




DIGITAL TRANSFORMATION: AN ANALYSIS BETWEEN TRAVEL TECHS AND TRADITIONAL TOURISM COMPANIES IN BRAZIL

TRANSFORMAÇÃO DIGITAL: UMA ANÁLISE ENTRE AS TRAVEL TECHS E EMPRESAS TRADICIONAIS DE TURISMO DO BRASIL

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Keywords	Abstract
<p>Digital Transformation. Tourism. Travel Techs. Digitalization. Technology in Tourism.</p> <div data-bbox="167 1182 402 1438" style="border: 1px solid black; padding: 5px;"><p>ISSN 2594-8407</p></div>	<p>Technology is, in fact, an important variable in the digital transformation of organizations, however, it does not represent the only element of this phenomenon. In tourism, the digital transformation has been causing disruptions and changes in the market, making traditional companies adapt to survive in the face of travel techs (technology companies that operate in the opportunities and inefficiencies of the travel and mobility market). The object of this study was the digital transformation in tourism between travel techs and traditional companies. The objectives were to analyze and understand the effects and potentialization of digital transformation on Brazilian tourism companies, understanding the limits and potential of travel techs and traditional companies in the Brazilian context. For the methodology, a bibliographic and documentary research was carried out among authors from different areas of knowledge and later a collection of primary data between traditional companies and travel techs using the Likert scale to measure the intensity of the responses. After a comparative and descriptive analysis of the data, it was concluded that travel techs have a digital maturity superior to that of traditional tourism companies and that despite a lot of investment in IT, these last companies have difficulties in aligning themselves culturally and generating value for the market through technology. Still, there are many challenges to the success of the digital transformation, which is at an embryonic stage in tourism and which generates concern among professionals and companies that may disappear from the market.</p>



Palavras-Chave	Resumo
<p>Transformação Digital. Turismo. Travel Techs. Digitalização. Tecnologia no Turismo.</p> <div data-bbox="153 949 397 1283" style="border: 1px solid black; padding: 5px;"><p>Submetido em: 09/10/2023 Aprovado em: 18/12/2023 Publicado em: 15/01/2024</p><p>Editor: Izac Bonfim</p></div>	<p>A tecnologia é inegavelmente, uma importante variável na transformação digital das organizações, porém, não representa o único elemento deste fenômeno. No turismo, a transformação digital vem causando disrupções e mudanças no mercado, fazendo com que as empresas tradicionais se adaptem para sobreviver frente às <i>travel techs</i> (empresas de tecnologia que atuam nas oportunidades e ineficiências do mercado de viagens e mobilidade). O objeto deste estudo foi a transformação digital no turismo a partir das <i>travel techs</i> e empresas tradicionais. Os objetivos foram analisar e compreender os efeitos e potencializadores da transformação digital sobre as empresas de turismo brasileiras, entendendo os limites e as potencialidades das <i>travel techs</i> e empresas tradicionais no contexto brasileiro. Para a metodologia, foi feita uma pesquisa bibliográfica e documental abordando autores de diversas áreas do conhecimento e posteriormente uma coleta de dados primários entre as empresas tradicionais e <i>travel techs</i>. A amostra foi constituída por 88 questionários validados, coletados de modo <i>online</i>. Os dados foram analisados por meio da estatística descritiva a partir do uso da escala tipo Likert para mensuração da intensidade das respostas. Concluiu-se que as <i>travel techs</i> nascem com uma maturidade digital superior às das empresas tradicionais do turismo e que apesar do intenso investimento em T.I, essas últimas possuem dificuldades em relação à mudança da cultura requerida na atualidade, e na geração de valor para o mercado por meio da tecnologia. Foi observado que a transformação digital está em um estágio embrionário no turismo, ocasionando muitos desafios e preocupação entre os profissionais e empresas que podem desaparecer do mercado.</p>

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INTRODUCTION

The theme of digital transformation is increasingly highlighted over the years, especially with the advancement of technologies on the global stage among corporations from different countries. With the scenario of the COVID-19 pandemic in 2020, many companies were impacted, and among them, some ceased to exist, while others moved towards possible adaptations. It is evident that companies operating in the digital realm had an easier time adapting to the new circumstances.

In this context, travel techs, technology companies addressing issues in the tourism market (Lima, 2020), identified opportunities for expansion and enhancement in delivering value to their customers through the digitization of their businesses. The various impacts caused by the pandemic ceased to be an option and became one of the few viable alternatives, considering that human interactions in the physical realm were limited and, in some cases, even impossible.

In 2019, for example, Thomas Cook, one of the earliest and most renowned tour operators worldwide, declared bankruptcy after nearly a century of existence and dominance in the tourism scene, especially in the European continent. Meanwhile, companies like Airbnb, TripAdvisor, TravelPerk, and Booking.com had already been gaining recognition globally and scaled rapidly and efficiently, without focusing on physical stores, as their business models are centered in the digital world.

You don't have to go far to find successful models and businesses within the tourism industry, which were also impacted by COVID-19. CVC, a nationally known operator, saw its shares fall after an internal management crisis in November, and shortly thereafter, they experienced a decline with the onset of the Covid-19 pandemic, causing significant impacts on the entire economic sector of tourism, especially physical establishments.

In this sense, studying this movement and gaining a better understanding of the interactions among companies within the context of the Brazilian tourism phenomenon are part of this study. In the first semester of 2020, the first radar of Brazilian travel techs was developed by Onfly, a startup with a repeatable and scalable business model, in a scenario of uncertainties and solutions to be developed, using technology with a solution focused on the corporate travel sector, introducing the subject researched in the present work in an introductory manner.



Therefore, this article is crucial for the systematization of knowledge regarding digital transformation in tourism and also to introduce the concept and contextualization of travel techs in Brazil to academia, which is still considered a relatively new and underexplored topic. With the onset of the coronavirus pandemic in 2020, the weakness of the Brazilian market became evident, especially among more traditional companies that had digitized little and failed to keep up with consumers who are increasingly connected from the beginning to the end of their journey. In the face of this scenario, the importance of investigating the proposed topic is thus emphasized.

That being said, the present article aims to analyze the effects of digital transformation on Brazilian tourism companies, understanding the limits and potentialities for both travel techs and traditional companies in the Brazilian context.

THEORETICAL FOUNDATION

When considering digital transformation, technology is commonly associated. Some concepts, such as IoT (Internet of Things), which describes the network of physical objects - "things" - embedded with sensors, software, and other technologies to connect and exchange data with other devices; Big Data dedicated to the acquisition, analysis, and interpretation of large volumes and varieties of data; and Web Analytics, a process of measuring, collecting, analyzing, and reporting navigation and interaction data generated by users on the internet.

These terminologies are capable of structuring and collecting data to understand the audience's behavior in the digital and social media universe and are examples of terms that are present and considered fundamental by some authors addressing the fundamentals of Digital Transformation. These elements bring automation to routine operational tasks and allow for a deeper and more strategic understanding of the business (Baptista, et al., 2017).

According to Porter (1998, p.28), "...technological changes play an important role in disrupting industries in general; moreover, they are also a major vector for creating new markets." Technology is indeed an essential variable in the digital transformation of organizations, but it does not represent the sole element of this phenomenon.

Technologies and technological acceleration create value for society and corporations, increasing productivity (Brynjolfsson & McAfee, 2012). However, it presupposes parallel



innovation in business models, organizational and cultural processes, institutions, and individuals' skills.

Following a similar line of reasoning to that mentioned by Brynjolfsson and McAfee (2012), digital transformation is not only about the integration of technologies but also the inclusion of strategies to make businesses more efficient and competitive in the market. According to the authors, the adoption of digital technologies in all phases of the business value chain, combined with factors such as the reorganization of work processes, business restructuring, and human resource development, is part of digital transformation.

In the face of this scenario, digital transformation involves "more processes and areas than just technology; instead, it arises from how organizations integrate these technologies for business transformation and how they operate" (Kane et al., 2015, p. 4). This line of thought even mentions that the purchasing decision habits of products and services commonly known in end consumers are present in corporate environments.

Therefore, organizations are obliged and induced to review their business models (Tagliani, 2016) to truly achieve a comprehensive transformation in the sector where their company operates. Tagliani (2016, s.p.) adds by stating, "business digitization is not the goal itself; on the contrary, it is the means to achieve business objectives and results that provide benefits in markets, making companies more productive, innovative, and competitive in return."

Thus, it is possible to summarize digital transformation as the use of technological advances and resources aligned with the organizational and individual culture of stakeholders to enhance products and services that add value to the consumer through improvements in customer experience, increased corporate productivity and management, or even as a means through which changes are generated in the business model.

Over the past decades, the development of Information and Communication Technologies (ICT) has introduced advances such as the Internet, Augmented Reality, and Social Media (Buhalis et al., 2015). Tourism has been undergoing a disruptive process due to digital technologies and innovation (Pindzo & Barjaktarovic, 2018). These advancements have caused changes in traveler behavior over the years in the pre, during, and post-travel periods, as well as in tourism companies.



In 2016, according to Pindzo et al. (2016), 51% of all bookings are made online, with 22.5% of these through Online Travel Agencies (OTAs), and 18% of all bookings are made via smartphones and tablets. According to the authors, revenues from online travel bookings had increased by over 73% in the last 5 years during the period considered by the cited research. These data demonstrate the impact of new technologies on the tourism market.

A few years later, studies by Silva, Filho, and Júnior (2019) found an increase in society's technological experience, leading to a growing trend in online reservations. The authors further state "[...] that the penetration of online travel will grow an average of 10% in the coming years" (Silva, Filho, and Júnior, 2019, p. 41). Similarly, as described in the National Tourism Plan Report 2018/2022, online reservations are estimated to achieve a growth of 3.3% per year until 2027.

This scenario is evident in research conducted by Maia et al. (2022), who claim that online tourism has already reached maturity globally in various countries. According to Pinto (2023, p. 30), "internet access allows the tourist to be autonomous and to have access to offers from other competitors, to obtain the information they want, without the need for professionals in the field," revealing the maturity of the sector in the virtual environment, given that its primary consumer uses this resource for selection, booking, and purchasing services.

In this sense, digital transformation represents a mix of significant consumer demands and new technologies that can help meet market expectations. According to Newman (2018), the main trends impacting accommodations and tourism include:

1. **Mobile Integration:** The possibilities brought to tourists through the popularization of mobile phones and mobile data technologies have been numerous, such as checking in via mobile, requesting a ride through an app, or even planning and booking an entire trip through a smartphone.
2. **Artificial Intelligence (AI) and Chatbots:** It used to be common for hotels to leave brochures and booklets with guides and destination information as recommendations. Nowadays, these hotels can provide all this information through apps and technology powered by AI. In addition, guests can even access voice-activated chatbots (such as Amazon's Alexa, which already integrates with some hotel chains) to open curtains, set alarms, or order breakfast without ever



speaking to a human. Another practical application of ChatBots was seen with Maxmilhas, which in 2020 was one of the pioneers in the Brazilian tourism market to use the "Conversational commerce" model. In this type of online sale, the customer, with the help of a virtual assistant, facilitates the purchase of airline tickets through chats like WhatsApp and Telegram (Menezes, 2020).

3. **IoT Integration:** As everyday devices and tools become increasingly connected and integrated (Internet of Things), they can provide rich information and data for the public and private sectors of tourism to make more informed strategic decisions and enhance the traveler's experience.
4. **Focus on Data:** Data will play an increasingly decisive role in the new era of tourism and hospitality. The obtained data can not only improve the customer experience but also assist in the segmentation of marketing actions and improve financial results.
5. **Reputation:** The advent of instant bookings also means that tourists can share their opinions in real-time on social media and travel review sites like TripAdvisor. This phenomenon has led hotels and restaurants to focus on providing quality products and services to their customers.
6. **Virtual Reality:** Even without being physically present, people can visit places like hotels, museums, or tourist destinations. This is made possible through virtual reality technology. Although the technology has not yet become widespread among tourism companies, there are already operators offering guests the opportunity to experience at least a portion of their travel experience before it actually happens.

Newman's (2018) contributions are complemented by Pindzo & Barjaktarović (2018), who point out that Virtual Reality has enabled tourists unwilling to bear the costs of transportation and accommodation to explore the destination online at a much lower cost, known as virtual tourism.

The advent of ICTs and technological advancements has allowed new entrants into the market, especially digital natives such as OTAs, metasearch engines, and tourism service platforms. These technologies are disrupting the entire tourism value chain (Pindzo & Barjaktarovic, 2018). According to the authors, digitization and the



emergence of new digital business models had an undeniable influence on the travel market. As new online tools establish themselves, consumers organize their trips in a simplified manner at an increasingly faster pace.

The digitization of tourism has undoubtedly brought various effects not only to travelers but also to companies that had to adapt to new market entrants and substitute products. These advances in the tourism chain have brought changes in consumption patterns and also in work relationships, which are becoming increasingly automated and digitized. Physical travel agencies are being replaced by OTAs, just as taxi rides are being exchanged for urban mobility apps that are already part of the traveler's journey.

Technological advances in society and industry markets, in general, have been impacting society as a whole, giving these people infinite scaling potential (Tritus, 2020).

In tourism, this is no different. If, in the past, the traveler's journey was "neglected" by mobility and travel companies with an individual focus on their products and services, currently, it is connected through mobile technology for tourists, as demonstrated by the report produced by the Lufthansa Innovation Hub "The State of Travel & Mobility Tech in 2019 – A VC Analysis." The tourism market seeks to assist the traveler at every stage of their journey to easily use mobile digital tools that provide everything they need, from research to booking, during the trip, and on the way back home. Modern tourists want to control the entire process and manage their own itinerary and finances (Pindzo & Barjaktarovic, 2018).

Just as in other well-known and explored technology sectors such as fintechs (technology companies offering various financial solutions), startups, or companies developing entirely digital financial products, where the use of technology is the main differentiator from traditional companies in the sector. According to a study by Liga Ventures (2020), companies like Nubank, Stone, and PagueSeguro, the so-called Travel Techs, are represented by startups and technologies that develop and deliver new experiences, services, business models, and products for the areas of Tourism, Travel, and Hospitality.



The term "Travel Tech" in English is recent in the market and, especially, in academic circles. However, in a preliminary study of the first radar of the so-called Brazilian travel techs conducted by Onfly in 2020, "Travel techs" are technology companies seeking to solve travel, tourism, and mobility problems (Lima, 2020).

Most of these companies were born in the so-called 3rd IT Platform and later in the 4th Industrial Revolution, amidst a tourism phenomenon marked by technological advances and the democratization of access to the digital world. Startups and technology tools like Maxmilhas, Hurb, Onfly, and Buser are some notable travel techs in Brazil among the more than 97 mapped in the first radar of these technology companies, as shown in Figure 1:

Figure 1

Radar of Brazilian travel techs



Source: Own elaboration.

These technology companies are causing disruption in the travel market with their business models that democratize travel and solve common problems in the traveler's daily life, in a scenario where the tourist experience is increasingly important. According to the research conducted by Liga Ventures (2020, s.p): "The solutions presented by Travel Techs are already a reality in our daily lives, facilitating our search



for flights, accommodation options, and travel itineraries." The research also reveals that these solutions impact even in the way "we control, organize, and manage everything around each experience we have" (Liga Ventures, 2020, s.p).

These transformations and technological revolutions can be seen through the business model of Travel Techs, which are gaining a larger space within the economic activities of mobility and tourism, and, above all, becoming part of the traveler's journey.

Despite the digital changes in the tourism phenomenon and the significant representation of tourism in the global economy's GDP (around 7.8% in 2023, according to the World Travel and Tourism Council - WTTC), the tourism market is filled with inefficiencies such as long lines at hotel check-ins and difficulties and bureaucracy to cancel a trip booked in advance (Lima, 2020). Technology has been transforming the world, and with the tourism phenomenon, it wouldn't be different. Startups and platforms are vectors of this digital transformation since technology is more present in the daily lives of travelers and Brazilian companies, ending complex, bureaucratic market processes, and at the same time, forcing traditional companies to move to avoid losing their space.

One of the events in the tourism and travel market that marked the year 2019 the bankruptcy of the British travel operator Thomas Cook. The world's first registered travel operator, born in 1841 and 178 years old, consolidated itself as one of the most traditional companies in Europe and the world.

One of the main reasons for Thomas Cook's bankruptcy, according to Neil Wilson (2019), an analyst at markets.com, was "because it didn't know how to evolve with time" (G1, 2019, s.p.). According to G1 (2019), since 2007, the company had been investing in acquiring traditional travel agencies and operators at a time when the business model was affected and altered by travel bookings made through the internet. While the company was investing in physical establishments, the market was already moving in the opposite direction towards the digital world.

On the other hand, companies like Booking.com, Kayak, Airbnb, Uber, and other Brazilian companies such as Maxmilhas, Hurb, and Buser have grown with new business models that rely on the digitization of the travel market. Supported by the pillars of the third platform, we have witnessed the emergence of various tourism companies.



Rodrigues (2017, p.33) states: "some of them are digital in their essence, while others use technologies as a means to create a channel of contact with customers and optimize their processes of interaction, logistics, and supply chain."

These organizations are causing a profound impact and significant changes in the tourism market. They are altering the way we consume services and products, as seen in the case of Buser, which democratized access to bus travel in a traditional and highly regulated market. This new proposal reveals that a digital startup can disrupt the consolidated market, and established companies should not underestimate their competitive assets, nor should they think that disruptors hold all the cards (Bilefield, 2016).

Through the analyses undertaken so far, one of the significant differences between Travel Techs (travel startups and technology platforms) and traditional tourism companies (such as traditional travel agencies, hotels, taxi services, and airlines) is that the majority of Travel Techs were born supported by the third platform, while traditional companies relied on the previous platform. Additionally, these startups operate in niches and markets with opportunities often overlooked by larger companies (Lima, 2020). This will reflect not only on how their services are offered but also on their entire business model and organizational culture. According to the report by the Lufthansa Innovation Hub in 2019, there are 44 unicorn startups (worth over \$1 billion in market value) in the travel and mobility sector worldwide.

The ability to adapt to crises and uncertain scenarios is one of the major strengths of startups that were born in the digital age. They mostly work with lean and scalable business models, allowing them to gain traction quickly in the market through processes of conception, validation, measurement, and learning.

When it comes to innovation, traditional and well-established companies in the market tend to be conservative regarding new technologies. In other words, they are less likely to invest in innovation until these technologies are already being extensively used by other organizations (Rodrigues, 2017). These companies, being mostly consolidated and robust, face greater challenges in adapting to new technologies and market needs. Additionally, bureaucratic processes, rigid hierarchies, and resistance to change are characteristics of these companies.



To innovate, most traditional companies use closed innovation models (where there is an internal Research and Development department focused on innovation) or an open innovation model (where external parties such as startups, customers, and suppliers are involved). A PwC survey conducted in 2017 indicated that open innovation was the most commonly used method, with 61% of respondents from large companies using it to drive their new idea generation processes (Liga Ventures, 2020).

Porter (1998, p. 285) states that "the buyer's perception of a substitute is often not as great as that of an established product, and knowledge about the benefits and characteristics of a substitute is often incomplete." It is essential to understand that despite the existing risk in adopting innovations, organizations that delay their adoption may be surpassed by new entrants or even substitute products (Porter, 1998). Companies born in the fourth industrial revolution or those supported by the Third Platform of ICTs have not yet undergone digital transformation. After all, they were mostly born already digitized with an organizational culture and a business model adapted to this era.

In this context, traditional Brazilian tourism companies such as CVC demonstrated resistance and difficulty in incorporating digitization into their business models. In the corporate travel sector, processes are even more outdated and still depend on rigid booking platforms, numerous emails, and various paper-based travel expense reports (Lima, 2020).

Consequently, with the pandemic, these organizations, struggling to adapt or even pivot their business models, were the ones that suffered the most and felt the negative effects of the COVID-19 crisis with mass layoffs, loss of market value, and losses to shareholders.

METHODOLOGY

The present study was initially conducted through bibliographical and documentary research. Various sources such as books, e-books, websites, articles, and publications from research institutes were utilized to address topics like "digital transformation," "technology in tourism," and "travel techs" to aid in structuring and providing theoretical foundations.

The search for bibliographical production on digital transformation and travel techs proved challenging due to their scarcity, a scenario also acknowledged by Maia et al.



(2022). To overcome this challenge, different databases and journals were consulted, giving preference to reputable sources such as Portal Capes, Scielo, ResearchGate, Google Academy, and Tourism in Analysis, in search of articles addressing the studied topic.

Terms like "Digital Transformation of Tourism," "Digitalization of Travel," and "Travel techs" were equally employed in English for the search; however, few academic studies were found, especially in a national context. Among those found, a focus was noted on the online evaluation of online travel agencies (Maia et al., 2022), others focused on knowledge management in online travel agencies (Pinto, 2023), or on consumer perception regarding online travel agencies (Silva, Filho, and Júnior, 2019). Therefore, the present work was structured from multi and interdisciplinary perspectives to compile knowledge throughout the text.

The research has an exploratory nature, and for its development, a questionnaire was designed with a mixed approach, both qualitative and quantitative, featuring questions addressing the main variables composing the digital transformation phenomenon. The questionnaire was created using the Google Forms research platform and distributed among Brazilian tourism companies, enabling the collection of primary data that assisted the research.

The first version of the travel tech radar mapped a total of 97 Brazilian companies and technology platforms. From another perspective, according to the leading information producer for tourism professionals, Portal Panrotas (2019), 80,000 tourism companies were registered in Cadastur, configuring the size of the entire research population, as travel techs are also included in this number. Thus, the questionnaire was distributed from January 7 to March 2, 2021, resulting in a total sample of 88 respondents.

For the calculation of the ideal margin of error, the SurveyMonkey research tool's margin of error calculator was used, considering the following parameters: a confidence level of 95%, a sample of 88 unique respondents, resulting in a margin of error of 10%. Thus, all collected data have a high degree of accuracy.

The survey respondents were mostly managers and decision-makers in tourism companies, with 59.1% being male and 40.9% female. Access to these professionals



occurred through private messages, WhatsApp groups, social networks such as Facebook and LinkedIn, and online link sharing until the established minimum sample of 88 respondents was reached. A strategy similar to the snowball method was one of the main actions adopted to approach research subjects, where respondents were encouraged to share the questionnaire with others in their social networks, resulting in faster results.

The snowball methodology, which involves using chains of references, was also employed. In this method, the survey is initially distributed to some individuals within the general population, and these individuals are then asked to refer new people to participate in the survey. Overall, this data collection process seeks the respondents' social networks to provide the researcher with an increasingly larger set of potential contacts (Vinuto, 2014).

The research variables were measured using a Likert scale of five points, with 1 (one) equivalent to "Completely Disagree," and 5 (five) equivalent to "Completely Agree." "The Likert scale uses multi-item measurement, a scientific instrument for observing and measuring social phenomena idealized by Likert in 1932 with the goal of measuring attitudes through opinions in an objective manner" (Lucian, 2016, p. 13).

After data collection, the information obtained was extracted and compiled into graphs, tables, and word clouds. Following this step, a descriptive and comparative analysis of the data was conducted to obtain information about the maturity levels of digital transformation in companies, profiles, sectors, impacts of travel techs on the market, and mainly the aspects influencing digital transformation in companies. In the end, correlations were established between the obtained data and comparisons between travel techs and traditional tourism companies with what was raised in the theoretical framework for a conclusion with richer results.

The analyses of Likert Scale data were obtained through questionnaire responses, enabling an understanding of the intensity and level of maturity of some aspects that are part of digital transformation, on scales from 1 to 5, where a higher number indicates a higher degree of intensity. The companies were again separated between traditional tourism companies and travel techs for a more in-depth analysis of the data. Furthermore, the global average and each group's given scores were calculated.



For the analysis of the main challenges for the success of digital transformation, survey respondents assigned a score from 1 to 9 to the most challenging items of digital transformation, where 1 is a slightly challenging item and 9 is very challenging. For the examination of the data, the global average and each group's scores (traditional companies and travel techs) were also calculated from the sample.

Lastly, to obtain a more accurate analysis of the qualitative data from the questionnaire, word clouds were created with the main ideas and keywords that appeared in the survey sample responses.

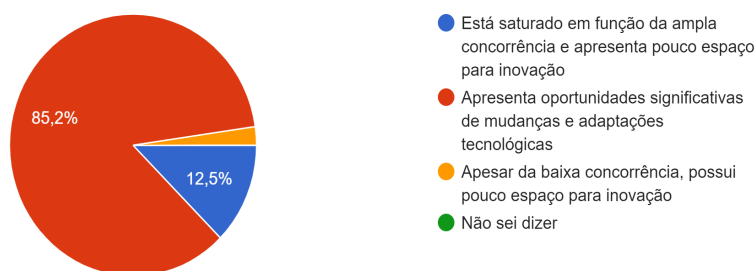
RESULTS

The collected data show that 85.2% of respondents consider that the company's market presents significant opportunities for technological changes and adaptations, while 12.5% state that the market is saturated due to intense competition and offers little room for innovation.

Graph 1

Level of competitiveness and market opportunity for tourism companies

Considerando o mercado de atuação da empresa que você trabalha, você diria que:
88 respostas



Source: Research Data.

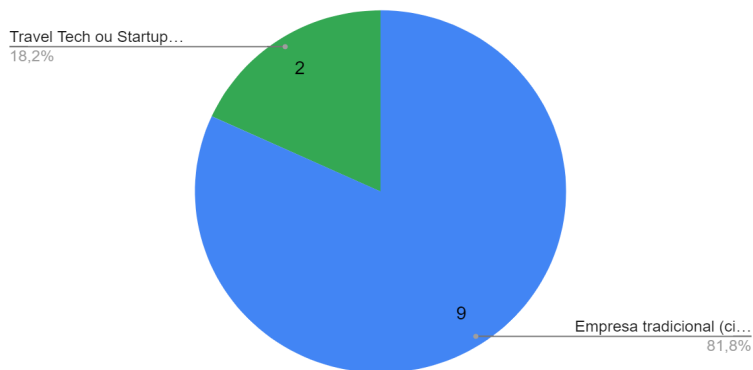
Among the companies that stated the market is competitive and offers little room for innovation, over 80% belong to the group of traditional companies, as indicated by the following graph:



Graph 2

Respondents with saturated markets and little room for innovation.

Empresas que afirmaram que seus mercados estão saturados e apresentam pouco espaço para inovação



Source: Survey data.

This discrepancy supports Porter's reflections (1998), in which he states that technology acts as an equalizer in industries and weakens the competitive advantage of companies with established models in the traditional market. Thus, travel techs, which use technology as an agent to address market opportunities, have room for growth and differentiation with innovative business models in "bloody markets" and even in creating new markets, better known as blue oceans. According to this travel tech model, these companies "focus on reaching a large number of consumers, anytime and anywhere, without geographic limits" (Silva, Filho, and Júnior, 2019, p. 44), making it easier to reach untapped markets.

The tourism and mobility market has undergone numerous changes over the years. In an attempt to identify the main alterations and adaptations in companies due to technological advances and changes in consumer behavior, the following responses were obtained:

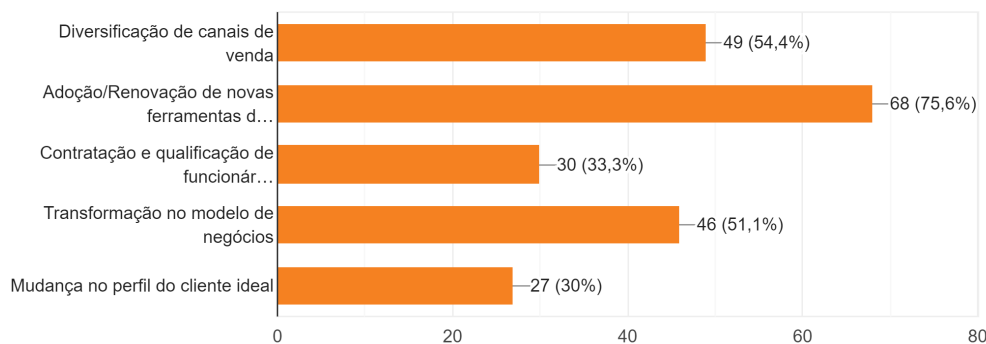


Graph 3

Changes in Companies Caused by Consumer Behavior and Technological Advances

Quais mudanças ocorreram em sua empresa considerando o comportamento do consumidor e os avanços tecnológicos?

90 respostas



Source: Survey data.

Regarding the adaptation process, the primary changes reported by the companies were the adoption/renewal of new tools and technology, followed by diversification of sales channels and transformation in the business model.

All these changes naturally occur throughout the disruption caused by the birth and evolution of digital technologies, as emphasized by Pindzo and Barjaktarovic (2018). Consumers organize their trips in a more simplified manner as the emergence of new tools in the market accelerates, and companies absorb them to better serve increasingly demanding tourists seeking practical and straightforward solutions. This is because "the fact that the customer does not need to go to a specific place to have a quality service is an added value. With just one click and from the comfort of their home, they can solve everything" (Pinto, 2023, p.36).

If we delve deeper into the sales and distribution channels of tourism companies, we find that 67% of the entire sample uses their websites as the main channel, followed by

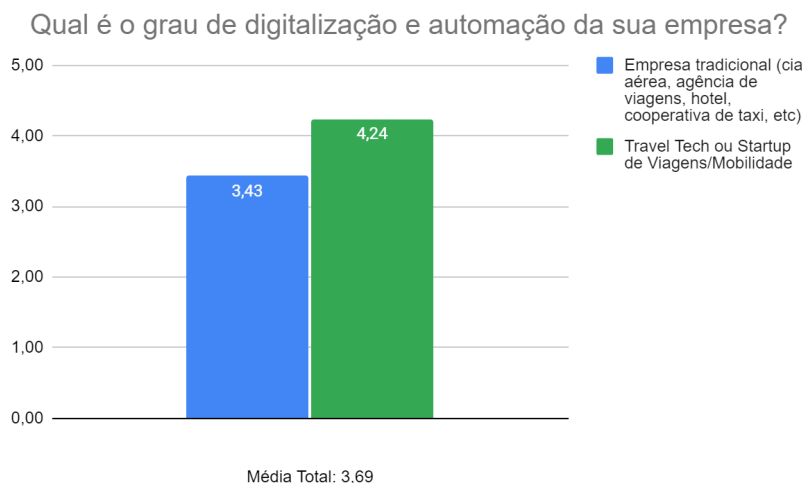


social media (50%), mobile apps (28.4%), physical establishments (26.1%), and affiliates/resellers (22.7%)¹. Other channels were also mentioned, such as events, partner agencies, and tools like Online Booking Tools (OBTs), which are instruments focused on managing airfare and hotel reservations commonly used by travel agencies and operators.

Among the interviewed companies, no travel tech uses physical establishments as sales channels, as expected. Platforms like websites, mobile apps, and social media were the predominant channels within this group. Regarding the level of digitization and automation of processes and working methods of the companies, a global average of 3.69 out of 5 was obtained. Among traditional companies, the average obtained was 3.43, while among travel techs, the average was 4.24 out of 5, as shown in graph 4.

Graph 4

Degree of digitization and automation of companies



Source: Survey data.

Therefore, as stated by Lima (2020) and Rodrigues (2017), technology companies in the travel market were born digitized, which explains this difference between the two categories. These companies, born with the support of the 3rd platform of information technology, absorbed a legacy left by technological evolution and "rode the wave" of new technologies.

¹ The sum of the data is greater than 100% because the question allowed for more than one response.

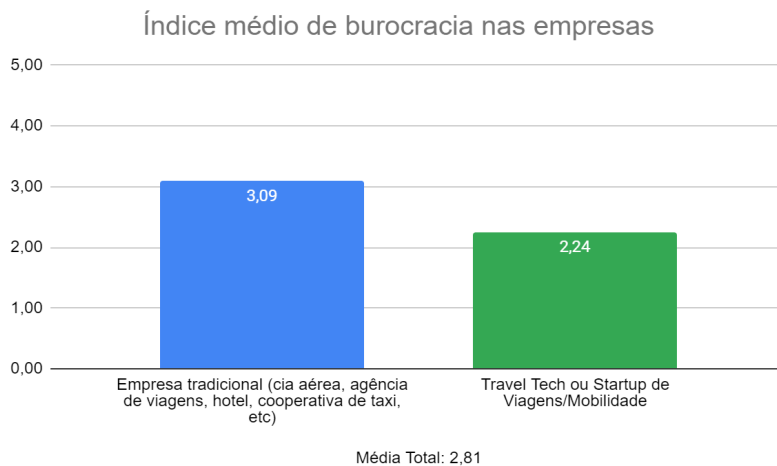


In light of this scenario, "the better perceived or recognized the brand of the online tourism company, the greater its influence on reputation, customer recommendations, and the perceived quality of information about the products/services offered on the website" (Maia et al., 2022, p.14). The authors continue to state that such characteristics not only have a significant influence on consumer trust but also significantly impact the intention to purchase a given tourism service or product.

Another indicator of digital maturity is bureaucracy, which continues to be a hindrance to innovation, as pointed out by Rodrigues (2017). Large and well-established companies in the market naturally exhibit bureaucratic processes, rigid hierarchies, and resistance to change. However, lean organizations with less rigid hierarchies demonstrate greater ease and agility in operational processes, hindering bureaucracy as an adversary to innovation.

Graph 5

Average Bureaucracy Index in Companies



Source: Survey Data.

The overall average for the average level of bureaucracy was 2.81. In this case, the lower the index, the lower the bureaucratic level of the organization. Traditional companies had a higher index of 3.09, while the group of travel techs had an average of 2.24, indicating greater ease and fewer obstacles to innovate within the company. The following graph shows the average impact that 2nd and 3rd IT Platform tools and

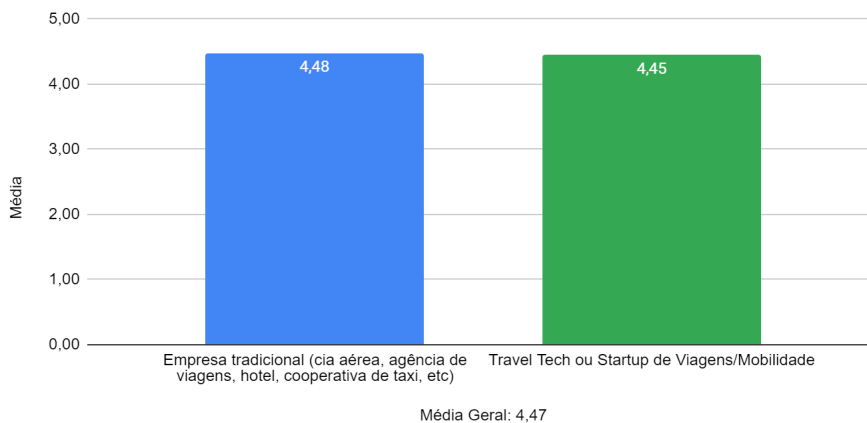


technologies have had on the tourism market in recent years, such as the internet, mobile apps, big data, social media, bots, and AI.

Graph 6

Average Impact of 2nd and 3rd IT Platform Tools and Technologies on the Tourism Market in Recent Years

Impacto médio da internet, Apps Mobile, Big Data, Redes sociais, Bots, Inteligência Artificial e outras tecnologias no mercado de turismo nos últimos anos



Source: Survey Data.

In this aspect, there were no significant differences between the two groups of the sample; both agree that these technologies have changed the way of consumption, commerce, and also social relations and experiences during a trip (Pindzo & Barjaktarovic, 2018). The overall average was 4.47, while traditional companies had an average of 4.48, followed by travel techs with an average index of 4.45.

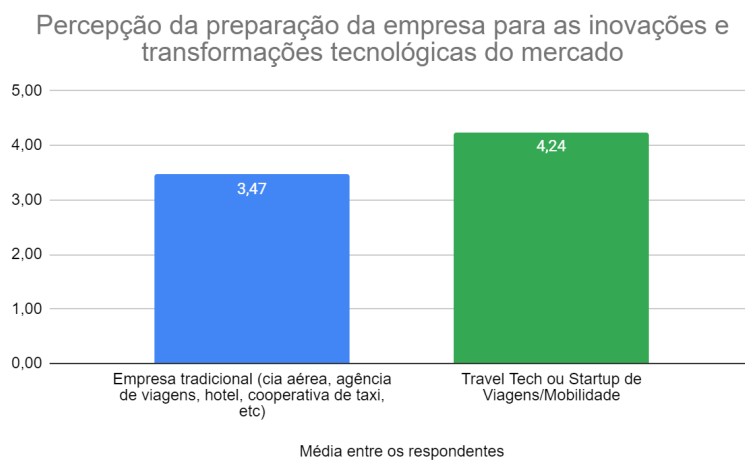
This highlights the crucial role of the internet as a platform for the distribution and sale of tourism services and products. Tourism in this sense "has witnessed a progressive shift from traditional booking channels to online distribution, where online travel agencies - also known as third-party booking sites - emerge as the main driving force in this new business environment" (Maia et al., 2022, p. 291). As indicated in graph 7, professionals working in travel tech companies perceive that these organizations are much more prepared for technology transformations and innovations, with an average



of 4.24 out of 5. On the other hand, the perception of traditional companies on the same aspect has an index of 3.47, as shown below:

Graph 7

Company Preparedness for Market Technological Innovations and Transformations



Source: Survey Data.

The overall average among the survey respondents was 3.85, indicating a certain delay in the tourism market in general to keep up with and adapt to technological advances that occur overall.

The company's preparedness for these aspects highlights the speed and ability to adapt to new scenarios and market transformations. With technological advancements and changes in consumer behavior, adaptation becomes a matter of competitive advantage over competitors (Pindzo & Barjaktarovic, 2018). This aspect represents an advantage for travel techs over traditional companies, which have a considerably lower index compared to technology companies in the tourism market that have been gaining increasing prominence in recent years (Lima, 2020).

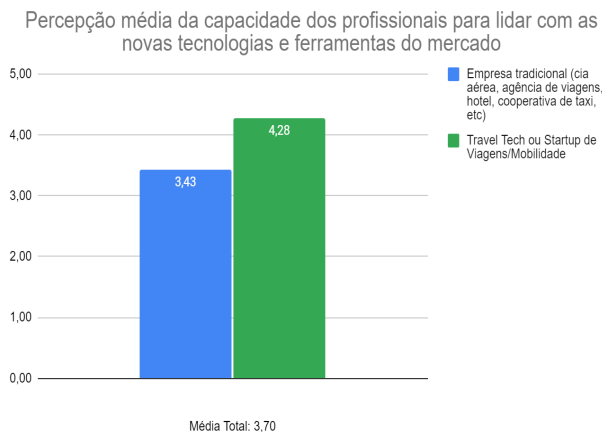
As technology advances, old professions disappear, and skills that were once manual become automated, especially with industrial revolutions. These changes require new skills from professionals, for the use of tools and technologies. Moreover, it is common for new professions and demands to emerge, especially in the field of IT.



According to the survey conducted with the sample of this study, with an average index of 4.28, professionals working in travel techs feel more prepared to deal with new technologies and tools in the travel market. On the other hand, the group of traditional companies showed an average index of 3.43, indicating a lag and difficulty in operationalizing the new demands and technologies of the market, consequently, a greater difficulty in digitizing.

Graph 8

Degree of Professional Training



Source: Survey Data.

This result was expected, as it is in the nature of startups and technology companies to solve market problems quickly, requiring a skilled, proactive team that acts with agility. After all, many startups have leaner teams, sometimes with fewer financial resources, and in the face of this, they need to make assertive strategic decisions and adapt more quickly.

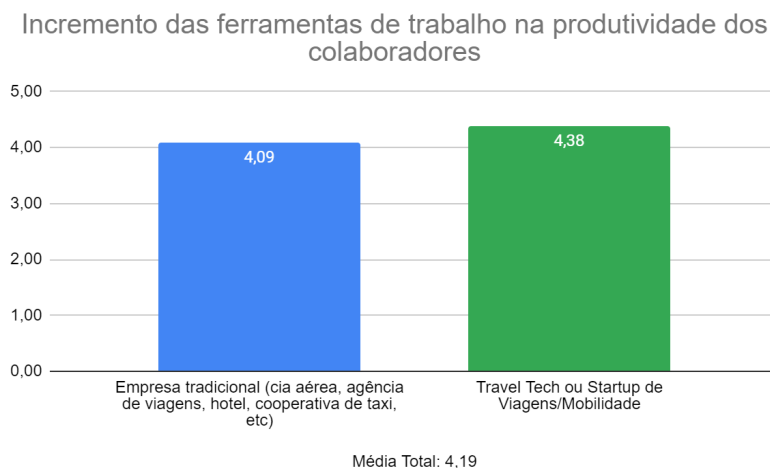
In this regard, it is essential for these companies to have a leader with motivational potential so that employees feel valued and committed to delivering their best daily and wanting to be better professionals, working in a good environment, without rivalries, and with collaboration among all to offer the best to their customers (Pinto, 2023, p.35).



Questioning both groups about the degree of improvement in employee productivity with the tools they use to work, there was a higher consensus among the responses. With a global average of 4.19, both the group of traditional companies and travel techs agree that the tools they use for work increase employee productivity (Graph 9).

Graph 9

Increase in Productivity Caused by Work Tools



Source: Survey Data.

Increasing the final consumer's perception of value for a certain product or service is the goal of any company. For the audience of this survey, the perception of value generation and innovation by the business model of traditional companies and travel techs is quite distinct, with averages of 3.45 and 4.52 respectively.

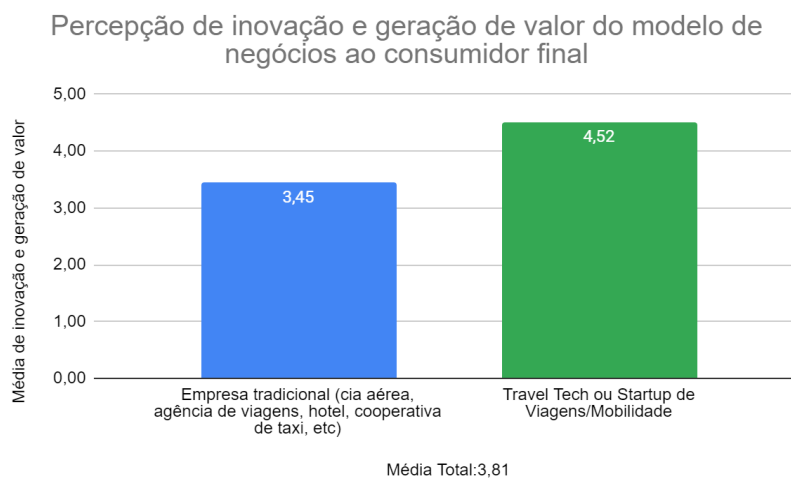
This may indicate how technology companies in the tourism industry are increasingly winning consumer preference. In other words, travel techs are gaining more space in the market at the expense of traditional companies, which, for survival reasons, need to reinvent their business model and adapt to this new scenario. In this scenario, value generation and innovation go hand in hand with the creative factor because "by encouraging creativity, innovative solutions can be found to respond to problems. It is



important to stimulate knowledge sharing so that the company improves performance, optimization, and innovation for its own benefit" (Pinto, 2023, p. 26).

Graph 10

Degree of Innovation and Value Generation in the Business Model for the Final Consumer



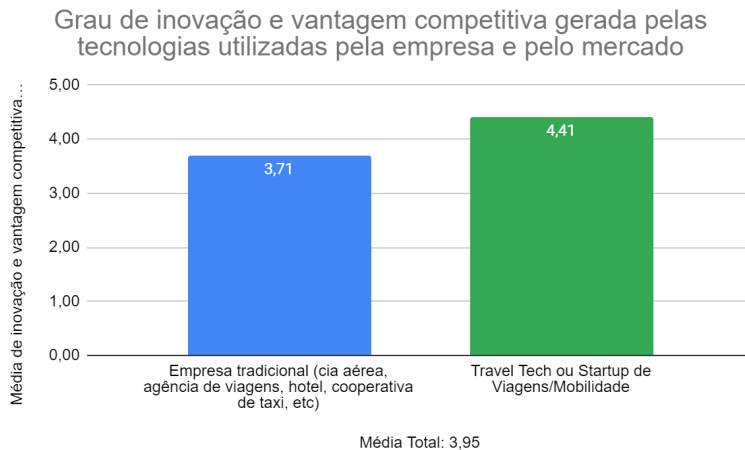
Source: Survey Data.

It is understood that technology can be a competitive advantage for its holders. According to Porter (1998), technology is a vector of disruption and creator of new markets. After all, "the rapid growth in the number of online users and the increase in the rate of online transactions provide clear evidence of the popularity of technology" (Silva, Filho e Júnior, 2019, p. 43). With an average index of 4.41, according to the travel techs group, the technologies used by these companies make them more competitive and innovative compared to their competitors. For traditional tourism companies, their technologies may represent a weakness compared to their technology-driven competitors. In the end, the average value of the responses was 3.71 out of 5.



Graph 11

Competitive Advantage and Innovation Among Tourism Companies

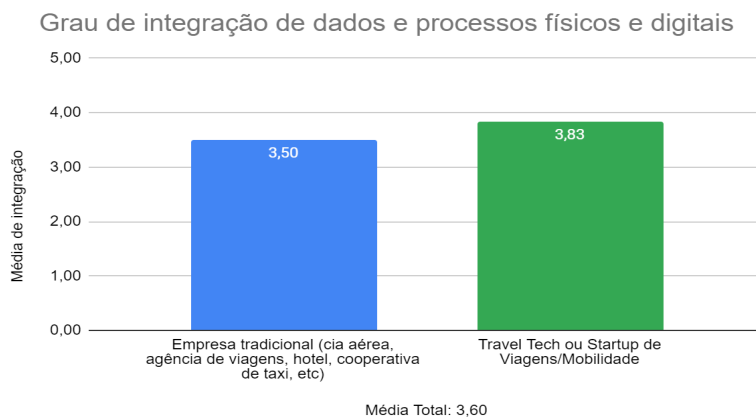


Source: Research Data.

According to Berman (2012), one of the indicators and paths to mature digital transformation is omnichannel incorporation, i.e., the degree of integration between physical and digital processes. As shown in Graph 12 below:

Graph 12

Omnichannel Integration in Tourism Companies



Source: Research Data.



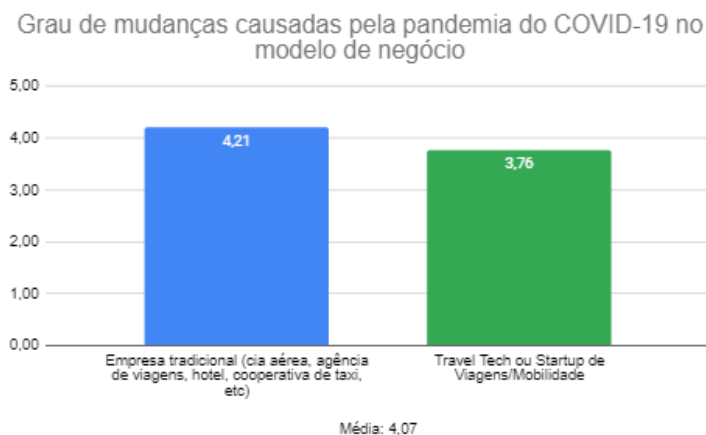
A integration of offline and online processes and data is a cause for concern among both groups with an average of 3.6 out of 5. The category of travel techs surprised by having an average index of 3.83 for this issue in the questionnaire. After all, it is expected that companies that have technology at the center of their solutions and business models have a structured omnichannel operation.

The data from traditional tourism companies do not deviate much from this pattern presented by technology companies, with an average of 3.51, as shown in the graph below. There is a long way to go for these physical and online processes to be integrated.

The COVID-19 pandemic brought severe consequences and effects to the global tourism market. With a global average of 4.07 among responding companies, a large part of tourism professionals became unemployed.

Graph 13

COVID-19 and the Impact on Tourism Companies



Source: Research data.

The traditional companies' business model, with an average of 4.21, was the most impacted among the two groups. On the other hand, among travel techs and startups, this index was lower, with 3.71. Due to a greater ability to adapt quickly and a higher degree of digitalization, as shown in Graph 14, these companies were more digitally mature when many businesses were prohibited from opening their physical stores and had to migrate to digital channels as an instinct for survival (Gimenez, Varrichi, &



Herculani, 2022; Tritus, 2020; Linhares, 2020). Regarding the effects and consequences that travel techs brought to tourism in general, the responses are subjective and were segmented according to the category of responding companies. For understanding and visualization, a word cloud was created with the main aspects and recurring keywords.

For most respondents who are part of travel techs, these companies are gaining more and more space and are protagonists of a technological revolution in the tourism and mobility market.

Figure 2

Keywords: Impact of travel techs



Source: Research data.

A recurring aspect in various responses concerns the modernization and adaptation of market needs that travel techs have brought to the tourism market through technology. Despite still being in an embryonic phase, the optimization of processes and the improvement in the consumer experience in an agile, innovative, and simple way is what adds value to these companies and, furthermore, reinforces the need for a digital transformation in the tourism market.



When analyzing the responses provided by professionals from traditional companies, the majority recognize the positive effects and changes caused by travel techs in the market, such as attracting younger generations, process automation, agility, and growth through technology. These changes have taken traditional companies out of their comfort zones and accelerated their digital transformation, which is crucial for their survival in the market, especially with the COVID-19 pandemic.

Other respondents appear skeptical or unconcerned about the arrival of travel techs, as some segments still have few prominent technology companies and have flaws and weaknesses in their business models. The following figure includes the recurring keywords from traditional companies regarding the impacts of travel techs:

Figure 3

Keywords from traditional companies about the impact of travel techs



Source: Research data.

Underestimating disruptive companies in the market can be a risk, and also, imagining that they have all the knowledge and strategies of the market is an error committed by many consolidated corporations (Bilefield, 2016). Although some professionals do not



recognize the impact of travel techs, these new entrants in the market can overcome and even replace traditional companies with their services and products.

FINAL CONSIDERATIONS

One of the main myths about digital transformation is that it only occurs in the technology realm when, in fact, this phenomenon requires a holistic view of business strategy and the market in general. After all, the digitization process is not an end but a path to achieving desired objectives and results that provide competitive advantages and benefits for organizations.

Digital transformation in the tourism and mobility market is still in an embryonic stage, with a long journey ahead, especially when compared to other markets such as fintech and e-commerce. The COVID-19 pandemic accelerated this process, especially because tourism is one of the main affected markets, leading many companies to prioritize digitization. However, it did not necessarily result in full digital transformation, as it requires organizational and cultural alignment of all stakeholders to add value to the business.

For the digital transformation phenomenon to happen rapidly in tourism, digital tools need to be the main assets of companies operating in this market, generating value for the end consumer and, at the same time, being operated by qualified professionals with streamlined processes that facilitate the permeation of an innovation culture throughout the organization.

Travel Techs often own their digital assets, eliminating friction and even acting in the disintermediation of the tourism chain through technology. This makes them more competitive and innovative. It is undeniable that travel techs, supported by 3rd Platform technologies from ICTs, are more digitally mature than traditional companies. Technology companies in tourism have not yet assimilated all the possibilities of digital transformation because, for the most part, they emerged with business models adapted to the digital world and an organizational culture aligned with the mindset of this new technological era to address inefficiencies left by conventional business models in the travel and mobility market.



The research conducted between travel techs and traditional tourism companies highlighted that the latter, despite seeking to update themselves with new tools, partnerships with startups, or the creation of innovation hubs, still have a long way to go, especially in tourism, an area where there are still skeptical or doubtful professionals about the potentials of travel techs and digital transformation. As long as there is resistance to technological reality, it can bring severe consequences such as unemployment and even bankruptcy for various tourism companies.

Travel techs have limiting factors such as a lack of resources and lean teams, which can represent a competitive risk against traditional companies that are established in the market and have financial capital to create aggressive strategies. To bring results to the market, it is necessary to explore prototypes and minimally viable products when building a market strategy, guiding the path to be taken and leading to accelerated growth. Therefore, maintaining agility and speed can be the greatest differentiator for this group.

While a smaller structure can pose a risk, it can also be a competitive advantage because bureaucracy is lower, facilitating innovation, especially in companies where technology is the main ally to operate in blue oceans often permeated by strict regulations and traditional markets.

A significant portion of traditional companies has strong and well-known brands, with more human and financial capital available. However, these tourism organizations have rigid hierarchical structures and struggle when trying to be agents of innovation in the market due to the bureaucracy that has already taken hold in these organizations, causing a slow decision-making process. Despite often having an internal innovation or IT core, technology is not one of the organization's main assets, and this mindset often does not spread equally throughout the company.

In summary, there are several challenges ahead for both groups, such as integrating physical and digital processes within companies, keeping up with market trends to add value for consumers. There is also a difficulty in training professionals to deal with new technologies and demands that the technological environment requires from the



market, and, most importantly, cultural alignment within organizations among those involved.

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