International Journal of Safety
and Security in Tourism/Hospitality

The Management Practices of Tourism SMEs in Pandemic Times: innovation as a quest of survival

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Abstract

The objective of this paper is to analyze the strategies and actions implemented by small and medium-sized companies in the tourism sector (SMEs) based on the social and economic crisis caused by COVID-19. The study focuses mainly on direct customer service on the coastline of the Metropolitan Area of Puerto Vallarta, including souvenir shops, accommodation, restaurants, and art galleries, among others. Our argument is that to keep operating, companies had to implement various changes, mainly the incorporation of digital tools in their management and communication processes with both suppliers and their customers. The research uses quantitative methods, both digital and traditional (face-to-face) instruments were used to data collection in order to overcome the obstacles imposed by the social distancing, and confinement required in the general population. The results show what were the activities implemented by the companies that contribute to innovation, as well as particularly two types of innovation, according to the Oslo Manual (2007) in relation to commercial and organizational innovations. We conclude that tourism is an activity of direct contact with the consumer and experience, which limits certain

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services to be digitalized, so that it must be considered the profile of tourists, the age group and their region of origin to explain the acceptance to digitalization of some practices related to the provision of tourist services.

Keywords: Innovation, Tourism, Small and Medium Enterprises (SMEs), Pandemic, Puerto Vallarta.

Introduction

A point of agreement among international organizations is the resurgence of different economic activities within a framework of greater social and environmental balance. In addition, the use of digital technologies was already considered *a sine qua non* condition for the competitiveness of various economic sectors. However, the "new reality" imposed by the current pandemic situation constrains to adapt to a context of innovation and digital transformation to a large portion of the business sector globally, in whose environment of social and economic crisis, could generate vulnerability for this adaptation in various segments.

The World Tourism Organization (2021a) states that the digital transformation will impact this sector through three central axes: the provision of intelligent travel facilities; the constitution of smart tourist destinations and the emergence of new profiles in the labor market. From the above, in relation to tourist destinations, the following questions arise:

> *Has innovation in the supply of tourism products and services accelerated as a result of technological advances due to the conditions of the health crisis?*

Empirically, a multi-case study has been designed to identify the technological innovations that were incorporated in small and medium-sized[4] companies in the tourism sector. The territorial scope of analysis is the Puerto Vallarta region, formed by the municipalities of Puerto Vallarta and Bahía de Banderas, Mexico. In economic terms, the importance of tourism in national economies is reflected in its contribution to the Gross Domestic Product and the generation of

[4] La caracterización de PYMES ha sido definida en el apartado de Metodología.

employment. Mexico found in tourism a way out of the population and to safeguard the coasts against internal and external threats derived from the war conflicts in the mid 20th century, besides contributing to the development of segregated areas since the Porfirian dictatorship. The *Fondo de Garantía de Fomento al Turismo* [Tourism Development Guarantee Fund] was created in 1956, as the first effort of the federal government to guarantee the promotion of tourism and the precursor of the current *Fondo Nacional de Fomento al Turismo* [National Tourism Development Fund] (FONATUR), created in 1974. The main program carried out was that of Integrally Planned Centers (CIP), developed by the State and whose border and isolation situation presents scarce population, which implies risk and vulnerability to the interests of the neighboring country to the north, that is, it was a strategy developed by the central power for geopolitical reasons (César and Arnaiz, 2004).

However, contrary to a planned destination, but equally functional for geopolitical purposes (César y Arnaiz, 2004) Puerto Vallarta appears on the international map as a consequence of the publicity generated by movie stars such as Elizabeth Taylor and Richard Burton, who made this city the preferred refuge of their romance in the sixties, awakening great interest in the American market that began to move more and more towards this Pacific zone until it consolidated itself as one of the most visited Mexican sun and beach destinations among Riviera Maya and Los Cabos (Sectur, 2017) at a national and international level. Currently, tourism is a very important economic activity for Mexico. In 2019 Mexico was in the seventh position in the world in the internment of tourists, with the arrival of 45.0 million, generating an income of 24.6 Billion Dollars to the country (UNWTO, 2020). According to INEGI (2020) the participation of tourism GDP in the Mexican economy was 8.7% in 2019. Particularly, around 2.3 million paid occupations have been generated in tourism-related activities, representing 5.8% of the total paid occupation in the country. According to data from the Secretary of Tourism - Sectur (2019) the tourist region of Puerto Vallarta has received in 2019, by air, 24,98,365 national and international tourists, occupying the seventh position among the thirty-one existing airports in the country. By sea, the arrival of 482,335 passengers has been registered, in 181 arrivals; the fifth place among the 31 Tourist Ports in the country.

Image 1. Geographic location of the Puerto Vallarta Metropolitan Area

Fuente: Adaptation based on INEGI, 2004.

Due to the Sars-Cov2 pandemic, decreed by the World Health Organization on March 11, 2020, the world economic, social and political scenario is undergoing a drastic change, with conditions related to "low growth, increased poverty and growing social tensions" (Economic Commission for Latin America and the Caribbean - ECLAC, 2021). In this scenario the most affected have been "women, youth, the poor, informal sector employees and workers in contact-intensive sectors" (International Monetary Fund - IMF, 2021: n.p.).

In countries and regions where structural inequality is a historical problem, this situation becomes even more difficult. This is the case of Africa and Latin American countries, among others. According to estimates presented by ECLAC (2021) in 2020, extreme poverty in the Caribbean and Latin America reached 12.5%, while the poverty rate reached 33.7% of the population. According to UNWTO (2021) due to the pandemic, in 2020 there was a 74% reduction in international arrivals. Likewise, countries and regions where tourism is a key activity in the economy have been greatly affected, as a characteristic of this situation is that it is one of the first economic sectors impacted. Thus, if the empirical and practical context and implications of the current scenario seem to be self-evident. However, the theoretical problematics related to the crisis and tourism aren't so simple to be observed, being just recently

came up due precisely the worldwide exposure given by the pandemics and they have substantial future scope (Duan et al, 2021). For example, Duan et al (2021) show that research on tourism crises has event-driven characteristics, they are more concentrated Asia, Europe, and North America and they are organized in multiple subcategories, where the most common way to fame – especially when seen through their effects on tourist destinations – are in the macro, meso, and micro levels. So, since tourism industry is a very sensitive one (Korstanje, 2012; Zhong et al, 2021), and considering the way the crises is managed, in what synergistic factors can enhance or weaken (Duan et al, 2021), the main task imposed to the sector and all the stakeholders involved is to be able that to the recognize, prevent, plan actions and take decisions to intervene before crises, in orer to mitigate them, or during them in order to minimize their effects (Laws & Prideaux, 2006; Korstanje, 2012). In doing so, the issue of knowledge and research in tourism arises, and both needs to be revised: the research in tourism needs to shift from the tourist centric to an alternative approach (Korstanje, 2020) and the practical knowledge and innovation needs to be reviewed (Zhong wt al, 2021). That is precisely on the later that lays this paper.

Literature Review

There are various approaches to innovation and its construction as an analytical category. Schumpeter's contribution since the first decade of the 20th century to the theory of Economic Development and the incorporation of innovation as a key factor for it, has been a reference for the approaches that other authors have developed over the following decades. For Schumpeter (1978) the effects of technological and social changes, i.e. technology, innovation and socio-cultural environment, have a more decisive and dynamic impact, since these immaterial factors were called forces or factors of economic development or economic evolution. Economic development is thus understood as a dynamic phenomenon of qualitative transformation of society and the economy. Hence, he bases a theory of economic development on the processes of technological innovation and development and on socio-cultural change, so that economic development is a process of qualitative transformation of society and the economy. Schumpeter, in the thirties, identifies these innovations in five categories that together are the causes of revolution of the economic structure in an endogenous process in a sort of "creative destruction":

1) The introduction of new consumer goods (products);

2) Emergence of a new method of production and transportation;

3) Opening of new markets;

4) Generation of new sources of supply;

5) Change in the organization or in its management process.

For Schumpeter (1978) innovation should be understood as an invention that is introduced into the market, with the potential for industrialization and, therefore, for the market. Hence, the fundamental force that moves capitalist production and the system as a whole of its economic development is the technological phenomenon and with it, the process of technological innovation, but not incremental innovations, but radical innovations, those that are capable of revolutionizing society and the economy. Moreover, it is in the concrete social-historical framework, and not outside it, that technology is generated, transformed and used. In the 1960s Thomson (1965) pointed out that innovation is the generation and implementation of new ideas, processes, products or services, and Nelson (1968) mentioned that it is the process by which new products and techniques are introduced into the economic system. In the following two decades, concepts are built around the "perception of new ideas, practices or objects" that are introduced into the market (Zaltman, Duncan and Holbeck, 1973; Tushman and Nadler, 1986; Deward and Dutton, 1986). One of the main contributions towards an internationally accepted conceptualization is from the OECD and Eurostat in the Oslo Manual (2006, 2007) whose 1997 definition is updated in the first decade of the 21st century and integrates non-technological innovations, incorporating other categories, namely commercial, organizational and technological innovation, even if they are only new for the company that carries them out, without forgetting that if innovation does not translate into benefits it is not innovation (Mulet Meliá, ND). More specifically, innovation is defined as "the introduction of a new or significantly improved product (good or service) or process, or the introduction of a new marketing or organizational method applied to business practices, work organization or external

relations" (OECD-EUROSTAT, 2007: 49). The above incorporates the notion that they can be ideas developed for the first time by the company, but also those that although developed by third parties, have been adopted in the organization. In addition, a common characteristic of all innovation is that it "has gone to market" (OECD-EUROSTAT, 2007: 49). Thus, the Oslo Manual (2007) agrees with Schumpeter (1978) in that the ultimate objective is to improve performance, either to increase demand or to reduce costs. However, it adds that in addition to Research (Basic and Applied) and Development (R&D), there are other activities that the company can implement and contribute to innovation and distinguishes six activities (OECD-EUROSTAT, 2007):

1) Imagining new products, processes or business methods or organizational changes;
2) Purchasing technical information or buying know-how and skills from third parties;
3) Developing Human Resources (HR) skills;
4) Investing in equipment, software or intermediate goods;
5) Reorganizing business management systems;
6) Developing new business methods.

Hence, four types of innovations are identified, as shown in Table 1: 1) Product; 2) Process; 3) Commercial; and 4) Organizational.

Table 1. Types of Innovation according to the Oslo Manual, 2007

Type of Innovation	Description

Product in Services	May include significant improvements in supply operations, the addition of new functions or features to existing services, or the introduction of completely new services.
Process	It is the introduction of a new or significantly improved method of production or distribution and includes improvements in techniques, equipment or software.
Commercial	The introduction of a new marketing method involving significant improvements in product design or presentation, positioning, promotion or pricing
Organizational	The introduction of a new method of organization applied to business practices, work organization or external relations of the company and involves reorganizing work routines and procedures as well as the distribution of responsibilities.

Source: own elaboration based on Oslo Manual (OCDE-Eurostat, 2007)

Although the OECD clearly states that product innovation includes significant improvements in technical specifications, components or materials, incorporated software, ergonomics or other functional characteristics, it is important to highlight the subcategory that differentiates "tangible" products from those that are not, i.e., product innovation in services, which makes it possible to work with this category in the tourism cluster.

Derived from the nature of services, one characteristic is that they are produced at the same time as they are consumed, which can generate confusion when differentiating between product (service) and process innovation. In this case, if the innovation involves new or significantly improved characteristics of the service offered to the client, it is a product innovation; however, if it involves new or significantly improved methods, equipment or knowledge used to improve the provision of the service, it is a process innovation.

Following Schumpeter, Montoya (2004: 211) points out that an entrepreneur is the person (with or without business) who is capable of generating and managing radical innovations within or outside organizations, i.e., he takes up Schumpeter's (1978) notion of "innovative entrepreneur" as the one who is the propitiator of innovation processes and, consequently, the cause of development.

In contrast to the above, according to the Oslo Manual (OECD-EUROSTAT, 2007) not all change is innovation; thus, ceasing to use a process, a commercial or organizational method, or ceasing to market a product is not innovation, just as a simple replacement or increase in capital is not innovation either. The above is in line with what Schumpeter already differentiated in the thirties, between a "company" as one that "makes new combinations" clearly referring to the incorporation of innovations (Montoya, 2004: 212). Accordingly, the phenomenon of innovation cannot be studied apart from the structure of economic interests and power in which it is generated, developed and used, since an analysis of innovation must start from the understanding and recognition of the existing relationships between this socio-cultural framework and the innovative process (Montoya, 2004).

Innovation in business models

The incorporation of digital technologies has changed various areas of life (Curbelo, 2018). In the business sector in particular, Information and Communication Technologies (ICT) have been fundamental, as they facilitate various administrative activities, in addition to the automation of processes, which leads to cost reduction and increased productivity (Cholán & Cano, 2016; Chávez & Villavicencio, 2020). Likewise, the possibility of accessing an infinite amount of data in real time and access to various technological tools allows companies to perform analysis and predictions to observe and control consumer behavior (Rey-García, 2019). Chávez and Villavicencio (2020) propose that the choice of digital processes to developing organizations should be made based on calculations of economic profitability, according to each alternative solution, in addition to the implementation of a culture of digital transformation according to the characteristics of the organization. In this context, observing the attributes of the network society, Uriarte & Acevedo (2018: 36) point out the concepts of "globalization, digitalization, or adaptability" for the formation of "new business models and opportunities", which also affects the social, academic and public administration spheres, which must adapt. In the words of Curbelo (2018, p. 136) "the transformative impact of the digital affects not only how it is produced, but also how it is lived, and, above all, the balances in the distribution of income, wealth, expectations of social mobility and, ultimately, the economic and political model itself."

However, digital transformation occurs in different ways and with different intensity depending on the economic sectors and the characteristics of the products or services offered. According to Roca (2014), banks and electricity companies are going through a slow, orderly and continuous transition process, while the media and entertainment such as the press, cinema and music have undergone a disorderly and rapid change in the 2010s.

It is still substantial to note that depending on the type of organization, change management should be based on flexible processes, since environmental interferences, such as "new regulatory laws, changes in policies or business strategies or emerging technologies" can generate unforeseen effects on the implemented business model (Varón-Serna et al., 2017: 27).

Therefore, it is important to keep in mind Vacas' (2018: 140) pointing out that "technology acts as a catalyst, but it is (never) a sufficient condition for digital transformation, the priority task of any organization is to reorient its strategy, identifying what should not change, what can be improved, what should be suppressed and what has to be enhanced with the help of technology." According to ECLAC (2020a) in the period from 2004 to 2018, significant progress has been observed in the implementation of a digital ecosystem in Latin America, however, the region still lags behind developed regions such as North America, Western Europe, Eastern Europe and the Arab States. Moreover, the OECD (2020) notes that micro and small enterprises have at this time of pandemic an opportunity to reduce the gaps in the connection with the markets and increase their competitive capacity. However, it is argued that digitalization can be effective in generating development if it is a universal and inclusive strategy. Thus, policies to support the adoption of tools, infrastructure and knowledge appropriate to each context are essential.

Digital transformation

According to Lee, Lee and Chou (2017) Industry 4.0 is characterized by the occurrence of digitization at all levels of the physical assets of an organization, in addition to the integration in digital ecosystems within the value chain; different from Industry 3.0 which is based on the automation of individual machines and processes.

In this context, the concept "Digital Transformation" constitutes in using and integrating various digital technologies to improve business performance and service to stakeholders (Uriarte and Acevedo, 2018). Basically, it is a change in the processes carried out manually, which are now executed digitally, from software tools and the Internet, so that changes are generated not only operational, but also of value in products and services (Chávez and Villavicencio, 2020). Thus, the activities operated by human capital can be optimized, through process automation and decentralization of functions (Katz, 2018; Chávez and Villavicencio, 2020). The result sought is an increase in competitiveness and profitability (Vacas, 2018). Therefore, digital transformation should be guided by a broader business strategy, based on three key areas: processes, innovation and digitalization (Tabrizi et al., 2019). Similarly, Roca (2014) has mentioned four stages that describe the digital transformation of businesses: the digitization of processes, customer touch points in the virtual or remote environment, the design of services and products consumed through digital platforms, and the adaptation of business models. However, small and medium-sized enterprises, have more limitation of economic resources and technological know-how, "which puts them in a difficult situation to compete and survive" (Uriarte & Acevedo, 2018: 37). Now, according to the Organization for Economic Cooperation and Development - OECD (2018; 2020) only one third of workers in Latin America and the Caribbean use digital tools in their work activities, while in Europe this number represents more than half of the workers. On the other hand, particularly in the recent Latin American context, digital transformation is posed as an opportunity for countries to overcome the difficulties for development, which have increased due to the Covid-19 pandemic (OECD et al., 2020). In this context, in the business sphere, the ECLAC Report (2020a: 26), highlights the importance of "promoting a productive digital transformation", substantially supporting micro, small and medium-sized enterprises (MSMEs), so that the implementation of public policies promote the change of "management processes to incorporate the use of digital technologies in supply chains, processing, manufacturing and operations, as well as in distribution channels" (ECLAC: *Idem*). Therefore, innovation in production and management processes must be accompanied, or rather, sustained by the development of Knowledge Management methodologies according to the changes implemented (Uriarte and Acevedo, 2018; Diogo et al., 2019). Likewise, it is significant to reason that these innovations can lead to cultural changes that challenge the *status quo*, and the ability to feel comfortable with failure (Chavez and Villavicencio, 2020). Traditional organizations, which were used to a logic of linear, slow and gradual changes, in this scenario of digital transformation need to

update their mindset, to deal with rapid and unpredictable moves (Muniz, 2020). In this sense, the transformation of organizational behavior represents a very important element for the successful incorporation of digital changes in organizations (Uriarte & Acevedo, 2018; Fernandes, Fleury & Silva, 2019). Likewise, training and constant updating are crucial for organizations to follow this adaptive process (Chávez & Villavicencio, 2020). In summary, according to Parviainen et al. (2017) and Fernandes, Fleury & Silva (2019) the digital transformation is constrained from the organizational level, but also in the social microsystems, leading to alterations at the level of organizational processes, through the incorporation of new digital tools that lighten the company's practices; at the organizational level, by offering new services or recycling existing ones; at the ecosystem level, through modifications in roles and value chains; at the societal level, as they can alter social structures, influencing, for example, consumer decision-making.

Methodology

There are various criteria that countries use to classify micro, small and medium-sized enterprises (MSMEs), according to the economic policies and strategies necessary for their development, which are determined according to their national or regional contexts and the particular needs related to these economic segments (Saavedra and Hernández, 2008). For the present study, the definition of Micro, Small and Medium Enterprises was established according to two components, the number of workers in the enterprise (or employment) and its annual balance sheet (or sales) shown in Table 1.

Table 1. Stratification of MSMEs in the third sector (services) in Mexico.

Size	Number of employees	Income (million MXN)
Microenterprise	Up to 10	Up to 4
Small enterprise	11 - 50	From 4.01 to 100
Medium enterprise	51 - 100	From 100.01 to 250

Fuente: self-elaboration based on *Diario Oficial de la Federación* (2019).

Currently, the term SMEs includes the subcategory "microenterprise" to refer to smaller business units with up to 10 employees. Thus, in relation to the total number of employees, it is observed

that in both countries the delimitation is similar for the subcategory microenterprise, with a maximum of 10 employees, and for small enterprises, up to 50 employees. However, in Mexico, a medium-sized company is considered to be one that has between 51 and 100 employees in the service sector. As can be seen, the annual balance sheet criterion is directly related to the economy of the countries and their development, while the criterion of the number of employees is more similar, which is why it will be the component adopted in this study for the categorization of the sector analyzed.

Data collection methods

By means of a synchronous comparison, data collection techniques were used:

- Direct observation. Conducting tours in the observed tourist sites.
- Documentary analysis. Consultation of official sources: Ministry of Tourism (Mexico).
- Self-application survey (online), telephone survey and personal survey (face-to-face). Application of a questionnaire to owners of SMEs, with the objective of identifying the transformations carried out to keep operating due to sanitary restrictions and their impact on the companies.
- Semi-structured interviews. Applied to social representatives and representatives of the business sector. The objective was to identify the global perception of the sectors regarding the conditioned changes due to the pandemic.

Characterization of the study universe

To define the universe of analysis in Puerto Vallarta-Bahia de Banderas, the fixed establishments of the tourist strip in both study municipalities were selected, with complete information on the segment in the tourism sector, the size of the company (observed through the total number of employees), in addition to the municipality and localities where the establishment is located (Table 2).

Table 2. Study universe according to category enterprises of interest[5]

Size (by number of employees)	Number of enterprises
0 a 10	1,709
11 a 50	278
51 a 100	18
101 a 250	27
más de 250	23
Total	**2,055**

Source: INEGI, DENUE (2021b).

In this universe, it was evident that microenterprises are more representative in the study region, constituting more than 90% of the business sector, while small enterprises represent less than 10% and medium-sized enterprises less than 1% of the organizations (DENUE, 2021b). The economic segment with the highest representation is Bars, Restaurants, Cafeterias and similar (75%), followed by Accommodation services (13.3%), Travel agencies and travel organization (4.1%), Transportation (4.1%), Events (0.5%) and Other types of businesses (2.4%) (Table 3).

Table 3. Economic units by geographic zone according to category of interest.

Category	Geographic zone		Total
	Bahía de Banderas	Puerto Vallarta	
Bars, restaurants, Coffee Shops and similar.	768	783	1,551 (75%)
Accommodation service	148	126	274 (13.3%)
Travel agencies	0	85	85 (4.1%)
Transporting	8	77	85 (4.1%)
Events organization	4	6	10 (0.5%)
Other	21	29	50 (2.4%)
Total	949	1,106	2,055

Source: INEGI, DENUE (2021b).

[5] Those within tourism cluster in geographic zone studied.

The distribution of the universe of application of the study by localities is presented in Table 4. The localities where the survey was applied in person were defined due to the high concentration of tourism businesses. In the other localities, the surveys were applied by telephone and online.

Table 4. Sites of applications in Puerto Vallarta-Bahía de Banderas

Municipality	Coastline sites of application	Economic units
Puerto Vallarta	Zona Hotelera Sur Colonia Emiliano Zapata (Zona Romántica)* Centro-Malecón* 5 de Diciembre Zona Hotelera Norte Versalles* Marina Vallarta*	1,106
Bahía de Banderas	Nuevo Vallarta* Bucerías* La Cruz de Huanacaxtle Punta Mita El Nuevo Corral del Risco Higuera Blanca Litibú Sayulita San Francisco Lo de Marcos	949
Total Universe	2,055	

*Application *in locu.*

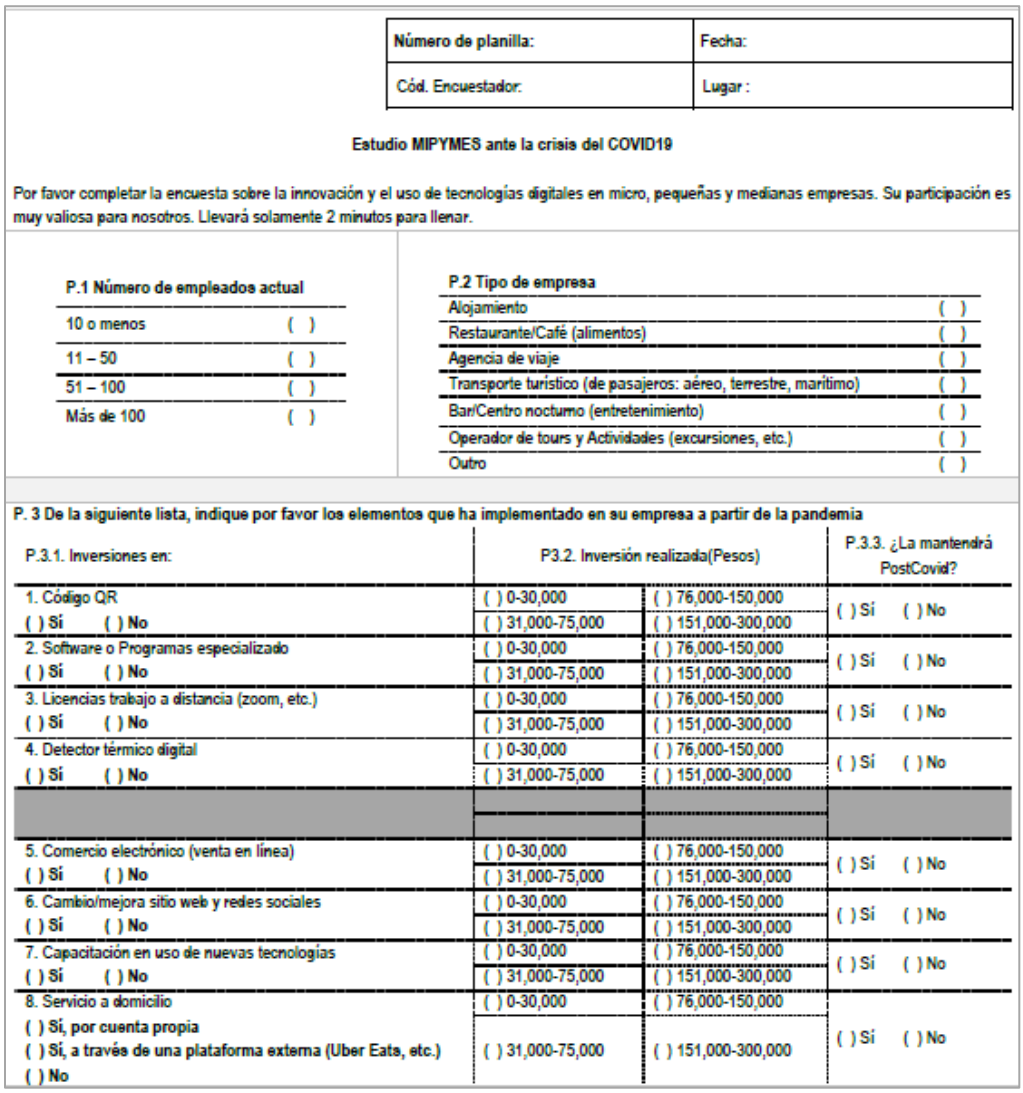
Source: INEGI, DENUE (2021b).

Table 5. Methodological frame

Concept	Description
Method	Electronic survey Phone survey Personal (face-to-face) survey
Universe	2,055
Sample size	253
Confidence level	95%
Margin of error	+/-6
Application date	May 1st to June 15th 2021.
Software used to application and statistical analysis.	Rotator Survey Modelador de Estudios V.29.72 Microsoft Excel

Source: Own elaboration.

Image 2. Questionnaire used for quantitative method.



Número de planilla:	Fecha:
Cód. Encuestador:	Lugar :

Estudio MIPYMES ante la crisis del COVID19

Por favor completar la encuesta sobre la innovación y el uso de tecnologías digitales en micro, pequeñas y medianas empresas. Su participación es muy valiosa para nosotros. Llevará solamente 2 minutos para llenar.

P.1 Número de empleados actual

10 o menos	( )
11 – 50	( )
51 – 100	( )
Más de 100	( )

P.2 Tipo de empresa

Alojamiento	( )
Restaurante/Café (alimentos)	( )
Agencia de viaje	( )
Transporte turístico (de pasajeros: aéreo, terrestre, marítimo)	( )
Bar/Centro nocturno (entretenimiento)	( )
Operador de tours y Actividades (excursiones, etc.)	( )
Outro	( )

P. 3 De la siguiente lista, indique por favor los elementos que ha implementado en su empresa a partir de la pandemia

P.3.1. Inversiones en:	P3.2. Inversión realizada(Pesos)		P.3.3. ¿La mantendrá PostCovid?
1. Código QR ( ) Sí ( ) No	( ) 0-30,000 ( ) 31,000-75,000	( ) 76,000-150,000 ( ) 151,000-300,000	( ) Sí ( ) No
2. Software o Programas especializado ( ) Sí ( ) No	( ) 0-30,000 ( ) 31,000-75,000	( ) 76,000-150,000 ( ) 151,000-300,000	( ) Sí ( ) No
3. Licencias trabajo a distancia (zoom, etc.) ( ) Sí ( ) No	( ) 0-30,000 ( ) 31,000-75,000	( ) 76,000-150,000 ( ) 151,000-300,000	( ) Sí ( ) No
4. Detector térmico digital ( ) Sí ( ) No	( ) 0-30,000 ( ) 31,000-75,000	( ) 76,000-150,000 ( ) 151,000-300,000	( ) Sí ( ) No
5. Comercio electrónico (venta en línea) ( ) Sí ( ) No	( ) 0-30,000 ( ) 31,000-75,000	( ) 76,000-150,000 ( ) 151,000-300,000	( ) Sí ( ) No
6. Cambio/mejora sitio web y redes sociales ( ) Sí ( ) No	( ) 0-30,000 ( ) 31,000-75,000	( ) 76,000-150,000 ( ) 151,000-300,000	( ) Sí ( ) No
7. Capacitación en uso de nuevas tecnologías ( ) Sí ( ) No	( ) 0-30,000 ( ) 31,000-75,000	( ) 76,000-150,000 ( ) 151,000-300,000	( ) Sí ( ) No
8. Servicio a domicilio ( ) Sí, por cuenta propia ( ) Sí, a través de una plataforma externa (Uber Eats, etc.) ( ) No	( ) 0-30,000 ( ) 31,000-75,000	( ) 76,000-150,000 ( ) 151,000-300,000	( ) Sí ( ) No

Source: Own elaboration.

Finally, for the qualitative analysis, the sample was composed of the representatives of the main organizations that constitute the most representative business segments of tourism in the tourist region studied. Likewise, key actors from the academic sector were also interviewed; whose vision of the concrete reality of tourism in the regions examined was valuable for understanding the observed context.Specifically, the profile of the key actors interviewed is that of business and academic representatives, with several years of activity and / or study of the tourism field and

with great knowledge about the development of tourism in their countries and cities. The reporting organizations are presented in table 6.

Table 6. Organizations included in the qualitative study.

Segment	Organizations
Acommodation	Asociación de Hoteles Riviera Nayarit Asociación de Hoteles de Puerto Vallarta
Bars, Coffee Shops, Restaurants	CANIRAC - Cámara Nacional de la Industria de Restaurantes y Alimentos Condimentados
Events	OCV - Oficina de Visitantes y Convenciones de la Riviera Nayarit
Operators and travel agencies	Asociación de agencias de viajes de Puerto Vallarta
Other sectors	AEBBA - Asociación de Empresarios de Puerto Vallarta y Bahía de Banderas, A.C. CANACOPE - Cámara Nacional de Comercio en pequeño Servicios y Turismo de Puerto Vallarta Fideicomiso de Promoción Turística – Zona Bahía de Banderas
Academy	Observatorio Integral Turístico y Universidad de Guadalajara

Source: Own elaboration.

Results

In Mexico, the implementation of measures focused on inhibiting the mobility of the population by restricting leisure options and requesting the reorganization of work in companies to be carried out remotely. The closure of non-essential activities and limiting the capacity in public and private spaces implied a partial closure of establishments dedicated to hotels and restaurants during 2020. According to the ENOE (2020), micro and small businesses in Mexico account for 68.6% of the employed population6. Based on this, according to the Federal Government's statements, in Mexico the support actions focused on financing micro and small businesses mainly with microcredits of 25,000 and 51,000 pesos at preferential rates of 0% to 6.5% per annum. The objective was to promote the permanence of this business sector applicable to economic units engaged in the commercialization, production of goods and/or provision of services.

[6] In non-agricultural sectors.

Table 7. Main containment measures implemented by the Federal Government with economic impact on SMEs, 2020-2021.

COVID-19's main containment measures
National Day of Healthy Distance.
Suspension of work, school and social activities.
Limitation to essential activities[7] and application of a traffic light system
Capacity limits in public and private spaces.
Implementation of sanitary protocols in establishments
Use of masks

Source: Prepared by the authors based on information from the Government of Mexico (2020).

Additionally, support programs for small entrepreneurs were implemented as part of the social and economic policy implemented by the federal government as of 2019. To these programs are added state programs, in this case of the Government of Jalisco. In the case of the Federal Programs, the main ones are: *Tandas para el Bienestar, Crédito a la Palabra, Apoyo Solidario a la Palabra* (Secretaría de Economía, 2021). In particular, the State Government implemented the Zero Rate Loans *[Préstamos Tasa Cero*] as part of the "Plan Jalisco. As part of the context in which the health emergency has developed, other aspects that have influenced the socioeconomic crisis of SMEs in Mexico are the high unemployment rate, labor precariousness and insufficient investment in Research and Development, as well as others described in Table 8.

[7] The essential activities are those related to the health system and its supply chain, service and supply chain, public safety, attention to victims, state legislative activities, financial services, distribution and sale of energy, generation and distribution of drinking water and services, public services, food and beverage industry, supply centers and food stores, courier services, mechanical repairs and funeral services.

Table 8. Underlying factors that influence the worsening of the social and economic situation.

Main factors influencing the economic situation of SMEs
High rate of informal employment [8]
High level of poverty [9]
Low R&D spending [10]
Precarious working conditions [11]
Public debt
Dependence on tourism. Tourism regions "mono-producers" of tourism.

Source: Own elaboration based on INEGI, 2021; CONEVAL, 2018; UNESCO, 2021.

Sample distribution

The segments "Agencies and Tour Operators" are presented as two disaggregated categories; as well as the segment "Bars, Restaurants, Cafeterias and Nightclubs", the category "Other" is integrated by companies selling Accessories and Clothing (beach, traditional, etc.), Souvenir Shops, Handicraft Shops, Art Galleries, etc.

Table 9. Sample distribution

Economic units	**Participation (%)**
Accommodation	6%
Tour operators (excursion, etc.)	8%
Bar/Night clubs (entertainment)	5%
Travel agencies	2%
Restaurants/Coffee Shops (food service)	46%
Other	32%
Touristic Transport (de pasajeros: aéreo, terrestre, marítimo)	2%
Total general	**100%**

Source: Own preparation.

[8] 55.5% labor informality rate (INEGI, 2021)

[9] Only 21.9% of population in Mexico is non-poor and not vulnerable (CONEVAL, 2018)

[10] Mexico invests only 0.4% del GDP in I+D (UNESCO, 2021).

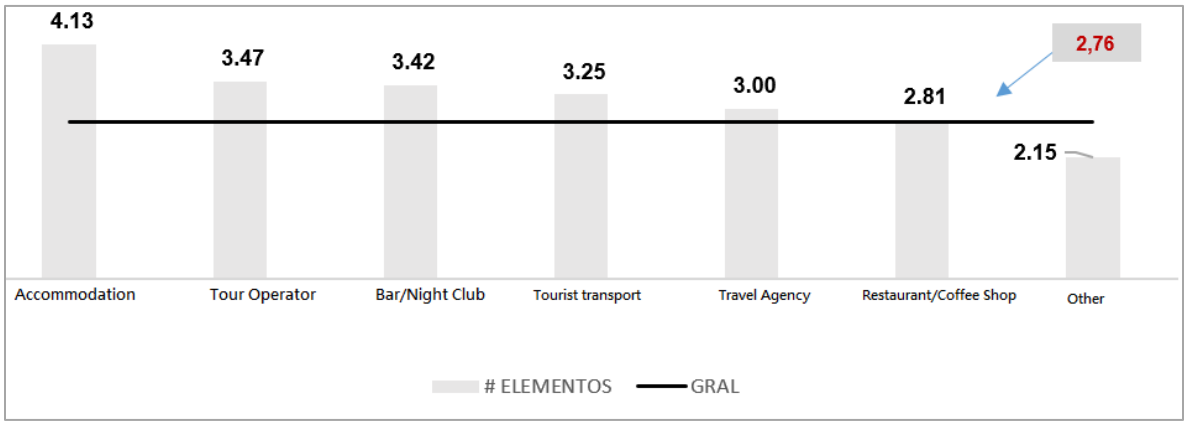
[11] The nominal minimum wage in Mexico has had the largest increase in the last 30 years since 2018, even so, job insecurity worsens in restaurant and hotel companies, reflected in the need to request a “tip” due to insufficient wages and , sometimes, no employment benefits.

Elements contributing to innovation and digitization

With 95% reliability, the average number of elements acquired per company is between approximately 2.5 and 3 elements (graph 1). The elements or actions that have been put to the consideration of the business community are:

- QR code
- Specialized software or programs
- Remote work licenses
- Digital thermal detector
- E-commerce
- Change/improvement of website and social networks
- Training in the use of new technologies
- Home Delivery Service (applicable only to food service)

Figure 1. Average number of items by type of company



Source: Own preparation.

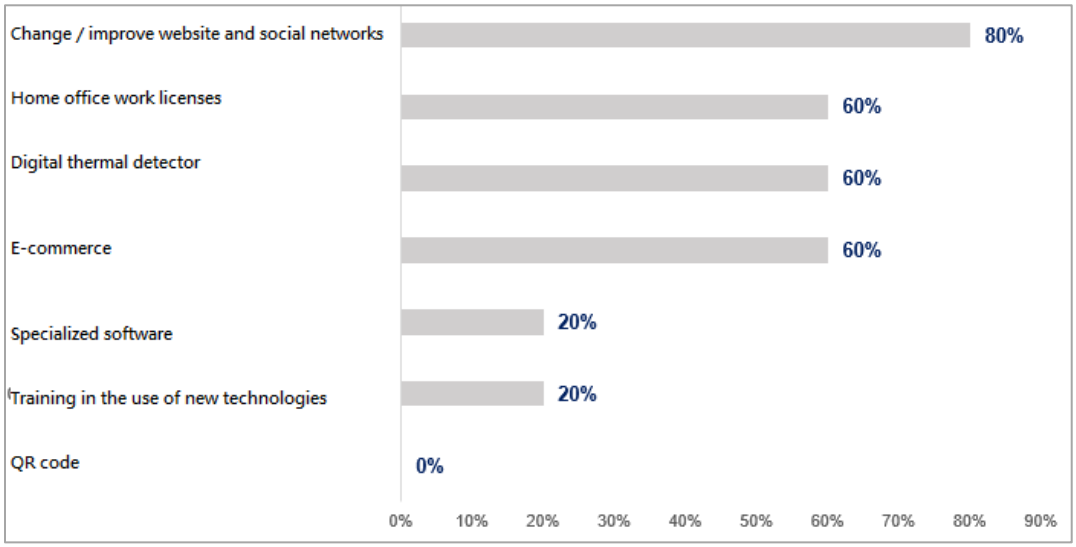
Actions Implemented by "Type of Company".

The percentage adds up to more than 100% because the company selected more than one element, according to all those it has implemented during the pandemic. In the case of travel agencies, it is well known that it is one of the few services that can be provided remotely. Hence, the implementation of QR codes appears as the least used in contrast to other segments. In words of the representative of Travel Agencies in Puerto Vallarta:

> *"Social media, the digitization of the industry come long before the pandemic. I think about eight or 10 years ago the history of social networks began and not only the tourism industry is part of that. A number of business factors have entered social media, so much so that some are confusing". (Travel agencies Puerto Vallarta PV)*

Moreover, it is said that this situation would make this industry more competitive: "[...] the digital transformation in the tourism industry creates a wide range of information on social media, which makes the industry more competitive. But we also have to be careful because within that information there have been many cases of information that is not true" (PV travel agencies).

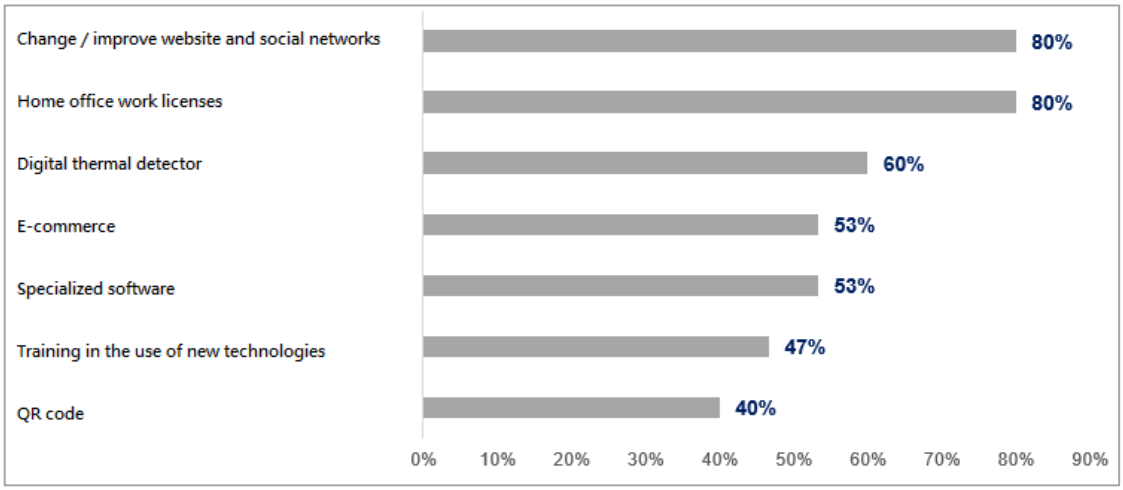
Figure 2. Actions Implemented in Travel Agencies



Source: Own preparation.

For hotels and lodging services, all options were implemented to a significant extent. The improvement in the website and social networks stands out, as well as the use of licenses for work from home (home office).

Figure 3. Hotels and accommodation services' items implemented

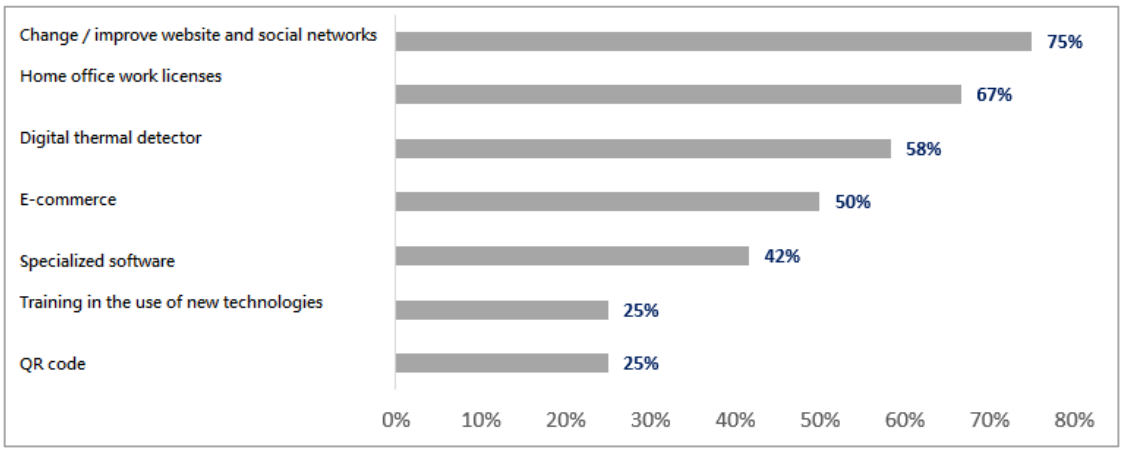


Source: Own preparation.

On the other hand, the implementation of home office work licenses in Bars and Night Clubs stands out, since it would seem that in companies with greater customer service (face to face) this would be unusual. In an interview, the President of the National Chamber of Industry of Restaurant at Puerto Vallarta points out that:

> *"...rather it was the urgency of being in force in the market. If we did not migrate to use electronic means, we would definitely close the establishments […] We had to migrate, look for strategies to reach our clients, about the pandemic. I mentioned that there was already a migration and there were applications and there were already services that we gave electronically. However, he hastened the use of these,... because we did see it as an emergent and immediate market for ..." (Canirac)*

Figure 4. Bars and Night Clubs's items implemented.

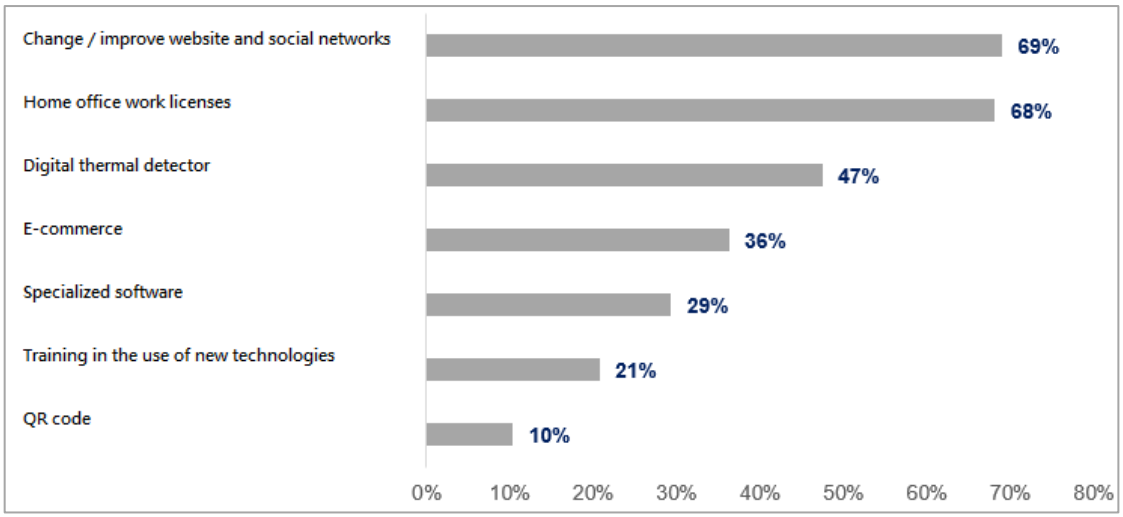


Source: Own preparation.

For Restaurants and Coffee Shops, the improvements started even before pandemic and it is said that digital applications play a very important role in this industry.

> *"It is to compare it with what we have already been working on, because this is not new. I mean, it's a transformation that we've made as traders, as an industry. We have been adapting to the needs. We know that digital applications currently play a very important role because there is a trend towards purchases through electronic media" (Canirac)*

Figure 5. Elements implemented in Restaurants/Coffee shop (food service).

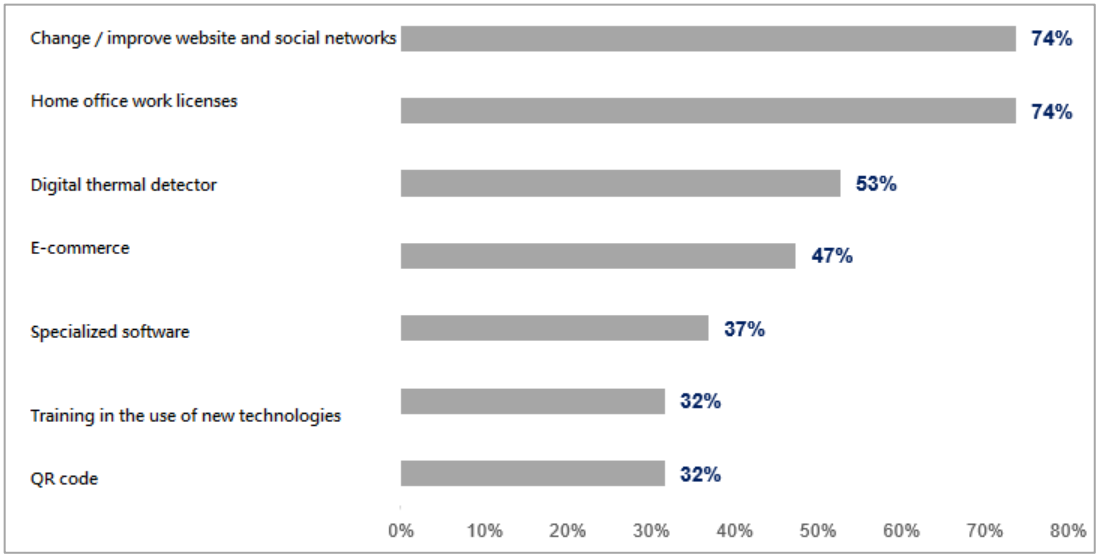


Source: Own preparation.

It is evident that tour operators play a very important role in the tourist experience and that it is very difficult to supply direct customer service through digital media, although they are used as a support for the service itself. For the academic sector, digital transformation takes part of the process of dehumanization, in its own words:

> *"The digital transformation is part of the process of dehumanization of capitalism, in which man is coming out and technology is… forming absolutely everything… it is part of a process. … [In summary] The increase in digitization in society represents a systematic reduction in employment and increased marginalization" (Observatory)*

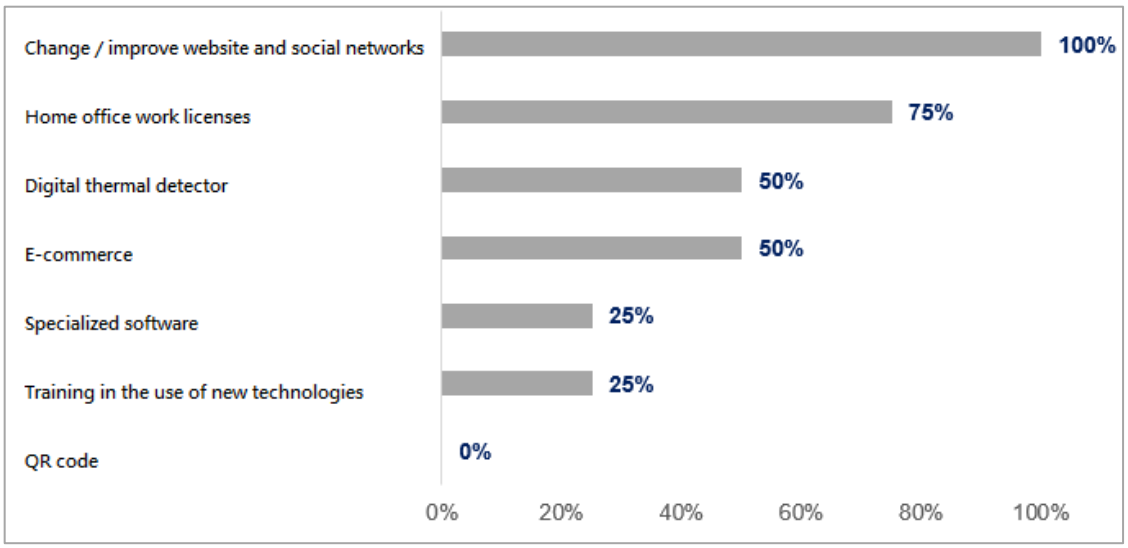
Figure 6. Tour operators and activities.



Source: Own preparation.

In the case of tourist transport companies, it is striking that the use of the QR code is not used in contrast to the use of social networks and web improvements.

Figure 7. Elements implemented in Tourist Transport (air, land, sea).

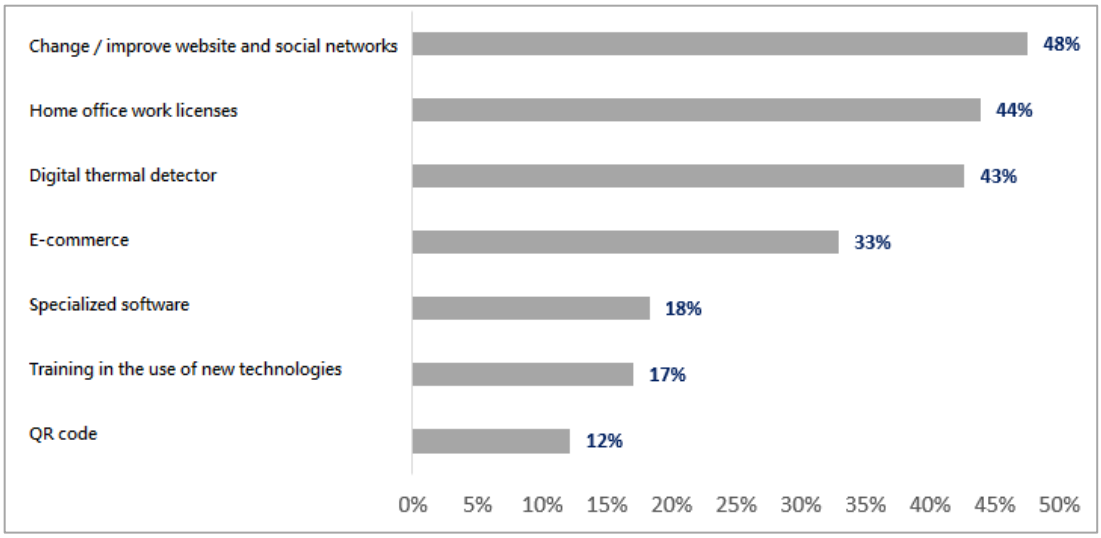


Source: Own preparation.

In the case of "other" that includes clothing stores, souvenir shops, art galleries, ice cream parlors, among others, none of the categories (elements to be implemented) reaches 50%, which indicates a delay in the implementation of actions of digitization compared to the rest of the segments. Hence, it is possible that the need for direct attention intervenes, as part of the tourist experience, that is, it is part of the nature of tourism. In this sense, the President of the Tourism Observatory points out that:

> *In tourism there is the special situation that is Face-to-Face, that is, being face to face. But, but they can give a lot of activities that can be… taken out. And that is what hoteliers are seeing now ... How to simplify my way of cleaning hotels, how to use technology ... (Observatory)*

Figure 8. Elements implemented in the "other" category.

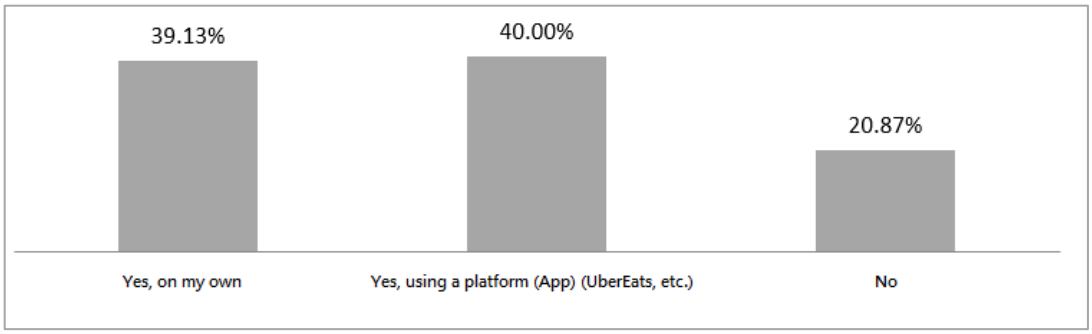


Source: Own preparation.

In the Mexican tourism sector companies, the most assumed element during this pandemic has been the "Changes and Improvements of the WEB site and social networks", where 64% of the companies have carried it out (in terms of range, between 58% and 70% of the companies of the Mexican tourism sector have undertaken this action during the pandemic with a reliability of 95%). The next action taken in number of companies was the acquisition of the digital thermal detector (between 53% and 65% of the companies); the third has been the implementation of "Electronic Commerce" (between 36.5% and 49% of the companies in the tourism sector).

As for maintaining these elements after the pandemic, more than 90% of the companies that undertook improvements in their WEB site or e-Commerce, will maintain these measures in the future. In the case of those who acquired the thermal detector, barely 60% of the companies will maintain it in the future, so presumably it is associated more to a coercive aspect by the local authorities for the compliance of sanitary protocols.

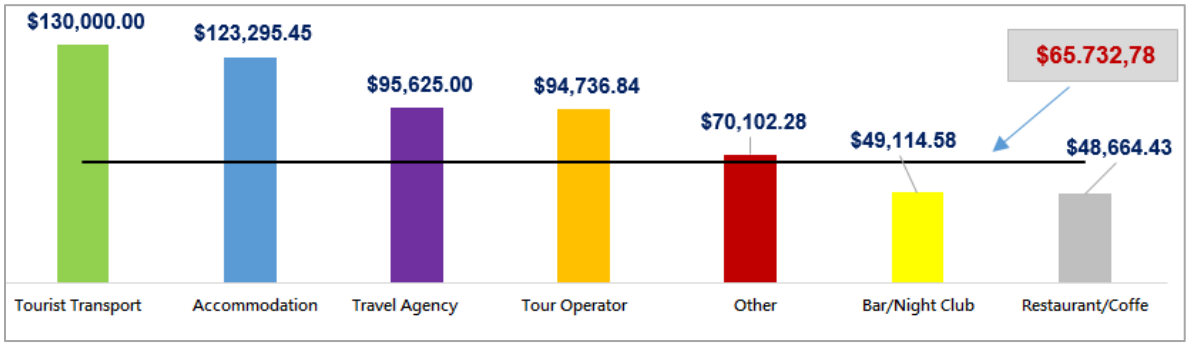
Figure 9. Restaurant/Cafe that implemented home service from the pandemic



Source: Own preparation.

The overall average investment for the implementation of technological elements to support the business is 65,732 pesos. When observing by type of company, for the acquisition of the different elements implemented during the pandemic is considerably higher in transportation companies in relation to bars, restaurants or cafes.

Figure 10. Average investment (MXN)



Source: Own preparation.

Discussion

Based on this scenario, the study sought to answer the following questions: Has the digitalization of the supply of tourism products and services accelerated due to the conditions of the health crisis? What are the limitations faced by SMEs in their incorporation into innovation and digital transformation ecosystems?

We start from the idea that in order to keep operating, companies had to implement various changes, mainly the incorporation of digital tools in their management and communication processes with both suppliers and consumers. In general, the surveys applied to observe the study scenario consisted of small companies (between 10-50 employees). The companies that most incorporated new technologies were in the lodging segment. More specifically, the "Changes and Improvements of the WEB site and social networks" were the most mentioned element, by 64% of the companies, of which 93% indicated that they will maintain these investments after the pandemic. This decision is related to the perception that the promotion and communication by digital media is considered a relevant tool for business, so it would be the case of an innovation, because despite not being a new practice, its use has been expanded during the pandemic. In the same sense, e-commerce has been mentioned by 43% of respondents of which 94% say they will keep them post Pandemic. The incorporation of QR codes also attracts attention because it is a technology that for many companies had not been successful before and due to the need of the health context they have been quite used. The results indicate that 36% used this tool, of which 79% said they would keep it in the post-Covid period.

Finally, due to the nature of the companies analyzed - SMEs - and the service offered - activities related to tourism - the use of telecommuting licenses and specialized software or programs were the least used strategies. This is due, in the first place, to the characteristic of the tourism offer, which is very much based on on-site experiences. Secondly, because they are mostly small companies, they do not have complex departmental divisions that require an alternative structure for the management of the companies.

From the need for transformation, companies had to adapt, mainly stimulated by the search for recovery. On the other hand, this movement has also generated resistance in different ways, mentioned by the interviewees. This was related to the areas of the company that were digitized and the resistance of employees and consumers to the implemented changes.

From the findings, three activities were identified that companies have implemented during the pandemic period and that contribute to innovation, coinciding with OECD-EUROSTAT (2007):

- Human Resources skills development.
- Reorganizing business management systems

- Developing new business strategies

At the same time, two main types of innovation are recognized in Puerto Vallarta Metropolitan Area SMEs according to the Oslo Manual (2007):

1. Commercial Innovation
2. Organizational Innovation

Having said this, and considering all the above mentioned, Roca (2014) can be taken up again insofar as the stages of transformation in SMEs in the study region accelerated during the period 2020-2021: 1) Digitalization of processes, 2) Customer touch points in virtual environment, 3) Design of services and products in digital environments, 4) Adaptation of business models. While Uriarte and Acevedo (2018) already mentioned that SMEs have more limitations of economic resources and technological "know how", which puts them in a difficult situation to survive and compete. In this case, in Mexico there is no government entity specifically oriented to support digitization of SMEs, these efforts are made by the associations to which they belong, as in the case of the advisory and training programs mentioned by the National Chamber of Small Commerce (Canacope). Meanwhile, the support granted by the central government to face the economic crisis has been dispersed with greater facilities by both the central government and the local government of Jalisco.

Likewise, it was identified that the larger companies are the ones that had the greatest margin for incorporating digital tools, either because of their organizational structure and/or the liquidity they had.

Conclusion

The history of mankind is marked by health crises that to a greater or lesser extent have affected people's daily lives due to fear of contagion, depriving them of mobility and enjoyment of recreational activities, or depriving them of their source of income. Due to its characteristics and contemporaneity, the direct antecedent of the current health crisis took place a decade ago during

the outbreak of the influenza A H1N1 virus, affecting the health of thousands of people and complicating the economic situation of several countries around the world.

However, the current Sars-Cov-2 health crisis has brought about drastic social changes in a globalized economy the likes of which have not been seen in the modern era. Consequently, tourism is in a very complicated period for its recovery, mainly in those regions whose economic development depends on this activity and where SMEs and their permanence in the market play a preponderant role for the national economy.

The concern for this sector in Mexico is very similar to the point that the Secretary of State for Tourism (SECTUR) has requested the head of the Federal Executive to consider Tourism as an essential activity (El Universal, 2020) and during 2021 the open borders policy has been maintained for the reception of the foreign market, at the same time that internal mobility for the national market has been primordial for the maintenance of the Micro, Small and Medium companies of the tourism sector.

The Puerto Vallarta-Bahia de Banderas region is the third most important for Sun and Beach tourism in Mexico, together with the Riviera Maya (Cancun) and Los Cabos. However, due to the fact that the country has not closed its borders and its ease of regional connections by air and land, it has been operating minimally since it was authorized to reopen with minimum capacity as of May 2020 in the state of Jalisco and July in the state of Nayarit.

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