式的环保提醒（例如手机短信，电子 滚动屏，印刷品等）	1	2	3	4	5	6	7

	非常不同意			中立			非常同意
上海的环保标语很显眼	1	2	3	4	5	6	7
上海的环保标语很容易理解	1	2	3	4	5	6	7
上海的环保标语出现在了关键的位置	1	2	3	4	5	6	7

请继续评价上海的特征。							
总体来说，我觉得：	非常不同意			中立			非常同意
上海很干净	1	2	3	4	5	6	7
上海很整洁	1	2	3	4	5	6	7
上海的绿化工作做得很好	1	2	3	4	5	6	7
上海的自然景观和人文建筑和谐相融	1	2	3	4	5	6	7
上海有很好的生态景观	1	2	3	4	5	6	7
上海的自然环境保持得很好	1	2	3	4	5	6	7
在上海有很多机会体验自然	1	2	3	4	5	6	7
上海和谐地生活着很多种小动物和植物	1	2	3	4	5	6	7
上海空气质量好	1	2	3	4	5	6	7
上海水质好	1	2	3	4	5	6	7
在上海没有感受到环境污染	1	2	3	4	5	6	7

请继续评价上海的特征。							
总体来说，我觉得：	非常不同意			中立			非常同意
上海有全面的环保法规/政策	1	2	3	4	5	6	7
上海制定了清晰的环保行为指引（例如垃圾分类政策）	1	2	3	4	5	6	7
上海的环保法规/政策是严格执行的	1	2	3	4	5	6	7
上海有一套针对破坏环境的惩罚措施	1	2	3	4	5	6	7
上海的相关部门会对破坏环境的行为进行处罚	1	2	3	4	5	6	7
上海的政府部门在监控着环境质量	1	2	3	4	5	6	7
上海市政府在环保方面投入了大量资金	1	2	3	4	5	6	7
上海政府在环保方面付出了大量努力	1	2	3	4	5	6	7
上海市政府宣传了环保行为的好处	1	2	3	4	5	6	7
上海的政策鼓励了我做出环保行为	1	2	3	4	5	6	7
上海的政策协助了我做出环保行为	1	2	3	4	5	6	7

请继续评价上海的特征。							
总体来说，我觉得：	非常不同意			中立			非常同意
上海提供了许多种类的环保设施（例如分类垃圾桶，绿色公交）	1	2	3	4	5	6	7

上海有足够数量的环保设施	1	2	3	4	5	6	7
上海的环保设施很方便就能找到	1	2	3	4	5	6	7
上海的环保设施很容易使用	1	2	3	4	5	6	7
上海的环保设施得到了良好的维护	1	2	3	4	5	6	7

请继续评价上海的特征。							
总体来说，我觉得：	非常不同意			中立			非常同意
我的旅游同伴会互相提醒注意环保	1	2	3	4	5	6	7
我的旅游同伴比较注意环保	1	2	3	4	5	6	7
我的旅游同伴反感故意破坏环境的行为	1	2	3	4	5	6	7
我在上海看到周围的人比较注意环保	1	2	3	4	5	6	7
上海有很多工作人员在维护环境质量	1	2	3	4	5	6	7
上海有很多志愿者在保护环境	1	2	3	4	5	6	7
在上海破坏环境的话会被人反感	1	2	3	4	5	6	7

请继续评价上海的特征。							
总体来说，我觉得：	非常不同意			中立			非常同意
国家层面在强调可持续发展	1	2	3	4	5	6	7
国内各级政府在努力引导可持续发展	1	2	3	4	5	6	7
国内企业界在努力争取可持续发展	1	2	3	4	5	6	7
现在媒体经常报道环境问题	1	2	3	4	5	6	7
媒体广泛宣传注重环保	1	2	3	4	5	6	7
社会各界提倡绿色环保	1	2	3	4	5	6	7
国内大众越来越认同环保行动	1	2	3	4	5	6	7
年轻一代更加注重环保了	1	2	3	4	5	6	7

请继续评价上海的特征。							
总体来说，我觉得：	非常不同意			中立			非常同意
在上海，有利于环境的产品/服务其价格并没有更贵	1	2	3	4	5	6	7
在上海，做出环保行动不需要花费较大的成本	1	2	3	4	5	6	7
在上海，做出环保行为可以顺便省钱	1	2	3	4	5	6	7
在上海，做出环保行为能得到一些财务上的奖励	1	2	3	4	5	6	7
在上海，做出环保行为能得到一些小礼物	1	2	3	4	5	6	7

第三部分：环保行为频率。							

请根据与同伴去上海旅游的经历，选择在上海旅游时您有多经常做出以下行为？1=从来不，4= 一半的时候， 7=总是，数字越大，频率越高。

	从来不			一半的时候			总是
打扰动物（例如喂食、捕捉野生动物）	1	2	3	4	5	6	7
攀折摘采花草树木	1	2	3	4	5	6	7
往水体景观里扔东西	1	2	3	4	5	6	7
往地上吐痰	1	2	3	4	5	6	7
踩踏景观草地	1	2	3	4	5	6	7
往地上扔垃圾	1	2	3	4	5	6	7

请继续回忆，在上海旅游时，您有多经常做出以下行为？

	从来不			一半的时候			总是
如果去附近的地方，选择走路	1	2	3	4	5	6	7
如果去附近的地方，选择骑自行车	1	2	3	4	5	6	7
外出时首选公交/地铁/大巴等公共交通工具	1	2	3	4	5	6	7
多人共享一辆私家（例如私家车或滴滴顺风车），避免只搭乘一个人	1	2	3	4	5	6	7

请继续回忆，在上海旅游时，您有多经常做出以下行为？

	从来不			一半的时候			总是
睡觉时关灯	1	2	3	4	5	6	7
上一层楼时，选择走路（不坐电梯）	1	2	3	4	5	6	7
在酒店里，冲凉的时间比家里更长	1	2	3	4	5	6	7
水龙头出的热水达到理想的温度之前，让水流掉	1	2	3	4	5	6	7
刷牙/洗脸的过程中，关上水龙头	1	2	3	4	5	6	7

请继续回忆，在上海旅游时，您有多经常做出以下行为？

	从来不			一半的时候			总是
按照标志分类扔垃圾	1	2	3	4	5	6	7
在外游玩时，清理自己制造的垃圾（例如食物渣、果皮）	1	2	3	4	5	6	7
就餐时， 合理规划自己的食物，减少餐厨垃圾	1	2	3	4	5	6	7

请继续回忆，在上海旅游时，您有多经常做出以下行为？

	从来不			一半的时候			总是

学习了解上海当地的环保设施	1	2	3	4	5	6	7
学习了解该当地居民的环保行为	1	2	3	4	5	6	7
学习/遵守当地的环保规章制度（如景区游客行为守则，吸烟区规定）	1	2	3	4	5	6	7

请继续回忆，在上海旅游时，您有多经常做出以下行为？

	从来不			一半的时候			总是
让酒店每天换床单	1	2	3	4	5	6	7
让酒店每天做全套房间清洁	1	2	3	4	5	6	7
让酒店每天换毛巾	1	2	3	4	5	6	7
每天索取一份新的酒店客房一次性用品（牙刷 、梳子等）	1	2	3	4	5	6	7

请继续回忆，在上海旅游时，您有多经常做出以下行为？

	从来不			一半的时候			总是
减少使用纸质用品（例如餐巾纸、厕纸、抹手纸）	1	2	3	4	5	6	7
减少使用塑料袋	1	2	3	4	5	6	7
减少使用一次性餐具（筷子，勺子,餐盒，吸管，餐巾纸等）	1	2	3	4	5	6	7
重复使用一次性用品（例如塑料袋、塑料瓶、酒店的梳子、牙刷等）	1	2	3	4	5	6	7
购物时避免过度包装（例如包装耗材多、装饰华丽）	1	2	3	4	5	6	7
选择大包装而不是多个独立小包装的商品（例如购买大瓶装的水，而不是多个小瓶装）	1	2	3	4	5	6	7

请继续回忆，在上海旅游时，您有多经常做出以下行为？

	从来不			一半的时候			总是
自带餐具（例如堂食使用，或打包食物）	1	2	3	4	5	6	7
自备水杯/水瓶装水喝	1	2	3	4	5	6	7
使用自带的个人清洁用品（例如牙刷、毛巾等）	1	2	3	4	5	6	7
外出时自备垃圾袋	1	2	3	4	5	6	7
购物时，使用自带的购物袋或自己的包	1	2	3	4	5	6	7

请继续回忆，在上海旅游时，您有多经常做出以下行为？

	从来不			一半的时候			总是
购买绿色环保认证的服务（例如入住绿色饭店）	1	2	3	4	5	6	7
购买有环保认证的产品	1	2	3	4	5	6	7

购买上海本地生产的商品	1	2	3	4	5	6	7
购买可降解的产品（例如可降解餐盒）	1	2	3	4	5	6	7
购买有机食品	1	2	3	4	5	6	7
为上海的绿色环保项目多花了一些钱（例如绿色酒店、公园环保项目）	1	2	3	4	5	6	7
叫外卖	1	2	3	4	5	6	7

请继续回忆，在上海旅游时，您有多经常做出以下行为?							
	从来不			一半的时候			总是
提醒我的同伴不要投喂动物	1	2	3	4	5	6	7
提醒我的同伴不要制造噪音（例如，保持说话、手机低音量）	1	2	3	4	5	6	7
提醒我的同伴保护环境	1	2	3	4	5	6	7
捡起别人丢下的垃圾（例如瓶子）	1	2	3	4	5	6	7
说话时保持低音量	1	2	3	4	5	6	7

请继续回忆，在上海旅游时，您有多经常做出以下行为?							
	从来不			一半的时候			总是
公开支持上海的环境保护（例如签名、写信、发朋友圈、微博等）	1	2	3	4	5	6	7
捐款支持上海的环保事业 (例如放些零钱到捐款箱、网上捐款)	1	2	3	4	5	6	7
自愿避免参观生态脆弱或需要恢复的景点（例如脆弱的生态景观、修复中的历史遗迹）	1	2	3	4	5	6	7
自愿花时间参与上海的环保活动	1	2	3	4	5	6	7

第四部分：参与者信息。
您的性别是？ 1=男 2=女
您的年龄是?
1=18 岁以下
2=18~30 岁
3=31~40 岁
4=41~50 岁
5=51~60 岁
6=61 岁及以上
您的个人税前月收入是?

1=3000 元及以下
2=3001~5000 元
3= 5001~10000 元
4= 10001~15000 元
5= 15001 元~20000 元
6= 20001~25000 元
7= 25001 元及以上
您的最高学历（含目前在读）是?
1= 小学及以下
2= 初中
3= 高中/中专/技校
4= 大学专科
5= 大学本科
6= 硕士研究生及以上
谢谢参与!

<div align="center">**旅游者环保行为研究**</div>

尊敬的女士/先生：

您好！这是一份关于旅游者环保行为的匿名问卷，答题需要 15-20 分钟。

本问卷中，离开常住地 24 小时以上休闲度假、探亲访友、出差开会、参加教育培训等都属于旅游。

"环保行为"是指将对环境的伤害降低到最小或对环境有益处的行为，例如关注生态环境、节约能源资源、绿色消费、低碳出行、垃圾分类、减少污染产生、呵护自然生态、为环境基金捐款，劝说他人保护环境，参与监督举报等等。

环保政策则是指对环境有益处的政策，例如垃圾分类政策、禁止采摘花朵规定、废水废气管理办法等等。

您的真实想法对我的研究十分重要。我会严格保密您所提供的信息。

若您有任何意见和建议，请联系本人：**.

谢谢！

第一部分：请阅读以下陈述，表明您对环保行为的态度。									
我觉得环保行为是：									
	不好的	1	2	3	4	5	6	7	好的
	不明智的	1	2	3	4	5	6	7	明智的
	不愉快的	1	2	3	4	5	6	7	愉快的
	无益的	1	2	3	4	5	6	7	有益的
	没必要的	1	2	3	4	5	6	7	有必要的

第二部分：请阅读以下陈述，选择您身边重要的人（例如亲戚、朋友，或同事）对您做环保行为的看法。数字越大，同意程度越高。							
我身边重要的人，	非常不同意			中立			非常同意
他们认为我应该做出环保行为	1	2	3	4	5	6	7
他们想要我做出环保行为	1	2	3	4	5	6	7
他们更喜欢我做出环保行为	1	2	3	4	5	6	7
他们认可我做出环保行为	1	2	3	4	5	6	7
他们认为保护环境是大家都应该做的事	1	2	3	4	5	6	7

第三部分：出游信息
过去 1 年内（2020 年 4 月 1 日至今），您去过以下哪个/些城市旅游?
1=北京；2=上海；3=广州；4=深圳；5=武汉；6=成都；7=南京；8=西安；9=青岛；10=厦门；11=苏州；12=昆明；13=长沙；14=哈尔滨；15=重庆；16=三亚；17=大理；18=天津；19=济南；20=杭州；21=其他城市；22=没有出去旅游
您最近一次去上海旅游是什么时候去的？（请填写）：
最近一次去上海的最主要目的是**?**
1= 休闲度假
2= 公务出差/开会
3= 探亲访友
4= 教育培训
5= 其他（请填写）
是跟旅行社跟团旅游吗？ 1= 是；2= 不是
以下哪个选项能最准确描述您最近一次上海之旅的同行人员？
1= 没有同行人员，我自己一个人去
2= 跟朋友一起去
3= 跟同事一起去
4= 跟爸妈一起去
5= 情侣/夫妻出游
6= 家庭出游，有小孩
7= 其他，请填写：
最近一次去上海之旅在酒店住了几晚?
1= 住亲戚/朋友/同事/同学等家里，没住酒店
2= 1 晚
3= 2 晚
4= 3 晚
5= 4 晚
6= 5 晚
7= 6 晚或更多

第四部分： 请基于您在上海的旅游体验，评价上海的特征。							
总体来说，我觉得：	非常不同意			中立			非常同意
上海和谐地生活着很多种小动物和植物	1	2	3	4	5	6	7
上海水质好	1	2	3	4	5	6	7

上海空气质量好	1	2	3	4	5	6	7
在上海有很多机会体验自然	1	2	3	4	5	6	7
在上海没有感受到环境污染	1	2	3	4	5	6	7
上海的自然景观和人文建筑和谐相融	1	2	3	4	5	6	7
上海有尊重自然的传统	1	2	3	4	5	6	7

请继续评价上海的特征。							
总体来说，我觉得：	非常不同意			中立			非常同意
上海有很多关于环保的广告宣传	1	2	3	4	5	6	7
上海的环保标语出现在了关键的位置	1	2	3	4	5	6	7
在上海经常看到环保标语	1	2	3	4	5	6	7
上海市民常常讨论环保方面的话题	1	2	3	4	5	6	7
上海有许多由政府牵头的与环保相关的行动（例如"创建卫生城市"等）	1	2	3	4	5	6	7
上海有许多民间自发的环保行为（例如参与"熄灯一小时"）	1	2	3	4	5	6	7

请继续阅读以下陈述，表明您的同意或不同意程度。							
总体来说，我觉得：	非常不同意			中立			非常同意
上海的绿化工作做得很好	1	2	3	4	5	6	7
上海很干净	1	2	3	4	5	6	7
上海市民很支持环境保护	1	2	3	4	5	6	7

请继续阅读以下陈述，表明您的同意或不同意程度。							
总体来说，我觉得：	非常不同意			中立			非常同意
在上海，做出环保行为能得到一些小礼物	1	2	3	4	5	6	7
在上海，做出环保行为能得到一些财务上的奖励	1	2	3	4	5	6	7
在上海，做出环保行为可以顺便省钱	1	2	3	4	5	6	7
在上海，有利于环境的产品/服务其价格并没有更贵	1	2	3	4	5	6	7

请继续阅读以下陈述，表明您的同意或不同意程度。							
总体来说，我觉得：	非常不同意			中立			非常同意
上海提供了许多种类的环保设施（例如分类垃圾桶，绿色公交）	1	2	3	4	5	6	7
上海的环保设施很方便就能找到	1	2	3	4	5	6	7
上海的环保设施很容易使用	1	2	3	4	5	6	7
上海有足够数量的环保设施	1	2	3	4	5	6	7
上海市政府宣传了环保行为的好处	1	2	3	4	5	6	7

请继续阅读以下陈述，表明您的同意或不同意程度。							
总体来说，我觉得：	非常不同意			中立			非常同意
上海有很多工作人员在维护环境质量	1	2	3	4	5	6	7
上海市政府在环保方面付出了大量努力	1	2	3	4	5	6	7
上海市政府在环保方面投入了大量资金	1	2	3	4	5	6	7
上海有全面的环保法规/政策	1	2	3	4	5	6	7
上海有一套针对破坏环境的惩罚措施	1	2	3	4	5	6	7

请继续阅读以下陈述，表明您的同意或不同意程度。							
总体来说，我觉得：	非常不同意			中立			非常同意
上海有许多公益机构组织的环保主题活动（例如衣服回收）	1	2	3	4	5	6	7
上海的工商行业举办各种活动支持环保（例如外卖默认免餐具、提供纸袋/纸吸管选项）	1	2	3	4	5	6	7
上海的环保法规/政策是严格执行的	1	2	3	4	5	6	7
我在上海看到周围的人比较注意环保	1	2	3	4	5	6	7
国内大众越来越认同环保行动	1	2	3	4	5	6	7

请继续阅读以下陈述，表明您的同意或不同意程度。							
总体来说，我觉得：	非常不同意			中立			非常同意
我的旅游同伴比较注意环保	1	2	3	4	5	6	7
我的旅游同伴会互相提醒注意环保	1	2	3	4	5	6	7
媒体广泛宣传注重环保	1	2	3	4	5	6	7
年轻一代更加注重环保了	1	2	3	4	5	6	7

请继续阅读以下陈述，表明您的同意或不同意程度。							
总体来说，我觉得：	非常不同意			中立			非常同意
国家层面在强调可持续发展	1	2	3	4	5	6	7
社会各界提倡绿色环保	1	2	3	4	5	6	7
国内各级政府在努力引导可持续发展	1	2	3	4	5	6	7

第五部分：请阅读以下描述您在上海旅游时环保行为控制力的语句，选择您的同意/不同意的程度。							
在上海旅游的过程中，	非常不同意			中立			非常同意
是否做出环保行为取决于我	1	2	3	4	5	6	7
只要我想，就可以做出环保行为	1	2	3	4	5	6	7
做出环保行为对我来说是容易的	1	2	3	4	5	6	7
如果我想做环保行为的话，是可以做到的	1	2	3	4	5	6	7
我有条件去做环保行为	1	2	3	4	5	6	7

第六部分：上海旅游过程中的实际环保行为。							
次上海旅游的过程中，您在多大程度上做出了环保行为？请选择同意/不同意程度。							
在上海旅游的过程中，	非常不同意			中立			非常同意
我在上海旅游的过程中做出了环保行为	1	2	3	4	5	6	7
我在上海旅游的过程中保护了环境	1	2	3	4	5	6	7
我在上海旅游的过程中为环境保护做出了贡献	1	2	3	4	5	6	7
我在上海旅游的过程中尽了自己的努力去保护环境	1	2	3	4	5	6	7
在上海旅游，我采取了环保的旅行方式	1	2	3	4	5	6	7

第七部分：请表达您下次去上海旅游时做出环保行为的意向，选择同意或不同意程度。							
	非常不同意			中立			非常同意
我愿意在下一次去上海旅游做出环保行为	1	2	3	4	5	6	7

我打算在下一次去上海旅游时做出环保行为	1	2	3	4	5	6	7
我将努力在下一次去上海旅游时做出环保行为	1	2	3	4	5	6	7
我会在下一次去上海旅游的时做出环保行为	1	2	3	4	5	6	7

第八部分：参与者信息
您的年龄是多少岁？(请填写):
您的性别是：1＝男；2＝女
您的最高学历（含目前在读）是?   1＝小学及以下   2＝初中   3＝高中/中专/技校   4＝大学专科   5＝大学本科   6＝硕士研究生及以上
您的职业是？（请填写）：
您的个人税前月收入：   1＝3000 元及以下   2＝3001~5000 元   3＝5001~10000 元   4＝10001~15000 元   5＝15001 元~20000 元   6＝20001~25000 元   7＝25001 元及以上
谢谢参与!

Appendix 7: Questionnaire for the main survey of Study 2 (n=666).

旅游者环保行为研究

尊敬的女士/先生：

您好！这是一份关于旅游者环保行为的匿名问卷，答题需要 15-20 分钟。

本问卷中，离开常住地 24 小时以上休闲度假、探亲访友、出差开会、参加教育培训等都属于旅游。

"环保行为"是指将对环境的伤害降低到最小或对环境有益处的行为，例如关注生态环境、节约能源资源、绿色消费、低碳出行、垃圾分类、减少污染产生、呵护自然生态、为环境基金捐款，劝说他人保护环境，参与监督举报等等。

环保政策则是指对环境有益处的政策，例如垃圾分类政策、禁止采摘花朵规定、废水废气管理办法等等。

您的真实想法对我的研究十分重要。我会严格保密您所提供的信息。

若您有任何意见和建议，请联系本人：**.

谢谢！

第一部分：请阅读以下陈述，表明您对环保行为的态度。								
我觉得环保行为是：								
	不好的	1	2	3	4	5	6	7	好的
	不明智的	1	2	3	4	5	6	7	明智的
	不愉快的	1	2	3	4	5	6	7	愉快的
	无益的	1	2	3	4	5	6	7	有益的
	没必要的	1	2	3	4	5	6	7	有必要的

第二部分：请阅读以下陈述，选择您身边重要的人（例如亲戚、朋友，或同事）对您做环保行为的看法。数字越大，同意程度越高。							
我身边重要的人，	非常不同意			中立			非常同意
他们认为我应该做出环保行为	1	2	3	4	5	6	7
他们想要我做出环保行为	1	2	3	4	5	6	7
他们更喜欢我做出环保行为	1	2	3	4	5	6	7
他们认可我做出环保行为	1	2	3	4	5	6	7
他们认为保护环境是大家都应该做的事	1	2	3	4	5	6	7

第三部分：出游信息
过去 1 年内（2020 年 4 月 1 日至今），您去过以下哪个/些城市旅游?
1=北京；2=上海；3=广州；4=深圳；5=武汉；6=成都；7=南京；8=西安；9=青岛；10=厦门；11=苏州；12=昆明；13=长沙；14=哈尔滨；15=重庆；16=三亚；17=大理；18=天津；19=济南；20=杭州；21=其他城市；22=没有出去旅游

您在上题中点击了**，接下来，请基于您最近一次去**旅游的体验答题。
您最近一次去您最近一次去**旅游是什么时候去的? 旅游是什么时候去的?
1=去年"五一劳动节"之前（2020 年 5 月 1 日之前）
2=去年"五一劳动节"期间及之后（2020 年 5 月 1 日及之后）
最近一次去**的最主要目的是**?**
1=休闲度假
2=公务出差/开会
3=探亲访友
4=教育培训
5=其他（请填写）
是跟旅行社跟团旅游吗? 1=是；2=不是
以下哪个选项能最准确描述您最近一次上海之旅的同行人员?
1=没有同行人员，我自己一个人去
2=跟朋友一起去
3=跟同事一起去
4=跟爸妈一起去
5=情侣/夫妻出游
6=家庭出游，有小孩
7=其他，请填写：
最近一次去**之旅在酒店住了几晚?
1=住亲戚/朋友/同事/同学等家里，没住酒店
2=1 晚
3=2 晚
4=3 晚
5=4 晚
6=5 晚
7=6 晚或更多

请根据您最近一次去**的旅游体验答题。

	非常不同意	不同意	有些不同意	中立	有些同意	同意	非常同意
总的来说，这次来**我感到很满意	1	2	3	4	5	6	7
来**旅游是一个正确的决定	1	2	3	4	5	6	7
来**旅游，我觉得很开心	1	2	3	4	5	6	7
来**的旅行经历，符合我的预期	1	2	3	4	5	6	7

请根据您最近一次去**的旅游体验答题。

在**旅游的过程中，	非常不同意	不同意	有些不同意	中立	有些同意	同意	非常同意
是否做出环保行为取决于我	1	2	3	4	5	6	7
只要我想，就可以做出环保行为	1	2	3	4	5	6	7
做出环保行为对我来说是容易的	1	2	3	4	5	6	7
如果我想做环保行为的话，是可以做到的	1	2	3	4	5	6	7
我有条件去做环保行为	1	2	3	4	5	6	7

第四部分：游客在**的环保行为。							
请回忆，在**旅游时，您有多经常做出以下行为？数字越大表示频率越高。							
	从来不			一半的时候			总是
减少使用塑料袋	1	2	3	4	5	6	7
购物时，使用自带的购物袋或自己的包	1	2	3	4	5	6	7
外出时自备垃圾袋	1	2	3	4	5	6	7
减少使用一次性餐具（筷子，勺子,餐盒，吸管，餐巾纸等）	1	2	3	4	5	6	7
购物时避免过度包装（例如包装耗材多、装饰华丽）	1	2	3	4	5	6	7
自备水杯/水瓶装水喝	1	2	3	4	5	6	7
选择大包装而不是多个独立小包装的商品（例如购买大瓶装的水，而不是多个小瓶装）	1	2	3	4	5	6	7
自带餐具（例如堂食使用，或打包食物）	1	2	3	4	5	6	7
重复使用一次性用品（例如塑料袋、塑料瓶、酒店的梳子、牙刷等）	1	2	3	4	5	6	7

请回忆，在**旅游时，您有多经常做出以下行为？数字越大表示频率越高。

	从来不			一半的时候			总是
为**的绿色环保项目多花了一些钱（例如绿色酒店、公园环保项目）	1	2	3	4	5	6	7
购买可降解的产品（例如可降解餐盒）	1	2	3	4	5	6	7
购买有环保认证的产品	1	2	3	4	5	6	7
购买绿色环保认证的服务（例如入住绿色饭店）	1	2	3	4	5	6	7
购买**本地生产的商品	1	2	3	4	5	6	7
购买有机食品	1	2	3	4	5	6	7

请回忆，在**旅游时，您有多经常做出以下行为？数字越大表示频率越高。

	从来不			一半的时候			总是
让酒店每天换毛巾	1	2	3	4	5	6	7
让酒店每天换床单	1	2	3	4	5	6	7
让酒店每天做全套房间清洁	1	2	3	4	5	6	7
使用自带的个人清洁用品（例如牙刷、毛巾等）	1	2	3	4	5	6	7
每天使用一份新的酒店客房一次性用品（牙刷、梳子等）	1	2	3	4	5	6	7

请回忆，在**旅游时，您有多经常做出以下行为？数字越大表示频率越高。

	从来不			一半的时候			总是
自愿花时间参与**的环保活动	1	2	3	4	5	6	7
自愿避免参观生态脆弱或需要恢复的景点（例如脆弱的生态景观、修复中的历史遗迹）	1	2	3	4	5	6	7
公开支持**的环境保护（例如签名、写信、发朋友圈、微博等）	1	2	3	4	5	6	7
捐款支持的环**的保事业 (例如放些零钱到捐款箱、网上捐款)	1	2	3	4	5	6	7

请回忆，在**旅游时，您有多经常做出以下行为？数字越大表示频率越高。

	从来不			一半的时候			总是
提醒我的同伴不要制造噪音（例如，保持说话、手机低音量）	1	2	3	4	5	6	7
说话时保持低音量	1	2	3	4	5	6	7
提醒我的同伴保护环境	1	2	3	4	5	6	7
提醒我的同伴不要投喂动物	1	2	3	4	5	6	7
上一层楼时，选择走路（不坐电梯）	1	2	3	4	5	6	7

请回忆，在**旅游时，您有多经常做出以下行为？数字越大表示频率越高。

	从来不			一半的时候			总是
学习了解**当地居民的环保行为	1	2	3	4	5	6	7
学习了解**当地居民的环保设施	1	2	3	4	5	6	7

请回忆，在**旅游时，您有多经常做出以下行为？数字越大表示频率越高。

	从来不			一半的时候			总是
在酒店里，冲凉的时间比家里更长	1	2	3	4	5	6	7
水龙头出的热水达到理想的温度之前，让水流掉	1	2	3	4	5	6	7

第五部分：请阅读以下描述您环保习惯的语句，选择同意或不同意程度。							
日常生活中，	从来不			一半的时候			总是
我经常做环保行为	1	2	3	4	5	6	7
我自觉地做环保行为	1	2	3	4	5	6	7
我做环保行为不需要特意记着	1	2	3	4	5	6	7
如果我不做环保行为，我会感觉奇怪	1	2	3	4	5	6	7
我不需要经过思考就可以做出环保行为	1	2	3	4	5	6	7
不做环保行为对于我是困难的	1	2	3	4	5	6	7
环保是我平时的惯常行为	1	2	3	4	5	6	7
在我意识到我在做环保行为之前，我已经在做了	1	2	3	4	5	6	7
对于我来说，需要一些努力才能让自己不去做环保行为	1	2	3	4	5	6	7
环保行为是我不需要思考就会去做的事情	1	2	3	4	5	6	7
做环保行为是我的典型特征	1	2	3	4	5	6	7
我做环保行为已经很长时间了	1	2	3	4	5	6	7

第六部分：参与者信息
您的年龄是多少岁？(请填写):
您的性别是：1=男； 2=女
您的最高学历（含目前在读）是? 1=小学及以下 2=初中 3=高中/中专/技校 4=大学专科 5=大学本科 6=硕士研究生及以上
您的职业是? （请填写）:
您的个人税前月收入： 1=3000 元及以下 2=3001~5000 元 3=5001~10000 元 4=10001~15000 元 5=15001 元~20000 元 6=20001~25000 元 7=25001 元及以上
谢谢参与!