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Comparative analysis of the moderating effect of structural capital on the relationship between innovation capability and pioneering behaviour in tourism firms

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ABSTRACT

The intense competitiveness of the tourism industry requires firms to develop diverse strategies that allow them to maintain their market positions. This study's primary aim was thus to comparatively analyse the moderating effect of structural capital in the relationship between innovation and pioneering behaviour in tourism firms in Arequipa and Cusco (Peru), both of which have been declared World Heritage cities. A quantitative approach was employed, for which 159 surveys were administered to managers of tourism companies, and the non-parametric partial least squares technique was used in the data analysis. The results revealed a direct effect of innovation capability on pioneering behaviour in these southern Peruvian cities. Additionally, structural capital had a direct effect on pioneering behaviour that was significant and non-significant in Cusco and Arequipa, respectively. Furthermore, the moderator effect was found to be divergent in both cities. Based on these results, we conclude that firms in cultural tourism destinations should bolster their innovation capability and develop a network of inter-organisational contacts to enhance their pioneering behaviour in the tourism industry.

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1. Introduction

In recent years, the tourism industry has witnessed a marked increase in the importance of cultural tourism destinations. Such locations are generally understood as spaces for tourism where domestic or international visitors aim to learn about, experience, and consume a city's cultural products (Aarstad et al., 2015). Cultural tourism destinations are formed by a series of attractions linked to art, architecture, history, culture, literature, music, culinary heritage, and other elements (Richards, 2018). It is now considered a strategic and sustainable economic sector worldwide with great economic and social impacts in its sphere of influence and serves as a key source of job creation (Martínez-Pérez et al., 2019; Ruiz-Ortega et al., 2021; Zhang & Zhang, 2018). In this scenario, firms need to develop various strategic orientations than enable them to remain competitive and sustainable in the market. (Rosa et al., 2022; Ruiz-Ortega et al., 2022). To achieve this, organizations should foster innovation, capitalizing on the relationships in their inter-organisational networks.

Pioneering behaviour—defined as the strategic posture of being the first to introduce new products and services in the market ahead of competitors—has been studied under the framework of strategic orientation (Mueller et al., 2012, Gómez et al., 2022; Ruiz-Ortega et al., 2022). The antecedents of pioneering behaviour have been examined, with several works that analyse its direct and indirect effects. Furthermore, the range of these antecedents has been broadened when the search was conducted with related variables such as entry timing and first-mover advantage (Robertson, 2021; Zachary et al., 2015; Markman et al., 2019). However, despite the various studies analysing the determinants, there remains a need to identify new key factors that drive the pioneering behaviour of organizations in different economic contexts (Gómez et al., 2022; Ruiz-Ortega et al., 2022; Ahmad-Husairi et al., 2021).

Dynamism and high competition in a company's ecosystem suggest the need for pioneering behaviour (Robertson, 2021). To enhance the benefits of pioneering, developing innovation capability—a firm's ability to create new products and services—is necessary (Saunila, 2019) and is thus a key antecedent for this strategic stance. The previous literature includes closely related research on the links between innovation and pioneering orientation (Ruiz-Ortega et al., 2021; Ahmad-Husairi et al., 2021; Zhang & Chen, 2022). In addition, we have followed the suggestions of Pikkemaat et al. (2019), who argue for the need to explore the causes and consequences of tourism innovation in emerging economies. Further, Saunila (2019) concludes that research on innovative capability is largely concentrated in the manufacturing sector and scarce in service companies. Our work thus responds to the demand for studies in tourism firms.

Meanwhile, structural capital—conceptualized as the interaction with a firm's network of inter-organisational relationships through network ties and density—has been examined as a dimension of social capital (García-Villaverde et al., 2019; Nahapiet & Ghoshal, 1998). In this sense, firms' innovation capability can be nourished by the benefits of structural capital, which favours their pioneering behaviour (García-Villaverde et al., 2020; 2021). Additionally, previous studies analysed the causes and consequences of a pioneering orientation. For example, García-Villaverde et al. (2020) linked social capital and market dynamism as antecedents of pioneering orientation. In a recent study, Ruiz-Ortega et al. (2022) evaluated the curvilinear effect of the strength of ties on pioneering orientation and the moderating role of scanning capability. However, we found no research on the moderating effect of structural capital on the relationship between innovation capability and pioneering orientation.

This study also follows the recommendations of García-Villaverde et al. (2021), who call for studies to separately study the effect of the dimensions of social capital on pioneering orientation and to delve deeper into the effect of resources and capabilities on pioneering behaviour. In addition, Ruiz-Ortega et al. (2018) recommend studying the effect of structural capital on pioneering orientation in dynamic industries, with the aim of comparing the results in different business contexts. To the best of our knowledge, no studies have comparatively analysed the interaction between structural capital and innovation capability in bolstering the pioneering behaviour of tourism firms in developing economies with markedly different cultural roots.

To fill this gap in the literature, we aim to comparatively analyse the moderating effect of structural capital on the relationship between innovation capability and pioneering behaviour in tourism firms in two of Peru's World Heritage cities. The results of this comparative study enhance the theoretical and

empirical understanding of the direct effect of innovation capability on pioneering behaviour and provide an analysis of the divergent moderating effect of structural capital on firms in tourism destinations.

The remainder of this article is structured as follow. Section 2 presents a review of the literature and our proposed hypotheses. Section 3 defines our methodology, followed by the presentation of our descriptive and inferential results. The final sections address the discussion, conclusions, future lines of research, and practical recommendations.

2. Literature review

2.1 Pioneering behaviour

The extant literature considers strategic orientation to be one of the most important orientations in the context of strategic management (Ibarra-Cisneros et al., 2021). In this sense, pioneering behaviour has been regarded as a key factor in the creation of a business competitive advantage and is understood as the strategic posture adopted by an organization to introduce new innovative products (goods and services) to the market ahead of competitors (García-Villaverde et al., 2020).

Previous studies argue that the tourism environment drives the development of pioneering behaviour (Fu & Lehto, 2018). However, pioneering can bring benefits and disadvantages. As benefits, we can list technological leadership, learning, access to resources, and switching costs for consumers (Lee & Jang, 2017), whereas the disadvantages are the result of market, technological and competitive dynamism (García-Villaverde et al., 2021). An adequate pioneering position depends on an enterprise's capacity to maintain a balance between the advantages and disadvantages.

Internal and external factors are also important for firms to develop pioneering behaviour, particularly in terms of competitiveness (Kim et al., 2022). Additionally, businesses that adopt pioneering behaviour can be nurtured by absorptive capacity (Dahan & Shoham, 2020). Similarly, structural capital enhances a firm's pioneering attitude (Ruiz-Ortega et al., 2018). Meanwhile, García-Villaverde et al. (2020) hold that market dynamism and social capital impact pioneering orientation. These arguments allow us to delve into the antecedents of strategic orientation, which include pioneering orientation.

2.2 Innovation capability and pioneering behaviour

In terms of innovation capability and pioneering behaviour, the surrounding environment requires organizations to develop dynamic strategies and actions to adeptly tackle market changes (Teece, 2019). Traditionally, the dynamic capabilities approach has been studied drawing on three dimensions: adaptive, absorptive, and innovative capability (Cohen & Levinthal, 1990; Wang & Ahmed, 2007; Teece, 2019). Wang and Ahmed (2007) conceptualize adaptability as an organization’s ability to continuously adapt to the environment, while absorptive capacity is understood as a firm’s ability to identify, assimilate, exploit, and transform external knowledge into new processes and products (Mueller et al., 2020). For this research, innovation capability was chosen due to firms’ capacity to develop new ideas, processes, and products (Muskat et al., 2021; Wang & Ahmed, 2007).

Furthermore, although it is a relatively new practice in service enterprises, innovation is characterized by generating competitive advantages for organizations. In this context, it is important to analyse tourism companies’ innovation capability (Martínez-Román et al., 2015). Additionally, innovation is framed in reducing tourism production costs, improving the commercial process, and offering a greater variety of tourism experiences, with inter-organisational cooperation increasing the innovation capability of small and medium tourism enterprises. Martínez-Pérez et al. (2019) also posit that radical innovation is a key factor for competitiveness in cultural tourism clusters. In this line, we found related research that corroborates the importance of innovation for pioneering behaviour. An example is the work by Hochleitner et al. (2016), which concludes that open innovation is related to pioneering behaviour. Similarly, Ruiz-Ortega et al. (2021) report the importance of innovation capability in pioneering orientation. Finally, the innovation capabilities developed by pioneering firms helps them achieve technological leadership and gain access to resources. In light of the theoretical and academic importance of innovation capability and pioneering behaviour in cultural tourism firms, we propose the following research hypotheses:

H1a: Innovation capability has a significant direct effect on pioneering behaviour in cultural tourism destination firms in Arequipa.

H1b: Innovation capability has a significant direct effect on pioneering behaviour in cultural tourism destination firms in Cusco.

2.3 Structural capital and pioneering behaviour

Social capital originally arose from the power, status, and willpower that emerge from the network of individual and organizational relationships (Nguyen et al., 2020). It describes the current and potential resources available in the network of inter-organisational relationships, for which the literature establishes three dimensions: relational, cognitive, and structural (Nahapiet & Ghoshal, 1998). Relational capital refers to the quality of the relationships and the trust between participants in the business ecosystem (Zahoor & Gerged, 2021), while cognitive capital refers to the shared goals and culture in the business network (Nahapiet & Ghoshal, 1998). In the present study, structural capital—characterized by the interaction of the social network, ties and network density with customers, suppliers and others and provides organizations with many benefits, especially for micro- and small enterprise—was selected (Beltramino et al., 2020).

On the one hand, the characteristics of structural capital can generate benefits for innovation capability through the contacts or nexus it contains. In addition, it can be used to obtain market opportunities, seek information, or to access resources in the sector (Beltramino et al., 2020). However, its success depends on the degree of cohesion and diversity of the business sector's network of relationships. In recent studies, Hasan et al. (2020) find that the strengths and density of social networks are associated with innovation. On the other hand, Laursen et al. (2012) argue that social capital has a direct effect on the propensity to innovate in cultural tourism companies. For example, García-Villaverde et al. (2020) highlight social capital and market dynamism as key antecedents of pioneering orientation. In a recent study, Ruiz-Ortega et al. (2022) examine the curvilinear effect of strength of ties on pioneering orientation and analyse the moderation of scanning capability, which substantially improves a firm's strategic position.

The above arguments lead us to propose the following hypotheses:

H2a: Structural capital has a significant direct effect on pioneering behaviour in cultural tourism destination firms in Arequipa.

H2b: Structural capital has a significant direct effect on pioneering behaviour in cultural tourism destination firms in Cusco.

2.4 The moderating effect of structural capital

The previous literature has highlighted the importance of structural capital for enhancing firms' competitiveness (Kim & Shim, 2018), given the diverse benefits a firm's network of contacts can provide.

The indirect effects of social capital on diverse relationships have also been studied, while a few works have addressed the moderating effect of structural capital. Along these lines, Fan et al. (2016) highlight the significant indirect effect of social capital on pioneering behaviour. That is, if firms are able to use structural, relational, and cognitive capital to generate entrepreneurial capabilities, they will adopt a better strategic position. Khan et al. (2017) conclude that structural capital promotes process and product innovation. Additionally, Beltramino et al., (2020) argue that structural capital is the component of social capital with the greatest impact on firms' innovation capability. Likewise, Sulistyo and Ayuni (2020) consider that social capital has an important influence on innovation capability, and García-Villaverde et al. (2020) explain that closed and diverse ties (social capital) moderate the relationship between market dynamism and pioneering orientation. Given these arguments, we posit the following hypothesis.

H2a: Structural capital positively moderates the relationship between innovation capacity and pioneering behaviour in cultural tourism destination firms in Arequipa.

Additionally, concerning the antecedents, we find studies that analyse the effect of structural capital on innovation (Martínez-Pérez et al., 2019; García-Villaverde et al. 2019). In this sense, Martínez-Pérez et al. (2019) suggest that inter-organisational relationships can generate myopia and inertia due to information redundancy in a competitive and dynamic business environment, which can lead firms to reduce the potential for innovation and pioneering behaviour. Previous research has also evidenced the U-shaped relationship between the closed ties of structural capital and pioneering behaviour. A U-shaped relationship has also been found between the most diverse ties (García-Villaverde et al., 2017). Meanwhile, Ruiz-Ortega et al. (2018) hold that structural integration has an inverted U-shaped effect on pioneering orientation. The relationship is moderated by technological and marketing capabilities in contrasting effects. Ruiz-Ortega et al. (2020) suggest that the strength of ties has a U-shaped relationship with pioneering orientation. Under these premises and considering that Cusco is a significantly more developed tourism cluster in comparison to other cities, the proximity between the participants in the entrepreneurial ecosystem and their geographical proximity may generate information and knowledge redundancy. Drawing on these arguments, the following study hypothesis is formulated.

> **H2b:** Structural capital negatively moderates the relationship between innovation capacity and pioneering behaviour in cultural tourism destination firms in Cusco.

Figure 1 presents the proposed theoretical research model, which has been analysed in two Peruvian World Heritage Cities: Arequipa (a) and Cusco (b). In this sense, the continuous line H1a,b represents the direct relationship between innovation capacity and pioneering behaviour. Line H2a,b represents the relationship between structural capital and pioneering behaviour. Finally, the dotted line H3a,b represents the moderation model, where structural capital moderates the relationship between innovation capacity and pioneering behaviour in firms in cultural tourism destinations.

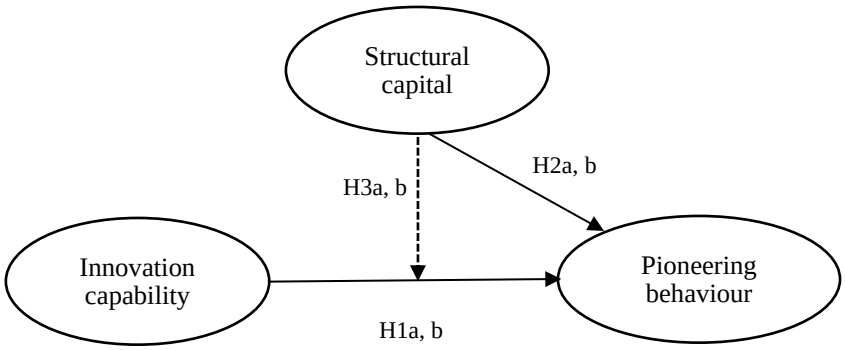

Figure 1. Proposed research model

3. Methodology

Despite the prominence of cultural tourism destinations, Pikkemaat et al. (2019) suggest that few studies have focused on developing countries, which are home to cities of great cultural wealth. In this sense, Arequipa, recognized as a World Heritage city since 2002, has come to be the main tourism destination in southern Peru. In 2020, it was recognized by UNESCO as a creative city of gastronomy, which bolstered it attraction for tourists. In addition, it boasts a series of adventure, experiential, and gastronomic tourist attractions to meet the demands of both domestic and international tourism. The city of Cusco was also awarded World Heritage status by UNESCO in 1983 and is currently the leading tourism destination in Peru due to the various tourist attractions it houses (Payntar et al., 2021), with cultural tourism being one of its main attractions. In addition, it implicitly fulfils the criteria of a tourism cluster environment (García-Villaverde et al., 2020), i.e. it has agglomerations of similar or related companies linked together in the same economic activity and located in a geographical environment, with economic, political, and social implications.

The population comprises firms located In the World Heritage cities of Arequipa and Cusco. Companies with fewer than three salaried employees were excluded, thus guaranteeing the minimum operational structure required to develop organizational capacities (Martínez-Pérez et al., 2019). After

applying these inclusion and exclusion criteria, 243 and 339 active organizations remained for Arequipa and Cusco, respectively. The economic activities correspond to hotels, restaurants and bars, tour operators and agencies, and museums.

The sampling process was carried out at the researchers' discretion, taking the organizations representative of the tourism industry located in the cities listed as World Heritage sites, from which 65 and 95 valid surveys for Arequipa and Cusco were obtained, respectively. Thus, an overall sample of 159 valid surveys representing a response rate of 26.75% was obtained. The confidence level was 95%, and the most favourable (p) and unfavourable (q) situation was (p=q=0.5), with a sample error of 6.37%. Data collection was conducted in the first six months of 2019.

The study variables of innovation capability—structural social capital and pioneering behaviour—were measured on a 7-point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree.

Pioneering behaviour. This is defined by the strategic posture an organization adopts to introduce new and innovative products to the market before competitors (García-Villaverde et al., 2020). For the present study, we used the 3-item scale proposed by Ruiz-Ortega et al. (2018).

Innovation capability. This is characterized by a firm's ability to develop new ideas, processes, and products (Ruiz-Ortega et al., 2021). To measure this variable, we applied the five items of innovation capability used by Rodrigo-Alarcón, et al. (2018), which have been widely deployed in research on the topic.

Structural capital. This is understood in terms of the social interaction generated in a firm's network of inter-organisational relationships. After reviewing the previous literature, we opted for the 6-item instrument proposed by García-Villaverde et al. (2018), which has proven acceptable and been used in other studies.

Control variables. As control variables, we included the cultural identity of the manager and percentage of sales to foreign tourists. As cultural identity is a factor that may affect the capability for innovation and pioneering behaviour (García-Villaverde et al., 2021), the response options were Aymara, Quechua, other, or no ethnicity. Meanwhile, overseas sales, framed as sales to international tourists, may have impacted decisions related to innovation capability and pioneering behaviour.

The statistical procedure was performed using the partial least squares (PLS) technique based on variance, which has been widely used in non-parametric social science research and has advantages over other multivariate methods. In addition, this technique has high statistical power and small sample frames (Hair et al., 2019). This methodology involves the modelling of structural equations through the evaluation of two basic assumptions: the measurement model and the structural model. The latter is where the hypotheses of the theoretical model are estimated by means of bootstrapping.

The statistical analysis was conducted using the variance-based partial least squares (PLS-SEM) technique, which has advantages over other multivariate methods and is widely used in non-parametric social science research. In addition, to this end, we implemented Smart PLS 3.9.9 Software, a tool with high statistical power in studies with small samples (Hair et al., 2019). The methodology involves structural equation modelling through the evaluation of two basic assumptions of the measurement and structural models. In the latter, the assumptions of the theoretical model are estimated using bootstrapping (Benitez et al., 2020; Cepeda-Carrion et al., 2019).

4. Results

The analysis of the measurement model is intended to assess the relationships between the variables and their indicators; a proper assessment of this model ensures that the relationships between variables are valid and reliable.

Table 1. Reliability and discriminant measures

	Internal consistency		**Convergent validity**	**Discriminant validity**		
	Cronbach's alpha > 0.7	Composite reliability > 0.7	AVE > 0.5	(1)	(2)	(3)
(1) Innovation capability	0.879	0.916	0.733	0.856	0.348	0.679
(2) Structural capital	0.869	0.902	0.607	0.304	0.779	0.485
(3) Pioneering behaviour	0.910	0.943	0.847	0.609	0.441	0.920

Note: The values in bold above and below the diagonal show convergent validity and the heterotrait-monotrait ratio, respectively.

Table 1 shows the Cronbach's alpha and composite reliability. The values are > 0.7, which indicates adequate internal consistency (Cepeda-Carrion et al., 2019). In addition, the AVE values are greater than 0.5, which confirms convergent validity. Additionally, the discriminant validity meets the required criteria (Hair et al., 2019). A second estimation was performed using the heterotrait-monotrait (HTMT) ratio, revealing values of ≤ 0.85, which meets the level of acceptance (Henseler, et al., 2015).

We also performed an analysis of the measurement model at the indicator level (see Table 2). With the exception of Item 1 for innovation capacity, the results show adequate variance inflation factor (VIF) values and cross-loadings (Hair et al., 2014). This presented a cross loading of 0.270, which was not acceptable in the model evaluated, and was thus excluded from the study (Cepeda-Carrion et al., 2019).

Table 2. Measurement model at the indicator level

Variable	Item	VIF	Cross loading
		≤ 5.0	**> 0.7**
Pioneering behaviour	Item 1	3.349	0.925
	Item 2	3.220	0.921
	Item 3	2.735	0.915
Innovation capability	Item 1 (excluded)	1.047	0.270
	Item 2	2.363	0.871
	Item 3	2.152	0.845
	Item 4	2.344	0.846
	Item 5	2.508	0.862
Structural capital	Item 1	1.778	0.670
	Item 2	1.791	0.722
	Item 3	2.017	0.810
	Item 4	2.488	0.839
	Item 5	3.726	0.831
	Item 6	3.367	0.788

This research proposes three comparative structural models. First, the base model analyses the direct effect of the predictor variable of innovation capability on pioneering behaviour. Second, we jointly analyse the direct effects of innovation capability and structural capital on pioneering behaviour. Third, the final model determines the moderating effect of structural social capital on the relationship between innovation capability and pioneering behaviour, as analysed comparatively in the cities of Arequipa and Cusco.

Structural Model 1 tests H1a and b by exploring the direct effect of innovation capability on pioneering behaviour. The results presented in Table 3 show significant path coefficients of β=0.596, $p<0.001$ and β=0.593, $p<0.001$ for Arequipa and Cusco, respectively.

In addition, the control variables of cultural identity and foreign sales show significant path values of β= -0.290, $p<0.01$ and β=0.235, $p<0.05$ for the city of Arequipa. For the city of Cusco, however, the relationships are non- significant (see Table 6). An analysis of the significant relationships suggests that cultural identity is a component that restricts pioneering behaviour, whereas in the case of foreign sales (international tourists), it is a factor element that promotes it.

The coefficients of determination were R^2=0.491, $p<0.001$ and R^2= 0.341, $p<0.01$ for the cities of Arequipa and Cusco, respectively, revealing an explanatory power for both cases. These results indicate that innovation capability has a substantial influence on the pioneering behaviour of companies in the cultural tourism destinations of Arequipa and Cusco (see Table 6) and therefore lead us to accept our research hypotheses H1a and H1b.

Table 3. Analysis of the direct effects innovation capability

Relationship	Direct effect	Confidence interval (2.5% - 97.5%)	t Value	Significance (p < 0.05)	Condition
Innovation capability →Pioneering behaviour (Arequipa)	0.596	(0.446–- 0.748)	7.726	0.000	Significant
Innovation capability →Pioneering behaviour (Cusco)	0.593	(0.387–- 0.737)	6.669	0.000	Significant

Structural Model 2 reveals interesting results for the direct effects of innovation capability and structural capital on pioneering behaviour. First, innovation capability presents lower path coefficients compared to the base model, arguably produced by the intervention of structural capital, which has path coefficients of β=0.121 (non-significant) and β=0.279, p<0.01 for the Arequipa and Cusco regions respectively, thus highlighting the importance of this variable for the tourism market in Cusco (see Table 4). However, with respect to the base model, a similar coefficient of determination of β=0.491, p<0.001 is found for the Arequipa region, with a minimum increase of almost 1%. In contrast, for the Cusco region, an acceptable increase of 16.42% with a path coefficient of β=0.397, p<0.001 is observed (see Table 6). These results lead us to reflect on the importance of structural capital for the Cusco region. In addition, they allow us to accept our research hypotheses H2a and H2b.

Table 4. Analysis of the direct effects of innovation capability and structural capital on pioneering behaviour

Direct relationship	Direct effects	Confidence Interval (2.5% 97.5%)	t Value	Significance (p < 0.05)	Condition
Innovation capability → Pioneering behaviour (Arequipa)	0.569	(0.442–- 0.710)	8.370	0.000	Significant
Structural capital → Pioneering behaviour (Arequipa)	0.121	(-0.048–- 0.283)	1.430	0.153	Not Significant
Innovation capability → Pioneering behaviour (Cusco)	0.483	(0.259–- 0.660)	4.560	0.000	Significant
Structural capital → Pioneering behaviour (Cusco)	0.279	(0.065–- 0.424)	3.102	0.002	Significant

Structural Model 3, which proposes structural capital as a moderator in the relationship between innovation capability and pioneering behaviour, yields interesting results. There is a significant path coefficient of β=0.724, p<0.001 in the direct relationship between innovation capability and pioneering behaviour, with an increase of 27.24% in the city of Arequipa. Meanwhile, Cusco shows a significant path coefficient of β=0.427, p<0.001 with a decrease of 11.6% (see Table 5).

Furthermore, we find that the analysis of the direct effect of structural capital on pioneering behaviour shows contrasting results. That is, in the case of the city of Arequipa, the path coefficient is non-significant at β=0.057, demonstrating a significant decline and almost disappearing, which leads us to propose that this variable is absorbed by innovation capability in this city. Meanwhile, in Cusco, it is positive and significant with a path value of β=0.344, p<0.001. In addition, the control variables show decreasing values compared to Model 1.

As regards the moderating role of structural social capital in the relationship between innovation capacity and pioneering behaviour, we find significant path values of β=0.191, p<0.01 and β= -0.244, p<0.01 for Arequipa and Cusco, respectively. The results suggest that, in the case of Arequipa, structural capital promotes pioneering behaviour, while for Cusco, it weakens it, given the negative sign of the path coefficient (see Table 6).

Table 5. Final model. Analysis of the moderating effects

Relationship	Direct effect	Confidence interval (2.5% - 97.5%)	t value	Significance (p < 0.05)	Condition
Innovation capability → Pioneering behaviour–Arequipa	0.724	(0.555–- 0.910)	8.051	0.000	Significant
Innovation capability → Pioneering behaviour–Cusco	0.427	(-0.256–- 0.605)	4.840	0.000	Significant
Structural capital → Pioneering behaviour–Arequipa	0.057	(-0.097–- 0.256)	0.900	0.368	Non-significant
Structural capital → Pioneering behaviour– Cusco	0.344	(0.109–- 0.491)	3.312	0.001	Significant
Moderation	Indirect effects	Confidence interval (2.5% - 97.5%)	t value	Significance (p < 0.05)	Condition
Structural capital ↓ Innovation capability → Pioneering behaviour– Arequipa	0.191	(0.020–- 0.360)	2.263	0.024	Significant
Structural capital ↓ Innovation capability → Pioneering behaviour– Cusco	-0.244	(-0.373–- 0.029)	2.233	0.026	Significant

Cultural identity also yields interesting results. For Arequipa, it presents a negative and significant effect with a path coefficient of - β=0.290, p<0.01; β=-0.260, p<0.01 and β=-0.244, p<0.01 for the first, second, and third models respectively, while for Cusco, the effect is non-significant in the three models. The results described above allow us to accept hypotheses H3a and H3b.

Table 6. Table summarizing the final models

	Model 1		**Model 2**		**Model 3**	
	H1a Arequipa	**H1b Cusco**	**H2a Arequipa**	**H2b Cusco**	**H3a Arequipa**	**H3b Cusco**
Innovation capability	0.596***	0.593***	0.569***	0.483***	0.724***	0.427***
Structural capital			0.121	0.279**	0.057	0.344***
Structural capital ↓ Innovation capability → Pioneering behaviour					0.191**	-0.244**
Cultural identity	-0.29**	0.054	-0.260**	0.049	-0.244**	0.059
Overseas sales	0.235*	-0.012	0.204*	-0.014	0.218*	0.023
R^2 adjusted	0.491***	0.341**	0.495***	0.397***	0.520***	0.462***
Dif %			0.01%	16.42%	5.05%	16.37%

Nota: Path = * p < 0.05, **p < 0.01, ***p < 0.001

Finally, the coefficient of determination increases the explanatory power of the effect of innovation capability on pioneering behaviour, with R^2=0.523, p<0.001 and R^2=0.441, p<0.001 for Arequipa and Cusco, respectively.

5. Discussion

This article contributes to the analysis of the various antecedents of pioneering behaviour underpinning previous works in the literature (Ruiz-Ortega et al., 2021; 2022; García-Villaverde et al., 2017; 2019; 2020). Specifically, we conducted a comparative analysis of the moderating effect of structural capital on the relationship between innovation capability and pioneering behaviour in tourism firms in two of Peru's World Heritage cities that present differences in their cultural roots. In addition, the significance of firms in this economic sector introducing new products and services ahead of competitors was substantiated (García-Villaverde et al., 2020). Further, tourism companies need to develop skills to promote their innovation capability (Ruiz-Ortega et al., 2021).

Our study makes several valuable contributions to the literature. First, our results reveal the influence of innovation capability on pioneering behaviour, with similar effects observed in the two cities (Arequipa and Cusco) confirming the results of previous research (Ruiz-Ortega et al., 2021) and explaining this relationship in the context of a particular country and with variables exogenous to the organization (competitive intensity and technological dynamism). In the present research, this relationship is analysed in a comparative and detailed manner with the introduction of an endogenous variable (structural capital). Additionally, the importance of the cultural roots in these two cities is highlighted as a differentiating factor. For example, Arequipa is characterized as a city with a stronger cultural identity, while Cusco is cosmopolitan in nature.

Second, the results for the direct effect of structural capital on pioneering behaviour show a significant relationship in the case of the city of Cusco but not for Arequipa. The structure of the network in Cusco is likely more developed due to the maturity of the tourism cluster in this city, while in Arequipa the tourism cluster is still in an early developmental stage. Furthermore, the sales of services to foreign tourists is important for the city of Arequipa, whereas in Cusco the prominence of foreign tourism is considered part of its competitive environment. These two factors mark an important difference in the explanatory power of the analysed models. These results are also similar to those of previous studies by García-Villaverde (2019), who show that social capital has a negative and significant impact on pioneering behaviour.

Finally, Model 3 confirms the importance of structural capital as a key internal element that drives the impact of innovation capability on pioneering orientation. Additionally, the comparative analysis shows divergence in the moderating effect of structural capital; in the case of Arequipa the moderation is positive and significant, while for Cusco it is negative and significant. The previous literature underscores the importance of structural and/or related types of capital in various relationships that are similar to those

addressed in the present study. For example, Beltramino et al. (2020) conclude that structural capital is crucial to enhancing innovation capability because small firms have limited possibilities to acquire new knowledge and thus need to draw on its benefits. In addition, Sulistyo and Ayuni (2020) argue that in the case of micro and small firms, structural capital affects innovation capability. Meanwhile, García-Villaverde et al. (2019) find that social capital can both positively and negatively moderate in pioneering relationships. In this sense, our research is consistent with previous works.

6. Conclusions

The results of our research allow us to conclude that innovation capability bolsters the pioneering behaviour of tourism firms in the cities of Arequipa and Cusco. In addition, promoting innovation and a strategic pioneering position strengthens a firm's level of competitiveness and promotes sustainability in the market (Beltramino et al., 2020; Ruiz-Ortega et al., 2022). On the other hand, the results show different direct effects of structural capital on pioneering behaviour, arguably due to the cultural differences between the two cities. We can also conclude that the moderating effect of structural capital on the relationship between innovation capability and pioneering behaviour is divergent. In the case of Arequipa, the moderation is positive, likely due to the incipient nature of the processes of integration in its entrepreneurial ecosystem, which means it does not create knowledge redundancy. Meanwhile, in Cusco, the effect is negative, possibly because the integration and agglomeration (clustering) in this city are comparatively more advanced than those in Arequipa, thus generating knowledge redundancy. Furthermore, we highlight the roles of cultural identity and foreign sales, which mark an important difference in the explanatory power of the model as they present contrasting results in the two cities.

In terms of our theoretical contribution, the creation of new goods and services is a key element in the competitiveness of tourist destinations, particularly cultural ones. In addition, the consolidation of links and the density of the network of contacts favours innovation capability, enhancing this capacity so as to improve strategic orientation. However, a lack of specialization may constrain new ideas. While it is true that firms' social relationships within tourism destinations are generally interactive (García-Villaverde et al., 2021), the importance of the integration of tourism companies has been identified as a key factor in improving the competitiveness of the sector. Additionally, this research complements the advances in social capital theory by reviewing structural capital and dynamic capabilities through the perspective of innovation capability. Specifically, the primary antecedents of pioneering behaviour have been analysed in detail.

Our study has important practical implications for managers of tourism businesses in the context understudy. First, it is important to develop innovation capability as a crucial determinant of the creation of new products and services. Second, company managers should broaden their network of contacts since network strength is a factor that promotes greater innovation capabilities and, consequently, the development or innovation of tourism products. Nonetheless, a low density and configuration of the network of contacts can weaken pioneering performance. The results of this research are of great value to firms, especially in terms of decision-making.

The study has several limitations that could be overcome in future research. First, the data collection process was carried out in a normal (pre-pandemic) environment. Second, the comparative analysis might have different results if implemented in a national context due to the diversity and the low level of professionalization in the management of tourism companies in developing countries. Moreover, the research is cross-sectional, which means that the data was collected at a single point in time and does not allow us to observe how the changes evolve. In addition, the results of the study can only be extrapolated to countries with similar economies.

Suggests for new lines of research include incorporating the exploration of value (as a source of innovation capability), the effect of organizational agility, and adaptability on innovation capability and pioneering behaviour with the various effects of environmental dynamism. In addition, it would be of interest to extend studies to other contexts in the tourism sector, such as sun and beach tourism, rural tourism, health tourism, and others, especially in developing countries.

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Anexos

Pioneering behaviour
Item 1: Our firm is typically one of the first to introduce new products to the market.
Item 2: Our firm is typically a leader in the development of innovative ideas
Item 3: Our firm is well known for introducing new products, services, and ideas.

Innovation capability
Item 1: We have an organizational culture that support innovation (excluded).
Item 2: We are able to use knowledge from different resources for product development activities efficiently and rapidly.
Item 3: Our firm is able to reflect changes in market conditions to own products and processes as soon as possible.
Item 4: Our employees are supported and encouraged to participate in activities, such as product development and innovation process improvement, and to produce new ideas.
Item 5: We are able to continuously evaluate new ideas that come from customers, suppliers, etc. and try to use these ideas into product development activities.

Structural capital
Item 1: We interact frequently with our contacts.
Item 2: We know our contacts personally.
Item 3: We have close social relationships with our contacts.
Item 4: The resources and information we exchange with our contacts tend to be similar.
Item 5: The contacts with whom we frequently interact tend to know one another.
Item 6: The contacts from whom we receive advice and useful information for decision-making know one another.

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