A Scale to Evaluate the Post-pandemic Tourist Experience in Valparaíso

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Abstract. Tourist eXperience (TX) is hard to evaluate due to its complexity, and the highly personal and subjective nature of experiences. TX can be considered as a particular case of Customer eXperience (CX), which is an extension of User eXperience (UX). Tourism was dramatically affected by the COVID-19 pandemic, and TX evaluation should explicitly consider the post-pandemic context. We developed a scale to evaluate the post-pandemic TX in Valparaíso, Chile. The scale was refined based on experts' opinion, was validated through a pilot test, and was later applied in a survey with 316 participants. Statistical validation indicate that the scale is reliable. It includes 56 items grouped in 8 dimensions: emotions, local culture, authenticity of the place, entertainment, services, post-pandemic experience, loyalty, and general perception. Survey's results confirm the importance of evaluating TX pandemic-related issues. They emphasize the potential of Valparaíso as destination, but also indicate some major issues that should be addressed: safety, cleanliness, sustainability, and inclusiveness.

Keywords: Tourist Experience · Customer Experience · Tourist Experience Evaluation · Scale · Post-pandemic

1 Introduction

The concepts of Tourist eXperience (TX) and Customer eXperience (CX) have been extensively discussed. It is hard to agree on their definitions, because experiences are personal and subjective, and TX and CX are complex and multidimensional. Laming and Mason highlight that CX includes all physical and emotional responses that a customer experiences before, during and after coming into contact, directly or indirectly, with a brand/company, during his/her whole "journey", including the post consumption stage [1]. Customer-company interactions occur through products, systems and services that the company offers. Tourists are specific types of costumers, that are using tourism-related services, products and systems. CX can be seen as a natural extension of User eXperience (UX), a well-known and highly explored topic in Human-Computer Interaction (HCI) [2–4]. It focuses on a person's interaction with all services, systems and products that a company/organization/brand offers, instead of focusing on the interaction with a single product, system or service [4].

Many scales have been proposed to evaluate TX. Tourism was dramatically affected by the COVID-19 pandemic, and TX scales should explicitly consider the post-pandemic context. We developed a scale to evaluate the post-pandemic TX in Valparaíso, Chile, in a process that included 4 steps: (1) developing the scale based on literature, (2) refining the scale based on experts' opinion, (3) validating the scale through a pilot test, and (4) applying the scale in a survey with over 300 participants and statistically validated it. The first and the second steps of the process were analyzed in previous work [5, 6]. This paper documents the whole process of developing the scale, comparing its preliminary and final versions, and discussing the results of the pilot test and of the survey. Section 2 briefly analyzes the concepts that fundaments our study. Section 3 describes the scale's development, and analyze the results of the survey. Finally, Sect. 4 highlights conclusions and proposes future work.

2 Experiences and Tourism

2.1 User eXperience

UX is one of the main topics in HCI research and practice. As the ISO 9241-210 standard indicates, UX includes "the perceptions and responses of the person resulting from the use and/or anticipated use of a product, system or service" [7]. So, UX does not limit to the interaction with interactive software systems, it refers to a person interaction with any kind of product, system or service.

UX with tourism-related digital products is one of our main research topics. We focused on UX evaluations, proposing specific heuristics and evaluation methodologies. Among others, we studied online travel agencies [8–10], virtual museums [11–13], and national parks [14]. We intend to further explore the potential of new, specific heuristics, when evaluating the tourist experience with tourism-related services [15, 16].

2.2 Costumer eXperience

The CX concept was initially proposed in marketing. Almost a decade ago, Lewis high-lighted its relevance in HCI, and pointed out that CX is the link between HCI and Service Science [2]. In our view, CX is a natural extension of UX, that examine a person's inter-actions with all products, systems and services that a company offers [3, 4]. Experience with one company's artifact will most probably affect the perception of other artifacts of the same company, and the overall person's experience.

For some years, we examined TX as a particular case of CX, examining quantitative data available at online travel agencies websites [17–19]. We are currently developing TX evaluation tools; our study proposes a scale to evaluate the post-pandemic TX in Valparaíso, Chile [5, 6].

2.3 Tourism eXperience

Several TX definitions were proposed. Godovykh and Tasci offer a comprehensive review of CX in tourism [20]. In their view, experience is "the totality of cognitive, affective,

sensory, and conative responses, on a spectrum of negative to positive, evoked by all stimuli encountered in pre, during, and post phases of consumption affected by situational and brand-related factors filtered through personal differences of consumers, eventually resulting in differential outcomes related to consumers and brands". Even if their definition refers to experiences in tourism, it does not limit to TX, and may apply to experiences in other fields.

Several scholars are using the concept of "memorable" TX [21–27]. Tung and Ritchie identify four dimensions of memorable TX: affect, expectations, consequentiality, and recollection [21].

2.4 Evaluating the Post-pandemic Tourism eXperience

Scales are common tools to evaluate TX. Many scales have been proposed. Many studies are proposing new TX scales, and are validating the underlying models that fundament those scales. Some scales are more general, others are focusing on specific tourism sectors, or specific destinations.

As tourism was dramatically affected by the COVID-19 pandemic, we think that TX scales should explicitly consider the post-pandemic context. As we did not find a proper scale to evaluate TX in Valparaíso, considering the pandemic restrictions, we developed a new scale. Our scale is based on 12 scales proposed by other authors [22–33]. It includes items adapted from other scales, as well as new items, related to the post-pandemic context, and to Valparaíso specificity as destination.

2.5 Developing a Scale for Tourist Experience Evaluation in Valparaíso

We created the new scale in several iterations:

1. We developed a preliminary version of the scale, based on literature [5]. The scale was reviewed by two UX/CX experts, and was refined based on their feedback.
2. The scale was evaluated by 30 experts, academics, and tourism students, and was refined based on their feedback [6].
3. The scale was validated through a pilot test, that involved 20 participants. Scale's reliability was evaluated.
4. The scale was applied to 316 tourists, and was statistically validated.

The process of constructing the scale is described below.

2.6 The Preliminary Scale

We created the first version of the scale based on literature review [5]. The scale included 56 items, grouped in 8 TX dimensions: emotions (8 items), local culture (8 items), authenticity of the place (13 items), entertainment (8 items), services (11 items), post-pandemic experience (4 items), loyalty (2 items), and general perception (2 items). The scale was reviewed by two UX/CX experts, with computer science and psychology background, and items were refined based on their feedback.

The preliminary scale included 43 adapted and 13 original items. Most of the original items are related to Valparaíso particularity (8 items), or are COVID-19 pandemic-related

(4 items); 1 new item is rather general (medical and health services availability). The preliminary scale's dimensions and items are shown in Table 2.

2.7 Refining the Scale Based on Experts' Feedback

The scale was quantitatively and qualitatively examined, in late 2021 – early 2022, by:

- 11 tourism experts, that work in governmental and private tourism sector in Valparaíso area;
- 10 academics from Chile, Spain and Argentina;
- 9 tourism undergraduate students, from Universidad de Playa Ancha, Valparaíso, Chile.

The 30 participants were asked to evaluate each of the 56 items, using a 5-point Likert scale, where 1 is not appropriate at all, and 5 is very appropriate. They were also asked to make comments on dimensions, on items, and on the whole scale [6].

Table 1. Overall opinions on the preliminary scale.

	Min	Max	Average	Std. Dev.
Experts (11)	2.89	5.00	4.45	0.38
Academics (10)	3.20	5.00	4.38	0.38
Tourism students (9)	3.33	4.89	4.52	0.32

Table 1 synthetizes the quantitative evaluations of the scale. All groups of participants have a positive opinion, with averages from 4.38 to 4.52. Opinions are rather homogeneous, with low standard deviations. Table 2 details the quantitative evaluation of the preliminary scale. It also indicates actions that were performed on scale's items.

The items with highest approval were "*I would like to visit Valparaíso again in the future*" (Loyalty), "*The experience met my expectations*", and "*I was satisfied with the experience*" (General Perception). The three items scored an average of 4.90. The item with lowest approval was "*It was a liberating experience*" (Emotions), that scored 3.33. Many participants indicated that the term "liberating" may be confusing; the item was eliminated. Items "*I will remember the emotions and sensations that I felt*", and "*I felt positive emotions in general*" (Emotions), had good approval; however, they were consider rather general, possibly confusing, and difficult to evaluate, and were therefore eliminated. (Perceived) safety was considered an emotion-related issue, and was moved from dimension "Services" to dimension "Emotions".

Items "*I participated in activities organized by local communities*", and "*The local community organizes activities open to visitors*" (Local Culture), were considered subjective, difficult to evaluate, and were removed. A tourist lack of participation in certain activities does not necessary mean that those activities are inexistent. A destination identity is not always fully related to its culture, that is why the item "*The identity of Valparaíso is remarkable*" was also eliminated.

Table 2. Quantitative evaluation of the preliminary scale.

Dimensions	Items	Averages	Std. Dev	Actions
Emotions	It was a liberating experience	3.33	1.32	Eliminate
	It was a unique experience	4.63	0.89	Keep
	It was a revitalizing experience, that took me out of monotony	4.35	0.80	Adapt
	I had fun	4.55	0.72	Keep
	I will remember the emotions and sensations that I felt	4.41	1.07	Eliminate
	I felt positive emotions in general	4.54	0.68	Eliminate
	I enjoyed the overall experience	4.63	0.61	Keep
	I will always remember this experience	3.94	1.20	Keep
Emotions (8 items)		*4.30*	*0.53*	
Local Culture	The relationship with the local community was nice	4.43	0.82	Adapt
	I experienced local traditions and customs	4.77	0.57	Keep
	I participated in activities organized by local communities	4.66	0.76	Eliminate
	The local community organizes activities open to visitors	4.03	1.38	Eliminate
	I got a good impression of the local community	4.57	0.77	Keep
	The local community is unique, and different from my own community	4.17	1.18	Adapt
	The local community was ready to help and provide information on Valparaíso	4.59	0.97	Keep
	The identity of Valparaíso is remarkable	4.51	0.97	Eliminate

(*continued*)

Table 2. (*continued*)

Dimensions	Items	Averages	Std. Dev	Actions
Local Culture (8 items)		*4.47*	*0.60*	
Authenticity of the Place	I learned new things	4.59	0.72	Adapt
	I appreciated the historic richness of Valparaíso	4.73	0.64	Adapt
	I appreciated the uniqueness of the funiculars ("elevators")	4.48	0.82	Adapt
	I appreciated the uniqueness of the trolleys	4.55	0.77	Adapt
	I appreciated the uniqueness and importance of the stairs for Valparaíso	4.50	0.82	Keep
	I appreciated the historical case of Valparaiso, as world heritage	4.72	0.58	Keep
	I appreciated the Valparaíso harbor and its commercial relevance	4.48	0.97	Adapt
	I appreciated the coast, the sea, and the associated services	4.34	0.80	Keep
	I appreciated the gastronomy of Valparaíso	4.51	0.77	Keep
	I appreciated Valparaíso's architecture	4.72	0.52	Keep
	I appreciated the variety of touristic attractions	4.47	0.94	Keep
	Valparaíso offers a significant cultural diversity	4.37	1.00	Keep
	Valparaíso's climate is pleasant	3.85	1.31	Keep
Authenticity of the Place (13 items)		*4.48*	*0.56*	
Entertainment	Guided tours are available	4.31	1.09	Adapt
	Cultural activities are freely available	4.50	0.90	Adapt

Table 2. (*continued*)

Dimensions	Items	Averages	Std. Dev	Actions
	Valparaíso offers cultural attractions (e.g. galleries, cultural centers, museums)	4.57	0.86	Keep
	Valparaíso offers activities concerning its history	4.03	0.93	Eliminate
	I enjoyed participating in activities that Valparaíso offers	4.53	0.82	Keep
	I performed activities that I have never done before	4.23	1.01	Keep
	Valparaíso offers night entertainment attractions	4.07	1.17	Keep
	I enjoyed carnivals and/or festivals specific to Valparaíso	4.30	0.99	Eliminate
Entertainment (8 items)		*4.32*	*0.63*	
Services	Valparaíso offers diverse options of accommodations	4.41	1.02	Adapt
	Valparaíso offers diverse restaurants/places to eat	4.52	0.95	Adapt
	Valparaíso offers diverse leisure and relaxation services	4.34	1.01	Keep
	Public restrooms are available	3.93	1.44	Eliminate
	Medical and health services are available	4.38	1.05	Eliminate
	Valparaíso has public security services	4.31	1.11	Eliminate
	Valparaíso offers accessible tourist information services	4.41	1.02	Keep
	Tourist agents were friendly	4.41	1.02	Adapt
	Tourism service quality was as promised	4.48	1.02	Adapt
	Valparaíso has appropriate signaling for emergency procedures, as for tsunamis and earthquakes	4.48	1.02	Adapt

(*continued*)

Table 2. (*continued*)

Dimensions	Items	Averages	Std. Dev	Actions
	Secure areas for tsunamis and earthquakes are clearly indicated	4.45	1.09	Eliminate
Services (11 items)		*4.38*	*0.90*	
Post-pandemic Experience	I felt safe, without fear of COVID-19 contagion	4.73	0.83	Keep
	I felt that social distance measures where appropriate	4.67	0.92	Keep
	COVID-19 related safety measures where appropriately informed	4.57	1.01	Adapt
	COVID-19 related safety measures did not impede that my experience was enjoyable	4.60	0.97	Keep
Post-pandemic Experience (4 items)		*4.64*	*0.83*	
Loyalty	I would recommend Valparaíso as destination to other tourists	4.87	0.51	Keep
	I would like to visit Valparaíso again in the future	4.90	0.40	Keep
Loyalty (2 items)		*4.88*	*0.41*	
General Perception	The experience met my expectations	4.90	0.40	Keep
	I was satisfied with the experience	4.90	0.40	Keep
General Perception (2 items)		*4.90*	*0.40*	

All items of the dimension Authenticity of the Place were kept, some with slightly changed definitions. One new item was included: "*I discovered a mix of colors, sounds, smells and flavors typical for Valparaíso*", as suggested by participants.

Items "*Valparaíso offers activities concerning its history*", and "*I enjoyed carnivals and/or festivals specific to Valparaíso*" (Entertainment), were eliminated. Firstly, participants objected that history-related activities should be considered "entertainment". Secondly, carnivals/festivals can only be experienced in very specific seasons, and cannot be evaluated by all tourists. "*Valparaíso offers water sports*" was included as new item; nautical tourism has a great potential in Valparaíso, due to its location on the Pacific coast.

Dimension Services was subject to major changes. Several of its initial items were removed for being too general, or redundant: "*Public restrooms are available*", "*Medical and health services are available*", "*Valparaíso has public security services*", "*Secure areas for tsunamis and earthquakes are clearly indicated*". Participants suggested several new items instead, related to sustainability, inclusiveness, transportation, internet connection, among others.

Based on participants' comments, several items were adapted, clarifying their meaning and/or better focusing. All items of the dimensions Post-pandemic Experience, Loyalty, and General Perception had good approval rates, and were considered pertinent. The refined version of the scale has the same number of items as the initial one (56), but only 29 items were kept unchanged. Table 3 highlights the most important changes, synthetizing the eliminated and the new items. The full new version of the scale is presented in Table 5.

Table 3. Scale's refinement based on experts' opinion.

Dimensions	Eliminated items	New items
Emotions	It was a liberating experience I will remember the emotions and sensations that I felt I felt positive emotions in general	I felt safe
Local Culture	I participated in activities organized by local communities The local community organizes activities open to visitors The identity of Valparaíso is remarkable	None
Authenticity of the Place	None	I discovered a mix of colors, sounds, smells and flavors typical for Valparaíso
Entertainment	Valparaíso offers activities concerning its history I enjoyed carnivals and/or festivals specific to Valparaíso	Valparaíso offers water sports

(continued)

Table 3. (*continued*)

Dimensions	Eliminated items	New items
Services	Public restrooms are available Medical and health services are available Valparaíso has public security services Secure areas for tsunamis and earthquakes are clearly indicated	Valparaíso offers appropriate transportation Valparaíso offers good internet connection Digital information on Valparaíso and its attractions is available Valparaíso has appropriate touristic signaling Valparaíso is clean and well maintained Valparaíso is a sustainable destination Valparaíso is an inclusive destination I perceived professionalism and competence of the tourist staff I perceived a good value for money
Post-pandemic Experience	None	None
Loyalty	None	None
General Perception	None	None

2.8 Validating the Scale Through a Pilot Test

In order to check scale's reliability, we performed a pilot test that involved 20 participants, in early 2022. They were all tourist in Valparaíso. Participants were asked to evaluate all scale's items using a 7-point Likert scale (from 1 – strongly disagree, to 7 – strongly agree). All participants agreed that items are clearly stated, and easy to understand.

We used Cronbach's α test to check scale's reliability. Results are presented in Table 4. The scale has a good reliability (0.913), superior to the acceptable level of 0.700.

The highest α values were obtained for dimensions Post-pandemic Experience, and General Perception. The lowest values were obtained for Loyalty. Excepting Loyalty, all the others dimensions have Cronbach's α values higher than 0.700. When eliminating items, α values for dimensions does not improve significantly. In some cases, α values get slightly higher; however, differences are minors (in most cases less than 0.050), and the items are considered relevant, so they were kept unchanged: "*I felt safe*" (Emotions), "*I learned about the history of Valparaíso*", "*I appreciated Valparaíso's architecture*", "*Valparaíso's climate is pleasant*" (Authenticity of the Place), "*Valparaíso offers appropriate transportation*" (Services), and "*COVID-19 related safety measures did not impede that my experience was enjoyable*" (Post-pandemic Experience). On the contrary, when the following items are eliminated, Cronbach's α values for the associated

Table 4. Cronbach's α test for data collected in the pilot test.

Dimensions	Cronbach's α
Emotions	0.759
Local Culture	0.723
Authenticity of the Place	0.852
Entertainment	0.840
Services	0.732
Post-pandemic Experience	0.869
Loyalty	0.683
General Perception	0.906
Scale	*0.913*

dimensions get lower, and this is a validation that the items are relevant and have to be maintained: "*I enjoyed the overall experience*" (Emotions), "*The local community is unique*" (Local Culture), "*I appreciated the historical case of Valparaiso, as world heritage*" (Authenticity of the Place), "*I enjoyed participating in activities that Valparaíso offers*" (Entertainment), "*Digital information on Valparaíso and its attractions is available*" (Services), and "*I felt safe, without fear of COVID-19 contagion*" (Post-pandemic Experience).

Based on the result of the pilot test, we did not consider necessary to make new changes to the scale. The only change that we made was how the scale is applied in practice. Many participants in the pilot test indicates that evaluating items on a 7-point scale is quite difficult, so we decided to use a 5-point scale instead.

2.9 Applying the Scale: A Survey

The scale was used in a survey with 316 participants, all of them tourist that experienced Valparaíso as destination. We used the convenience sampling, and we collected data in April – May 2022. Most of the participants were Chileans (312 participants, 98.73%); only 4 were foreigners (1.27%). Gender balance was somehow more equilibrated: 198 participants were females (62.66%), 114 participants were males (36.07%); 1 participant indicates "other" as gender (0.32%), and 3 preferred to not discharge the information (0.95%).

Most of the participants belonged to the age group from 21 to 30 y/o, but all age groups were reasonably covered:

- Under 20: 41 participants (12.97%),
- From 21 to 30: 90 participants (28.48%),
- From 31 to 40: 65 participants (20.57%),
- From 41 to 50: 48 participants (15.19%),
- From 51 to 60: 46 participants (14.56%),

- From 61 or over: 26 participants (8.23%).

Most of the participants were employed (170 participants, 53.80%); 94 were students (29.75%), 26 were in charge of the domestic work (8.23%), 14 were retired (4.43), 5 were unemployed (1.58%), and 7 choose the option "other" when asked for their employment status (2.21%). 24 participants got a PhD or MSc degree (7.59%), 145 were college graduated or students (45.89%), and 147 did not possess a college degree (46.52%). It is significant that most of the participants (260, 82.28%) were visiting Valparaíso for the very first time.

Confirmatory factor analysis (CFA) was used to validate the scale, in order to (1) check the underlaying model, and (2) check if significant changes are necessary [34, 35]. We used the maximum likelihood for missing data, as some of the 316 observations were incomplete, and we processed data with STATA 17. The model has 8 factors (scale's dimensions) and 56 variables (scale's items).

All factorial loads are statistically significant at p-value = 0.000; all items are significant for their associated dimensions. Covariances between factors are all significant. The likelihood ratio Chi-Squared (χ^2) is 4040.283, which is significant (p-value = 0.000). The root mean squared error of approximation (RMSEA) is 0.075, which is considered acceptable. The incremental fit indices are lower than 0.900 (and lower than 0.950, as recommended lately): the comparative fit index (CFI) is 0.860, and the non-normed fit index (NNFI) is 0.868. Therefore, our model can still be improved.

Averages and standard deviations for all items are presented in Table 5.

Table 5. The scale for evaluating the post-pandemic tourist experience in Valparaíso, Chile.

Dimensions	Items	Average	Std. Dev
Emotions	It was a unique experience	3.64	1.14
	It was a revitalizing experience	3.62	1.20
	I had fun	3.96	1.15
	I felt safe	2.60	1.17
	I enjoyed the overall experience	3.82	1.14
	I will remember this experience	3.93	1.14
Emotions (6 items)		*3.59*	*1.00*
Local Culture	The local community was welcoming	3.58	1.13
	I learned local traditions and customs	3.38	1.24
	The local community is unique	3.50	1.16
	The local community was ready to help and provide information on Valparaíso	3.59	1.19
	I got a good impression on the local community	3.54	1.18

(*continued*)

Table 5. (*continued*)

Dimensions	Items	Average	Std. Dev
Local Culture (5 items)		*3.52*	*1.04*
Authenticity of the Place	I learned new things on Valparaíso	3.54	1.23
	I learned about the history of Valparaíso	3.45	1.30
	I appreciated the funiculars ("elevators") of Valparaíso	3.74	1.34
	I appreciated the trolleys of Valparaíso	3.74	1.37
	I appreciated the uniqueness and importance of the stairs for Valparaíso	3.82	1.27
	I appreciated the historical case of Valparaiso, as world heritage	3.79	1.28
	I appreciated the Valparaíso harbor and its relevance	3.89	1.23
	I appreciated the coast, the sea, and the associated services	3.92	1.25
	I appreciated the gastronomy of Valparaíso	3.77	1.26
	I discovered a mix of colors, sounds, smells and flavors typical for Valparaíso	3.85	1.24
	I appreciated Valparaíso's architecture	4.01	1.21
	Valparaiso offers a variety of touristic attractions	3.89	1.19
	Valparaíso offers a significant cultural diversity	3.90	1.22
	Valparaíso's climate is pleasant	3.87	1.17
Authenticity of the Place (14 items)		*3.81*	*1.06*
Entertainment	Good quality guided tours are available	3.04	1.21
	Various activities are freely available	3.60	1.22
	Valparaíso offers cultural attractions (e.g. galleries, cultural centers, museums)	3.77	1.21

(*continued*)

Table 5. (*continued*)

Dimensions	Items	Average	Std. Dev
	I enjoyed participating in activities that Valparaíso offers	3.59	1.23
	I performed activities that I have never done before	3.35	1.33
	Valparaíso offers water sports	3.04	1.32
	Valparaíso offers night entertainment attractions	3.67	1.30
Entertainment (7 items)		*3.49*	*1.11*
Services	I found accommodation that suits me	3.60	1.24
	I was surprised by the diversity of restaurants/places to eat	3.68	1.22
	Valparaíso offers appropriate transportation	3.47	1.21
	Valparaíso offers diverse leisure and relaxation services	3.50	1.25
	Valparaíso offers accessible tourist information services	3.15	1.27
	Valparaíso offers good internet connection	3.52	1.27
	Digital information on Valparaíso and its attractions is available	3.49	1.29
	Valparaíso has appropriate touristic signaling	3.28	1.25
	Valparaíso has appropriate signaling for tsunamis and earthquakes emergencies	3.55	1.28
	Valparaíso is clean and well maintained	2.25	1.31
	Valparaíso is a sustainable destination	2.91	1.32
	Valparaíso is an inclusive destination	2.85	1.36
	I perceived professionalism and competence of the tourist staff	3.26	1.30
	I perceived that the tourist staff was friendly	3.38	1.26
	Tourism service quality was as expected	3.39	1.25

Table 5. (*continued*)

Dimensions	Items	Average	Std. Dev
	I perceived a good value for money	3.42	1.24
Services (16 items)		*3.30*	*1.01*
Post-pandemic Experience	I felt safe, without fear of COVID-19 contagion	2.91	1.26
	I felt that social distance measures where appropriate	2.83	1.23
	COVID-19 related safety measures where appropriate	3.12	1.25
	COVID-19 related safety measures did not impede that my experience was enjoyable	3.39	1.29
Post-pandemic Experience (4 items)		*3.07*	*1.13*
Loyalty	I would recommend Valparaíso as destination to other tourists	3.81	1.22
	I would like to visit Valparaíso again in the future	3.96	1.21
Loyalty (2 items)		*3.88*	*1.19*
General Perception	The experience met my expectations	3.70	1.18
	I was satisfied with the experience	3.74	1.18
General Perception (2 items)		*3.72*	*1.16*

Dimension Post-pandemic Experience scored lowest (3.07), almost identical to the central point of the scale. Two of its items got low scores: "*I felt that social distance measures where appropriate*" (2.83), and "*I felt safe, without fear of COVID-19 contagion*" (2.91). This confirms the importance of evaluating pandemic-related issues. Three items of the dimension Services got low scores: "*Valparaíso is clean and well maintained*" (2.25), "*Valparaíso is an inclusive destination*" (2.85), and "*Valparaíso is a sustainable destination*" (2.91). All three highlight important issues to be attended by Valparaíso's authorities, as well as safety, which also got one of the lowest scores: "*I felt safe*" scored only 2.60.

It is remarkable that dimension Authenticity of the Place got the highest score (3.81). This stresses the potential of Valparaíso as destination. Almost all dimension's items got scores higher than 3.70. Items that stand out are: "*I appreciated Valparaíso's architecture*" (4.01), "*I appreciated the coast, the sea, and the associated services*" (3.92), "*Valparaíso offers a significant cultural diversity*" (3.90) "*I appreciated the Valparaíso harbor and its relevance*" (3.89), and "*Valparaiso offers a variety of touristic attractions*" (3.89). Overall, emotions were positive: "*I had fun*" (3.96), and "*I will remember this experience* (3.93). Dimension Loyalty scored 3.88, and item "*I would like to visit*

Valparaíso again in the future" got a remarkably high score (3.96). Dimension General Perception also got a favorable score (3.72).

3 Conclusions and Future Work

TX evaluation is challenging as TX is multidimensional, subjective, and highly personal. One of the most common TX evaluation artifacts are scales. We developed a scale to evaluate TX in Valparaíso, Chile. It includes 56 items, grouped in 8 dimensions: emotions (6 items), local culture (5 items), authenticity of the place (14 items), entertainment (7 items), services (16 items), post-pandemic experience (4 items), loyalty (2 items), and general perception (2 items). Our scale attends general TX factors, Valparaíso's specificity as destination, and also the post-pandemic context.

The scale was initially developed based on literature. It was then evaluated by 30 tourism experts/scholars/professional, and was refined based on their feedback; 12 items have been replaced, 16 items were adapted, and 28 items were kept unchanged. Scale's reliability was checked in a pilot study involving 20 participants.

The scale was later used in a survey that included 316 participants. Confirmatory factor analysis showed that all items are significant for their associated dimensions, and covariances between factors are all significant. However, the incremental fit indices indicate that the underlying model of our scale can be further improved.

Survey's results highlight the importance of pandemic-related issues. They indicate the potential of Valparaíso as destination, especially based on its architecture, coast, harbor, cultural diversity, and the variety of touristic attractions. They also point out major issues that should be addressed in order to improve TX in Valparaíso: safety, cleanliness, sustainability, and inclusiveness.

As future work, we will check the underlaying model of our scale, based on structural equation modeling. We intend to use the scale in future surveys.

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