A Combined Approach Of Sustainability And Resilience On Tourism: Capabilities, Managerial Practices And Activities

Case Of The Tourism Industry In Saudi Arabia

Dr: Ragmoun wided

Department of Business Administration, College of Business and Economics, Qassim University, PO Box: 6640, Buraidah 51452, Saudi Arabia

Department of Business Administration, Faculty of Economics and Management of Nabeul, University of Carthage, Tunisia

Abstract

In this paper, we are looking for a pragmatic approach to define a critical resilience path based on factors that can help the Saudi tourism industry bypass the problems caused by COVID 19 and ensure survival after the pandemic.

The model developed and tested is based on different interrelations and interactions between capabilities, managerial practices, and activities at the same time. We are looking for a joined effect of these factors. explore the relation-

ships between sustainability-related capabilities, activities, and mana-

gerial practices.

A quantitative approach via questionnaire was adopted. At all 549 questionnaires were collected from different organizations across different regions of Saudi Arabia, and in particular: Jeddah, Riyadh, Hayel, Hafr albatin, Al baha. The religious tourism industry (situated in Makkah and Medina) is integrated into the research because the nature of this pandemic has also affected these sites.

Data collected was purified based on the results of confirmatory factor analysis (CFA)

by SPSS 16. Demographic and descriptive analysis was also conducted and the structural model was tested using AMOS 23.

Two hypotheses related to the mediating effect of dynamic capabilities between organizational resilience and technical factors, as well as environmental factors, were rejected.

Results reveals that dynamic capabilities are the most important factor to allow the development of organizational and individual factors as well as facilitating the adoption of technology. Technical factors mediate the relationship between the other three factors and organizational resilience.

Keywords: tourism resilience, factors of resilience, sustainable tourism, structural equation model

منهج مشترك للاستدامة والمرونة في القطاع السياحي: القدرات والممارسات والأنشطة الإدارية حالة صناعة السياحة في المملكة العربية السعودية

د. وداد محمد قاسم رقمون

قسم إدارة الاعمال – كلية الاقتصاد والإدارة – جامعة القصيم

المستخلص:

تهدف هذه الورقة إلى إبراز المنهج العلمي الذي يحدد المسار الأمثل للمرونة من خلال مجموعة من العوامل التي تساعد على بقاء واستمرارية قطاع السياحة في المملكة العربية السعودية وتجاوز العقبات التي نتجت عن انتشار فيروس كورونا 19. لذا أُعتمد النموذج الذي تم تطويره واختباره على العلاقات المتبادلة والتفاعلات المختلفة بين القدرات والممارسات الإدارية والأنشطة؛ وذلك لتعريف وقياس تأثيرها المشترك.

تم اعتماد المنهج التحليلي الوصفي عبر الاستبانة لجمع البيانات؛ حيث تم جمع 549 استبانة من المنظمات السياحية في مناطق مختلفة من المملكة العربية السعودية، وعلى وجه الخصوص: جدة، الرياض، حائل، حفر الباطن، الباحة. كذلك تم دمج قطاع السياحة الدينية (الموجودة في مكة والمدينة)؛ نظرًا لتأثرها خلال هذه الأزمة وانتشار الوباء. وتم معالجة البيانات التي تم جمعها بناءً على نتائج تحليل العامل المؤكد (CFA) بوساطة SPSS 16. كذلك تم إجراء تحليل ديموغرافي وصفي، وتم اختبار النموذج الهيكلي باستخدام AMOS 23. واستنادا إلى النتائج؛ تم رفض فرضيتين تتعلقان بالتأثير الوسيط للقدرات الديناميكية بين المرونة التنظيمية والعوامل الفنية، وكذلك العوامل البيئية. كما أظهرت النتائج أن عامل القدرات الديناميكية هو أهم العوامل المساهمة في تطوير العوامل التنظيمية والفردية، وكذلك تسهيل تبني التكنولوجيا، كما تتوسط العوامل التقنية العلاقة بين العوامل الثلاثة الأخرى والمرونة التنظيمية، وتعزز العلاقة بين المرونة والعوامل البيئية.

الكلمات المفتاحية: المرونة التنظيمية، عوامل المرونة، السياحة المستدامة، نموذج المعادلة الهيكلية.

(*) للمراسلة:

أستاذ وداد رقمون، قسم إدارة الاعمال ، كلية الاقتصاد والادارة، جامعة القصيم، ص.ب. ٦٦٤٠، بريدة ٥١٤٥٢، المملكة العربية السعودية، قسم إدارة الاعمال – كلية العلوم الاقتصادية والتصرف بنابل – تونس.

(*) Corresponding Author:

Professor Widad Raqmon, Department of Business Administration, College of Economics and Administration, Qassim University, P.O. 6640, Buraydah 51452, Kingdom of Saudi Arabia, Department of Business Administration - Faculty of Economic Sciences and Management in Nabeul - Tunisia..

e-mail: w.ragmoun@qu.edu .sa

Introduction

As a dangerous and contagious pandemic, COVID 19 has spread throughout the world and has created new conditions and rules for a different level of life. This disease has redefined habits and established new economic and social rules, and is considered a crisis with an especially high impact in the tourism industry due to its global impact and scale (Higgins-Desbiolles, 2020). The "new" normal has emerged, with social distancing obligations, lockdown, and restrictions to stop the pandemic. Tourism is one of the major sectors affected by these transformations because it depends on the mobility and travel capability of tourists. Based on data published by the World Tourism Organization (2020) a decrease of 22% was seen at the beginning of the year 2020 with the first appearance of the virus, and the possible range of the fall is from 60% to 80%.

Prayag (2018) demonstrates that crises are not new to tourism. Several researchers have debated the integration of crisis management principles for destination plans to improve resilience (Filimonau & De Couteau, 2020). In the same vein, Williams and Baláž (2015) argue that crises constitute a great challenge for the tourism industry, which seems not to be prepared to face crises (Wang & Ritchie, 2012) and to remain vulnerable to any external unusual events related to security or safety (Ritchie, 2004).

In any case, it is interesting and helpful to identify how tourism organizations can be effective in times of crisis and how they can adapt to the new conditions of a turbulent environment (Biggs, Hall, & Stoeckl, 2012), due to the importance of this sector in terms of the labor market (Sharma et al., 2021) and its determining role in sustainable development goals (World Tourism Organization, 2020). This conception is also supported by Hall, Prayag, and Amore (2017), who consider that organizational resilience after or during a crisis is important for tourism organizations and for ensuring sustainable growth.

This study examines the tourism industry, in general, to define a combination approach of resilience factors in this field in Saudi Arabia and ensure sustainability. This research question is: What are the determinants of tourism resilience? and to what extent does resilience determine sustainability in the tourism industry in Saudi Arabia?

Tourism as an industry in Saudi Arabia is still in the primary stages of development and the government considers this sector as one of the key activities within Vision 2030 as related to sustainable development. According to Supardi and Hadi (2020), business resilience seems to be relevant to organizations' ability to face crises and emergencies, with a great effort towards adaptation to environmental change and new conditions while trying to reduce as far as possible the effect of such change. So, this ability will assist change in the transformational process due to the crisis and will absorb disturbance before the changes required after the crisis (Gunderson, 2000).

Previous work has focused only on some specific individual factors or dynamic capabilities, and its still persistent need for a resilience conceptual framework obliges researchers to adopt other theories to establish and define an adequate framework specific to the tourism industry. Strategic management has regained importance and discussion has turned to the appropriate pathway for organizational resilience in a turbulent environment, based on strategic planning to prepare for, respond to and sustain long-term

resilience through specific mechanisms (Jiang, Ritchie, & Benckendorff, 2017). Such research provides a clearer view of resilience, but empirical studies are always needed to identify key factors, interdependence, and relationships between different constructs previously identified (Jiang and Ritchie, 2017). Therefore, as Rivera (2020) mentioned in a study related to the tourism industry and health sector, examining such activities during the pandemic time is vital. Sharma et al. (2021) demonstrate through their research that only 45 studies related to the effect of COVID 19 on tourism exist, and this range is still very limited compared to the importance of such an object. All these considerations add additional motivation to the interest of this paper in creating an operational and pragmatic pathway that can help policymakers and managers in the tourism industry to have a clearer vision of the actual situation and place at their disposal toolkits or practices to drive resilience through a sustainable approach, named sustainable tourism.

Despite the great number of studies related to resilience and factors of resilience, an exhaustive model does not appear to exist. Prayag et al. (2019) emphasize the few empirical studies in this field and demonstrate that existing researchers do not offer an integrative approach for different types of resilience. This paper outlines factors that can stimulate resilience and ensure sustainability in tourism. Our objective is to validate management practices, capacities, and activities for this objective through the development of a conceptual framework. In other words, we are looking to answer questions about: 'What are the determinants of tourism resilience?' and to what extent does resilience determine sustainability in the tourism industry in Saudi Arabia?' We have to explore and define these determinants as well as their relative importance, then, we will measure their effect on tourism resilience to define, at the end, a critical pathway to sustainability.

This study could be the first to examine a combinate approach of systemic theory and trauma theory to explain how resilience can be generated, shared and maintained for sustainability. These results introduce a practical solution for the tourism industry in this difficult pandemic period. It can help policymakers and managers understand how the crisis can be managed differently by the definition of organizational capability. Definition of resilience factors can provide the organization with a functional

kit for emergencies, with tools and strategies to face changes, and ways to manage the emergency with higher performance and lower resource levels.

1. *Resilience in the tourism industry*

1.1. *Resilience as concept*

In its beginnings, the theory of resilience belongs to an ecologist approach (Holling, 1973), and this can help to understand the complex and paradoxical theoretical assets of the literature related to sustainable development (Cochrane, 2015).

The concept of resilience is related in general to turbulence, co-evaluation, dynamism, and disequilibrium (Stevenson et al., 2009). In other words, resilience signifies movement: we must move to survive, we must change to survive and we must fit the new conditions with "intelligence" to make them an occasion to progress and not a threat. Considering the research of Bruneau et al. (2003), resilience can be compared to a "sponge" which absorbs the negative impact of a crisis and represents adequacy between the existent entity and its updated version, to satisfy new needs generated by the crisis (Manfield & Newey, 2018). Considering events in the crisis of COVID 19, this conception is the most appropriate for such unpredictable events and can at the same time provide the organization with constant adaptability and constant successful change. Resilience is about continuity and adequacy and is not a response to the crisis but a preventive approach to the impacts which could happen due to the crisis. Thus, the organization will be ready at any time for any conditions, to evaluate and generate the best version of change in specific conditions.

To understand this concept and make it measurable in line with the study's objective, different tools and concepts used in different research works to identify, measure, and define resilience are summarized (Table 1).

Table 1. Different constructs of resilience

Constructs	Elements	References
Strategies	Coordination Technics Good relationship Network Recognize risk and opportunities Timely interventions	Alves, Lok, Luo, and Hao, 2020; Fitriasari, 2020
Attributes	Proactive Adaptive Reactive Dynamic	Supardi and Hadi, 2020

Stages or Cycle	Reorganization Exploitation Conservation Release	Holling 2001
Dimensions	Robustness Agility Integrity	Kantur and Iseri-Say (2015)

Dimensions of organizational resilience as defined by Kantur and Iseri-Say (2015) consider robustness as the capacity of the organization to resist and surpass difficulties faced, while agility is related to the rapidity of action taken and integrity is related to the microlevel represented by the solidarity between employees during times of crisis.

Resilience as a concept has become a necessity and the rule to survive today. Combined with the tourism industry, the second main concept, resilience is at the 'heart' of sustainable tourism and its management process (Biggs et al., 2012) because it can help any organization deal with uncertainties and persist (McManus, Seville, Vargo & Brunsdon, 2008).

Also, and based on chaos theory, it is clear that tourism cannot be analyzed in such a stable and linear system as presented by Farrell and Twining Ward (2004, 2005) but that it is, in reality, a dynamic, complex, and evolving system (McKercher, 1999; Stevenson et al., 2009)

1.2. *Sustainable tourism (ST)*

As discussed below, the long term is adopted here as the continuum of reflection, and this is named sustainability. The main interest of the study is in the resilience of the tourism industries, to define sustainable tourism.

Tourist organizations were selected because of the specificities of tourism that make it different from other sectors and because of its importance in this context of research. It is suggested that this sector is more sensitive to crises due to the particularity of its product (Smith, 1994).

The tourist organization may be sensitive because its financial resources are limited, and its experience is also restrictive because this differs from one context to another and it is not possible to generalize the experience of any tourism organization to the rest. Finally, strategic planning for such organizations is also limited (Burnard & Bhamra, 2011; Verreynne, Williams, Ritchie, Gronum & Betts, 2019).

However, sustainable tourism is considered as a concept which represents the durability of tourist industries whatever their limits or difficulties, tourism must survive and contribute to sustainable development. Sustainable tourism has emerged as an important consideration in the development of the tourism industry. In other words, based on this conception, the tourism industry has to take into account its actual and future impacts on economic, environmental, and social aspects through the satisfaction of visitors, environmental interests, and the community (UNWTO & UNEP, 2005).

Table 2 shows the two main approaches used in the literature review to understand sustainable tourism: One is based on an operational approach through practices and the definition of these specific practices, to stimulate the emergence of sustainability in this field. This can be added to a multidimensional approach extracted from the sustainable development approach, and its different aspects applied to tourism.

Table 2. Aspects of sustainable tourism

Construct	Dimensions	References
Practices	Sustainable destination management	Maisarah & Salmi (2020)
	Sustainable business management	
Dimensions	Institutional dimension	Huayhuaca et al. (2010)
	Ecological dimension	
	Economic Dimension	
	Socio-cultural dimension	

1.3. *Resilience vs sustainability: divergence or convergence*

The association and use of these concepts are still different from one research to another.

Espiner and al. (2017) demonstrate that the conceptualization of resilience and sustainability is confusing and it is possible to consider these two concepts as parallels in tourism.

On the contrary, McCool (2015), based on the analysis of the tourism economy, presents sustainable tourism as a strategy to build resilience.

Lew (2014, p14) supports another different perspective through conceptual comparisons and defines a model for 'scale, change and resilience in tourism' to demonstrate that resilience must be associated with developing more than the sustainable paradigm.

Derissen et al. (2011), claim that sustainability is used to prevent change, but resilience is an adaptation to change through existing capacities and resources. one of the main critics addressed to this conception is related to the restrictive approach of resilience in this sense limited to problem-solving.

In this study, we are looking for a new combined approach that defends complementarity between sustainability and resilience to anticipate and cure existing threats.

As we can see, resilience and sustainability coexist in the tourism literature, but the articulation and effects between them are still unclear and poorly addressed. This research will try to defend a new combined approach between resilience and sustainability.

We will consider the same proposition of the model of the NBT sector in New Zealand (Hopkins & Becken, 2015; Hall & Boyd, 2005) which defends the idea according to which resilience is considered as a condition of sustainability because sustainable destinations seem to be associated with high resilience level. This model is also determinant for us in this level of analysis because it argues that resilience is one of the determinants of sustainability: It is necessary but not sufficient, and this is why we have to integrate some other factors into our conceptual model. Because resilience is necessary but not sufficient for sustainability, it is illustrated here as specialized spheres often intersecting with, but conceptually separate from, sustainability: resilience is primordial for the realization of sustainability. cannot be achieved.

2. *A theoretical approach: the complementarity between resilience, systems, and trauma theory*

In the beginning, we need to understand the general framework of our reflection through resilience theory. The origin of this theory is associated with the ability to detect pain and its treatment (O'Leary & Ickovics, 1995), the ability to survive (Rutter, 1979), or the ability to regenerate power to survive, grow, or develop (Jones, 1991).

the term ability, permit us to confirm that organizational resilience is related and depends on individual factors seems the most determinant in this state.

O'Leary (1998) identified three models of the resilience compensatory model, the protective factor, and the challenge model. According to our objective, the protective factor model is the most appropriate. This model defines some factors that can reduce the relative importance of negative outcomes and moderate the effect of risk if it exists independently of negative circumstances (Bonanno, 2004). In this same idea, Ungar (2004) identifies some personal and specific skills as protective factors such as emotional management and reflective skills.

As discussed, the main factor determinant of resilience is personal or individual in terms of skills and ability in compartmental (interpersonal) and cognitive (reflexive approach).

Nishikawa (2006) argues that this positive transformation through risk is called 'Thriving' and is the result of experience associated with time and through three ways or ways: to survive, to recover, and to thrive.

On complementarity with this theory, the constructivist self-determination theory (Saakvitne et al., 1998) which belongs to trauma theory, regains importance. Integrates development and growth after the crisis by adopting a constructivist approach, cognitive development, and social learning to allow individual development according to cultural and social norms.

here, the ability to respond positively to trauma depends on individual factors such as experience in addition to an interpersonal experience delimited by a specific cultural, economic and social norm (Nishikawa, 2006).

Based on Saakvitne et al. (1998), this theory is important because it defines a personalized and contingent aspect of thriving which can help us to understand the constructive approach of resilience adopted here:

1. It considers nomothetic and idiographic which make this process as specific: context and process matter, as well as an individual factor and this, makes the idea of a linear process for resilience difficult to admit.
2. I identify different roles or mechanisms on resilience's 'individualized' process: our model for resilience and sustainability must integrate some mediating and moderating variables to succussed.
3. The self-determination aspect makes the development of resilience automatic and intentional: it depends on decision making: prevention and intervention
4. Thriving, in this perception, can be gradual and abrupt

All this analysis is still related to the individual approach, promoted to an interpersonal level and shared on an organizational level according to the systemic theory.

In this state, resilience can depend on individual factors and organizational factors that can be mediating orand moderating variables. the concept of thriving defined, here, permits us to suppose that resilience maintained can provide sustainability and it still depends on a deliberated or determined nonlinear process.

3. *Hypotheses and proposed model*

To provide a clear and exhaustive approach to the different factors cited in the existing literature, these will be cited as presented. Then, based on integrative and logical reflection, an attempt will be made to classify these factors and demonstrate how they can assist the resilience cycle, as detailed below, to achieve sustainable tourism.

Based on the literature review, there are two main categories of factors related to resilience in the tourism industry: organizational and individual. By individual factors, the adaptative capacity of employees is meant, which can depend on lifestyle, identity, and satisfaction (Prayag et al., 2019), on the nature of the relationship between stakeholders (Chowdhury, Prayag, Orchiston, & Spector, 2018) and on continuity insurance (Orchiston, 2013). Dahles and Susilowati (2015) present another approach to developing resilience in small and medium businesses, such as tourism organizations, based on the ability to develop resources.

Recent research cites three other factors based on a cross-disciplinary approach to organizational resilience: individual factors related to people, supply chain resilience between partnerships, and system resilience related to the process of resilience development (Amore et al., 2018).

An emergent approach related to resilience was developed by Jiang et al. (2019), who consider that level of capability is important because it combines existing resources to generate new routines able to facilitate resilience.

Table 3. Factors Related to Organizational Resilience in General

Factors	**References**
Government assistance	Assaf and Scuderi (2020) Chen, Huang and Li (2020) Ioannides and Gyimothy ´ (2020) Sharma et al. (2021)
Equity	Benjamin, Dillette, and Alderman (2020)
Institutional progress	Brouder (2020) Haywood (2020)
Tourist's emotions, Cultural venues, National command Local reaction, corporate self-improvement initiatives, Tourism product post-crisis	Chen, Huang and Li (2020) Sharma et al. (2021)
Individual factors Organizational Factors	Morales et al. (2019)

Needs of the host community	Lapointe (2020)
Ecological Factors	Crossley (2020)
Corporate social responsibility (through self-efficacy and employee satisfaction)	Mao, He, Morrison, and Andres Coca-Stefaniak (2020) Sharma et al. (2021)
Dynamic capabilities	Jiang et al. (2019)
Geo-economic relations	Mostafanezhad, Cheer, and Sin (2020)
Three levels (macrolevel, mesolevel, and microlevel)	Prayac (2020)
Relation with the destination	Renaud (2020)
Technology innovation	Sharma et al. (2021) Gallego and Font (2020)

As shown in Table 3, the researcher tried to collect and summarize different perspectives related to organizational factors in general, and some are specific to the tourism industry.

All factors cannot be presented here: this could be approached through a systematic review of the literature. However, this article concentrates on one factor explored by the most recent research, especially during the last year, within the period of the COVID crisis.

In seeking to classify these factors according to the context of research and the specifics of the tourism industry, five main factors can be identified: organizational, individual, environmental, governmental, and technological factors, occurring on two levels, internal and external:

- Dynamic Capacity Development (DCD)
- Organizational factors (OF) are relevant to the tourism entity or organism.
- Individual factors (IF) are related to employees and consumer confidence
- Environmental factors (EF) determine external factors and encompass nature and ecological conditions, government response, and locality.
- Technological factors (TF) are the relevant aspects of this actual period, related to artificial intelligence capacities.

The general concept for the model is based on the interaction between a service provider (tourism industry) and consumer and based on the development or construction of resilience factors in the tourism industry. These factors can be used to define an appropriate degree of resilience based on the intensity of the situation or the crisis, to generate sustainable tourism. In other words, resilience is developed not only to resolve problems and face crises, but also to sustain the tourism industry and ensure its continuity, represented here by the concept of sustainable tourism.

3.1. Dynamic Capacity Development (DCD)

According to Aldunce, Beilin, Handmer, and Howden (2014), resilient organizations develop specific capabilities to be more flexible and innovative. This concept must be made a part of organizational culture (Sawalha, 2015) through the adoption of routines that enable adequate adaptation and response to the crisis (Alonso, Kok, & O'Shea, 2018; Paton & Hill, 2006).

Augier and Teece (2009) consider that internal resources and dynamic capabilities are definitive for long-term resilience. This is related to the development of slack resources, in addition to the transformation of operational routines for resilience (Teece, 2009).

Bhamra, Dani, and Burnard (2011) argue that resilience is based on the development of capabilities used to identify and localize key resources. Capabilities in this sense constitute a way to manage resources, create resources, and definitively manipulate resources to achieve resilience. This is connected to a predisposition to be ready to fight. What is needed to be resilient in terms of resources and capabilities, maximize the exploitation of these, and develop others new forms if required at the right time and in an efficient manner?

For tourist organizations, many researchers, such as Altinay, McLean, and Cooper (2013), demonstrate that management capabilities are insufficient and constitute a major challenge in a turbulent environment. In general, such dynamic capabilities are directedly related to flexibility and adaptation capacity, and having dynamic capabilities implies a high level of perception, which is called a mindset (Koronis & Ponis, 2018).

As discussed previously, the development of dynamic capabilities can help the organization to understand, anticipate, analyze, and create the best way to manage crises and build a future through the maximization of the use of existing resources.

H1. Development of dynamic capabilities mediates the link between organizational resilience and factors in the tourism industry.

3.2. Organizational factors (OF)

Koronis and Ponis (2018) demonstrate that resilience is built in terms of responsiveness (response to crisis and rapidity of response), preparedness (planning), learning (to acquire new knowledge and competencies), and adaptability (flexibility). Based on this, to be resilient, the organization must be able to learn to understand the existing reality and anticipate the future, to plan and prepare an action plan for a crisis if it happens, to respond adequately to the scale of problems and the new conditions, and to minimize as far as possible any negative effect from the crisis.

This approach can integrate the majority of the variables selected in this research. Planning requires that the organization be able to define the role of everyone if a crisis happens, evaluate risk and define different scenarios. However, this is not enough if the planning is not applied in the right way. This means that the idea of resilience must be shared by different members on different levels, and this process can be named culture, in which, to become more operational, leadership efforts matter to orient

and assist the implementation process.

H3. Organizational factors determine organizational resilience in the tourism industry.

3.3. Individual Factors (IF)

As discussed below, knowledge, dynamic capabilities, and learning must be considered to define optimized organizational behavior. However, it should be remembered that this behavior results from the efforts and interactions of the individuals.

Based on the different characteristics of resilience as defined by Denhardt and Denhardt (2010), to be resilient, the organization must be able to be active and take care of the mental health of its members. It has to be flexible to define new approaches, be reliable in terms of infrastructure to facilitate information access for managers and resources, and develop an organizational culture and different styles of management to ensure trust and respect. For these researchers, leaders, as well as managers, are considered a constant generator of resilience.

To identify the relative importance of individual factors on resilience, it is acknowledged that the management process (the process of change) and support as assured by managers and leaders is required for successful resilience (Motta, 2007). Moreover, managing change for resilience demands resources, and Aktouf (2004) argues that culture mediates the link between the managerial process as conceived and its implementation through tangible resources and organizational systems.

A learning approach presented by Gray and Jones (2016) confirms this individual aspect and emphasizes the importance of collaboration and the learning process for a long-term effect on trust.

Therefore, trust, learning, collaboration, culture, and mental health are all factors relevant to an individual aspect.

H4. Individual factors determine organizational resilience in the tourism industry.

3.4. Environmental Factors (EF)

As proportional to an internal approach to resilience antecedents (Ali et al., 2017), an external approach or environmental approach was developed to examine factors, drivers, or determinants of organizational resilience.

Demmer et al. (2011) consider that it is not enough for organizations - and especially SMEs such as tourism organizations, which are composed of a majority of small and medium organizations - to perform strategy and evaluate processes to increase profit and sustain performance.

Rahman and Mendy (2018) identify a sociocultural approach that is defining for SMEs. Gunasekaran et al. (2011) support this concept and demonstrate that resilience and competitiveness are closely interdependent and that this will make technology, globalization, and operations important for resilience.

It can be concluded here that if resilience depends on competitiveness, it will automatically be affected by external factors, also named environmental factors because this competitiveness as a concept is relevant to markets and competitivity.

H5. Environmental factors determine organizational resilience in the tourism industry.

3.5. Technical Factors (TF)

Based on the dynamic capabilities approach adopted here, technical factors are represented by artificial intelligence capabilities (AIC). In this sense, Rialti et al. (2018a; b) demonstrate that such capabilities can contribute to the development of agility and strategic flexibility. A deeper analysis of these facts shows that this effect is related to its ability to collect and disseminate data in the right way and in the right time. This is termed a communicational approach.

This conception is consolidated by other authors who suggest that the survival of the tourism industry depends on the general conception of this sector, which must be revisited. The most interesting vision consists of the transition from an exploitative model to a constructive model (Everingham & Chassagne, 2020). Such a constructive approach requires interpretation and analysis of the facts to anticipate the future and be ready for an eventual crisis.

Gittell et al. (2006) argue that relational capital is crucial to reinforce the process and face a crisis. For Koronis and Ponis (2018), effective and open communication increases resilience levels because it encourages employees to exchange data and make efficient decisions. This synergetic effect can stimulate a creative solution to manage a crisis and minimize its effects as much as possible.

H6. Artificial intelligence capacities determine organizational resilience in the tourism industry.

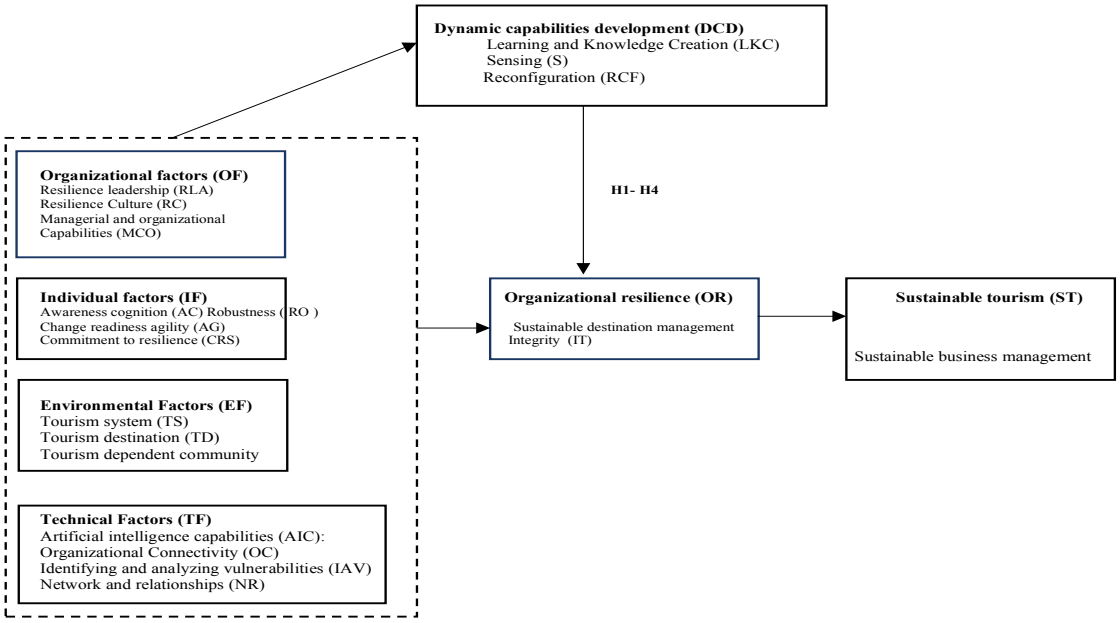

Figure 1. Theoretical model

4. *Research design and methods*

4.1. Measurement Instruments

The items used to measure latent constructs in the theoretical model are detailed in Table 3. All three main variables are adopted: resilience factors (internal, external and interaction between internal and external), resilience, and sustainable tourism.

Table 4. Items and references

Constructs	Dimensions	Items	References
Organizational factors (OF)	Resilience Leadership	8	Morals et al. (2019)
	Resilience Culture	8	
	Managerial and organizational capabilities	7	
Individual Factors (IF)	Awareness cognition	5	Lee et al. (2013)
	Change readiness	4	Sweya et al. (2020)
	Commitment to Resilience	3	Lee et al. (2013)
Environmental Factors (EF)	Tourism system	4	Prayag (2020)
	Tourism Destination	2	
	Tourism-dependent community	3	
Artificial intelligence capabilities (AIC)	Organizational connectivity	6	Lee et al. (2013)
	Identifying and analyzing vulnerabilities		
	Networks and relationships	4	Sweya et al. (2020)
Organizational resilience (OR)	Robustness	4	Kantur and Iseri-Say (2015)
	Agility	3	
	Integrity	2	
Dynamic capabilities development (DCD)	Learning and Knowledge Creation	4	Jiang et al. (2019) Ahn and Chang, (2004) Kuah et al. (2012).
	Sensing	3	Newey and Zahra (2009)
	Reconfiguration	3	Jiang et al. (2019) Ettlie and Pavlou (2006)

4.2. Questionnaire design and data collection

An online survey was used to collect data, and this choice was made due to many reasons. The first is related to the restrictive mobility between regions and COVID 19 contamination, which means that it was safer to adopt this method. The second is related to the difficulty in localizing and accessing tourist

organizations in Saudi Arabia.

The most appropriate way to proceed was to identify tourist organizations through research on the Web. After this, we produced a list of these entities with their contacts (address, e-mail, and phone number) and then sent the questionnaire via e-mail and waited for three days. If there was no response, the researcher then tried to communicate via phone to accelerate the process and offer help if necessary. In some cases, the questionnaire was administered via phone or social media (Messenger, Twitter, WhatsApp, and Instagram).

In all, 549 questionnaires were collected from different organizations across different regions of Saudi Arabia, and in particular: Jeddah, Riyadh, Hayel, Hafr albatin, Al baha. The religious tourism industry (situated in Makkah and Medina) is integrated into the research because the nature of this pandemic has also affected these sites. Google Forms was used to prepare the questionnaire, and a link was created and sent. The collection of data took approximately three months.

The questionnaire was divided into three parts: the first part is used to describe the study and presents the main idea and interest. The second part contains questions related to the demographic characteristics of the respondents, such as experience, age, sex, education level, and occupation.

The third part presents all items extracted from the existing literature to collect data on the constructs based on the research model (Figure 1). Items are investigated using a Likert scale (5-point) that serves to measure the degree of agreement and disagreement.

The first version of this questionnaire was pre-tested with 15 respondents to test the clarity and facial validity of the tool. Some modifications were then made to make it more acceptable and easier for participants, remembering, particularly, that it would be administered online and so would have to be consistent and as clear and simple as possible.

The sample is made up of general managers or executives working for tourist organizations such as hotels, museums, tourist sites, festival organizers, and travel agencies. According to the recommendations of Kline (2015), a sample of 200 to 300 is recommended for the use of SEM, depending on the number of independent variables and their measurement (Hair Jr. et al., 2010).

4.3. Analysis

The research model having been developed must now be evaluated and verified. In this case, the structural equation model (SME) is selected as the most appropriate. The model test will be performed through two models: a measurement and a structural model. The collected data was purified on the basis of the results of the component analysis by SPSS 16. Demographic and descriptive analysis was also conducted. The structural model was tested using AMOS 23.

5. Results

5.1. Demographic information

Based on the results in Table 5, the greatest part of the respondents is aged between 25 and 45 (78.3%), with a large proportion of males (89.8%). For qualifications, approximately 55.1 % of the respondents had a bachelor's degree and a smaller proportion had a Master's degree (15.4%).

Table 5. Descriptive analysis

Respondents		Frequency	Percentage
Age	25-45	418	78.3
	45-65	23	8.7
	Above 65	10	3
Gender	Male	451	89.8
	Female	87	29
Qualification	Diploma	181	29.6
	Bachelors	299	55.1
	Master	89	15.4
Occupation	Employee	358	62.2
	Director	183	32.2
	Manager	16	4.1

6.2. Confirmatory Factor Analysis (CFA)

A confirmatory factor analysis (CFA) was performed to appreciate the multidimensionality of different constructs using SPSS 16 including :

The loading factor : it is acceptable, with the value greater than 0.5.

Convergent and Discriminant validity was also calculated.

Cronbach's alpha was adopted to evaluate internal coherence and reliability for different measures. According to Hair et al. (1995), level recommended is 0.7

AVE (average variance extracted) to test the validity of the convergence based on (Wong, 2013) and have to be 0.5 or greater.

Composite reliability (CR) is calculated and can be considered acceptable if it ranges to 0.5 as mentioned and admitted by Bagozzi & Yi (1988).

Results show that: only resilience culture, seemed to be representative with two distinctive levels which confirm its importance for organizational resilience.

Individual factors explain only 19% of this construct in addition to commitment to resilience with a

percentage of 22%. We can admit, in this state that resilience still related to a behavioral approach combined to a cognitive aspect

Environmental factors are concentrated to only one dimension for the sample, which is the tourism system. However, it should be clarified that this dimension represents only 22% of the total variance explained.

Artificial intelligence capabilities are represented by two dimensions: Identifying and analyzing vulnerabilities (31%) and network and relationship (19%).

Dynamic capabilities development is based on learning and knowledge creation, with 29% and 33%.

Tourism and sustainability deals with sustainable destination management (29%) and sustainable business management (34%). Table 6 details all these indicators.

Table 6. Confirmatory Factor Analysis (CFA)

Constructs	Items	Loadings	Cronbach's alpha	CR	AVE
Organizational factors (OF)	OF 2	0.45	0.87	0.755	0.732
	OF 3	0.53			
	OF 4	0.61			
	OF 6	0.57			
	OF 8	0.71			
Individual Factors (IF)	IF1	0.70	0.77	0.811	0.703
	IF 2	0.80			
	IF 3	0.60			
	IF 4	0.73			
Environmental Factors (EF)	EF1	0.56	0.89	0.912	0.891
	EF 2	0.79			
	EF 3	0.81			
Artificial intelligence capabilities (AIC)	AIC 2	0.61	0.76	0.747	0.802
	AIC 3	0.77			
	AIC 4	0.71			
	AIC 5	0.63			
Organizational resilience (OR)	OR1	0.68	0.86	0.877	0.729
	OR2	0.66			
	OR3	0.69			
	OR4	0.70			
	OR5	0.73			
	OR6	0.81			

Dynamic capabilities development (DCD)	DCD 1	0.69	0.73	0.659	0.565
	DCD 3	0.35			
	DCD 4	0.63			

5.2. Structural Model

This step was performed using AMOS 23 to appreciate and quantify different relationships:
direct and indirect effects were detailed through the corresponding path coefficient and t-statistic (figure 2). Two types of variables are adopted: independent variables (determinants of tourism resilience) and dependent variable which is resilience on tourism which determine sustainability, and mediating variable (dynamic capability development)

Table 7 shows result of path coefficient with estimates and statistics in order to decide of the acceptance or rejection of hypotheses previously developed.

Table 7. Structural Model

Path			Estimate (ß)	Statistics	P
DCD	<---	OF	.451	2.978	.000
DCD	<---	IF	.021	1.246	.022
DCD	<---	EF	1.386	8.417	.047
DCD	<---	OR	.114	1.709	.000
OR	<---	OF	.434	2.166	.000
OR	<---	DCD	.718	2.738	.000
OR	<---	IF	-1.532	3.824	.000
OR	<---	TF	-.221	2.568	.001
OR	<---	EF	-.133	2.384	.000
OF	<---	DCD	.685	1.713	.000
OF	<---	IF	.249	1.117	.004
OF	<---	TF	-.959	2.631	.008
OF	<---	EF	-.534	2.543	.003
IF	<---	EF	.701	2.535	.000
IF	<---	DCD	.118	2.813	.000
IF	<---	OF	.033	2.351	.000
IF	<---	TF	.035	3.132	.042
TF	<---	OR	.081	1.278	.053

5.3. Mediation analysis

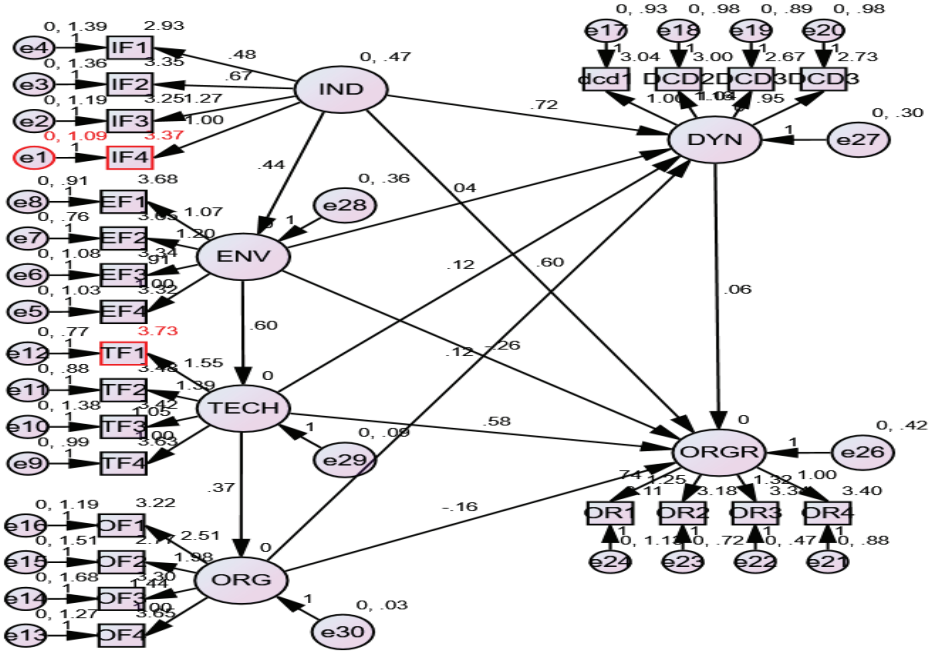

Table 8 summarizes the results of the hypothesis test and Table 9 represents the fit index of the research model.

Table 8. Hypothesis test

Hypothesis	Statutes
H1. The development of dynamic capabilities mediates the link between organizational resilience and organizational factors in the tourism industry.	Accepted
H2. The development of dynamic capabilities mediates the link between organizational resilience and individual factors in the tourism industry.	Accepted
H3. Dynamic capabilities development mediates the link between resilience and its environmental factors in the tourism industry.	Rejected
H4. The development of dynamic capabilities mediates the link between organizational resilience and technical factors in the tourism industry.	Rejected

Technical factors and environmental factors have a direct effect on the development of organizational resilience.

Based on the results, technical factors are strongly related to resilience (as a dimension of organizational resilience). Integrity as a second significant dimension of resilience seems to be difficult to define and measure. It will be very interesting to focus on this point to understand this concept and identify the processes or variables needed to develop it.

Table 9. Fit index

Fit index	RMSEA	GFI	CFI	CMIN/df
Value	0.028	0.910	0.911	1.765
Recommended value	**≤ 0.08**	<0.95	<0.95	**≤ 2**

6. Discussion and Conclusions

In this study, a theoretical model related to the development of organizational resilience for sustainable tourism was developed by combining different factors. This model details the factors influencing

organizational resilience in line with the relative importance of a crisis and how the combination of these factors can help develop an adequate level of resilience to maintain sustainable tourism.

The findings indicate that the development of dynamic capabilities is the key factor in this approach. DCD mediates the link between technical factors as represented by artificial intelligence capabilities, as well as organizational factors and organizational resilience. This means that the concept of resilience is generated by these factors, but the importance of this resilience cannot be measured across a short time, and its effect must be continued for as long as possible through specific dynamic capabilities, to generate sustainable tourism and have a significant effect at different levels (economic, social, and environmental). By the development of dynamic capabilities is meant the definition of flexibility and adaptation through two main aspects: cognitive and operational. Through DCD, it is necessary to think, plan, and more importantly, incorporate new operations and approaches to acting on operational routines and the use of internal and external resources.

This result confirms that resilience is a constructive concept: it is not a simple and determined fact, but a projection and requires continuity to think, prevent, analyze and prepare a functional plan. Another important aspect of resilience, as demonstrated in this study, is related to the capabilities of artificial intelligence. With the current crisis caused by COVID 19 and the social distancing imposed by this health situation, artificial intelligence becomes very important and assists the majority of activities.

Nowadays, with the transformation and the "new normal", prevention becomes inefficient and anticipation seems to be more beneficial and required. To anticipate, it is necessary not only to analyze the current conditions but also to reflect on the past to learn, the present to understand and the future to anticipate.

Also, this study demonstrates that resilience as a concept is not an objective, because being resilient must be understood, measured, adopted, and applied. Organizational resilience is necessary for sustainability, but it is clear that this effect still depends on the level of dynamic capabilities as a moderating variable and the continuity of resilience must be reinforced.

This conclusion gains importance with the crisis caused by COVID 19, and especially for the tourist organization. The specificity of the context consolidates this concept even further. and the service product as intangible makes this aspect fundamental. To make this clearer, it should be remembered that dynamic capabilities as defined connect to a resource-based view (Teece et al., 1997; Eisenhardt & Martin, 2000) to evolutionary theory (Zollo & Winter, 2002), and both of these at the same time (Wang & Ahmed, 2007).

So, first, as an intangible product (tourism service), creating value is the most important aspect to succeed, and this is possible through dynamic capabilities. Second, as a strategic and organizational process, dynamic capabilities assist the transformation process of turning existing resources into new strategic orientations to create value (Eisenhardt & Martin, 2000) and this will allow the tourist organization to be more innovative. Third, dynamic capabilities are related to a strategic approach and process which involves a long time. Finally, sustainable tourism demands constant improvement to overcome

pandemic effects, and DCD can increase this opportunity to develop in different ways: rebuilding organizational factors for best learning, integrating internal and external resources to maximize profit, renewing its services to create a new image, and new methods of attraction based on new needs in terms of food, services, environment, health conditions, and better sanitary conditions. The pandemic offers new horizons and redefines tourism's features, with a focus on reconfiguring the existing attractive destinations with the minimum of resources and effort.

This brief analysis is used to explain how DC can be beneficial for organizational resilience and sustainable tourism. However, this research also provides a new configuration of these capabilities and treats them differently: using two levels (moderator and mediator) in addition to categorizing them by their nature (dynamic capabilities and artificial intelligence capabilities).

So far, it is clear that artificial intelligence capabilities must be reconsidered in this context, and this is not a question of collecting data. Information is available to everyone at any time, but the question of how to use it, interpret it and understand it will create a difference and can make this difference valuable.

This research has investigated resilience for organizations in the tourism industry to achieve sustainable tourism. A conceptual model was developed based on five main factors: organizational, individual, environmental, technical, and dynamic capabilities development. This model was tested to understand the relative importance of each factor for the development of resilience and its effect on sustainable tourism.

The findings indicate that the development of dynamic capabilities mediates the effect of organizational factors and technical factors on organizational factors.

The results show that there are predefined factors for resilience and other factors which are developed or constructed to guarantee resilience and continuity of resilience. Furthermore, the level of resilience is directly associated with specific predefined factors. In addition, the degree of resilience seems to be important, as the need for dynamic capabilities becomes a defining issue. Robustness, agility, and integrity as resilience dimensions must be managed differently. Robustness requires substantially more dynamic capability than agility and integrity.

6.1. Contributions

This study enriches the existing literature on tourism resilience and dynamic capabilities development. It provides a critical pathway for both resilience and sustainability in terms of a variety of factors. It provides recommendations for tourism affected by the Covid 19 pandemic. Results reinforce one of the most important aspect of Vision 2030 which is sustainability.

All of these findings can help provide new information to better understand how to plan resilience and sustainability oriented to the tourism strategy.

Two main concepts can make the difference in this orientation: development of dynamic capabilities and artificial intelligence capabilities, which are highly correlated.

6.2. Limitations and further suggestions

Independently, some critical limitations have to be considered. The first deals with the new perspective

developed in this research, in fact further research can develop an additional strategic approach to make this conception more pragmatic. Second, a longitudinal study seems to be more useful to appreciate the effect of dynamics capabilities more than a punctual perspective. Additional factors can emerge and can reinforce this primary investigation. Third, spatial approach could be also, more effective to define sustainable and resilient tourism. Future research are also, called to verify the eventual complementarity between sustainable tourism can effectively stimulate and sustainable development goals (SDGs) during post-pandemic period.

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