

**ABIOLA SODEEQ ADEMUYIWA**

**INNOVATION IN TOURISM: THE IMPORTANCE OF COLLABORATIVE  
NETWORKS FOR INNOVATION IN TOURISM-RELATED SECTORS**



**UNIVERSITY OF ALGARVE**

**FACULTY OF ECONOMICS**

2024

**ABIOLA SODEEQ ADEMUYIWA**

**INNOVATION IN TOURISM: THE IMPORTANCE OF COLLABORATIVE  
NETWORKS FOR INNOVATION IN TOURISM-RELATED SECTORS**

Masters in Tourism Economics and Regional Development

Dissertation made under the supervision of:

Professor Marisa Cesário

Professor Dora Lúcia Miguel Agapito



UNIVERSITY OF ALGARVE

FACULTY OF ECONOMICS

2024

## **AUTHORSHIP STATEMENT**

Innovation in Tourism: The Importance of Collaborative Network for Innovation in  
Tourism-related Sectors.

I solemnly declare that this study is a product of my research prowess. All authors and works consulted are properly cited in the text and are included in the listing of references.

Abiola Sodeeq Ademuyiwa

.....

(Signature)

## **COPYRIGHT**

© Copyright: (Abiola Ademuyiwa Sodeeq).

The University of Algarve reserves the right, in accordance with the provisions of the Portuguese Copyright and Related Rights Code, to archive, reproduce and make public this work, regardless of the means used, as well as to broadcast it through scientific repositories and allow its copy and distribution with merely educational or research purposes and non-commercial purposes, as long as credit is given to the respective author and Publisher.

## **DEDICATION**

This research work is dedicated to the late and cherished memory of my father, Mr. Sunday N.F. Ademuyiwa, who suddenly passed away on the 27th of October 2016. I miss you, Papa! Additionally, I dedicate this work to my beloved daughter Zara Adediwura Ademuyiwa, whose boundless curiosity and joy for life reminds me of the importance of knowledge and discovery. May she always pursue her dreams with passion and determination.

## ACKNOWLEDGEMENTS

I would like to take this opportunity to express my deepest gratitude to my supervisors: Professor Marisa Cesario and Professor Dora Lúcia Miguel Agapito, for their guidance and undiluted support throughout my research work and during lectures in the University. Your expertise and knowledge have been invaluable to me, and I greatly appreciate your patience and willingness to always answer questions when required. In addition, your feedback and suggestions have been very instrumental in refining my ideas and thought process, and I will not trade that for anything. I am privileged to be addressed as one of your students.

I would also like to say a very big thank you to my mentor; Jaane Engler, who has been very instrumental in this daunting period of my life. Another resounding thanks to Laura Carmona, my wonderful friend that helped me proof-read the resumo section of my thesis.

To Mr. Jimmy Olusola Oguntuyo, you are nothing but an Angel in human form. A simple thank you will not be enough to appreciate your kind gesture. God bless you and your beautiful family.

Finally, this acknowledgment wouldn't be complete without appreciating my dear wife, Yejide Afolasade Ademuyiwa, thank you for supporting me through thick and thin.

## ABSTRACT

*This study examines how tourism firms in Portugal innovate, with a specific focus on product and process innovation, collaboration, and barriers that prevents them from collaborating for innovation activities. The research is based on a subsample of 505 tourism-related companies. The main findings of the research shows that tourism firms in Portugal focus more on process innovation than product innovation. In addition to that, our findings also revealed that innovation activities in Portugal is mostly firm-based and not cooperation based. The methodological approach of this research involves quantitative analysis of firm-level data from the Community Innovation Survey (CIS) 2020. Descriptive statistics and chi-square tests were employed to examine the relationships between cooperation for innovation activities and process/product innovation. The study also discusses the theoretical implications and how these findings can help improve theories about innovation and collaboration, especially in the tourism industry in Portugal. Recommendations made for policymakers and stakeholders include, but not limited to initiating all forms of incentive to encourage and motivate firms to invest in research and development, making it flexible to get access to funding, and encouraging partnerships between firms and academia. Firms should also develop their own innovation strategies and create a culture that supports innovation.*

**Keywords:** Collaboration, Innovation, Product innovation, Process innovation, Tourism firms, Portugal, CIS2020

## RESUMO

*A indústria do turismo em Portugal desempenha um papel fundamental no crescimento e desenvolvimento económico do país. Para se manter competitiva no mercado global, a inovação contínua é crucial. Este estudo investiga a natureza da inovação dentro deste setor, examinando as características das empresas relacionadas com o setor do turismo, as suas práticas de inovação e as barreiras que impedem a colaboração e o progresso. Ao compreender esses elementos, podemos obter insights valiosos sobre como fomentar um panorama turístico mais inovador e colaborativo em Portugal. A maioria das empresas incluídas neste estudo pertence ao setor da hospitalidade, abrangendo hotéis e restaurantes. A maior parte são pequenas e médias empresas (PMEs) com menos de 250 funcionários. Embora uma parcela significativa se envolva ativamente em atividades de inovação, há espaço para melhorias. Curiosamente, a cooperação para inovação é relativamente baixa entre essas empresas, sugerindo uma área potencial para desenvolvimento. O estudo revela uma tendência clara: a inovação de processo, que se concentra na melhoria da eficiência operacional, é mais predominante do que a inovação de produto, que envolve o desenvolvimento de ofertas totalmente novas. Isso pode ser atribuído a uma variedade de fatores, como a necessidade de agilizar os serviços existentes para atender às expectativas do cliente ou os custos relativamente altos associados à introdução de produtos completamente novos. Além disso, muitas empresas dependem principalmente de recursos internos para inovação, embora algumas colaborem com parceiros externos. A pesquisa destaca uma forte correlação positiva entre a cooperação para inovação e a inovação de processo e de produto. As empresas que se envolvem em esforços colaborativos de inovação têm significativamente mais hipóteses de alcançar o sucesso em ambas as áreas. Por exemplo, o estudo descobriu que empresas que colaboram em iniciativas de inovação são mais propensas a experimentar inovação de processo em comparação com aquelas que não colaboram. Da mesma forma, a colaboração desempenhou um papel positivo na inovação de produto, com empresas colaboradoras apresentando uma taxa de inovação mais alta. Esses resultados estão em consonância com um relatório da FCT (Fundação para a Ciência e a Tecnologia) em Portugal, que enfatiza a tendência das empresas de estarem mais envolvidas na inovação de serviços e processos em comparação com a inovação de produtos. Embora a inovação colaborativa seja promissora, é necessário fortalecer a capacidade geral de inovação de produtos em Portugal para aumentar a sua competitividade no mercado global de turismo. Apesar dos benefícios potenciais da colaboração, vários fatores impedem a inovação e a cooperação no setor turístico português.*

*A barreira mais significativa identificada no estudo é o alto custo. As empresas muitas vezes lutam para investir em investigação e desenvolvimento (I&D) ou adotar tecnologias inovadoras devido a restrições financeiras. Além disso, a intensa competição dentro do setor e as diferentes prioridades entre as empresas podem criar um ambiente desafiador para a colaboração. Embora fatores como falta de parceiros de colaboração, acesso a conhecimento externo e crédito limitado também tenham sido identificados como barreiras, foram percebidos como menos significativos em comparação com altos custos, competição intensa e prioridades divergentes. Isso sugere que abordar os obstáculos mais proeminentes poderia ter um impacto significativo na promoção de um ambiente mais propício à inovação e colaboração. Ao compreender o cenário atual da inovação e cooperação na indústria do turismo portuguesa, as partes interessadas podem desenvolver estratégias para promover essas atividades críticas. A política pode desempenhar um papel crucial implementando incentivos, como redução de impostos ou subsídios, para ajudar a reduzir o impacto financeiro da inovação para as empresas de turismo. Isso tornaria a inovação mais acessível, principalmente para empresas menores. Além disso, as associações da indústria e instituições governamentais podem desempenhar um papel vital na facilitação de oportunidades de networking e colaboração. Eventos, workshops e programas de parceria podem criar uma plataforma para partilha de conhecimento e fomentar uma cultura de colaboração, levando ao desenvolvimento de novas ideias e soluções inovadoras. Preencher a lacuna de habilidades na força de trabalho é outra área fundamental para melhorias. Programas de formação, estágios e iniciativas educacionais direcionadas ao setor do turismo podem garantir que as empresas tenham acesso a uma força de trabalho qualificada, capaz de impulsionar a inovação e a competitividade. Finalmente, simplificar o processo de candidatura para subsídios e doações governamentais pode torná-los mais acessíveis às empresas, fornecendo-lhes o apoio financeiro necessário para investir em inovação. Ao identificar barreiras específicas e propor recomendações práticas, este estudo oferece insights valiosos que podem contribuir para o corpo existente de conhecimento sobre inovação e colaboração no setor turístico português. Ao identificar barreiras específicas e propor recomendações práticas, este estudo capacita políticos e líderes da indústria a criar um ambiente mais propício à inovação e à cooperação. Em última instância, esses esforços contribuirão para a competitividade e sustentabilidade das empresas de turismo em Portugal, garantindo que o setor continue a prosperar nos próximos anos. No entanto, o estudo reconhece algumas limitações. O tamanho da amostra de 505 empresas, embora representativo, pode não capturar totalmente toda a indústria do turismo em Portugal. Além disso, a dependência de dados auto-reportados pelas empresas introduz um potencial de*

*subjetividade. Pesquisas futuras poderiam abordar essas limitações incluindo uma amostra maior e mais diversificada de empresas de turismo. Além disso, o uso de medidas objetivas de inovação e cooperação, como dados de patentes ou informação sobre as vendas, poderia fornecer uma imagem mais abrangente das práticas de inovação dentro do setor. Ao aproveitar estes resultados e abordar as limitações identificadas, pesquisas futuras podem oferecer insights ainda mais profundos para políticos e líderes da indústria, abrindo caminho para um futuro mais inovador e colaborativo para o setor turístico de Portugal. Em conclusão, a inovação é fundamental para a competitividade e sustentabilidade do setor turístico português. Este estudo destaca a importância da cooperação para a inovação e identifica barreiras que impedem o progresso.*

<b>General Index</b>	<b>Page</b>
AUTHORSHIP STATEMENT .....	iii
COPYRIGHT .....	iv
DEDICATION.....	v
ACKNOWLEDGEMENTS.....	vi
ABSTRACT.....	vii
RESUMO.....	viii
1. Introduction .....	1
1.1 Background and Overview .....	1
1.2 Problem Statement.....	4
1.3 Objective of the Study .....	4
1.4 Significance of The Study .....	5
1.4 Scope of The Study .....	6
1.5 Chapter Outline.....	6
2. Literature Review .....	7
2.1 Innovation in Tourism .....	7
2.2 Evolution of Innovation Models .....	8
2.3 Importance of Innovation for the Tourism Sector .....	11
2.4 Importance of Cooperation Network for Innovation in Toursim.....	13
3. Data and Methods.....	17
3.1 Research Design .....	17
3.2 Conceptual Framework .....	18
3.2.1 Innovation.....	18
3.2.2 Cooperation .....	19
3.3 Methodological Framework and Research Questions .....	20
4. Results.....	21

4.1 Characteristics of The Sample .....	21
4.2 Nature of the Innovation Process in Tourism: Cooperation-based Vs Firm-based.....	25
4.3 Relationship Between Cooperation for Innovation and Innovation .....	26
4.4 Factors Hindering Innovation in the Tourism-related Sectors in Portugal.....	29
5. Discussion of Results .....	32
5.1 Roadmap and Research Questions.....	32
5.2 The Nature of Innovation Activities in Portugal .....	32
5.3 Relationship Between Cooperation for Innovation and Tourism .....	33
5.4 Barriers to Innovation and Cooperation .....	34
5.5 Theoretical Implication of our Findings .....	35
6. Conclusions.....	35
6.1 Contributions .....	37
6.2 Limitation.....	38
BIBLIOGRAPHY .....	39

## List of Figures

Page

<b>Figure 1:</b> Innovation and cooperation for innovation, by sector (N=13.509) .....	24
<b>Figure 2:</b> Number of firms Cooperating for innovation in tourism related sectors, by partner and geography (N=505) .....	24

## List of Tables

Page

<b>Table 1:</b> Characteristics of The Sample .....	22
<b>Table 2:</b> Cooperation-based vs firm-based innovation in Accommodation and Food Service..	25
<b>Table 3:</b> Relationship Between Cooperation for Innovation and Process Innovation .....	26
<b>Table 4:</b> Relationship Between Cooperation for Innovation and Product Innovation .....	28
<b>Table 5:</b> Factors Hindering Innovation .....	30

## **List of Abbreviation**

WTTC	World Travel and Tourism Council
IMF	International Monetary Funds
OECD	Organisation for Economic Co-operation and Development
DMO	Destination Management Organisation
CIS	Community Innovation Survey
UNWTO	United Nations World Tourism Organization
R&D	Research and Development
RIS	Regional Innovation System
DGEEC	Direção-Geral de Estatísticas da Educação e Ciência
SNA	Social Network Analysis
FCT	Fundação para a Ciência e a Tecnologia
CIS	Community Innovation Survey

## **1. Introduction**

### **1.1 Background and Overview**

Tourism plays a very crucial role in the growth of contemporary economies, acting as a powerful engine for economic advancement. According to Brelik (2018), it not only boosts local and regional economies, but also significantly contributes to their overall socio-economic development, operating effectively on both small and large scales.

This assertion has been supported by the WTTC (2021) in a recent report carried out, highlighting the important role of the travel and tourism sector as one of the largest contributors to global economic prosperity. In the report, the WTTC reveals that travel and tourism accounted for 10.4% of global GDP and supported 313 million jobs worldwide in 2017, emphasizing the sector's immense capacity to creating employment opportunities, drive exports, and foster prosperity across the globe.

In fact, according to a report by the IMF (2021b), the number of travellers, over the last decade and related spending has increased significantly, boosted by rising incomes, falling travel-related costs, and an increasing range of available tourist activities. The report further stresses the fact that the tourism sector is closely linked to others in the economy, including, retail and marketing, transportation, and aviation, forming increasingly complex tourism supply chain.

For some context, ECT & Atout France (2022) submits that international tourist arrivals and tourism receipts were on the rise from 2010 to 2019, and steady growth was prevalent both globally and in Europe. During this period, global tourism grew from 956 million to 1.46 billion arrivals and international tourism receipts climbed from 865 billion EUR to 1.3 trillion EUR. In 2019, Europe was the leading tourism region in the world, attracting over half (51%) of all tourist arrivals and generating 39% of total tourism receipts.

Moreover, the tourism industry gives people more chances to visit other countries, and experience other cultures and food, leading many people to be employed as pilots, guides, hoteliers, flight attendants, and so on (Ham, 2022). Adding to this historical trajectory, the IMF, (2020a) highlights that in 1950, at the dawn of the jet age, just 25 million people took foreign

trips. By 2019, that number had reached 1.5 billion, and the travel and tourism sector had grown to almost too-big-to-fail proportions for many economies.

Whilst we must acknowledge the significant role tourism plays in different parts of the world, the sector is not without its own fair share of challenges. The industry grapples with various realities, ranging from social, political, and economic changes, as well as the necessity for collaboration and continual innovation to remain competitive in the crowded marketplace. Additionally, the increasing consumer expectations, alongside their ever-evolving preferences and sustainability concerns, present ongoing challenges for all stakeholders. This compels them to explore novel avenues for enhancing tourist experiences while simultaneously safeguarding natural and cultural resources.

As the OECD (2018) rightly maintains in their reports, the sustained development of the tourism industry hinges on its capacity to adjust to new economic, social, political, environmental, and technological changes. To fully harness its potential for fostering sustainable and inclusive growth, we need to create effective policies, cohesive strategies, and collaborative structures involving both government and private sectors, along with other stakeholders.

In response to some of the challenges mentioned earlier, innovation, as pointed out by Liburd et al. (2007) stands as the solution and key to addressing future challenges across various sectors of society and the economy, including tourism. Several firms and destinations across the globe are constantly and actively tackling ecological, social, and economic challenges, embarking on a transformative journey towards sustainability by openly embracing innovation.

This argument has also been echoed by Ratković et al. (2022) who believes that in modern tourism, tourists have unique needs and preferences that change over time. To address this, those developing tourism policies and working with tourist offerings must focus on improving products and services. This improvement can be achieved by introducing innovative solutions.

Moreover, the tourism industry and tourism companies function in a business ecosystem where innovation plays a crucial role in ensuring the survival of the firms (Sørensen, 2007). Despite this, there seems to be a noticeable deficiency in understanding the innovation processes within these tourism companies.

As we learn more about the intricacies of innovation in the tourism industry, emerging evidence from case studies and literature reviews underscore the central role of collaborative

networks in catalysing transformative change and ensuring the long-term sustainability of tourism firms. Through collaborative efforts among diverse stakeholders, such as (DMOs), hospitality providers, and local communities, innovative solutions are co-created to address pressing challenges and capitalize on new opportunities.

For instance, a case study carried out by Zach & Hill (2017) in Cape May, the Eastern Shore of Virginia; Indiana Dunes; and Amish Country in the USA, explores the relationship between innovative behaviour among firms in the tourism industry, their position in the network of a destination, and the characteristics of their relationships in terms of knowledge sharing and relational trust. By combining network structure analysis with firm-level relationship measures, the study investigates how different factors influence firms' innovative activities.

Their findings suggest that firms engaged in current collaboration, shared knowledge, and trust are more likely to exhibit innovative behaviour with their partner firms. Additionally, the study also reveals that betweenness centrality, a measure of a firm's position within the network, identifies which partners are the most successful innovators in the industry.

Furthermore, the results of their findings suggest that those who promote innovation in a destination should utilize brokerage positions to improve the in-flow of ideas. In other words, firms in central network positions can act as bridges between other firms, bringing in a wide variety of ideas from different sources.

While many articles have already been written about how technology is getting more innovative, when it comes to studying how innovation happens in tourism, there hasn't been much research yet (Schnurbus, 2017). To this end, it is important to investigate this so that we can make policies that encourage new ideas and make the tourism industry more competitive.

In the Portuguese context, the works of Meneses & Teixeira (2011) supports the notion that the tourism industry is rapidly growing and fiercely competitive, and this requires constant innovation to meet the escalating expectations of tourists. However, they acknowledged that research in this field is limited, especially in Portugal, where the tourism sector holds strategic importance for the economy. Despite this strategic significance, there is a lack of evidence on how Portuguese tourism firms innovate.

To effectively compete in this highly dynamic and turbulent market, tourism firms must prioritize innovation in cost-cutting and offering high-quality products, as highlighted by Alsos et al. (2014). Conclusively, the significance of the tourism industry as an economic catalyst is

unquestionable, but its resilience and adaptability in the face of challenges, particularly through innovation, will determine its future trajectory and competitiveness.

## **1.2 Problem Statement**

Even though we have previously acknowledged the importance of innovation for the competitiveness and sustainability of the tourism industry, there remains a notable research gap with respect to the specific mechanisms and dynamics of innovation in the tourism sector, particularly in Portugal. Additionally, collaborative networks have also been previously echoed as instrumental in fostering innovation in various industries, but there is also a shortage of empirical research exploring the role and efficacy of collaborative networks for fostering innovation in the tourism sector in Portugal.

One of the reasons that helps explain this lack of empirical studies about innovation in tourism is the fact that one of the main instruments to study innovation in Europe, the Community Innovation Survey, did not provide data for the tourism-related sectors until its latest version in 2020.

This shortage in the literature prevents our understanding of how tourism firms can effectively leverage collaborative networks to drive innovation, address industry challenges, and capitalize on emerging opportunities in Portugal. To this end, there is a need for empirical research that examines the importance of collaborative networks for innovation in tourism, elucidating the factors that facilitate or hinder collaborative innovation efforts, and identifying best practices for fostering innovation through collaboration in the industry. This is essential for educating policymakers, industry practitioners, and stakeholders on strategies to enhance innovation and ensure the long-term competitiveness and sustainability of the tourism sector in Portugal.

## **1.3 Objective of the Study**

Tourism is one of the major components of different economies in different parts of the world. As earlier established, the industry has also been proven to be one of the largest employers of labour all over the world. However, with the boom in the technological space, the

industry has now evolved over the years. The evolution of the tourism industry has also been accelerated by the introduction of innovative ideas which has enhanced the use of technology in recent times. This industry, just like every other industry has different segments, individual and collective complexities which is worthy of investigating.

In view of this, the current research work seeks to generally analyse the importance of collaboration networks for innovation in tourism.

The specific objectives are:

- a) Understand the nature of the innovative process in tourism related sectors in Portugal.
- b) To ascertain the relationship between collaboration networks for innovation and tourism in Portugal.
- c) Discuss the obstacles that hinder innovation and collaboration in the tourism industry in Portugal and recommend potent strategies to prevail over them.
- d) Evaluate how innovation and collaboration networks can help tourism managers in Portugal develop the industry.

#### **1.4 Significance of The Study**

This research is significant because the findings will provide valuable insights for policymakers, government officials, tourism managers, and industry stakeholders in Portugal. The outcome of this findings will enable them to make informed decisions that foster innovation and collaboration in the tourism sector. Furthermore, by investigating the relationship between collaboration networks and innovation in the context of the tourism industry, this study, by extension, contributes to the stock of knowledge and the academic discourse on innovation theories and practices. For the first time, the CIS instrument includes tourism related sectors in its list of the questioned firms, allowing for a pioneering analysis of this relationship.

Finally, the recommendations derived from this research work can serve as a manual for tourism organizations in Portugal to strategically study, plan and implement initiatives that promote innovation and collaboration, thereby solidifying the competitiveness of tourism in Portugal.

## **1.4 Scope of The Study**

- a) This research work analyses the importance and relationship that exists between collaboration networks and innovation in the tourism sector.
- b) The study utilises data from the Community Innovation Survey 2020 to conduct a quantitative statistical analysis of the result.
- c) This study focuses on the tourism sector in Portugal, specifically scrutinizing the role of collaborative networks in fostering innovation.

## **1.5 Chapter Outline**

The work is organised around 6 chapters. Chapter 1 is the introduction. Chapter 2 revises the literature about innovation, cooperation, and networks. It also analyses how the innovation concept has changed over time and why it's important for the tourism industry. It also covers how cooperation networks can help innovation. Chapter 3 includes information about the research design, and how the data was analysed. It also presents the research questions and the conceptual framework. Chapter 4 shares the results of the study. It looks how innovation works in tourism and how cooperation is related with innovation in tourism related Portuguese firms. Chapter 5 mention the implications for theory, practice, and policy. It explains how the study contributes to our understanding of innovation and cooperation in tourism. It also gives practical advice for people who make decisions in the tourism industry. It recommends ways to promote innovation and collaboration to make the industry more competitive and sustainable. Finally, chapter 6, summarizes the main findings of the study, analyses how the study contributes to our knowledge and suggests ideas for future research.

## **2. Literature Review**

### **2.1 Innovation in Tourism**

The world economy, as reported by MySmartJourney (2022) is significantly driven by the tourism industry, a dynamic sector that consistently adapts to meet the evolving demands of customers. In addition, technological innovation plays a pivotal role across various facets of this sector, and to enhance efficiency, reduce costs, and sustain competitiveness, the travel and tourism sector must continually embrace innovative strategies. This is crucial for tailoring customer experiences and improving overall customer satisfaction.

In his research Talin (2023) defined innovation as the process of creating, developing, and implementing new ideas, methods, or products that lead to significant positive change. They further maintained that innovation is all about recognizing and overcoming unmet needs or challenges by thinking creatively and deviating from established practices.

Furthermore, UNWTO, in their report, defines it as a collaborative effort that involves governments, academia, corporations, micro, small, and medium enterprises (MSMEs), startups, investors, and supportive business partners like accelerators and incubators, alongside other stakeholders. The organization further emphasizes that fostering a successful tourism innovation and entrepreneurial ecosystem requires connecting and bringing together all stakeholders to collaboration opportunities and prioritizing capacity building in tourism and technology (UNWTO, 2010).

Additionally, Tüzünkan (2017) stated that innovation, namely in the tourism sector, could also mean starting to use new methods in the social, cultural, and administrative environment, covered with words such as renovation or renewal. Nevertheless, the author acknowledges that the concept of innovation covers a breadth of ideas and advancements that cannot be expressed in a single word.

As Cano (2008) expresses, learning processes, from which innovations emerge, and the dynamics of change and development have traditionally been studied in relation to the manufacturing sector. Moreover, the objects of study have usually been process and tangible product innovations. However, Cano (2008) further reinforces that researchers have recently

focused their attention on other sectors, pointing out the necessity for more research applied to innovation in the service sectors.

Furthermore, Carvalho & Costa (2011) argues that innovation is nowadays an essential factor to consider for the economic competitiveness of firms. According to the authors, the study of innovation in services is still in its infancy, seeing that the first studies only appeared in the late 1990s. They recount that it is difficult to find a robust theoretical framework for the study of innovation in this sector, and it becomes even harder to find when applied to hospitality and tourism firms in general.

To this end, they opine that tourism is currently one of the most promising industries globally, and there is an urgent need to better understand innovation in this sector. However, Peters & Pikkemaat (2012) assert that existing literature tends to focus more on conceptual discussions rather than empirical evidence. Following up on this perspective, Korres (2008) argues that the diverse array of definitions of innovation lies in the different purposes of examining this phenomenon.

A more comprehensive definition of innovation is the one propounded by (Schumpeter, 1934), as cited in the works of Korres (2008). This is probably the most useable definition, and Schumpeter differentiated five areas in which companies can introduce innovation.

- Generation of new or improved products.
- Introduction of new production processes.
- Development of new sales market.
- Development of new supply market.
- Reorganization and/or restructuring of the company.

For the late Schumpeter, Korres, (2008) affirms that the most common sequence between these changes is that they involve carrying out new combinations, which are qualitatively important and introduced by dynamic business leaders, or entrepreneurs.

## **2.2 Evolution of Innovation Models**

Over time, the evolution of innovation models has been shaped by various factors, including technological advancements, changes in the market dynamics, shifts in consumer behaviours, and globalization. This evolution reflects a shift towards more collaborative, agile,

user-centric, robust, and sustainable approaches that aim to address the complex hurdles and opportunities of the 21st century.

Supporting this notion, Brandão et al. (2017) clarifies that this shift is attributed to various factors such as changing organizational structures, evolving inputs for innovation, shifting drivers, and emerging barriers, which is influenced by socioeconomic dynamics, market fluctuations, and the interplay between scientific knowledge and economic forces.

Additionally, the authors also maintain that early models of innovation tended to depict a linear progression, where innovation was portrayed as a sequential series of events occurring in firms. This conventional perspective also suggested that innovation originated from scientific and R&D activities, culminating into marketing and sales efforts. Therefore, science and R&D were perceived as primary sources of innovation, driving the development and commercialization of successful products and services.

However, the contemporary understanding acknowledges a more complex, yet dynamic relationship between innovation and its environment, where innovation is responsive to market demands while also influenced by a multitude of interconnected factors.

Tidd (2006), conversely, offers a critical point of view on early innovation models. The author suggests that early models, whether explicit or implicit, viewed innovation as a linear progression of functional tasks. They depicted innovation as either driven by new research opportunities leading to refined applications entering the market ("technology push"), or by market demands, suggesting the creation of solutions ("need pull").

Tidd (2006) contends that viewing innovation through a simplistic lens overlooks its inherent complexities. Rather, innovation is a multifaceted process that is characterized by various dynamic interactions. While at times, the "push" factor may seem predominant, other instances highlight the significance of the "pull" factor. However, the author emphasizes that successful innovation necessitates a harmonious interplay between both dynamics.

Acknowledging this complexity, managing innovation becomes a serious challenge due to its inherent uncertainties and risks. In fact, recent research recognizes the inadequacies of linear models and strives to incorporate greater complexity and interaction into conceptual frameworks. This recognition stems from the understanding that innovation often unfolds in a messy manner, which usually involves false starts, recycling between stages, dead ends, and non-linear progressions.

By framing innovation as a dynamic process reliant on interaction and acknowledging its messy nature, researchers can have a better understanding of intersecting its complexities and enhance their knowledge of effective innovation management.

Sharing another viewpoint, the research carried out by Buchmann (2014) highlights the limitations of previous studies on the evolution of network structures. While previous studies have often focused on external factors, for example, competitive pressure, as drivers for change processes in networks, Buchmann argues that emphasizing on external factors is insufficient to fully understand the process of partner selection in networks.

Elaborating on this discussion, Wu et al. (2019) stresses the critical role of collaborative innovation networks in the modern innovation conversation. The evolution of these networks is intricately linked to the interrelationships among innovation subjects, where even little changes can significantly impact network topology and subsequent evolution outcomes. The authors' research emphasizes the importance of accurately understanding the characteristics of network structure to inform the adoption of appropriate innovative behaviours within collaborative innovation networks.

Their findings also underscore the significance of three key features of collaborative innovation networks: knowledge transfer, policy environment, and periodic cooperation. By proposing a dynamic evolution model based on innovation resource theory, Wu et al., (2019) further provides a framework for understanding the resource-priority connection mechanism in these networks.

Brandão et al. (2017) recount that in today's business landscape, networking holds significant importance. Firms not only need to integrate their functional units, but they also need to establish and maintain connections with other players in the innovation ecosystem. This involves actively engaging and knowledge sharing with a diverse range of stakeholders, including other companies, academic institutions, research centres, end-users, and suppliers.

Whilst sharing explicit information is crucial, there is also a growing recognition of the role tacit knowledge plays in driving innovation. As a result of this, efforts are being geared towards developing effective mechanisms for creating, transferring, and utilizing all forms of knowledge in the innovation network.

To conclude and summarize, this section explores how innovation models have evolved over time. It discusses the transition from simplistic view towards more dynamic and collaborative approaches. The fundamental idea is that innovation is influenced by both what's

happening inside an organization and what's going on outside of it. We have clearly seen this through different literatures, like Brandão et al. (2017) talking about shifts in organizations structures to Tidd pointing out problems with linear thinking, and Buchmann's emphasis on internal factors in network evolution. The discussion eventually culminates into a recognition of collaborative innovation networks as the centrepiece to modern innovation, where knowledge transfer/sharing and networking play pivotal roles. Overall, the section highlights the necessity for organizations to embrace complexity, engage with diverse stakeholders, and promote efficient mechanisms for knowledge sharing to drive innovation in today's dynamic outlook.

### **2.3 Importance of Innovation for the Tourism Sector**

In today's dynamic and fiercely competitive business landscape, innovation stands as an anchor for organizations striving to maintain relevance and sustainability. This has already been reiterated in our previous chapters. The ability of firms to innovate not only fuels growth, but also guarantees adaptability to the ever-changing market. To this end, fostering innovation becomes not just a strategy, but a necessity for survival and success in today's business.

Calia et al. (2017) supports that the importance and significance of innovation for staying competitive cannot be overstated. However, despite the widespread acknowledgment of its significance, there still exists a less consensus about what enables an organization to innovate. This lack of consensus highlights the complexity of the innovation process and the diverse perspectives in the business community.

Furthermore, Pyka (2002) postulates that modern technical solutions are characterized by increased interrelatedness between heterogeneous actors and respective knowledge fields. The rapid pace of technological advancement means that no single firm can be aware of the development of all relevant technologies. Consequently, firms are compelled to seek access to external knowledge sources. In this regard, innovation networks have gained significant importance as a means of coordinating industrial research and development (R&D) processes.

In alignment with these insights, Ergashev & Jabborova (2021) explores the significant role of innovation processes in the tourism sector by accentuating that the capacity of tourism enterprises to adapt to any emerging technological changes and innovate in their operations is central for their continuous operations and competitiveness.

In addition, the authors further underscore that innovation in tourism extends beyond technological advancements to encompass meeting evolving consumer demands and desires, highlighting the need for modern service specialists to possess robust research and creative skills to effectively integrate innovations into their practices.

In a bid to support the role played by innovation in tourism, Giotis and Papadionysiou (2022) in their research, stresses that innovation serves as a crucial tool in attaining economic prosperity, environmental sustainability, and maintaining destination's competitiveness. Thus, it is of utmost importance for tourism enterprises to continuously engage in innovative efforts.

Moreover, Candi et al. (2019) investigates the dual nature of innovation, exploring how firms can simultaneously address business goals and social needs through their innovative activities. Their findings reveal that customers and other stakeholders play a significant role in steering organisations towards emphasizing the social dimension of innovation. Additionally, the study suggests a positive correlation between innovation with social intent and customer acceptance, indicating that innovation has the potential to fulfil both business goals and social needs.

Furthermore, findings from the works of Aladashvili & Tamarashvili (2022) states that innovation serves as a powerful tool, capable of increasing the competitive advantage of a tourism product. This, according to them, will have a positive impact on the country's competitive position. Consequently, developing innovative tourism products and activities will contribute to promoting the tourism sector and amplifying its positive effects.

Nevertheless, Hjalager (2002) contends that there exists minimal mutual trust among tourism enterprises, with many seeing each other as competitors rather than collaborators. E.g, unlike Silicon Valley, where knowledge and labour are shared for collective development, the tourism sector struggles with a lack of collaboration. Even though many destinations heavily rely on tourism, businesses within the sector often view each other as competitors rather than partners.

Di (2022) conducted research into successful strategies for managing innovation in dynamic business settings. This research utilizes a combination of qualitative interviews with business leaders and supervisors, as well as quantitative survey of company staffs. The findings identify several best practices for innovation management, which includes continuous scanning of the external environment, cross-functional collaboration and teamwork, agility and flexibility, clear innovation strategy and vision, risk-taking and experimentation, resource

allocation and management, leadership support and commitment, customer-focused innovation, and embracing digital transformation. Moreover, the author's quantitative survey data reveals that while most organizations have formal innovation strategies and cultures that encourage innovation, there is room for improvement in terms of having formal innovation processes, dedicated resources, formal metrics, and collaborations with external partners.

This section emphasizes the importance of innovation in tourism, and how it serves as one of the key drivers of economic growth, impacting the economy. This means it has a significant impact on creating jobs, improving infrastructure, and making regions competitive and more prosperous.

As developed through various literatures and insights from researchers, innovation is not merely a strategy but a necessity for organizations aiming to thrive in today's dynamic business environment.

Our discussion highlights the many-sided nature of innovation, which extends beyond technological advancements to encompass social elements, customer-centric approaches, and collaboration amongst different stakeholders. It has become obvious that successful innovation management requires a combination of strategic vision, agile mindset, resource allocation, and leadership commitment.

While significant efforts have been made in understanding and implementing innovative practices in tourism enterprises, there remains room for improvement. Addressing obstacles such as fostering collaboration, formalizing innovation processes, and leveraging external partnerships are vital for unlocking the full potential of innovation in the tourism industry.

Finally, and going forward, continuous research and practical initiatives that are focused on improving innovation management practices will be essential for driving sustainable growth, promoting economic prosperity, and ensuring the long-term competitiveness of tourism destinations and enterprises.

## **2.4 Importance of Cooperation Network for Innovation in Tourism**

Simply put, networking, as described by Sustain-T (2017) are those activities in which MSE owners build and manage personal relationships with individuals and organisations in their environment. Networks, in this sense, represents the intricate patterns of relationships

spanning various entities, including competitors. Daily interactions with these networks encompass collaboration with customers, suppliers, and industry rivals.

Looking at how the tourism industry has evolved over time, there is no denying that cooperation networks are crucial for driving innovation and shaping the competitiveness of destinations around the world. In this fast-paced industry, different literatures and authors recognize the importance of collaboration between various stakeholders, especially at the local or regional level, in pushing forward new ideas. Here, we will examine the significant impact of cooperation networks on innovation in tourism, using recent research and studies to illustrate how these networks contribute to the growth and success of destinations.

Recent scholarly attention has increasingly focused on strengthening innovation in tourism, particularly at the local or territorial level, and its profound implications for destination development. Notably so, Brandão (2014) underscores the central and important role of collaborative networks in enhancing and driving innovation in the tourism industry.

This postulation finds a backing in a study conducted in Aveiro (Portugal) by Brandão (2014), where different players in the tourism sector; businesses, academic institutions, and government bodies collaborate with the aim of exchanging knowledge and ideas. By coming together in these networks, Brandão (2014) submits that stakeholders can create and implement innovative practices and strategies that are tailored to the specific characteristics of their region.

Reinforcing this argument and demonstrating practical result, Brandão (2014) highlights a successful collaboration in Aveiro, where the University, local tourism authorities, and private sector businesses have collaborated to develop innovative tourism experiences and marketing strategies that led to the development of new tourism experiences and marketing approaches that highlight the unique attractions of the region.

Additionally, recent research by Chen et al. (2024) highlights how cooperation among tourist attractions has spurred a new form of competition among destinations. Regional tourism cooperation fosters win-win scenarios for everyone, with participating destinations benefiting from complementary advantages and enhanced comprehensive competitiveness.

The authors analyse the cooperation network among tourist attractions through the construction of a competitiveness measurement model and evaluating the competitiveness of tourist attractions through gravity models. Their analysis identified strong competitiveness in tourist attractions in Jiangsu and Zhejiang, two provinces in China, which is in contrast with weaker competitiveness in Anhui and Shanghai, two other provinces in China.

Furthermore, their study also identified key stakeholders in the cooperation network, particularly in the eastern region of the Yangtze River Delta, and delineates subgroups within the network. Research such as this is very important in making targeted regional tourism cooperation policies by governmental authorities, as they can help identify areas of strength and weakness in the tourism industry and develop strategies to enhance competitiveness and cooperation.

Likewise, Zhang et al. (2024) posits that the establishment of a stable structure is pivotal in fostering trust and strengthening the bonds among group members. This, in turn, mitigates conflicts, promotes effective communication, and facilitates cooperation. As such, evaluating and assessing the stability of networks, particularly as it pertains to collaborative settings, becomes indispensable for optimizing the attainment of group objectives.

Given that most destinations are composed of a chain of networks that comprises both tourism suppliers and principals, Buhalis (2000) concludes that there is a significant disconnect in the strategic orientation pursued at both the macro and micro levels. Consequently, a strong collaboration between the private and public sectors becomes imperative at this juncture.

To better understand how innovation operates in tourism at the local or regional level, Brandão (2014) proposes using RIS approach. This model provides a structure for analysing how innovation and development interact in a particular region. Brandão's research, based on a thorough review of existing studies, suggests that this model offers valuable insights into how innovation happens in tourism.

Through empirical studies in regions like Douro and Aveiro, Brandão explores various aspects of tourism innovation, which includes looking at how well tourism businesses and regions perform in terms of innovation, the types of networks that form during the innovation process, and how local knowledge and specific factors influence innovation in tourism. The author then submits that once these factors are understood, researchers and policymakers can tailor their approaches to encourage innovation in tourism, making destinations more competitive and appealing to visitors.

Destinations and businesses embracing a "status area" approach are more likely to improve tourist satisfaction and competitiveness, Buhalis (2000) recounts. Crafting distinctive and tailored offerings through flexibility and collaboration will not only boost tourists' willingness to pay but also foster loyalty, effectively addressing emerging trends in tourism demand.

Given that the tourism industry is one of the largest in the world, it then serves as a core that links various stakeholders together (Sustain-T, 2017). These stakeholders include tourism enterprises, tourists themselves, national tourism offices, infrastructure providers, and various supporting organizations, all intricately involved in tourism. This interconnectedness results in a diverse array of services and products forming the tourism product. Consequently, elaborate networking among stakeholders is necessary to deliver integrated tourist experiences.

Furthermore, the author recalls that diverse forms of networking can always enhance competitive advantage, which requires a shared commitment toward common objectives among members. These networks may range from established cluster consortia to evolving grassroots economic community developments, representing a broad spectrum of formations.

Cehan et al. (2020) also emphasizes the importance of collaboration in the growth and sustainable development of the tourism sector, stressing its relational nature. The authors examined structural characteristics and forms of collaboration to shed light on collaboration mechanisms in tourism. Their findings highlight the critical role of collaboration in overcoming challenges, gaining competitive advantages, and ensuring sustainable tourism development.

While sufficient literatures have extensively studied collaborative networks for social innovation, emphasizing their significance in addressing societal challenges, Wegner et al. (2023) affirms that notable gaps still exist in understanding the coordination of these networks and the specific roles that network leaders need to fulfil to attain optimal outcomes.

In this context, the research conducted by Zach (2013) on collaboration in micro DMO with less than 10 employees provide valuable insights. The study highlights the critical role of leadership support in driving successful collaboration and innovation development in these organizations. Specifically, Zach found that leadership support was the most critical factor in enabling successful cooperation and innovation development in micro DMOs.

Therefore, leadership support is a crucial factor in steering successful collaboration and innovation development in social innovation networks, irrespective of their scope or size. In addressing the notable gaps identified by Wegner et al. (2023), future research should focus on the specific leadership behaviours and coordination strategies that can solidify successful collaboration and innovation development in these networks. This will require a multifaceted approach that draws on insights from fields such as organizational behaviour, network analysis, and innovation management.

Finally, Zach (2013) compares the effects of leadership support with organizational settings for innovation, suggesting that leadership has a stronger impact on collaboration for innovation than internal organizational processes. The author further recommends prioritizing investment in leadership over relying solely on organizational processes, and by extension, highlighting the importance of social capital derived from collaboration for overall business performance in micro-organizations.

Summarizing this section, cooperation networks, as has been proven in different studies, play a significant role in fostering innovation and enhancing competitiveness in the dynamic landscape of the tourism sector. Through collaborative efforts among stakeholders, ranging from businesses to academic institutions and government bodies, destinations can connect their collective proficiency to create and implement innovative practices that is tailored towards their unique characteristics.

Moreover, we have also seen from literatures that leadership support emerges as one of the critical factors in driving successful collaboration and innovation development, which in turn emphasizes the importance of investing in leadership in both macro and micro-level tourism organizations.

Collaboration gives room for the integration of diverse opinions and the creation of innovative solutions that consider all angles required. It also fosters a culture of innovation and shared ownership, promoting creativity, trust, and accountability. By embracing collaboration, organizations can maximize their collective potential for success and stay ahead in a complex and ever-evolving global economy.

### **3. Data and Methods**

#### **3.1 Research Design**

To explore and better understand the relationships that exists between collaborative networks, innovation, and the tourism industry in Portugal, this study employs a quantitative research method, using secondary data from the Community Innovation Survey (CIS 2020) database.

The Community Innovation Survey (CIS) is a European Union initiative whose sole objective is the collection of data on innovation activities within the bounds of organizations. The survey provides thorough and valuable insights into the innovation strategies, processes, and outcomes of businesses across various sectors.

According to Eurostat (2023) The Community Innovation Survey (CIS) is a survey about innovation activities in enterprises, which is basically designed to capture the information on different types of innovation, to enable analysis of innovation drivers or to assess the innovation outcomes. Furthermore, Eurostat (2021) notes that the Community Innovation Survey (CIS) is routinely conducted in each European Union (EU) country to gather information on innovation efforts in businesses, covering improvements in both products (goods or services) and processes (organizational and marketing aspects).

## **3.2 Conceptual Framework**

This section presents the conceptual framework that lays the foundation for understanding the dynamics of innovation in the tourism industry. First, we begin by defining key concepts such as innovation, product innovation, process innovation, and other relevant concepts used in the empirical design. This framework will serve as a guide to elucidate the interplay of these concepts in fostering innovation, competitiveness, and sustainability in tourism.

### **3.2.1 Innovation**

As described by Jain (2023), innovation is the process of bringing about new ideas, methods, products, services, or solutions that have a significant positive impact and value.

According to CIS 2020 (DGEEC, 2022), a firm may be involved in one or more of the following situations: a) product innovation, referring to a new or improved good or service that significantly differs from the firm's previous offerings and has been introduced to the market; b) process innovation, occurring when a firm implements a new or significantly improved production process, or new and significantly improved methods of supplying services or supporting activity; and c) ongoing or abandoned innovation activities. A firm is considered

innovative if any of these situations apply. Innovation does not need to be new to market; however, it must be new to the firm irrespective of whether it was originally developed by the firm.

### **3.2.2 Cooperation**

The concept of cooperation, as linguistically defined by Khamis et al. (2006), as the practice of people or entities working together with commonly agreed-upon goals and possibly methods, instead of working separately in competition.

Furthermore, it should be noted that cooperation between tourism entities plays a pivotal role in fostering innovation, competitiveness, and sustainability in the industry. As elucidated by Wiatrak (2014), collaboration encompasses various aspects, primarily influenced by the place of operations and the types of partnerships formed. Whether in international, national, regional, or local markets, tourism entities engage in cooperative efforts aimed at:

- Bridging gaps in resources and skills
- Conducting educational and advisory activities
- Enhancing the quality of developed products
- Jointly preparing and creating new tourism products
- Collaborating on joint supplies and marketing efforts

These cooperative activities not only enhance the competitiveness of individual entities but also contribute to the overall growth and development of the tourism ecosystem.

According to CIS 2020 (DGEEC, 2022), firms may cooperate with different partners such as: other firms in the group; suppliers; customers; competitors; consultants; universities and R&D laboratories. The geographical reach of cooperation may vary, as cooperation can be developed with: Portuguese partners; European partners; USA; China/India or others. In this study we are considering the different partners of cooperations regardless of the geographical scale, because of the reduced number of firms cooperating and the need of statistical significance. A firm is considered to be in a cooperation relationship if it is registering a cooperation with at least one partner.

### 3.3 Methodological Framework and Research Questions

In this section, our goal is to establish the methodological framework for our study and formulate research questions based on the relationships between innovation in tourism and collaboration networks in tourism, as identified in our literature review.

Our literature review has established an obvious relationship between innovation in tourism and collaboration networks in tourism. In the tourism industry, collaboration networks among stakeholders have been found to significantly influence innovation dynamics. These networks, comprising tourism enterprises, tourists, national tourism offices, infrastructure providers, and supporting organizations, serve as conduits for knowledge exchange, resource sharing, and joint problem-solving initiatives.

For some perspective, Giotis and Papadionysiou (2022) and Zach (2013) highlight the key roles of innovation and leadership support in the tourism sector. The research work of Giotis and Papadionysiou (2022), stresses the importance of innovation for economic prosperity, environmental sustainability, and maintaining competitiveness in destinations, stressing the need for continuous innovative efforts among tourism enterprises.

Furthermore, Zach (2013) explores the significance of leadership support in fostering collaboration for innovation, particularly in micro DMOs with fewer than 10 employees. Leadership support emerges as a crucial driver for successful cooperation and innovation development, outweighing the impact of internal organizational processes.

Candi et al. (2019) investigate how firms can address business goals and social needs through innovative activities, finding a positive correlation between innovation with social intent and customer acceptance, thereby reinforcing the idea of collaboration networks contributing to innovation outcomes.

Hjalager (2002) discusses collaboration challenges in the tourism industry, citing minimal mutual trust among tourism enterprises as a barrier. Although this research primarily focuses on barriers, it indirectly underscores the importance of effective collaboration networks in overcoming obstacles to innovation in tourism.

Additionally, Cehan et al. (2020) employ SNA to examine the structural characteristics and forms of collaboration in the tourism sector, highlighting the importance and role of collaboration networks in overcoming challenges, gaining competitive advantages, and ensuring sustainable tourism development.

A panoramic view of the works of Hjalager (2002) suggests that tourism firms struggle to collaborate due to a complex interplay of different factors that presents significant barriers to innovation in the tourism industry.

Buhalis (2000) stresses the importance of collaboration between the private and public sectors in enhancing tourist satisfaction and destination competitiveness. The study emphasizes the role of collaboration networks in crafting distinctive offerings through flexibility and collaboration, ultimately boosting tourists' willingness to pay and fostering loyalty.

In summary, our literature review provides evidence supporting a positive relationship between collaboration networks and innovation in the tourism sector. To this end, we can conclude that collaboration networks play a central role in driving innovation, competitiveness, and fostering sustainable development in the industry.

Accordingly, our research seeks to address the following research questions:

RQ1: What is the nature of the innovative process in tourism related sectors?

RQ2: What relationship exists between cooperation for innovation and the tourism industry in Portugal?

RQ3: What factors hinders innovation and cooperation in the tourism related sectors in Portugal?

## **4. Results**

### **4.1 Characteristics of The Sample**

From the total sample of 13.509 Portuguese firms covered by CIS 2020, we have extracted a subsample covering sectors related to tourism (Nace codes 55 for Accommodation and 56 for Food Service).

Table 1 provides a general overview of the 505 selected firms in the tourism related sectors. The distribution of firms across the Nace code categories suggests that the sample is homogeneously distributed among the 2 sectors.

**Table 1: Characteristics of The Sample**

<b>Variables</b>	<b>No. of Firms</b>	<b>%</b>
<b>Nace Code</b>		
55 Accommodation	253	50.1
56 Food Service	252	49.9
Total	<b>505</b>	<b>100</b>
<b>Number of Employees</b>		
10-49	334	66.1
49-250	127	25.1
>250	44	8.7
Total	<b>505</b>	<b>100</b>
<b>Part of a Group</b>		
PT Group	352	69.7
Foreign Owned	153	30.3
Total	<b>505</b>	<b>100</b>
<b>Foreign Owned</b>		
No	469	92.9
Yes	36	7.1
Total	<b>505</b>	<b>100</b>
<b>Innovative firm (Product/Process/Ongoing)</b>		
No	251	49.7
Yes	254	50.3
Total	<b>505</b>	<b>100</b>
<b>Cooperation Towards Innovation Activities</b>		
Regardless the Partner	19	3.8
With Consultants	9	1.8
With Suppliers	13	2.6
With Clients	8	1.6
With Competitors	2	0.4
With Universities and R&D	9	1.8

Source: Own elaboration based on CIS 2020 data.

Furthermore, the number of employees is another very important variable in the table, with a major part of the firms (66.1%) having between 10 and 49 employees. This is very much consistent with the previous reports by the World Bank, (World Bank, 2019) that shows that SMEs make up a significant portion of the market in many industries, including making up around 90% of all businesses and providing over 50% of the world's employment. Also, the fact that 25.1% of firms have between 49 and 250 employees suggests that the sample also includes some larger firms, while 8.7% have more than 250 employees. This is key, because larger firms may have different resources and capacities than smaller firms, which can affect their innovative activities.

Most of the firms (69.7%) are not part of a group, which indicates that many of these businesses are independent entities. However, it should be noted that a significant percentage of them (30.3%) are part of a group, which suggests that there are also some larger and more established firms in the sample.

For foreign ownership, majority of the firms (92.9%), which is 469 out of 500 are not foreign owned. The implication of this is that the lodging and restaurant industry in this sample is predominantly composed of firms in Portugal. However, emphasis should be placed on the fact that a small proportion of the firms (7.1%), i.e 36 out of 505 are foreign owned, highlighting the global nature of this industry.

Also, the table provides information on the innovation activities of firms, with 50.3% of firms classified as innovative firms, based on the data. While this might be a positive sign because it suggests that a significant portion of the sample is actively engaged in innovation activities, which can be a key driver of growth and competitiveness, this is also a wakeup call. Looking at the data, the fact that 49.7% of firms are not classified as innovative firms recommends that there is a lot to improve upon in this area.

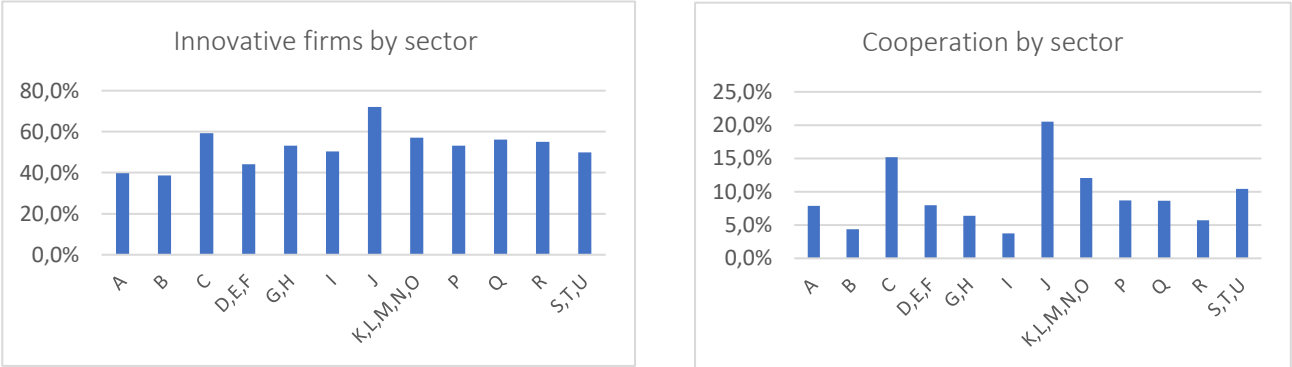
Finally, data on the table also shows that a relatively small percentage of firms (3.8%) engage in cooperation towards innovation activities, regardless of the partner. As we have extensively emphasized in different parts of the preceding sections, this is also consistent with what we have discussed, that many firms hesitate to collaborate with external partners, due to different reasons. Nonetheless, cooperation for innovation activities can be an important driver of innovation, as it allows firms to access new ideas and resources that they may not internally have.

Conclusively, the table provides useful insights into the sample size, which shows key characteristics and trends that are relevant to our research questions. The distribution of firms across the Nace code categories, number of employees, and whether they are part of a group of firms or not, all provide important context for our understanding of the sample as well. Also, a significant percentage of the sample is engaged in innovation activities, which might be a positive sign, but there is still room for improvement in this regard.

When compared with the other sectors, although the accommodation and food service present a relatively good performance in terms of innovation, it is the sector with a low incidence of cooperation (see graphs 1 and 2).

The relatively small portion of firms that engage in cooperation towards innovation activities is also a sign that there may be opportunities to encourage more collaboration between firms in Portugal.

**Figure 1: Innovation and cooperation for innovation, by sector (N=13.509)**

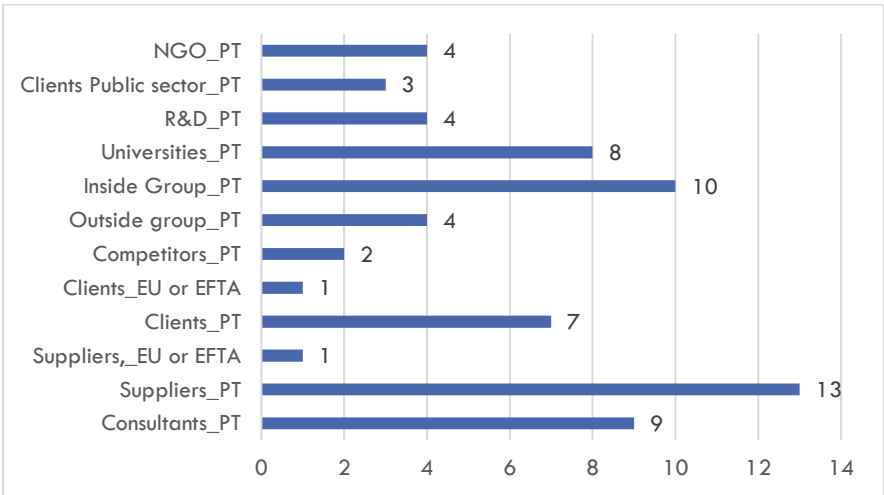


Source: Own elaboration based on CIS 2020 data.

Notes:

- Sector A Agriculture, Forestry and Fishing
- Sector B Mining and Quarrying
- Sector C Manufacturing
- Sector U Utilities
- Sector GH Wholesale, Retail Trade, Transport. and Storage
- Sector I Accommodation and Food Service**
- Sector J Information and communication
- Sector KLMNO Financial, Insurance, R. Estate, Consult. and Admin.
- Sector P Education
- Sector Q Human Health and Social Work Activities
- Sector R Arts, Sports and Recreation
- Sector S Other Service Activities

**Figure 2: Number of firms Cooperating for innovation in tourism related sectors, by partner and geography (N=505)**



Source: Own elaboration based on CIS 2020 data.

#### 4.2 Nature of the Innovation Process in Tourism: Cooperation-based Vs Firm-based.

Table 2 shows information on how companies in tourism-related firms in Portugal are innovating, specifically in terms of product and process innovations. The data is based on the Community Innovation Survey (CIS) 2020.

Firms were asked about the way product and process innovations have been developed. To the question: “Who developed the innovation”, four possible answers were available: (1) The firm; (2) The firm in cooperation with other firms or institutions; (3) The firm adapting or modifying goods or services originally developed by other firms or institutions; (4) Other firms or institutions.

We want to understand the nature of the innovation process in the tourism sector in Portugal. We distinguish between “Cooperation-based innovators” (firms responding 2) and “Firm-based innovators” (firms responding 1 or 3). Table 2 gives the frequencies for these variables (with a 0="No"; 1="Yes" codification). The percentages indicate the proportion of firms with positive answers.

We are excluding the adoption of innovation developed by others. Although important in order to measure knowledge diffusion (Fernandes, Cesário & Barata, 2017) it is not relevant for the purpose of this investigation, as well as not very representative in our sample.

**Table 2:** Cooperation-based vs firm-based innovation in Accommodation and Food Service

	Innovation rate (n=505)	Coop-based innovation (n=505)	Firm-based innovation (n=505)
Product Innovation	24.0%	8.9%	19.0%
Process Innovation	46.3%	20.4%	33.1%

Source: Own elaboration based on CIS 2020 data.

While both product and process innovations occur amongst firms in Portugal, process innovation occurs more often than product innovation. This is in line with the claims of the FCT (2013), who reports that Portuguese firms are more engaged in developing services and processes innovation, and less involved in product innovation. To be specific, 24.2% of firms are engaged in product innovation, while 46.3% are involved in process innovation. This suggests that firms in the tourism sector are more focused on improving their operational efficiency and processes than developing new products.

Furthermore, when it comes to the nature of innovation, the data shows that 8.9% of firms collaborate with external partners for product innovation, while 19.0% rely on their own methods. For process innovation, 20.4% of firms work with external partners, while 33.1% primarily innovate internally. Meaning that while some firms are open to collaborating with external partners for innovation, the majority still rely on their own resources.

FCT (2013) further asserts that when compared to the European average, Portugal demonstrates a higher proportion of firms engaged in the creation of service and process innovations, in terms of both cooperative and firm-based innovation. Despite this, the profile of Portugal is less innovative as regards product innovation, irrespective of either been carried out independently or in cooperation with other enterprises or institutions.

### 4.3 Relationship Between Cooperation for Innovation and Innovation

This section analyses the relationship between cooperation and innovation. It uses data from the Community Innovation Survey (CIS) 2020 to examine how firms that cooperate for innovation activities compare to those that don't. The analyses is separated for process and product innovation.

Table 3 gives the relationship between process innovation and cooperation for innovation.

**Table 3:** Relationship Between Cooperation for Innovation and Process Innovation

		Cooperation for innovation activities			Total
		No	Yes		
Process Innovation	No	<b>N</b>	<b>270</b>	<b>1</b>	<b>271</b>
		%	55.6%	5.3%	53.7%
	Yes	<b>N</b>	<b>216</b>	<b>18</b>	<b>234</b>
		%	44.4%	94.7%	46.3%
Total		<b>N</b>	<b>486</b>	<b>19</b>	<b>505</b>
		%	100.0%	100.0%	100.0%

Source: Own elaboration based on CIS 2020 data.

H0: Process innovation is independent from cooperation activities.

Qui-square=18.599, p=0.000

The table above is a contingency table, which is used for analyzing the relationship between two variables (Bryman, 2012). A contingency table allows two categorical variables to be analysed simultaneously, so that relationships between the variables can be evaluated. The

author also mentioned that it is a normal practice for a contingency table to include percentages, since they make the tables easier for interpretation purposes. In the given table above, the relationship between cooperation for innovation activities and process innovation is being analyzed. In addition, it also shows the frequency of cooperation activities and innovation for each variable, with the row representing process innovation and the column for cooperation activities.

Another feature we will be using in our analysis is the chi-square, which is a statistical test that assists in understanding if there is a relationship between two variables. It compares the observed data with the data we would expect to see if there was no relationship between the variables. As Bryman (2012) put it, the chi-square helps us to ascertain our level of confidence that there is a relationship between two variables in a population. However, Bryman (2012) further mentions that the chi-square value is of no meaning on its own, except it is meaningfully interpreted in relation to its associated level of statistical significance – the p-value.

The p-value tells us how likely it is that the results of a study occurred by chance. In the context of hypothesis testing, a low p-value indicates that the observed data is unlikely to have occurred if the null hypothesis were true. On the other hand, a high p-value suggests that the observed data is likely to occur even if the null hypothesis were true. As Bryman (2012) explains, a significant level of  $p < 0.05$  is commonly used in social research, which indicates a 5% chance that a relationship is falsely concluded to exist when it does not in the population.

Bryman (2012) argues that this level implies that out of 100 samples, up to 5 could show a relationship by chance. Alternatively, a significance level of  $p < 0.1$  would mean accepting a higher risk, with a 10% chance that a relationship might be inferred where none exists in the population. To this end, the author submits that choosing a stricter significance level like  $p < 0.01$  reduces the risk to 1%, indicating a higher level of confidence in the results. Therefore, selecting a significance level involves balancing the risk of falsely inferring a relationship with the desired level of confidence in the findings. If results are significant at  $p < 0.05$  but not at  $p < 0.01$ , further confirmation of the null hypothesis may be necessary to ensure the validity of the conclusions.

Table 3 is composed of data on whether companies are engaged in cooperation activities and process innovation. The numbers in the table represent the number of companies in each category, and the percentages show the proportion of companies in each category. The null hypothesis ( $H_0$ ) is that process innovation is independent from cooperation activities. In other words, the null hypothesis is suggesting that there is no relationship between whether a firm

engages in cooperation activities and whether it engages in process innovation. From the table, our data reveals that there is a different story. Out of the firms that engaged in process innovation activities, the majority (94.7%) also engaged in cooperation activities.

On the other hand, out of firms that did not engage in process innovation activities, only a small minority (5.3%) engaged in cooperation activities. For us to test whether this association is statistically significant, a chi-square test was conducted, which resulted in a highly significant p-value of 0.000 and a chi-square result of 18.599. The implication of this is that the association between cooperation activities and process innovation is unlikely to be due to chance, and that there is a real relationship between the two variables.

For elucidation purposes, this is suggesting that companies that engage in cooperation activities are more likely to engage in process innovation. This could be because cooperation affords firms the opportunity to share knowledge, resources, and expertise, which can lead to new and innovative ideas. As such, the result of our analysis supports the idea that cooperation influences innovation. As earlier mentioned, the null hypothesis (H0) is that process innovation is independent from cooperation activities, which means there is no relationship between whether a company engages in cooperation activities and whether it engages in process innovation. Due to this reason, we therefore, reject the null hypothesis (H0) in this case.

Table 4 shows data on the relationship between cooperation for innovation activities and product innovation. The null hypothesis (H0) for this analysis is that cooperation for innovation activities and product innovation are independent of each other. A closer look at the table confirms that firms that engage in product innovation activities are significantly more likely to also engage in cooperation for innovation activities.

**Table 4:** Relationship Between Cooperation for Innovation and Product Innovation

		Cooperation for innovation activities		Total
		No	Yes	
Product Innovation	No	<b>N</b> 376	<b>7</b>	<b>383</b>
		% 77.4%	36.8%	75.8%
	Yes	<b>N</b> 110	<b>12</b>	<b>122</b>
		% 22.6%	63.2%	24.2%
Total		<b>N</b> 486	<b>19</b>	<b>505</b>
		% 100.0%	100.0%	100.0%

Source: Own elaboration based on CIS 2020 data.  
H0: Product innovation is independent from cooperation activities.  
Qui-square= 16,3889, p=0.000

To be specific, of all firms that engaged in product innovation activities, the majority (63.2%) also engaged in cooperation for innovation activities. On the other hand, among companies that did not engage in product innovation activities, only a small minority (36.8%) engaged in cooperation for innovation activities.

For us to ascertain whether this relationship is statistically significant or not, a chi-square test was conducted and the test revealed a highly significant p-value of 0.000 and a chi-square value of 16,389, which indicates that the association between cooperation for innovation activities and product innovation is unlikely to be due to chance. In essence, the data suggests that companies that cooperate for innovation activities are more likely to engage in product innovation. To this end, the null hypothesis (H0) is then rejected, simply because there is a relationship between cooperation for innovation activities and product innovation. In summary, cooperation for innovation activities influences product/process innovation in Portugal.

#### **4.4 Factors Hindering Innovation in the Tourism-related Sectors in Portugal**

Firms were asked about the importance of various factors hindering their decision to initiate innovation activities between 2018 and 2020 (CIS, 2020). Answers could range from 0=Not a constraint; to 3=High importance.

We used the Mean and the standard deviation (SD) to analyse the results (Table 5). The Mean, alternatively known as the average, is a measure of central tendency which is basically an average of a set of values in each dataset.

For the sake of our analysis, the mean will assist us in determining and understanding the average perception or experience of firms with respect to various factors hampering innovation. For instance, if we calculate the mean of "*Lack of Internal Finance for Innovation*," it will give us an average score representing how much firms, on average, perceive internal finance as a factor hampering innovation. This helps us understand the overall sentiment or consensus among firms regarding different barriers.

On the other hand, the standard deviation is a measure of the dispersion or spread of data points in each dataset. While the mean shares information about the average value, the standard deviation shares insights into the variability or dispersion of the data points around the

mean. For example, if the standard deviation for "*Lack of Credit*" is high, it is an indication that there is a significant variation among firms in terms of how much they perceive credit as a factor hampering innovation. Some firms may perceive it as a major obstacle, while others may not see it as much of an issue. Contrarily, a low standard deviation is an indication that opinions are more consistent across firms, indicating a more uniform perception of the barriers.

**Table 5:** Factors Hindering Innovation

<b>Factors Hampering Innovation</b>	<b>Mean</b>	<b>SD</b>
Lack of Internal Finance for Innovation	0.94	0.050
Lack of Credit	0.81	0.047
Difficulties in Obtaining Public Grants or Subsidies	0.88	0.049
Costs too High	1.22	0.052
Lack of Skilled Employee	0.97	0.046
Lack of Collaboration Partners	0.74	0.040
Lack of Access to External Knowledge	0.75	0.041
Uncertain Market Demand	0.87	0.045
Too Much Competition	1.04	0.048
Different Priorities	1.06	0.050

Source: Own elaboration based on CIS 2020 data.

Having laid the foundation for our analysis, table 5 shows the data about several factors that can hamper innovation, as well as their mean and standard deviation. These factors include lack of internal finance, lack of credit, difficulties in obtaining public grants or subsidies, high costs, lack of skilled employees, lack of collaboration partners, lack of access to external knowledge, uncertain market demand, too much competition and different priorities.

It should be noted that the higher the mean value, the higher the perceived impact of that factors hampering innovation amongst the surveyed firms. Also, the standard deviation for each factor provides an indication of the level of agreement among firms with respect to the importance of that factor as a barrier to innovation. A high standard deviation indicates that there is a diverse range of opinions among firms regarding the importance of that factor, while a low standard deviation indicates that there is a high level of agreement or consensus among firms.

The factor with the lowest mean score is *lack of collaboration partners*. With a mean or average of **0.74**, firms perceive this factor to be less of a barrier, compared to factors like *Lack of Skilled Employees* (Mean of **0.97**), which is closer to 1 and a major factor that hampers innovation, *too much competition* (Mean of **1.04**), which is greater than 1 and even much of a barrier, and *different Priorities* (Mean of **1.06**), which is also greater than 1 and also even much bigger barrier compared to the last two mentioned. Furthermore, with a standard deviation of **0.040** for *lack of collaboration partner*, which is also the lowest, in comparison to the standard deviation for other factors, this attests to the fact that there is a high-level consensus about *lack of collaboration partner* as being less of a barrier to innovation than other factors, among all firms.

On the other hand, the factor with the highest mean score is *Costs too high*, with a mean of **1.22**, which is an indication that this is the most significant barrier to innovation, based on the responses of firms surveyed. However, this factor also has the highest standard deviation (**0.052**), in comparison to the standard deviation for other factors. This means that the values for *Costs too high* as a factor that hampers innovation are more spread out around the mean. For comprehension, the simple explanation here is that there is less agreement among firms about the impact of costs on innovation, with some firms rating it as a more significant barrier than others.

In conclusion, our analysis of table 5 has revealed insights into the factors that hamper innovation and their impact on firms. We used the mean and standard deviation of each factor to understand the average perception of firms and the level of agreement among them as regards these factors. The mean scores indicate that high costs, different priorities and too much competition are the most significant barriers to innovation, while lack of collaboration partners, lack of access to external knowledge and lack of credit are perceived as the least significant barrier. The standard deviation scores suggest that there is a high level of consensus among firms regarding the impact of lack of collaboration partners as a barrier to innovation, while there is less agreement regarding the impact of costs on innovation. These findings can help policymakers and organizations to design better policies and strategies to address the challenges of innovation and improve the competitiveness of firms in the tourism related sectors.

## **5. Discussion of Results**

### **5.1 Roadmap and Research Questions**

In this chapter, we'll take a closer look at what our research tells us about the nature of innovation in tourism related sectors in Portugal. We'll break down what we found about the firms involved, how they innovate, and barriers that hampers cooperation and innovation. By putting the pieces together, we'll get a clearer picture of innovation in this important industry. Finally, we'll discuss what this means for policymakers, tourism leaders, and future research.

Our research is aimed at understanding and answering the questions below.

- a) What is the nature of the innovative process in tourism related sectors?
- b) What relationship exists between cooperation for innovation and the tourism industry in Portugal?
- c) What factors hinders innovation and cooperation in the tourism related sectors in Portugal?

### **5.2 The Nature of Innovation Activities in Portugal**

Our study reveals that a little over a half of the firms surveyed are actively participating in innovation-related activities, which is (50.3%) to be specific. This aligns with previous research emphasizing the importance of innovation to stay competitive in the tourism industry.

However, this innovation is mainly firm based. While some firms are open to collaborating with external partners for innovation, the majority still rely on their own resources.

Meneses & Teixeira (2011) observe that the tourism industry in Portugal is expanding and competitive, which necessitates continuous innovation to meet tourist's expectations. Furthermore, Carvalho & Costa (2011) argue that innovation is crucial for the economic competitiveness of firms. Giotis and Papadionysiou (2022) buttress the fact that innovation plays a key role in economic prosperity, environmental sustainability, and sustaining general competitiveness. Aladashvili and Tamarashvili (2022) argue that innovation can enhance the competitive edge of a tourism product, benefiting the industry and amplifying positive impacts.

These findings suggest that innovation is critical for the competitiveness and success of tourism firms and our result indicate that many firms recognize this and are actively engaged in innovation-related activities, although the propensity to cooperate is still reduced.

### **5.3 Relationship Between Cooperation for Innovation and Tourism**

From our result, we discovered a strong link between cooperation and innovation in the tourism industry in Portugal. Firms that are engaging in collaborative innovation efforts were significantly more likely to experience both process and product innovation. The implication of this is that cooperation acts as a key driver for progress and growth in the tourism industry in Portugal. To be specific, Firms that collaborated on innovation initiatives (94.7%) were far more likely to achieve process innovation compared to those that did not (5.3%). Similarly, cooperation played a positive role in product innovation, with collaborating firms experiencing a higher innovation rate (63.2%) compared to non-collaborating firms (36.8%).

This result is in line with the report of the FCT (2013), that emphasizes the trend of firms in Portugal being more engaged in developing services and processes innovation, and less involved in product innovation. The FCT (2013) further asserts that when compared to the European average, Portugal by far, demonstrates a higher proportion of firms engaged in the creation of service and process innovations, in terms of both cooperative and firm-based innovation. It should be noted that, although, Portugal's innovation profile is not as strong, in terms of product innovation, whether done independently or in collaboration with other businesses or organizations. However, it is important to make more efforts in boosting product innovation in Portugal. This will help improve its overall innovation capabilities and competitiveness in the global market.

In summary, our study found a strong link between cooperation and innovation in the tourism industry in Portugal, with cooperative firms more likely to achieve process and product innovation. This highlights the crucial role of cooperation in driving progress and growth in the industry. The association between the two variables is significant, and is unlikely to be due to chance, and there is a real relationship between cooperation and innovation.

## 5.4 Barriers to Innovation and Cooperation

Identifying barriers to innovation is crucial for developing strategies to overcome them. In our research, we were able to identify several factors that hinder innovation in the tourism related sectors in Portugal. Top on the list is high cost, which emerges as a significant barrier that limits the ability of firms to invest in research and development (R&D) or adopt innovative technologies. Similarly, too much competition and different priorities among firms in Portugal are some other factors hindering innovation and cooperation. Intense competition can lead firms to focus on short-term gains and existing business models, potentially neglecting long-term investments in innovation. Additionally, different priorities amongst firms can create challenges.

On the other hand, factors such as the lack of collaboration partners, access to external knowledge, and lack of credit were also perceived as barriers hindering innovation, although with less impact. Some of these barriers are very much consistent with Hjalager's (2002) research, which argues that tourism firms struggle to collaborate due to a complex interplay of factors hindering innovation in the industry. Some of which are, limited interaction between academics and industry, a focus on formal intellectual property, challenges in knowledge dissemination, structural and behavioural characteristics of tourism businesses, lack of collaboration and trust, institutional frameworks, and human resource challenges. In fact, Hjalager (2002) opines that there exists minimal mutual trust among tourism enterprises, with many seeing each other as competitors rather than collaborators.

We have been able to demonstrate the fact that some of these barriers may not be as pronounced as high costs, intense competition, or different priorities, but they still present opportunities for improvement, which suggests that addressing these barriers with a wholistic mindset could have a significant impact on fostering a more conducive environment for innovation and collaboration in the tourism sector in Portugal.

In essence, our research looks at how innovation and collaboration work in the tourism sector in Portugal. We studied the features of tourism businesses, how innovation happens, and the various factors hindering innovation and cooperation. Our research can help policymakers, firms and institutions in the industry make better decisions and encourage more cooperation and innovative activities among firms.

## 5.5 Theoretical Implication of our Findings

Our findings stress the significant relationship between collaboration and innovation in tourism firms. The dominance of process innovation emphasizes the need for industry-specific scrutiny when analysing the results. Service-oriented industries, like tourism, might prioritize efficiency improvements over radical product development, as evidenced by the prevalence of process innovation in our study.

Furthermore, 'different priorities' as one of the major barriers suggest that future models should incorporate factors beyond financial constraints, which aligns with the assertion of Calia et al (2017) that there still exists a less consensus about what enables an organization to innovate, and this lack of consensus highlights the complexity of the innovation process and the diverse perspectives in the business community.

Finally, addressing the research questions.

- a) **Nature of the innovative process:** Priority is placed on process innovation amongst firms in tourism related sector in Portugal, and the use of internal resources are preferred over collaborative approaches.
- b) **Relationship between cooperation and innovation:** Our results found a positive correlation between collaborating with external partners and innovation.
- c) **Factors hindering innovation and cooperation:** Costs, competing priorities, and intense competition are identified as the main barriers.

## 6. Conclusions

At this point, we ought to have understood how innovation works in the tourism industry in Portugal and the nature of innovation process that is applicable to the tourism sector in Portugal. One of the most significant findings from this study is that process innovation is more developed than product innovation among firms in Portugal. This conclusion also matches other empirical studies that concludes that service and process innovation are crucial in the innovation landscape in Portugal. Furthermore, our findings also suggest a significant relationship between

cooperation for innovation efforts and process innovation in the tourism sector and our data indicates that firms engaging in process innovation are more likely to engage in cooperative initiatives. This result emphasizes the importance of encouraging cooperation among firm.

These findings help improve innovation theories by highlighting the need to consider specific industry patterns and local contexts. Additionally, the study compares cooperation-based innovation to firm-based innovation, giving us a deeper understanding of how innovation happens in the tourism sector. The study shows that cooperative innovation, especially for product innovation, is not very common. This goes against traditional open innovation theories, which suggest that businesses rely heavily on external partnerships for new ideas and innovation. The difference between what theories predict and the actual results shows that more research is needed to understand what drives companies' innovation strategies and cooperation choices in the tourism industry.

Finally, we were also able to analyse some of the many reasons why firms in Portugal are reluctant to the idea of cooperation towards innovation. Our research was based on the data from the Community Innovation Survey (CIS) 2020, using a subsample of 505 firms in the tourism related industry. According to the survey, we came to the realization that high costs, intense competition, different priorities, lack of skilled employees, internal financial constraint for innovation and difficulties in obtaining public grants or subsidies are the most significant barriers hampering innovation and cooperation in the tourism industry in Portugal. However, our research also identified several other factors hampering innovation and cooperation in Portugal. These factors include lack of collaboration partners, access to external knowledge, uncertain market demand and lack of credit, even though they are less significant barriers in terms of their comparison with other barriers.

Having these thoughts in mind, our conclusion here is that promoting innovation and cooperation in the tourism industry in Portugal requires an elaborate and multi-faceted approach in addressing the identified barriers in our research and implementing strategies to addressing them. The decision to focus on reducing costs, promoting collaboration, addressing skills gaps, improving access to funding, and addressing internal financial constraints hinges on policymakers and industry stakeholders in helping to promote a more conducive environment for innovation and cooperation in the sector. These efforts can ultimately contribute to improving the competitiveness and sustainability of tourism firms in Portugal.

Below are some recommendations to addressing some of the barriers mentioned above.

- One, policymakers can initiate all forms of incentive to encourage and motivate firms to invest in research and development. These incentives could be, for example tax credits/holidays or subsidies. This can help reduce the financial burden of innovation and make it more accessible to smaller firms.
- Two, industry associations and government institutions can facilitate networking and collaboration opportunities between firms, such as through industry events, workshops, and partnership programs. Also, this can help foster a culture of cooperation and knowledge-sharing, which can lead to the development of new ideas and innovations.
- Three, initiatives can be put in place to address the skills gap in the workforce, such as training programs, apprenticeships, and education initiatives. This can help to ensure that firms have access to a skilled and knowledgeable workforce, which is essential for driving innovation and competitiveness.
- Lastly, government grants and subsidies can be made flexible to firms, through simplified application processes and clearer guidelines. This can help to ensure that firms are aware of the support available to them and can take advantage of it to invest in innovation.

## **6.1 Contributions**

With this research work, we are contributing to the stock of knowledge and the existing literatures on innovation and collaboration in the tourism sector in Portugal. One, the research identifies specific factors that hinder innovation and cooperation in the industry, providing a comprehensive understanding of the challenges facing the sector. Two, the research provides practical recommendations for addressing these challenges through the formulation of policies by the appropriate authorities, the encouragement of knowledge exchange, enhancing networking, and improving access to financing. The research further suggests that firms and policymakers can create a more conducive environment for innovation and collaboration in the industry. Finally, the research plays emphasis on the importance of innovation and collaboration in the tourism industry in Portugal, whose competitiveness and sustainability can only be improved through the promotion of innovation and collaboration.

## 6.2 Limitation

This research has a couple of limitations that can be addressed in future studies. First, our reliance on data from the Community Innovation Survey (CIS) 2020 and the sample size of 505 tourism firms in Portugal may not accurately be a representation of the entire tourism industry in the country. Tourism is one of the mainstays and drivers of growth and development in the country and representing such huge industry with a sample size of 505 firms may be misleading. This limitation could affect the generalizability of our findings, as the results may not be applicable to all tourism businesses in Portugal. To address this limitation, future research could aim to include a more representative sample of tourism firms, possibly by using a larger sample size. Additionally, regional-level data was unavailable, posing a constraint. Regional data is solely accessible at the Safe Center of INE in Lisbon through personal consultation, which was not feasible due to time constraints in this study.

Finally, our research relied on firms to report their own experiences and opinions as regards innovation and cooperation, which could have led to inaccurate or biased results. For instance, firms may have underreported certain factors that they felt were negative or may have overreported factors that they felt were positive. To address this limitation, future research could aim to use objective measures of innovation and cooperation, such as patent data or sales data, rather than relying solely on surveys or self-reported data.

## BIBLIOGRAPHY

- Aladashvili, M., & Tamarashvili, T. (2022). 'Tourism Innovation and Its Role in Enhancing the Competitive Advantage of a Tourism Product'. International Conference on Advancements in Applied and Natural Sciences (ICAANS-2022), World Bulletin of Social Sciences.
- Alsos, G., Eide, D., & Madsen, E. (2014). Introduction: Innovation in tourism industries. In Alsos, G., Eide, D., & Madsen, E (Eds.), *Handbook of Research on Innovation in Tourism Industries*, 1, 1-24. Edward Elgar Publishing.
- Brandão, F. (2014). *Innovation in tourism: The role of regional innovation systems* (Doctoral dissertation). Universidade de Aveiro, Aveiro, Portugal
- Brandão, F., Costa, C., & Buhalis, D. (2018). Tourism innovation networks: a regional approach. *European Journal of Tourism Research*, 34-35.
- Brelik, A. (2018). Globalization in Tourism. *The 19th International Scientific Conference Economic Science for Rural Development*, 42-48.
- Bryman, A. (2012). Quantitative Data Analysis. In Bryman, A (Ed.), *Social Research Method*, 4, 329-351. New York: Oxford University Press.
- Buchmann, T. (2014). *The Evolution of Innovation Networks: An Automotive Case Study*. (Doctoral dissertation). Universität Hohenheim, Stuttgart, Germany.
- Buhalis, D. (2000). Marketing the competitive destination of the future. *Tourism Management*, 97-116.
- Calia, R., Guerrini, F., & Moura, G. (2007). Innovation Networks: From Technological Development to Business Model Reconfiguration. *Technovation*, 27, 426-427.
- Candi, M., Melia, M., & Colurcio, M. (2019). Two Birds with One Stone: The Quest for Addressing Both Business Goals and Social Needs with Innovation. *Journal of Business Ethics*, 160, 1019-1033.
- Cano, P. (2008). *Innovation Typology in Tourism* (master's thesis). Universitat de Girona, Spain.
- Carvalho, L. & Costa, T. (2011). Tourism Innovation – a Literature Review Complemented by Case Study Research. *Tourism & Management Studies*, 23-33).
- Cehan, A., Eva, M., Lațu, C., & Costa, C. (2020). Inquiring Structure and Forms of Collaboration in Tourism through Social Network Analysis. *Sustainability*, 2- 18.
- Chen, H., Lu, C., Wang, Y., & An, L. (2024). Competitiveness Evaluation and Cooperation Network Analysis of Tourist Attractions from The Perspective of Co-Opetition in The Yangtze River Delta (YRD). *Sustainability*, 16, 834.

- Di, T. (2022). Exploring Best Practices for Innovation Management in a Rapidly Changing Business Environment. *Journal of Management and Administration Provision*, 2, 21-25.
- ECT & Atout. (2022). Restarting Tourism for The Better: Performance of European Before, During & After COVID. Brussels: *The European Travel Commission & Atout France*.
- Ergashev, R., & Jabborova, Z. (2021). The Importance of Innovative Activity in Tourism. *European Scholar Journal (ESJ)*, 467-468.
- Eurostat. (2021). Glossary: Community innovation survey (CIS). [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Community\\_innovation\\_survey\\_\(CIS\)](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Community_innovation_survey_(CIS)). Accessed 6 March 2024.
- Eurostat. (2023). Community Innovation Survey 2020 (CIS2020) (inn\_cis12). [https://ec.europa.eu/eurostat/cache/metadata/en/inn\\_cis12\\_esms.htm](https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis12_esms.htm). Accessed 6 February 2024.
- Fernandes, S., Cesário, M., & Barata, J. (2017). Ways to open innovation: Main agents and sources in the Portuguese case. *Technology in Society*, 51, 153-162
- Fundação Para A Ciência e a Tecnologia. (2013). An Analysis of the Portuguese Research and Innovation System; Challenges, strengths, and weaknesses towards 2020. Lisboa: Ministério da Educação e Ciência.
- Giotis, G., & Papadionysiou, E. (2022). The Role of Managerial and Technological Innovations in the Tourism Industry: A Review of the Empirical Literature. *Sustainability*, 14, 1-20.
- Ham, S. Y. (2022). Global Shift in The Tourism Industry Policy Before and After the COVID 19 Pandemic. South Korea: *KDI School of Public Policy and Management*.
- Hjalager, A. (2002). Repairing Innovation Defectiveness in Tourism. *Tourism Management*, 23, 465-474.
- International Monetary Fund. (2020). Impact of The Pandemic on Tourism. *F&D*, 36-39.
- International Monetary Fund. (2021). Tourism in the Post-Pandemic World: Economic Challenges and Opportunities for Asia-Pacific and the Western Hemisphere. Washington, DC: Asia Pacific and Western Hemisphere Departments.
- Jain, N. (2023). Ideascap. Ideascap: <https://ideascap.com/blog/what-is-innovation/>. Accessed 16 March 2024.
- Khamis, A., Kamel, M., & Salichs, M. (2006). 'Cooperation: Concepts and General Typology'. *SMC '06 IEEE International Conference*, 2, 1-7.
- Korres, G. (2008). The Role of Innovation Activities in Tourism and Regional Growth in Europe. *Tourismos: an International Multidisciplinary Journal of Tourism*, 3, 135-152.

- Liburd, J., Carlsen, J., Edwards, D., & Forde, P. (2007). Networks for Innovation. In Liburd, J., Carlsen, J., Edwards, D., & Forde, P. (Eds), *Innovation for Sustainable Tourism: International Case Studies*. BEST Education Network.
- Meneses, O., & Teixeira, A. (2011). The Innovative Behaviour of Tourism Firms. *Economics and Management Research Projects: An International Journal*, 1, 25-35.
- MySmartJourney. (2022). Innovations in travel and tourism industry. MySmartJourney. <https://mysmartjourney.com/en-ca/post/innovations-in-travel-and-tourism-industry>. Accessed 3 February 2024.
- Pikkemaat, B., & Peters, M. (2012). Innovation in Hospitality and Tourism. In Pikkemaat, B., & Peters, M. (Eds.), *Handbook of Innovation in Hospitality and Tourism*, 1, 1-8. Routledge Publishing.
- Pyka, A. (2002). Innovation networks in economics: from the incentive-based to the knowledge-based approaches. *European Journal of Innovation Management*, 5, 152-163.
- Ratković, R., Jablan, M., & Liješević, M. (2022). Innovation in Tourism as a Model of Recovery in the Post-pandemic Period. *Economics*, 10, 131-146.
- Schnurbus, V. (2017). *Innovation in Icelandic Tourism*. (master's thesis). University of Iceland, Iceland.
- Simon, B. (2017). Collaboration Networks: Bringing Together a Team to Accomplish Your Projects. <https://www.smartsheet.com/collaboration-networks>. Accessed 1 April 2024.
- Sørensen, F. (2007). The Geographies of Social Networks and Innovation in Tourism. *Tourism Geographies*, 9, 22-48.
- Sustain-T. (2017). "Networking and Collaboration Benefits to Tourism Business," in Sustainable Tourism through Networking and Collaboration, Sustain-T, 1, 2-15.
- Talin, B. (2023). What is innovation and what are the different types and fields of innovation? <https://morehandigital.info/en/innovation-definition-innovation-types-and-meaning/>. Accessed 28 November 2023.
- The Organization for Economic Cooperation and Development. (2018). Tourism Trends and Policies 2018. Paris: [https://www.oecd-ilibrary.org/urban-rural-and-regional-development/oecd-tourism-trends-and-policies-2018\\_tour-2018-en](https://www.oecd-ilibrary.org/urban-rural-and-regional-development/oecd-tourism-trends-and-policies-2018_tour-2018-en). Accessed April 9 2024.
- The World Bank. (2019). Small and Medium Enterprises (SMEs) Finance. Washington.,The World Bank. <https://www.worldbank.org/en/topic/smefinance>. Accessed 11 April 2024.
- The World Travel & Tourism Council. (2021). The Economic Impact of Travel & Tourism. London: WTTC. <https://wtcc.org/Portals/0/Documents/Reports/2021/Global%20Economic%20Impact%20and%20Trends%202021.pdf>. Accessed 26 March 2024.

- Tidd, J. (2006). A Review of Innovation Models. *Imperial College London*, 1-3.
- Tüzüncan, D. (2017). The Relationship between Innovation and Tourism: The Case of Smart Tourism. *International Journal of Applied Engineering Research*, 12, 14861-14867.
- United Nations World Tourism Organization, (N/A). UNWTO. <https://www.unwto.org/what-is-tourism-innovation>. Accessed 18 December 2023
- United Nations World Tourism Organization. (2010). International Recommendations for Tourism Statistics 2008. New York: Department of Economic and Social Affairs. <https://www.unwto.org/tourism-statistics/on-basic-tourism-statistics-irts-2008>. Accessed 12 January 2024.
- Wegner, D., Hölsgens, R., & Bitencourt, C. (2023). Orchestrating Collaborative Networks for Social Innovation: Orchestrators' Roles in Socially Innovative Initiatives. *Technological Forecasting and Social Change*, 195, 1-12.
- Wiatrak, A. (2014). Determinants and Forms of Cooperation in Tourism. *Economic Problems of Tourism*, 4, 178-188.
- Wu, Z., Shao, Y., & Feng, L. (2019). Dynamic Evolution Model of a Collaborative Innovation Network from the Resource Perspective and an Application Considering Different Government Behaviours. *Information*, 10, 138.
- Zach, F. (2013). Collaboration for Innovation in Tourism Organizations: Leadership Support, Innovation Formality, and Communication. *Journal of Hospitality & Tourism Research*, 40, 1-33.
- Zack, F., & Hill, T. (2017). Network, knowledge and relationship impact on innovation in tourism destinations. *Tourism Management*, 62, 196–207.
- Zhang, D., Men, H., & Zhang, Z. (2024). Assessing the stability of collaboration networks: A structural cohesion analysis perspective. *Journal of Informetrics*, 18, 1-14.