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Committed to conservation

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5 **COMMITTED TO CONSERVATION:**
6 **TOURISM IN DEVELOPED AND DEVELOPING CONTEXTS**
7

8
9 **KEYWORDS:** cultural motivation; place attachment; participation; conservation
10 commitment; developed and developing heritage sites
11

12 **ABSTRACT**
13

14 This study investigates differences in tourists' conservation commitment at developed and
15 developing heritage sites. It examines relationships between conservation commitment and
16 related concepts: cultural motivation, place attachment, and participation. Data was collected
17 from two troglodyte heritage sites: Kandovan, Iran (*developing*) and Cappadocia, Turkey
18 (*developed*). 518 survey responses were collected at Kandovan and 627 at Cappadocia.
19 Partial least squares structural equation modelling was employed to perform analysis. Multi-
20 group analysis findings indicate that direct relationships among conservation commitment,
21 cultural motivation, place attachment, and participation were significantly higher in the
22 developing context; encouraging industry managers to use participative feedback to stimulate
23 conservation commitment.
24

25
26
27 **INTRODUCTION**

28 The management of cultural heritage is plagued by the contradiction between the preservation
29 of heritage assets and the large-scale tourism required to sustain sites on a long-term basis
30 (Ducros, 2017). Yet, the damage wrought by this increased footfall, infrastructure projects,
31 and the dilution of local culture can constrain sites hoping to mature into established tourism
32 destinations (Landorf, 2009). Thus, while the economic benefits of tourism to culturally-
33 endowed destinations are clear, it may instead contravene their core responsibility – the
34 conservation of heritage assets (Mackenzie & Gannon, 2019). Accordingly, Dragouni et al.
35 (2018, p.759-760) highlight the importance of visitor participation in developing sustainable
36 heritage sites underpinned by tourism, emphasizing “the involvement of the public in
37 decision-making as a means of accommodating community-relevant values and interests,
38 protecting cultural diversity, and promoting viable solutions that balance conservation and
39 competing pressures from socio-economic activity”.

40 Further, while the World Heritage Convention provides the foundation from which to
41 safeguard the sustainability of World Heritage Sites (WHS) across the globe, not all
42 culturally-important sites hold WHS status, particularly in marginalized economies and
43 developing markets (Adie, 2017). This has catalyzed a marked disconnect between the *haves*
44 and *have-nots* with regards to economic success (Ryan & Silvanto, 2010). Yet, despite its
45 financial dividend, WHS status is not necessarily a golden goose, with some suggesting that it
46 can negatively affect heritage conservation due to increased tourist awareness, attention and,
47 subsequently, footfall (Starr, 2013). It is also important to recognize that not all paths to
48 sustainability are controlled by governing bodies. While alternative notions of sustainable
49 tourism development are often characterized as emerging at the behest of the local
50 community (Tan, Kok & Choon, 2018), this also extends to tourists visiting cultural heritage

51 sites for leisure purposes. Therefore, it is crucial to consider the antecedent factors
52 stimulating tourists' commitment to the conservation of the cultural heritage sites they visit.

53 Sustainable cultural heritage tourism has been explored in isolation at both well-
54 known (Taheri et al., 2017) and emerging sites (Teo et al., 2014). Thus, while extant
55 literature often focuses on issues inherent to established sites in developed markets (Ducros,
56 2017); the developing world is not entirely overlooked. Research recognizes that many great
57 heritage sites, such as Machu Picchu (Peru) and Ha Long Bay (Vietnam), exist in emerging
58 economies. Yet little emphasis is placed on understanding tourist behavior at lesser-known
59 sites: typically, those without WHS designation. Resultantly, few studies focus on tourists'
60 commitment to the conservation of such sites. However, there may be differences in
61 expectations, behaviors, and evaluations of tourism services experienced at developed and
62 developing sites (Starr, 2013). Throughout this paper, the terms 'developed sites' and
63 'developing sites' refer to the status of the development status of the heritage site,
64 irrespective of the development of the country where these sites are located. Developed sites
65 are typically well-established, commercially attuned, underpinned by robust infrastructure,
66 adaptive management and monitoring systems, international recognition, and extensive
67 tangential service offerings (e.g., souvenir shops, cafes, and restaurants), supporting the
68 protection of the natural and cultural environment. In contrast, developing sites may not
69 apply adaptive management and monitoring processes, and follow less clear supporting
70 strategies for the protection of the natural and cultural environment and the well-being of
71 local communities (Tan et al., 2018).

72 Few previous studies compare the different standing given to antecedent factors
73 leading to tourists' conservation commitment and sustainable behavior across developed and
74 developing contexts (Dragouni et al., 2018). Yet, Hwang, Stewart and Ko (2012) argue that it
75 is important to encourage both tourists and locals to proactively participate in sustainability
76 matters, even if in a minor way. Some suggest that participation can empower local people to
77 engage with heritage conservation and the sustainable decision-making process (Dragouni et
78 al., 2018). While it is generally established that sites aiming for sustainability can stimulate
79 place attachment and participation to encourage tourists' commitment to site conservation
80 (Supanti & Butcher, 2019), discourse overlooks how this differs between developing and
81 developed contexts (Tan et al., 2018). There is, however, agreement that tourism underpinned
82 by heritage assets is stimulated by tourists' cultural motivations (Kolar & Zabkar, 2010),
83 where tangible and intangible characteristics and opportunities for socialization catalyze
84 travel, consumption, and subsequent conservation commitment. Nevertheless, whether this
85 differs in a developing and developed context remains underexplored. Hence, this study is
86 underpinned by the following questions:

- 87
- 88 (1) What effect do cultural motivation, place attachment, and participation have on
89 tourists' conservation commitment in a cultural heritage context?
90
 - 91 (2) Does the relationship between cultural motivation, place attachment, participation
92 and conservation commitment differ for those visiting developing and developed
93 cultural heritage sites?
94

95 LITERATURE REVIEW

96 *Cultural heritage tourism and related concepts*

97 Within tourism discourse, 'heritage' assets are used to attract visitors in the present, while
98 being maintained in the hope that they will continue to be enjoyed by future generations
99 (Lochrie, 2016). This mission emphasizes preservation and conservation, with heritage sites
100

101 laden with concerns surrounding sustainability and longevity. Many draw upon man-made
102 and/or natural assets, focused on preserving, maintaining, and providing access to
103 archeology, wildlife, culture, military, and religious heritage. Accordingly, heritage is
104 typically categorized based on its tangibility. Tangible heritage includes architecture,
105 museums, monuments, artefacts, and natural phenomena. Intangible heritage represents
106 culture and traditions: mythology, religion, cuisine, literature, and dance (Lochrie, 2016).
107 Yet, tangible and intangible heritage are symbiotic. This interdependence encapsulates
108 *cultural heritage* (Landorf, 2009).

109 However, while initially focused on conservation, tourism organizations have evolved
110 toward managing the commercialization of heritage; protecting it from an enthusiastic
111 international community intent on steadfastly consuming history and culture (Lochrie, 2016).
112 Due to its utility in motivating travel, the value of cultural heritage tourism has also
113 developed (Adie, 2017), and international classifications, such as the UNESCO World
114 Heritage Convention, have propelled destinations into public consciousness (Lochrie, 2016).
115 Nonetheless, while rising interest thrusts some sites toward financial viability, over-tourism
116 is in some instances denigrating the conservational purpose of cultural heritage management
117 (Ryan & Silvanto, 2010). Research therefore often focuses on the complexities of cultural
118 heritage management; identifying challenges surrounding preservation and conservation,
119 stakeholder collaboration, visitor management, and economic impact.

120 Balancing these challenges with site sustainability is therefore an ongoing concern;
121 often amplified in developing tourism markets where safeguarding heritage assets and
122 improving the required infrastructure is deprioritized in favor of rapid, consequence-agnostic
123 commercialization (Taheri et al., 2018). Accordingly, McKercher, Ho, and Du Cros (2005,
124 p.546) suggest, “Sustainable cultural tourism is only possible if formal relationships exist
125 between stakeholders”. Central to this is gaining an understanding of tourists’ motivations,
126 and how to balance their desire to experience cultural heritage with the need to maintain sites
127 in line with the objectives of heritage management. Therefore, understanding *why* tourists
128 engage with cultural heritage is crucial to engendering effective visitor management
129 strategies and may enhance their overall experience, while simultaneously encouraging
130 visitors to contribute to site conservation (Landorf, 2009).

131 132 ***Conservation Commitment and Cultural Motivation***

133
134 Conservation commitment embodies a willingness to conserve the environment (Lee, 2011).
135 In tourism literature, research into conservation commitment typically focuses on
136 environmental tourism (i.e., where participants actively take part in sustainability practices,
137 wildlife conservation within a natural setting) (Ballantyne et al., 2009), or local community
138 preservation of heritage sites. Conservation commitment can help to sustain traditions and
139 tangible destination elements that may otherwise become threatened. Lee (2011) shows also
140 that place attachment positively influences tourists’ commitment to conserving the
141 destinations they visit. Buonincontri et al. (2017) proposed a framework which integrated the
142 tourist experience, place attachment and sustainable heritage behavior, extending
143 conservation commitment into heritage tourism. Recently, tourists’ conservation commitment
144 is highlighted by the growth in crowd-funding initiatives aimed at conserving heritage sites.

145 Given cultural heritage tourism’s growing significance, research into what stimulates
146 such travel remains core to destination marketing and management strategies (Lochrie, 2016).
147 Yet, the importance of conservation commitment therein remains overlooked. Beyond
148 experiencing tangible heritage, relaxation, entertainment, education, enjoyment, and
149 knowledge gained from the experience also stimulate culturally-motivated travel. Culturally-
150 motivated tourists can be categorized into three groups, those: pursuing cultural immersion;

151 seeking historical education; and visiting sites for enjoyment, irrespective of provenance
152 (Poria, et al., 2006). Common to each is the importance of prior knowledge (Poria et al.,
153 2006). Such tourists are often engaged and immersed in the offerings available in the
154 destinations they visit, seeking sustained contact with locals (Wall & Mathieson, 2006).
155 However, cultural motivation is not homogenous and is comprised of a wide “cluster of
156 interrelated and intellectually based interests in culture and heritage” (Kolar & Žabkar, 2010,
157 p.655); encompassing typical travel motivations, albeit realized in a cultural setting.

158 Thus, cultural heritage tourism is not wholly ‘serious’ (Curran et al., 2018) as it
159 involves more casual, social pursuits. For example, visiting sites with family and friends, or
160 exploring destinations with important genealogical links, complements the educational
161 components of culturally-motivated tourism (Taheri et al., 2018). Research demonstrates how
162 expectations regarding social considerations, such as travel companions, the affability of
163 locals, and the behavior of peers stimulate cultural tourism (Kolar & Zabkar, 2010). Others
164 stress the importance of nostalgia (Poria et al., 2006), and the allure of the ‘unusual’ in
165 providing the push-or-pull factors culturally-motivated tourists crave (Zhou et al., 2013).
166 Such tourists pursue memorable experiences to satisfy their curiosity or to a feel sense of
167 excitement and escapism (Teo et al., 2014); the extent of which is often contingent on how
168 *attached* they feel to a destination.

169

170 ***Place attachment***

171 Place attachment represents the emotional connection between places and individuals
172 (Woosnam et al., 2018). A psychological component of the tourism experience; it can
173 stimulate a “sense of physically being and feeling ‘in place’ or ‘at home’” (Yuksel et al.,
174 2010, p.275). While not restricted to visitors, it can emerge when tourists are emotionally
175 invested in a destination and feel content within that setting. Those experiencing heightened
176 levels of place attachment are more loyal (Prayag & Ryan, 2012), and often recommend
177 destinations to others through word-of-mouth (Gannon et al., 2017). Stimulating place
178 attachment can positively impact upon destination popularity (Hammit, et al., 2006), and can
179 encourage conservation behaviors. For example, exploring wetlands in Taiwan, Lee (2011)
180 discovered that place attachment positively influences tourists’ commitment to conserve these
181 unique sites by encouraging environmental responsibility.

182 Place attachment is a multidimensional construct characterized by: place identity
183 (emotional), and place dependence (functional) (Woosnam et al., 2018). Proshansky, Fabian,
184 and Kaminoff (1983, p.61) define place identity as a “strong emotional attachment to
185 particular places or settings”. It encompasses symbolic attachment to a destination, and can
186 be born from genealogical or emotional associations. Thus, place identity can arouse feelings
187 of belonging and emotional connection to a destination (Poiria et al., 2004). Functional ‘place
188 dependence’ infers the extent to which places satisfy tourists’ needs: “how well a setting
189 serves goal achievement given an existing range of alternatives” (Jorgensen & Stedman,
190 2001, p.234). Emphasis is placed on both the tangible and experiential characteristics of
191 destinations, and whether these meet tourists’ expectations. Places that meet the needs of
192 tourists increase their attachment and dependence in comparison with those that fall short
193 (Hammit et al., 2006). Destinations engendering high levels of place attachment are often
194 suitably distinct; a characteristic inherent to most cultural heritage sites. Thus, while identity
195 and dependence remain important, others suggest that a sense of *involvement* can stimulate
196 place attachment (Prayag & Ryan, 2012). Research also highlights the importance of
197 socialization encouraged by destinations, with place attachment heightened through
198 interactions and experiences shared therein (Kyle et al., 2004).

199

200 ***Participation***

201 Scholarship demonstrates the growing desire for participative experiences, with focus given
202 to consumption underpinned by co-creation, engagement, and immersion (Taheri et al.,
203 2017). Participation is behavioral, measuring “the extent to which customers provide or share
204 information, make suggestions, and become involved in decision making during the service
205 co-creation and delivery process” (Chen et al., 2010, p.49); necessitating that tourism
206 offerings are tweaked to ensure customer needs are met.

207 Participation and satisfaction are reciprocal; the former positively influences the latter
208 over time, while satisfaction can also lead to increased participation; “satisfied
209 customers...invest time and effort to help an organization improve its service delivery and
210 are more interested in the welfare of the organization” (Eisengerich et al., 2014, p.43). So too
211 are those who feel strong attachment to a place or destination; this emotional connection can
212 encourage them to provide constructive feedback in the hope of substantive improvement
213 (Woosnam et al., 2018). Thus, participation involves the voluntary sharing of ideas, and this
214 information can be used to improve cultural heritage sites’ offerings (Eisingerich et al.,
215 2014). This constructive participation is a form of engagement and, if similar participative
216 feedback recurs, provides an opportunity for heritage sites to evaluate and improve the
217 quality and extensiveness of their offering from a visitor-perspective (Supanti & Butcher,
218 2019).

219 The desire to experience heritage may encourage participation at heritage sites via
220 cultural motivation’s inherently hands-on elements: interacting with native objects;
221 communicating with sincere local hosts; enjoying authentic offerings; experiencing history
222 and heritage with family and friends; and the safeguarding of heritage assets (Taheri et al.,
223 2018). This participative feedback can contribute to site longevity and popularity, where
224 those motivated to experience and conserve cultural heritage (and who feel attached to it)
225 may act in a way that contributes to site sustainability (Mai & Smith, 2015).

227 **COMPARING A DEVELOPED AND A DEVELOPING CULTURAL HERITAGE** 228 **SITE**

230 **Description of the sites**

231 Extant literature often focuses on internationally-recognized examples of cultural heritage
232 and the challenges inherent to sustaining tourism offerings in developed markets (Mai &
233 Smith, 2015). However, little is known about tourists’ attitudes toward site participation and
234 conservation in marginal contexts. Recognizing this, we turn towards two culturally-
235 comparable heritage sites couched within a non-Western context: Kandovan and Cappadocia.
236 Kandovan, a troglodyte village estimated at over 850 years old, is located in northern Iran. Its
237 distinctiveness stems from inhabited caves carved into the area by volcanic remnants from
238 the now-dormant Mount Sahand (Taheri et al., 2018). Similarly, Cappadocia is a 4th century
239 UNESCO World Heritage Site located in South-Central Turkey. It echoes Kandovan in being
240 dominated by an underground complex of populated cave-dwellings (Taheri et al., 2018).

241 Both provide a captivating example of troglodyte heritage, supported by a burgeoning
242 tourism industry. However, balancing this with the fragile architecture has catalyzed concerns
243 surrounding sustainability and preservation therein, with the increased impact of tourism and
244 the construction work required to service visitor expectations jeopardizing both sites (Taheri
245 et al., 2018). As an established attraction, tourism has already impacted upon Cappadocia:
246 “an outstanding example of traditional human settlement which has become vulnerable under
247 the combined effects of natural erosion and, more recently, tourism” (UNESCO, 2017). This
248 captures the fundamental difference between both sites; not based on heritage assets, but
249 influenced by the fact that Cappadocia (and Turkey generally) is a better-established tourism
250 destination than Kandovan (and Iran), with fewer concerns around safety and the availability

251 of high-quality hotels and restaurants, supported by investment in infrastructure (Taheri et al.,
252 2019).

253 Cappadocia's tourist numbers exceed 2.5million annually (Asil, 2013), whereas the
254 Iranian tourism industry services barely double this figure (O'Toole, 2017). Despite their
255 similar heritage assets, only Cappadocia holds WHS designation, with repeated calls for
256 Kandovan to receive similar recognition showing little progress. Thus, while Cappadocia
257 represents a developed, internationally-recognized example of heritage, Kandovan's appeal is
258 less pervasive, attracting international visitors in smaller numbers (Allan & Shavanddasht,
259 2019).

260
261
262

263 *Theoretical framework and research hypotheses*

264 **Figure 1** demonstrates the relationships between the constructs discussed in the Literature
265 Review (conservation commitment, cultural motivation, place attachment and participation)
266 and the proposed moderating effect of visiting a developing or developed heritage site.
267 Within the methodology used in our analysis these relationships are referred to as 'paths'.
268

269 [Figure1]

270

271 Based on the prior discussion on cultural motivation (Poria, et al., 2006) we argue that
272 cultural motivation has a positive effect on place attachment (Prayag & Ryan, 2012) and
273 participation (Mai and Smith, 2015)
274

275 **H1:** Cultural motivation has a positive effect on place attachment.

276 **H2:** Cultural motivation has a positive effect on participation.

277 **H3:** Place attachment has a positive effect on participation.
278

279 Within our model we also posit that culture motivation, place attachment, and participation
280 have a positive effect on conservation commitment (Buoincontri et al., 2017)
281

282 **H4:** Cultural motivation has a positive effect on conservation commitment.

283 **H5:** Place attachment has a positive effect on conservation commitment.

284 **H6:** Participation has a positive effect on conservation commitment.
285

286 *Mediating effects of place attachment and participation*

287 We also predict the indirect effect of cultural motivation on conservation commitment
288 through place attachment and participation, alongside the indirect effect of cultural
289 motivation on participation through place attachment. Studies have examined the role of
290 tourists' preconceived notions, and how these impact on social behaviors both directly and
291 indirectly via attitudinal variables (Taheri et al., 2017). Literature suggests that participation
292 and place attachment may mediate the effects of tourists' preconceived notions on their
293 commitment and behavioral outcomes (Supanti & Butcher, 2019). Therefore:
294

295 **H7:** Place attachment mediates the relationship between cultural motivation and
296 participation.

297 **H8:** Participation mediates the relationship between conservation commitment and cultural
298 motivation.

299 **H9:** Place attachment mediates the relationship between conservation commitment and
300 cultural motivation.

301

302 Given the differences between each site, there may be significant variances in the behavior of
303 tourists drawn to Kandovan compared with those visiting Cappadocia. Namely, we posit that
304 the influence of cultural motivation on place attachment, participation, and conservation
305 commitment between the *developing* (Kandovan) and *developed* (Cappadocia) contexts may
306 differ. This study compares how these antecedent factors influence conservation commitment
307 at both sites. Better-developed destinations are perhaps more capable of providing offerings
308 that sufficiently satisfy tourists' needs, while offering the opportunities for meaningful social
309 interaction required to stimulate place attachment. Further, conservation commitment differs
310 depending on the nature of a place and its tourism offerings (Ballantyne et al., 2009).
311 Therefore:

312

313 **H10:** Level of site development moderates the relationships among conservation commitment
314 cultural motivation, place attachment, and participation.

315

316 *Methodology*

317 *Sample and procedures*

318 We collected data at Kandovan and Cappadocia over a four-month period in 2015. Using
319 judgmental sampling, international tourists were approached by trained researchers at both
320 sites using an English language questionnaire for an average of 6 hours per day. Judgmental
321 sampling is an effective data collection approach when the main objective is theoretical
322 understanding rather than generalization and is used commonly across tourism and hospitality
323 studies (Wells et al., 2017). We asked these international tourists to: compare their
324 experiences with their prior experiences elsewhere, and also their actual experience after
325 visiting the sites. We pilot tested with 50 respondents (which there were not included in final
326 data analysis) at each site over the first 14-days, with questions tweaked based on responses
327 gathered at this pre-test stage. Data cleaning condensed the final sample to 518 questionnaires
328 for Kandovan and 627 responses for Cappadocia. We also tested for non-response bias
329 (Armstrong & Overton, 1977); an early and late version of the questionnaire was compared
330 for systematic differences in socio-demographic variables (gender, age, nationality) (**Table**
331 **1**). The results indicate no significant differences in this regard between these groups at both
332 sites (Armstrong & Overton, 1977). We used G*Power (Faul et al., 2009) to calculate the
333 minimum sample size based on power analysis, with results indicating that the minimum
334 sample size required to generate a power of 0.95 for our framework and for each group was
335 138. The data collected surpasses the level required.

336 As with all self-reported data, there is a risk of Common Method Variance (CMV)
337 (Podsakoff et al., 2003). Thus, the evaluation followed several theoretical and statistical
338 steps. To minimize social desirability bias (i.e., a response bias that is the propensity of
339 participants to answer questions in a fashion that might be viewed favorably by other
340 participants/researchers), participants were informed their answers were anonymous.
341 Independent and dependent constructs were in different sections of the questionnaire (**Table**
342 **2**). In order to avoid biases in responses due to uncontrolled contextual conditions, tourists
343 were asked to fill in questionnaires in different places outside of each site. Two statistical
344 approaches were used to evaluate CMV; Harman's single-factor test was employed by
345 entering all principal constructs into a Principal Component Analysis (PCA) (Podsakoff et al.,
346 2003). The eigenvalue unrotated PCA solution detected eight factors, with the highest portion
347 of variance explained by one single factor 33.123%. The unmeasured method factor approach
348 was used to further assess CMV. Following Liang et al. (2007), a common method factor was
349 introduced to the structural model. Indicator average variances/method factor were
350 investigated. The average variance demonstrated by indicators for Kandovan was 57% and

351 the average method-based variance was 1.6% (35:1). For Cappadocia, the average variance
352 explained by indicators was 66%, while the average method-based variance was 1.7% (38:1).
353 CMV is therefore not a concern. Finally, we controlled for several variables that could
354 threaten the accuracy of our model estimation including age, gender, and nationality, with no
355 concerning results.

357 [Table1&2]

358 *Survey instrument*

360 A self-administered questionnaire using reflective items from existing tourism marketing
361 construct measures was developed (**Table2**). Respondents indicated the extent to which they
362 agreed or disagreed with each statement using a 7-point Likert scale, anchored at 1 (strongly
363 disagree) and 7 (strongly agree). The dependent place attachment (PA) variable was
364 measured by five items adapted from Ram et al. (2016). The dependent participation (P)
365 variable included 3 items adapted from Eisingerich et al. (2014). For the dependent
366 conservation commitment (CC) variable, three items were adapted from Lee (2011). The
367 independent cultural motivation (CM) (9-items) variable came from Taheri et al. (2017).

369 *Analytical technique*

371 Partial least squares structural equation modelling (PLS-SEM) is commonly employed
372 throughout heritage tourism research (Taheri et al., 2017). It is suitable for early-stage theory
373 building with large numbers of indicators (Wells, et al., 2016) as “PLS-SEM's statistical
374 properties provide very robust model estimations with data that have normal as well as
375 extremely non-normal (i.e., skewness and/or kurtosis) distributional properties” (Hair et al.,
376 2017, p.22). PLS is also more suitable “where theoretical knowledge is not as strong as that
377 demanded by covariance-based approaches such as linear structural relations (LISREL) and
378 analysis of moment structures (AMOS), and can be used to suggest where relationships might
379 or might not exist” (Ashill & Jobber, 2014, p. 277). Using IMB-SPSS 26, Skewness and
380 Kurtosis tests were conducted. The results showed that the assumption of normality was
381 violated for some items in some constructs (against satisfactory values between -3 and +3)
382 (Wells et al., 2016). Thus, for the estimation and assessment of the model, this study also
383 used Consistent Partial Least Squares (PLSc), advancing conventional PLS (Dijkstra &
384 Henseler, 2015). Dos Santos et al. (2016, p.1093) argue that the “[PLSc] algorithm solves the
385 consistency problem, path coefficients; construct correlations, and indicator loadings. The
386 PLSc methodology avoids the issue of overestimation and underestimation of parameters”.
387 For assessment of the conceptual model, two step sage 1) measurement (i.e., relationship
388 between items and constructs) and structural model (i.e., assessment of effects and prediction
389 quality) were used with SmartPLS 3.2.8 software. All results were bootstrapped (n=5000) as
390 suggested by Hair et al. (2017).

393 *Measurement model assessment and invariance measurement: Full dataset and across two sites*

395 The assessment of the measurement model involves an assessment of its reliability and
396 validity with respect to the latent variable (LVs) constructs (Hair et al., 2017). This involves
397 evaluating the relationships between the LVs and their related items. The measurement model
398 was analyzed by testing construct reliability, convergent validity, and discriminant validity.
399 Construct reliability was assessed via composite reliability (CR), Cronbach's Alpha (α), and
400 Dijkstra-Henseler's rho (ρ_A). Per **Table2**, CR, α , and ρ_A for all constructs in the dataset and

401 across both sites reached the suggested threshold (.70) (Hair et al., 2017). Convergent and
402 discriminant validity were assessed in multiple ways. First, the square roots of the average
403 variance extracted (AVE) of all constructs for both sites were larger than all other cross
404 correlations using PLS and Consistent Partial Least Squares (PLSc) (**Table3**). Second, AVE
405 values exceeded .5 for all constructs in the dataset and for both sites (**Table2**). Third, all
406 items illustrated the highest loading in their intended constructs was $>.60$, with significant
407 values for both PLS and PLSc (Hair et al, 2017). Fourth, following Henseler, Ringle, and
408 Sarstedt (2015)'s heterotrait–monotrait ratio of correlations (HTMT) approach, all construct
409 HTMT values were below the cut-off value (.85) for the full dataset (.211-.576), for
410 Kandovan (.233-.623) and Cappadocia (.176-.487). All constructs hold adequate discriminant
411 and convergent validity.

412
413 **[Table3]**

414
415 ***Structural model assessment and multi-group analysis (MGA)***

416 Fit indices (standardized root mean square residual (SRMR) and Normed Fit Index (NFI))
417 were first calculated. Using the blindfolding procedure within SmartPLS, Stone–Geisser's Q^2
418 value was employed to test predictive relevance. Per **Table4**, SRMR (acceptable $<.08$), NFI
419 (acceptable $>.90$) and Q^2 (acceptable >0) were acceptable. All R^2 values surpassed the
420 suggested value (.10) (Hair et al., 2010) (**Table4**). The results support the reliability,
421 convergent validity, and discriminant validity of the structural model for the full dataset.

422
423 **[Table4]**

424
425 **Table5** illustrates standardized path coefficients and t -values for the conceptual
426 model. **H1** proposes a positive relationship between cultural motivation and place attachment.
427 The path coefficient ($\beta=.367$) is significant ($p<.01$), supporting **H1**. Cultural motivation
428 positively influences participation ($\beta=.423$; $p<.01$) and conservation commitment ($\beta=.289$; p
429 $<.01$), supporting **H2** and **H6**. Results also confirm the hypotheses (**H3**;**H5**) linking place
430 attachment to conservation commitment ($\beta=.405$; $p<.01$) and participation ($\beta=.523$; $p<.01$).
431 Further, conservation commitment is positively influenced by participation ($\beta=.427$; $p<.01$)
432 and cultural motivation ($\beta=.503$; $p<.01$), respectively supporting **H4** and **H6**. In terms of the
433 control variables, age, gender and nationality had no significant effect on conversation
434 commitment. We also tested the indirect role of place attachment and participation in three
435 hypothesized relationships in the PLS path model. We used Taheri et al.'s (2017)
436 recommendation to calculate indirect effects using bootstrapping ($n=5000$) and 95%
437 confidence intervals (CI). The direct relationship between cultural motivation, conservation
438 commitment and participation were significant and hence meet the condition for mediating
439 effects. The findings show that cultural motivation [**H7**: indirect effect $=.311$; $t=7.298$,
440 $CI=[.267; .343]$) indirectly influences participation through place attachment. Cultural
441 motivation [**H8**: indirect effect $=.267$; $t=6.399$, $CI=[.203; .327]$) also indirectly influences
442 conservation commitment through participation. Finally, cultural motivation [**H9**: indirect
443 effect $=.335$; $t= 8.239$, $CI=[.303; .398]$) indirectly influences participation through place
444 attachment.

445
446 **[Table5]**

447
448 To test the moderating role of visiting developing versus developed cultural heritage
449 sites (**H10**), we employed multi-group analysis (MGA). Prior to conducting MGA to compare
450 path coefficients between the sites, measurement invariance was tested (Hair et al, 2017).

451 Henseler et al.'s (2016) Measurement Invariance of Composite Models (MICOM) three-step
452 procedure (Configural, Compositional, and Scalar invariance) was applied. The test of
453 differences in loadings between groups for all items under their respective constructs showed
454 that the differences between all factorial loads in both site groups were non-significant
455 (Welch-Statterthwaite and permutation tests p -value $>.05$). **Table6** demonstrates
456 compositional and scalar invariance, guaranteeing 'full measurement invariance'.

457
458 **[Table6]**
459

460 Two nonparametric approaches were used to test for multi-group differences.
461 Following Henseler, Ringle, and Sinkovics' (2009) PLS-SEM MGA, the p -value of path
462 coefficient estimates must be $<.05$ between identified path coefficients across two groups.
463 Further, Chin and Dibbern's (2010) permutation approach was used. This technique employs
464 p -values to test differences between two groups if the p -value is $<.05$. The findings
465 demonstrate significant differences between both sites (**Table7**), alongside positive
466 relationships for both.

467
468 **[Table7]**
469

470 ***Findings and discussion***

471 The results support all nine hypotheses, grounded by extant literature in relation to RQ1:
472 "What effect do cultural motivation, place attachment, and participation have on conservation
473 commitment in cultural heritage sites?" For RQ2: "Does the relationship between cultural
474 motivation, place attachment, participation and conservation commitment differ for those
475 visiting developing and developed cultural heritage sites?" the MGA results demonstrate
476 significant differences between nine paths (**Table7**) across developing (Kandovan) and
477 developed (Cappadocia) contexts. The relationships between all constructs were positive for
478 both and all effects were significantly higher for Kandovan compared to Cappadocia. Thus,
479 the findings support the majority of the proposed paths included in our model (rejecting
480 $CM \rightarrow PA \rightarrow P$).

481 PLS and MGA results (**Table 6&7**) reveal that the influence of cultural motivation on
482 place attachment is greater for Kandovan than Cappadocia. This demonstrates the benefits of
483 the site's developing 'under-explored' nature, where tourists motivated by the pursuit of
484 hitherto unspoiled heritage feel greater attachment to destinations that provide this, as
485 opposed to developed, commercialized alternatives (Ram et al, 2016). Further, cultural
486 motivation has a significantly larger positive influence on participation in the developing
487 context. Again, this suggests that international tourists who travel to less-developed
488 destinations may provide feedback in a participative manner. This reflects extant research
489 which suggests that those motivated to visit developing cultural heritage sites are less
490 interested in highly-curated experiences laden with commoditized service offerings, instead
491 preferring to participate in more genuine, authentic experiences (Taheri et al., 2018).

492 While Iran is growing as a tourist destination it is by no means internationally
493 popular. Therefore, inbound tourists may hold greater interest in providing participative
494 feedback to improve service offerings in line with developed counterparts; here there is a
495 significant difference in the effect of place attachment on participation between the developed
496 and developing context. This is significantly more positive for Kandovan than for
497 Cappadocia; suggesting that tourists who enjoyed their experience, believed it represented
498 themselves accurately, and who felt attached to the experiential elements of cultural heritage
499 consumption were more inclined to offer constructive feedback on how the site could better

500 meet their needs. This significant difference may be due to the underdeveloped nature of
501 Kandovan, where tourists are eager to help the site achieve its potential.

502 Place attachment has a significantly stronger influence on conservation commitment
503 for Kandovan compared to Cappadocia. This suggests that while tourists are committed to the
504 conservation of both sites, they feel greater duty to actively engage in behaviors
505 demonstrating their commitment to cultural heritage conservation having visited a less-
506 developed site (Mai & Smith, 2015). Additionally, participation has greater influence on
507 conservation commitment at Kandovan than Cappadocia. This suggests that tourists
508 recognize that developing sites require greater participative feedback to improve their
509 offerings, and that this is manifest more effectively through active engagement in
510 conservation commitment behaviors (Ballantyne et al., 2009). Further, the findings
511 demonstrate the positive influence of cultural motivation on conservation commitment (Starr,
512 2013). However, this relationship is significantly stronger with regards to Kandovan. This
513 may be because those motivated by the pursuit of cultural consumption, and who travel to
514 under-developed heritage sites, recognize that more must be done to help such sites become
515 sustainable destinations and preserve heritage assets therein.

516 The results demonstrated significant positive differences for the indirect effect of
517 cultural motivation on conservation commitment mediated by place attachment between
518 Kandovan and Cappadocia. This suggests that enjoyment derived from feeling connected to a
519 destination can strengthen the link between tourists' cultural motivation and their
520 commitment to the conservation of cultural heritage sites, reflecting extant literature (Lee,
521 2011). The results confirmed significant positive differences in the indirect effects of cultural
522 motivation on conservation commitment mediated by tourists' participation between
523 Kandovan and Cappadocia. This suggests that by actively seeking opportunities to provide
524 constructive feedback, culturally-motivated tourists may engage in conservation commitment
525 behaviors more regularly. Interestingly, the findings did not reveal a significant difference
526 between Kandovan and Cappadocia for the indirect effect of cultural motivation on
527 participation through place attachment (**Table 7**). However, the direct effect for both
528 relationships was significant. Thus, cultural motivation can influence tourist participation
529 directly, and place attachment does not mediate this irrespective of 'development'.
530

531 CONCLUSIONS

532 This study investigated the interplay between antecedent constructs and tourists' conservation
533 commitment at cultural heritage sites, highlighting differences between these relationships in
534 a developed and developing context. We investigated the relationships between multiple
535 antecedent factors and conservation commitment for international tourists visiting Kandovan,
536 Iran (developing) and Cappadocia, Turkey (developed), confirming extant literature in
537 finding significant positive relationships between cultural motivation and place attachment
538 (Kyle et al., 2004); cultural motivation and participation (Mai and Smith, 2015); cultural
539 motivation and conservation commitment (Mai & Smith, 2015); place attachment and
540 conservation commitment (Taheri et al., 2018); and participation and conservation
541 commitment (Tan et al., 2018) at both sites.

542 While the approach adopted is purely quantitative, with implications driven by
543 researcher interpretation of how, where, and in what way the findings converge with extant
544 literature, this study nonetheless extends prior research in several ways. As explained prior, a
545 higher positive relationship for the *developing* context was identified for each direct
546 relationship. These differences suggest that, irrespective of similarities in heritage assets,
547 tourists' conservation commitment (and its antecedent factors) across heritage sites are not
548 homogenous. Therefore, researchers must consider how different contextual elements
549 contribute to tourists' enjoyment, attachment, behavior, and evaluation in order to further

550 develop sustainable management practice in line with WHC objectives. This study also
551 reinforces the importance of place attachment and participation as mediating factors between
552 cultural motivation and conservation commitment for both developed and developing sites.
553 Thus, many extant constructs that drive sustainable cultural heritage may differ between such
554 sites. Therefore, the comparison between participation, place attachment, cultural motivation,
555 and conservation commitment in a developed and developing context provides unique
556 insights into these constructs, complementing existing cultural tourism studies.

557 Further, this study offers practical implications. First, for both Kandovan and
558 Cappadocia, tourists were eager to provide participative feedback on how to improve the
559 tourism offering. However, underdeveloped cultural heritage sites may be less-adept at
560 collecting, evaluating, and operationalizing this feedback. Therefore, for developing sites,
561 where tourists' propensity to provide participative feedback is significantly higher, it is
562 important for tourism managers to introduce robust process for collecting and analyzing this
563 data by providing clear opportunities for tourists to offer constructive service design and
564 delivery feedback in a participative manner. Presently, developing cultural heritage sites are
565 characterized by a lack of adaptive management and monitoring systems. Thus, to continue to
566 support the protection of the natural and cultural environment, tourism managers should
567 introduce tracking and monitoring processes to ensure site development is undertaken in a
568 sustainable manner (Tan et al., 2018), in line with tourist expectations, and in a way that
569 continues to stimulate place attachment, participation, and conservation commitment.

570 Second, while tourists are eager to participate in the site improvement process by
571 offering feedback and showcasing conservation commitment behaviors, for developing sites
572 their attachment to these spaces may be significantly influenced by their *developing nature*.
573 Therefore, participative feedback and conservation commitment may be lower in sites that
574 change their tourism offerings too quickly. Managers must balance sustainable development
575 and service improvement to ensure that their offerings develop in a manner reflecting tourist
576 feedback while stimulating conservation commitment. Thus, we encourage those managing
577 *developing* cultural heritage sites to engage with managers of similarly endowed and
578 established *developed* sites, in-person or via the World Heritage Site Managers Forum
579 (WHC, 2018), to gain insight into service provision, improvement, and development in a
580 manner which does not negatively impact tourists' desire to participate or engage in
581 conservation commitment. To this end, we encourage developing cultural heritage site
582 managers to engage with the portfolio of sustainable management and development
583 workshops provided by UNESCO.

584 While this study provides nascent insight into multi-group differences between
585 international tourists at two different (*developing* and *developed*) heritage sites, some
586 limitations must be acknowledged. First, while we endeavored to investigate the
587 heterogeneity of two different cultural sites, there are other contextual factors/constructs
588 influencing our conceptual model (e.g., customer engagement, familiarity, natural
589 characteristics, accessibility from major tourism origin countries, the role played by
590 multinational tourist operators) which could be considered in future studies. For example, we
591 recognize that further studies should investigate the link between conservation commitment,
592 nostalgia and self-identity across the different cultural sites. Future studies should also look at
593 different types of tourists (e.g., adventure, backpacker), different variables (e.g., travel
594 experiences), and different types of heritage sites (e.g., museums).

595 Second, we adopted a soft-modeling approach towards prediction, rather than
596 causality. Future studies should use qualitative comparative analysis (e.g., fsQCA) to explain
597 causal conditions predicting behavioral outcomes. This would help scholars to identify the
598 combinations of causal conditions underpinning consumers' conservation commitment
599 (Gannon et al., 2019). Third, we collected data from participants fluent in English; future

600 studies could administer the questionnaire in other languages in order to overcome this. In
601 addition, future studies could also take into account of political and institutional factors
602 associated with the countries where the heritage sites are located. Further, differences in
603 sociodemographic characteristics overlooked by this study (e.g., nationality, income,
604 profession) should be examined. Finally, the sampling technique used in this study is limited
605 (i.e., judgmental sampling can help theoretical expansion, but not generalization), and future
606 research should attempt to use a stratified sampling technique.

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Table 1.Demographic information

Characteristics	Percentage	
	Kandovan	Cappadocia
<i>Gender</i>		
Male	59.1%	38%
Female	40.9%	62%
<i>Nationality</i>		
European	34.6%	48%
Asian	35.3%	31.2%
Middle-Eastern	25.1%	28.8%
<i>Age</i>		
46+	28%	32%
26-45	52.8%	41.8%
18-25	19.2%	26.2%

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Table 2. Reflective Constructs: Reliability, convergent, and discriminant validity

Constructs	Loadings PLS(PLSc)			CR			α			AVE			ρ_A		
	Full	K	C	Full	K	C	Full	K	C	Full	K	C	Full	K	C
<i>Cultural motivation</i>				.888	.903	.844	.835	.849	.725	.555	.523	.511	.890	.823	.801
CM1:I visit<site>to relax mentally	.828(.798)	.839(.832)	.808(.781)												
CM2:I visit<site>to discover new places and things	.822(.833)	.860(.811)	.854(.871)												
CM3:I visit<site>to be in a calm atmosphere	.801(.867)	.790(.787)	.833(.867)												
CM4:I visit<site>to increase my knowledge	.770(.777)	.723(.777)	.790(.790)												
CM5:I visit<site>to have a good time with friends or alone	.780(.787)	.779(.782)	.772(.787)												
CM6:I visit<site>because I am interested cultural attractions	.778(.782)	.801(.812)	.778(.797)												
CM7:I visit<site>because I am interested historical attractions	.711(.723)	.733(.711)	.752(.782)												
CM8:I visit<site>because I am interested in history	.722(.736)	.805(.801)	.756(.724)												
CM9:I visit<site>for heritage motivations	.709(.717)	.739(.721)	.766(.747)												
<i>Place attachment</i>				.820	.876	.823	.789	.812	.801	.602	.623	.621	.829	.842	.797
PA1:I enjoy visiting<site>more than any other attraction in<place>	.811(.789)	.823(.808)	.809(.789)												
PA2:For what I like to do during my trip to<place>,I could not imagine anything better than the experience provided by<site>	.722(.731)	.721(.780)	.719(.761)												
PA3:The<site>contributed to my sense of belonging to<place>	.740(.760)	.726(.747)	.744(.762)												
PA4:Visiting<site>says a lot about who I am	.766(.770)	.875(.811)	.778(.776)												
PA5:For attractions in<place>that I enjoy most, the<site>provides the best experience	.822(.836)	.780(.733)	.801(.801)												
PA6:After visiting<site>I feel	.811(.823)	.772(.722)	.871(.866)												

that<place>means a lot to me															
PA7: Visiting<place>says a lot about who I am	.729(.731)	.762(.761)	.718(.731)												
<i>Participation</i>				.798	.821	.827	.823	.877	.867	.667	.623	.601	.852	.877	.870
P1:If I have a useful idea on how to improve service, I give it to someone at<site>	.730(.732)	.730(.744)	.732(.752)												
P2:I make constructive suggestions to<site>on how to improve their service offerings	.777(.767)	.745(.752)	.749(.767)												
P3:I let<site>know of ways that it can better serve my needs	.788(.793)	.812(.834)	.789(.793)												
<i>Conservation commitment</i>				.798	.821	.807	.801	.827	.790	.520	.577	.581	.822	.881	.827
CC1:I am willing to donate money to environmental organizations	.811(.743)	.780(.778)	.825(.741)												
CC2:I am willing do volunteer work for groups that help the environment	.762(.723)	.739(.721)	.769(.723)												
CC3:I am willing to actively search for information about environmental conservation	.817(.768)	.758(.723)	.811(.729)												

Note:All item loadings>3.29($p<0.001$).Kandovan=K;Cappadocia=C;Full:Full dataset.

Table 3.Correlation matrix

Site	Construct	CM	PA	P	CC	Mean	SD
Kandovan	CM	.723				5.25	1.301
	PA	.411(.502)	.789			5.72	1.493
	P	.413(.410)	.507(.508)	.789		5.87	1.272
	CC	.210(.307)	.447(.466)	.490(.503)	.759	5.15	1.342
Cappadocia	CM	.714				5.03	1.080
	PA	.453(.511)	.788			5.23	1.340
	P	.436(.498)	.407(.489)	.775		5.19	1.161
	CC	.257(.301)	.423(.416)	.411(.445)	.762	4.88	1.145
Full dataset	CM	.744				5.41	1.271
	PA	.401(.387)	.775			4.79	1.091
	P	.423(.418)	.523(.498)	.816		5.07	1.490
	CC	.202(.265)	.457(.472)	.440(.457)	.721	5.29	1.271

Note:Bolded values on diagonal are square root of AVEs:PLS(PLSc)

Table 4. Fit indices, predictive relevance and explanatory power

Site	PLS-SRM	PLSc-SRM	NFI	R ²	Q ²
Kandovan	.058	.061	.92	R ² _{PA} =.378	Q ² _{CM} =.534
				R ² _{CP} =.473	Q ² _{PA} =.145
				R ² _{CC} =.587	Q ² _{TP} =.133
					Q ² _{CC} =.256
Cappadocia	.057	.063	.90	R ² _{PA} =.301	Q ² _{CM} =.237
				R ² _{CP} =.491	Q ² _{PA} =.223
				R ² _{CC} =.620	Q ² _{TP} =.147
					Q ² _{CC} =.211
Full dataset	.051	.060	.91	R ² _{PA} =.456	Q ² _{CM} =.233
				R ² _{CP} =.567	Q ² _{PA} =.201
				R ² _{CC} =.703	Q ² _{TP} =.189
					Q ² _{CC} =.238

Table 5. Direct paths

Hypotheses	β	<i>t</i> -value	<i>f</i> ²	Supported?
H1:Cultural motivation→Place attachment	.367	7.459	.122	Yes
H2:Cultural motivation→Participation	.423	12.579	.173	Yes
H3:Place attachment→Conservation commitment	.405	26.679	.182	Yes
H4:Participation→Conservation commitment	.427	18.287	.175	Yes
H5:Place attachment→Participation	.523	13.287	.174	Yes
H6:Cultural motivation→Conservation commitment	.503	15.296	.213	Yes

Note:*** 3.29($p < .001$); **2.58($p < .01$); *1.96($p < .05$).

Table 6.Results of compositional invariance and scalar invariance.

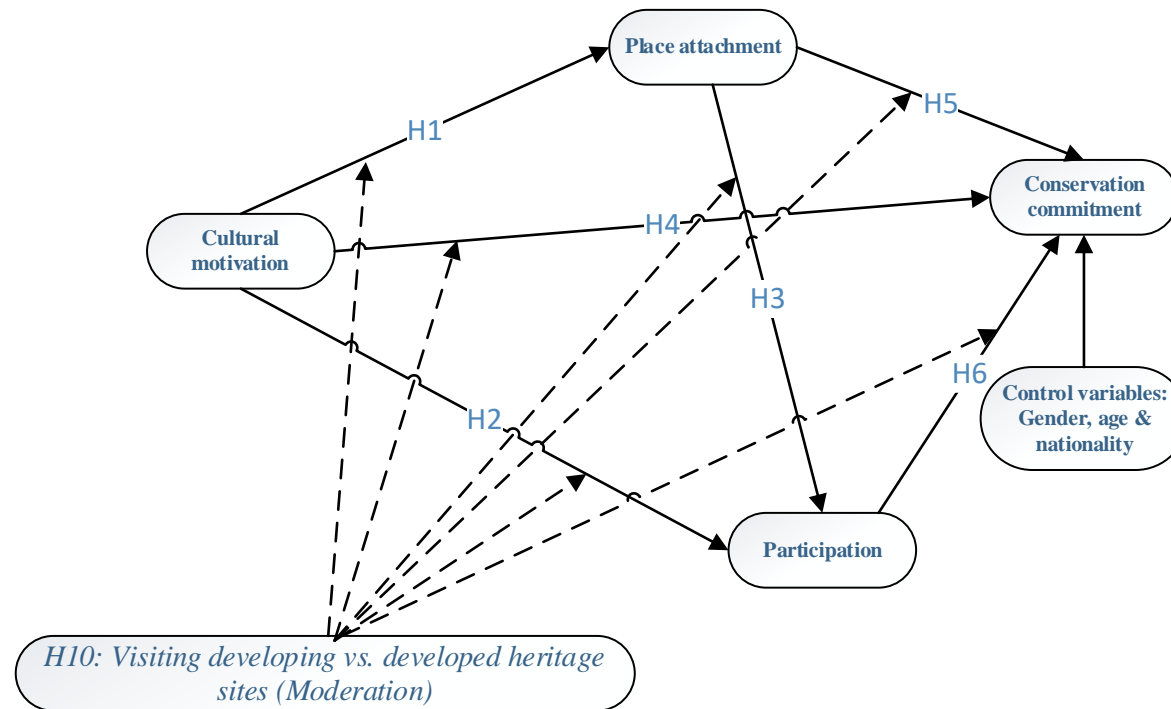
Composite	c-Value-(0=1)	95%-CI	Permutation-p-value	Compositional-invariance?
CM	.996	[.989;1.0]	.432	Yes
PA	.975	[.965,1.0]	.432	Yes
P	.999	[.998,1.0]	.139	Yes
CC	.999	[.977,1.0]	.456	Yes
Composite	Variance-difference	95%-CI	Permutation-p-value	Equal-variance?
CM	-.017	[-.122,.121]	.178	Yes
PA	-.090	[-.170,.171]	.262	Yes
P	-.418	[-.140,.136]	.432	Yes
CC	-.033	[-.051,0.175]	.611	Yes
Composite	Mean-difference	95%-CI	Permutation-p-value	Equal-mean-value?
CM	-.002	[-.044,.041]	.822	Yes
PA	-.003	[-.041,.041]	.762	Yes
P	-.003	[-.045,.037]	.239	Yes
CC	-.045	[-.225,.225]	.345	Yes

Note:CI=Confidence Interval.

Table 7.MGA findings

Paths	β -Kandovan	β -Cappadocia	β -differences	Kandovan-CIs	Cappadocia-CIs	Henseler's MGA <i>p</i> -value test	Permutation <i>p</i> -value test	Result
CM→PA	.511	.377	.134	[.432,.567]	[.321, .433]	.001***	.005***	K>C
CM→P	.621	.451	.170	[.589,.643]	[.389, .493]	.002**	.000***	K>C
PA→P	.367	.287	.80	[.311,.437]	[.221, .343]	.085*	.078*	K>C
CM→CC	.421	.351	.70	[.376,.469]	[.311, .403]	.001***	.005***	K>C
PA→CC	.344	.270	.74	[.288,.416]	[.228, .365]	.005***	.002***	K>C
TP→CC	.621	.511	.110	[.578,.664]	[.457, .570]	.050*	.072*	K>C
CM→PA→P	.252	.176	.76	[.187,.292]	[.121, .267]	.030**	.021**	K>C
CM→P→CC	.388	.207	.181	[.301,.464]	[.178, .286]	.025**	.022**	K>C
CM→PA→CC	.289	.270	.19	[.215,.352]	[.233, .343]	.378	.267	K=C

Note:***3.29($p < .001$);**2.58($p < .01$);*1.96($p < .05$);Confidence Interval(CI).



Indirect effects:

H7: Cultural motivation → Place attachment → Participation

H8: Cultural motivation → Participation → Conservation commitment

H9: Cultural motivation → Conservation commitment → Place attachment

Figure 1: Proposed Model