

# **(IJ-06) Personalized Recommendations In The Hospitality Industry**

## **A Data Science Perspective**

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### **ABSTRACT**

Since the year 2023 was assigned as the year of recovery for the global hospitality industry in the aftermath of the devastating COVID-19 pandemic crisis that plagued the world in 2019, there has been great anticipation and hopeful expectations for the industry to soar to unprecedented heights in the year 2024, as predicted by industry experts. The hotel market, which is an integral part of the travel and tourism industry, holds the distinction of being the largest market within this sector. Furthermore, it is important to note that these two markets, namely the hotel market and the travel and tourism market, are intricately connected and mutually dependent on each other. Within the hotel market, there exists a wide range of establishments that cater to the needs of customers seeking temporary lodging or sleeping accommodation, with a primary focus on providing comfort and ensuring safety and security. Additionally, the scope of the hotel market extends beyond mere accommodation, as it also encompasses a variety of services that are designed to meet the immediate needs of guests. These services may include the provision of meals, snacks, or beverages that can be consumed on the premises. Furthermore, after the outbreak of the COVID pandemic, the significance of delivering a personalized and individualized

experience to secure customer acquisition and retention has assumed a prominent and central position in this highly competitive business. As the landscape of customer technology continues to evolve, we are witnessing a notable transformation in marketing trends and expenditure. The realm of marketing technology itself is undergoing a rapid and accelerating evolution, playing a pivotal and indispensable role in enabling customers to successfully navigate through the ever-changing and dynamic technological advancements within the hospitality industry. So, it is obvious that the industry has endured nearly five turbulent years, including the Russia-Ukraine crisis. Now that the projections are favorable, in addition to eco-friendly travel, the global hospitality industry is poised to contribute significantly to the global GDP, with projections indicating that it will reach an all-time high of 17.24% in the year 2024, thereby surpassing its previous records. This upward trajectory in economic contribution is a testament to the resilience and adaptability of the industry as it rebounds from the challenges it faced in the wake of the pandemic and the Russia-Ukraine war. With these promising developments, it is evident that the global hospitality industry is on track to not only recover but thrive in the coming years, providing a much-needed boost to economies worldwide. Against this backdrop, this research paper provides a case study on Middle Eastern hotels that have achieved higher occupancy and RevPAR rates right after the COVID crisis eased. Therefore, the aim of this research paper is to present personalized recommendations derived from reliable data to forecast trends in the global hospitality industry. The paper provides recommendations on guest personalization and predicts trends that are poised to transform the industry, with a specific focus on Millennials and Generation Z. Through this research, conducted in the field of data science, not only can hotels benefit from the findings, but tour operators and industry experts can also utilize this valuable information to carefully plan and forecast their strategies from the year 2024 onwards. By examining these, stakeholders within the tourism sector can gain deeper insights into the best practices and strategies that have proven to be effective, thus enabling them to make informed decisions and stay ahead of the ever-evolving market trends. Moreover, it is undeniable that analyzing the behavior and mindset of travelers is of utmost importance for

hoteliers, as these tourists serve as the key agents of the industry. Therefore, this research paper has deemed it necessary to include an analysis of travelers' behavior along with growth areas within the hospitality industry. By understanding how travelers think and behave, valuable insights can be gained that will contribute to the development of successful strategies and initiatives.

## **RESEARCH METHODOLOGY**

Primarily, this research paper is based on secondary research methods. The content this paper offers also has background of few referential readings. Links to those references are included in the last section of Future research. After compilation and careful evaluation of the data, attempt has been made to develop correlation among the statistics presented in the research paper sections. That evaluation is part of the Finding section. In this context, a logical argument arises regarding the authenticity of the data. Hence, data derived from reputable sources like United Nations Tourism, the World Economic Forum, Forbes.com, and booking.com has been duly considered. Lastly, this research delves into the major areas of growth in global tourism, based on statistical data.

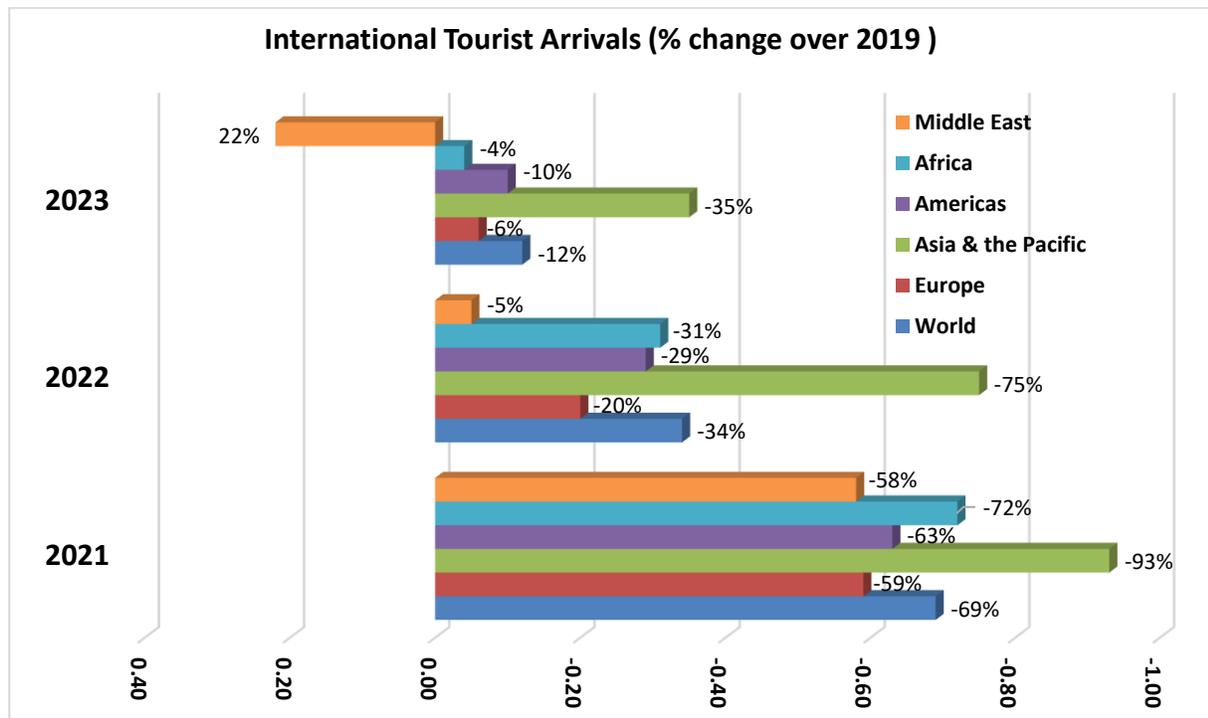
## **INTRODUCTION**

The recently published report on the global hospitality market in 2023 has provided valuable insights into the projected growth of this industry. According to the report, the global hospitality industry is set to witness a substantial increase in 2024 because it gained momentum from \$4390.59 billion in 2022 to \$4699.57 billion in 2023, showcasing a remarkable compound annual growth rate of 7.0%. This growth can be attributed to the stable economic progress produced by both developed and underdeveloped nations. **(Hospitality Global Market Report 2024)**. The United Nations Tourism website emphasizes the correlation between societal prosperity and the flourishing of the tourism sector, which parallels the growth observed in other economic sectors, including the hospitality sector. It means, the trickle-down effect of overall economic prosperity will ultimately have a positive influence on this industry. In fact, the UN Tourism Index, too,

forecasts a significant recovery in global tourism, attaining pre-pandemic levels by 2024, owing to the positive trajectory witnessed in 2023, where the industry achieved an impressive 88% recovery rate compared to pre-pandemic figures. (UN Tourism 2024). The analysis is being presented here as a case study to illustrate how, across the globe, the hotels in the Middle east region became the first beneficiaries of higher occupancy and RevPAR rates from societal and economic prosperity of the pre-pandemic level. Below are the graphical statistics taken from the UN Tourism website illustrating international tourist arrivals region wise.

**Figure 1**

International Tourist Arrivals, World and Regions



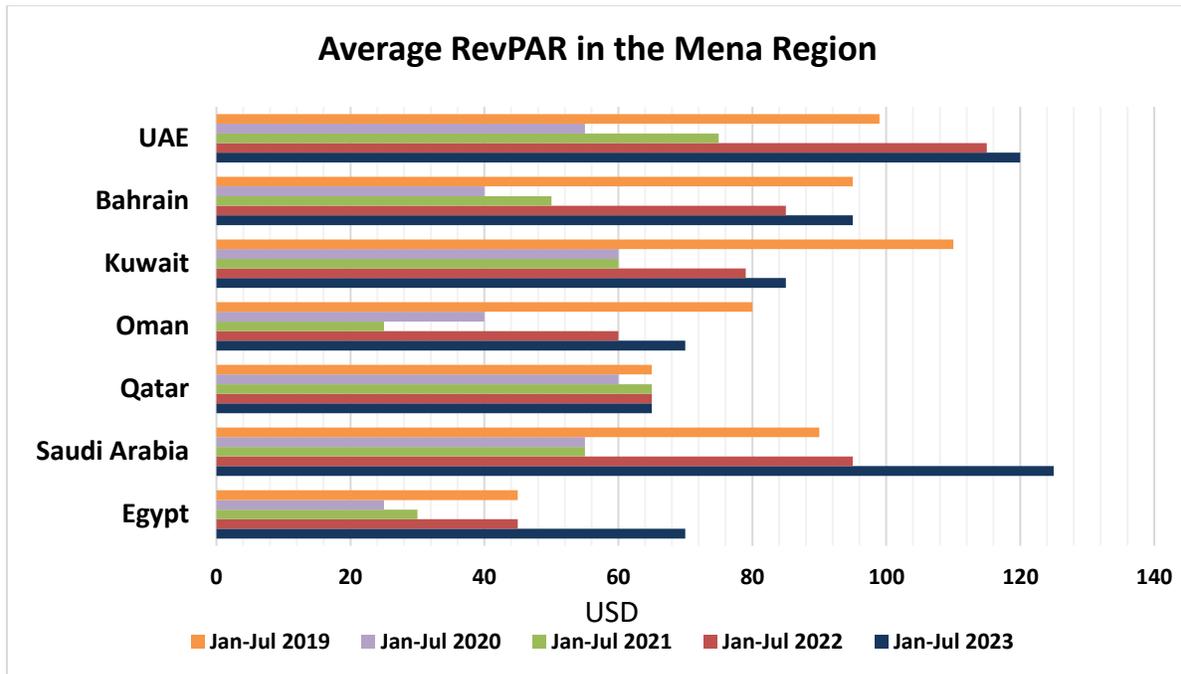
**Note: UN Tourism (International Tourist Arrivals, % Change over 2019)**

The representation of tourism data exemplifies a notable recovery trend in the Middle East, that has even surpassed its pre-pandemic levels of 2019 by 22%. On the other hand, Europe approached 94%, Africa 96%, and the Americas 90% of their pre-pandemic levels by the

end of 2023. The graphic illustration also shows that other regions have not achieved full recovery nor exceeded their pre-pandemic benchmarks. Since its' publication on the UN tourism website, the news of the Middle East being the winner to achieve and surpass the pre-pandemic level in tourism is considerably in the news across the web. The staggering growth in the Middle East's tourism sector, particularly evident in the aviation network, is instrumental in this recovery. For instance, Emirates Airlines, in collaboration with Philippine Airlines, has expanded its network, facilitating increased tourism. Consequently, there has been a concentrated effort by hoteliers and tour operators to promote the Middle East as a preferred destination for personalized and customized services for international travelers. The claim has strong backing as this strategic maneuvering has resulted in a notable increase in UAE hotel occupancy and RevPAR rates too, where occupancy rates surpassed pre-pandemic levels by 2.7% and reached up to 74.5% from January to July 2023. Whereas revenue per available room (RevPAR) in the UAE, Saudi Arabia, and Egypt not only claimed back the strength of the pre-pandemic level, but also surpassed that level by 23% (Alrashdi, 2023). Following is the statistical chart taken from the Emirates NBD website. Also, it is worthy to note that among the key metrics of the hospitality industry, occupancy rate and RevPAR are of great significance to evaluating performance.

## Figure 2

Regional Tourism: Middle east leads the recovery.



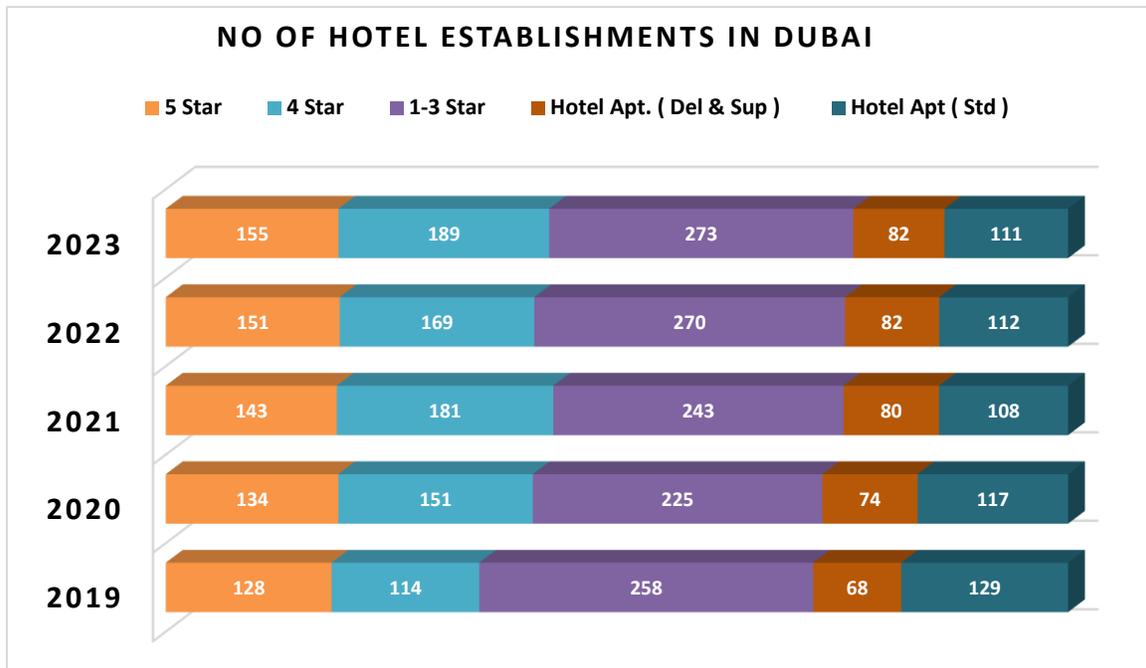
*Note:* Source-STR, Emirates NBD Research

Furthermore, in November 2023, the announcement of a unified visa, like the Schengen visa, by the Gulf Cooperation Council played a crucial role in the personalized and customized experience of international travelers visiting the region. This unified visa system aims to streamline the travel process for tourists visiting the Gulf countries, fostering a sense of ease and convenience. Moreover, the Gulf countries are actively working towards implementing visa and travel facilitation measures to enhance the overall travel experience in and around the Middle East, with a particular focus on stimulating tourism across the region (UN Tourism 2024). By prioritizing the promotion of tourism, these countries are not only showcasing their rich heritage and diverse landscapes but also creating opportunities for economic growth and cultural exchange across major economic sectors, including the Middle Eastern hospitality industry. The state of Dubai is no exception to this approach and has produced encouraging numbers. Dubai's department of economy and tourism released data during the second half of the year 2023, showing Dubai being the

forerunner to becoming the most visited tourist place in the world. Dubai received 8.55 million visitors from January to June 2023, surpassing the 2019 pre-pandemic figure of 8.36 million visitors. This is the reason the state of Dubai had an additional 810 hotel establishments until June 2023, as compared to the figure of 773 hotels in June 2022 (**GCC-Hospitality Market Review 2023**).

**Figure 3**

GCC-Hospitality Market Review



*Note:* Source- The Government of Dubai Media Office, Department of Economy and Tourism, Government of Dubai

## OVERVIEW OF GUEST PERSONALIZATION IN THE GLOBAL HOSPITALITY INDUSTRY

In the hospitality industry, personalization is the art of meticulously and intricately crafting

and shaping every aspect of the customer experience. The integration of digital technologies and the use of AI have given hoteliers a great opportunity to enhance the visitor experience and grow their businesses exponentially. It also helps them draft policies based on analytical data they acquire through technology. Personalization can further be explained through a process, and each phase of the process carries importance to achieving customer retention.

**Figure 4**



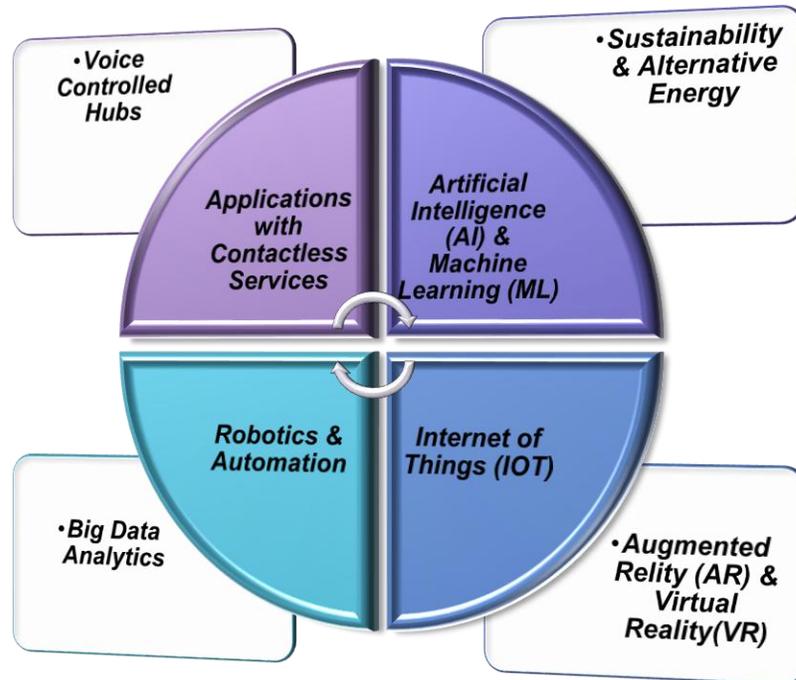
*Note:* **Source-** From Medallia Market research 2023 Personalization Survey

**(n=1,749 hotel guests).**

It is interesting to note that technology plays a pivotal role in each phase, and many hospitality outlets are making the most of the technology to boost their revenue throughout the process demonstrated above.

**Figure 5**

### Top Hospitality technology trends.



*Note:* Source- Zheldak, P. (2024). Top Hospitality technology Trends in 2024

According to the survey conducted by the University of Nevada-affiliated College of Hospitality, a significant percentage of respondents admitted allocating enough for the tech budget because technology has enhanced daily operations. Take the example of **contactless technology**, which has many useful purposes, including contactless check-in through apps. The survey also showed 70% of guests preferred hotels with advanced technological services, specifically the ones mentioned earlier, along with **voice-activated services** that enable them to control their room function to the extent of ordering room services and adjusting room lights. Also, the world is now benefiting from the advancements of artificial intelligence, which have brought about a revolution across the globe. It is undeniable that AI has also led to a revolution in personalized guest interaction, whereby hoteliers, using analytics, can now monitor guest data, be it behavioral or pertaining to social media and travel history. Seasonal fluctuation is undoubtedly evident in the hospitality sector. In this

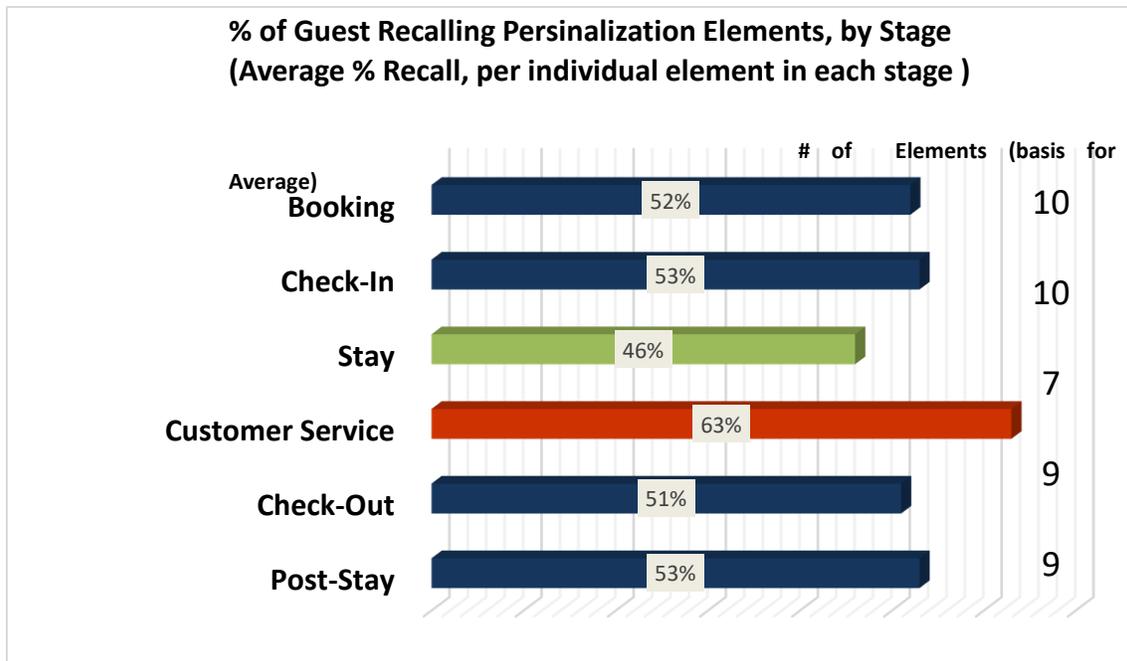
context, data analytics is available to rescue, as hoteliers can forecast demand through historical analysis and adjust their prices and resources based on predictive insight. Whereas AR and VR technologies have the power to present guests with a virtual tour of hotel destinations (**Zheldak, P. 2024**). It implies that, to stay relevant in this competitive business, hoteliers must adapt to emerging trends. There are many examples of guest personalization experiences to observe. Marriott's tech-friendly Moxy Hotels promotes digital services for its guests, which include keyless entry and digital check-in and check-out, among many others. Another hospitality giant, Hayatt, offers a personalized application through which guests can customize their stay and preferences even before they arrive. Here, questions arise. Who are the recipients of these services? Historically, Millennials have been in the spotlight, but demographics have taken a new turn, and now Generation Z has stepped into the limelight. Ivana Johnston has written an article published on the Forbes website titled, **How Is Gen Z Reshaping Hospitality and Travel?** The article posted in November 2023 offers an extensive and comprehensive analysis of Gen Z, who possesses the ability to secure their position within the framework of the policies and strategies implemented by hotels and tour operators. Generation Z, characterized by individuals born between the mid-1990s and early 2010s, holds a considerable financial influence, estimated to be around a staggering \$143 billion. This demographic constitutes a significant proportion, precisely 40%, of the overall consumer base within the hospitality industry. Moreover, as per **Euromonitor's voice of the consumer-travel survey**, it can be observed that there has been a transformation in the demographics of travelers. The current profile of travelers comprises young and empowered individuals who fall into various niche categories such as wellness worshipers, sports enthusiasts, and adventure seekers, among others. It is interesting to note that within these categories, the age group of Millennials, specifically those aged between 33 to 44, tends to assume a prominent role. This can be attributed to their inclination towards personalizing their travel experiences in accordance with their wellness and lifestyle preferences, thereby ensuring that their journeys resonate with them on a deeper level (**Bremner, C. 2023**). Furthermore, the joint forces of both Generation Z

and Millennials are projected to amass a substantial market share of 45% of luxury products by the year 2025, thereby highlighting their growing influence and potential impact on the hospitality industry (Johnston, I. 2023).

Also, a recently published special report, **Understanding Personalization Efforts in the Hospitality and Retail Industries** by US tech-research enterprise Medallia, delves even deeper into the intricate realm of the guest personalization experience, thereby emphasizing the importance of this aspect. The research conducted by the enterprise was based on the responses of 1,749 hotel guests about their recent visits or transactions in November 2023. The evaluation was rated on a scale from 0 to 10, with 10 indicating the best and 0 the worst guest personalization.

**Figure 6**

% of guest recalling Personalization elements



*Note:* Source- From Medallia Market research 2023 Personalization Survey

**(n=1,749 hotel guests).**

Figure 4 demonstrated the process of personalization, so, from Figure 6, we can now assess that the hotel's best chance to maximize guest personalization is during the guest stay, and it is obvious too because guests are in the stay phase and multiple factors are involved in terms of the customer services being provided by the hotel management. We can also call this phase the prime time of physical interaction between guests and hotel management. On the other hand, guests' expectations of a personalized experience are related to other key moments, specifically when they intend to book or even when they check in and out, leading up to the post-stay phase. Further, numbers from 0–6 represent low, 7-8 moderate, and 9–10 high guest personalization (**Medallia 2024**).

This special report by Medallia Enterprise also provides a consumer personalization wish list for hotels. Here too, the report evaluates what guests expect to be rewarded based on their history. They also want customization that suits them best, based on their preferences. Overall, the special report signifies that the higher the guest personalization number, the greater the chances of fostering a profound emotional connection and forging an unbreakable bond of loyalty and devotion between the hoteliers and their guests, leading to a higher level of customer satisfaction. Once the hotel achieves these goals, it instills a deep sense of confidence and assurance in the hearts and minds of the guests, ensuring that they feel cherished, valued, and understood on a deeply personal level, prompting them to return time and time again, not as mere guests but as cherished members of an exclusive and privileged community. It's indeed a collaborative equation where hoteliers, too, can propel themselves to new heights of success through customer retention, which is indeed the prime objective of the hospitality industry. Lastly, it is of utmost importance for hoteliers to achieve a balance between guests' personalization and their privacy. It is highly likely that many would be reluctant to share personal details such as their contact number, residential address, and email address. In such a context, it would be advisable for hoteliers to limit the collection of sensitive information to a minimum, focusing primarily on gathering non-

sensitive data such as booking history and individual preferences.

## **MAJOR GROWTH AREA**

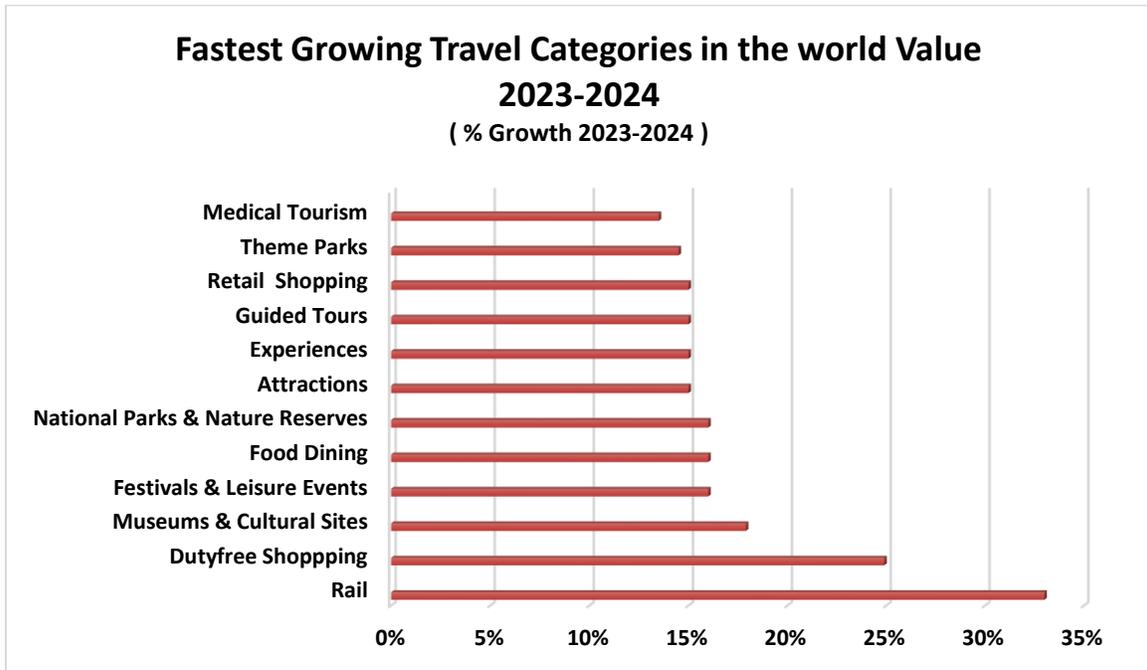
The previous section of this research paper dealt with the matter of guest personalized recommendations at a micro level, delving into the intricacies and nuances. However, to broaden the scope and provide recommendations that encompass a wider scale, the focus of this section is set on offering recommendations at a macro level. By shifting the perspective from the individual to the collective, this section aims to provide insights and guidance that can be applied on a broader scale, taking into consideration the larger context and overarching objectives of hoteliers and tour operators.

## **SUSTAINABILITY ELEMENT IN TOURISM**

Tourism watchdogs have rightly predicted that the sustainability element in tourism is destined to dominate the hospitality landscape from 2024 onwards. For consumers, it's a matter of seeking value for money; therefore, be it UN Tourism, Booking.com, or the World Economic Forum, all these reputable resources point to this fact, which will have far-reaching implications soon. Hotels' and tour operators' eco-awareness is a must now. According to the Booking.com Sustainable Travel Report 2023, 76% of the respondents expressed a desire to adopt sustainable travel in the coming years. Businesses with a high eco-awareness level have already started implementing eco-friendly strategies. Thus, Atlantis the Royal has started adopting Samsung LED signage to reduce their carbon footprints. This technology uses almost 50% to 70% less electricity than halogen. Additionally, Booking.com is also aiming to introduce the ethos of sustainable travel into mainstream operations, as stated by its CEO, Glenn Fogel. He also said that in 2022, Booking.com set out its ambition to be net-zero by 2040 as part of their climate action plan **(Booking.com 2023)**.

### **Figure 7**

### Fastest Growing Travel Categories in the World: Value 2023-2024



**Note: Source- Euromonitor International-passport Travel-Fixed 2023 exchange rate at constant prices**

Before delving into the data presented in the Euromonitor survey regarding the fastest-growing travel categories, it is important to acknowledge that during the COVID pandemic, short-term rentals such as Airbnb experienced the highest growth rate. However, now it is the sustainable travel categories that are assuming the forefront position in terms of growth, with rail travel being the fastest-growing category, with 35.6% growth over 2023–2024. Since the carbon emissions produced by air travel are significantly greater than those generated by other modes of transportation, it has become increasingly common for eco-conscious travelers to opt for rail travel as a viable alternative means. The graph also gives an understanding of the conduct and attitude of the tourists. They are opting for destinations

that can additionally provide them with duty-free shopping. And particularly in Europe, museums and cultural sites throughout the region will prevail in the realm of hospitality **(Bremner, C. 2023)**.

Culinary tourism, too, is a prerequisite, as evident in the chart ranking. Travelers are eager to choose destinations that offer them the experience of local food and markets, making food a key driver in destination selection. Food also presents the opportunity to have cross-cultural experience and helps local businesses thrive as well. Also, the concept of sustainability encompasses many categories that demand careful evaluation by hospitality businesses. To determine the category to which they belong, hospitality businesses must engage in a thorough examination of their practices and policies. This assessment could involve scrutiny of various factors, including but not limited to reducing plastic waste, boosting the consumption of locally sourced food, implementing a robust recycling program, and adopting renewable energy sources as well as an efficient waste management system. Here, hoteliers and tour operators must remember the personalization process, and they can customize their services keeping in mind the findings of the survey.

## **FINDINGS**

This research paper attempts to build a personalized recommendation opinion after careful evaluation of referential material. In fact, personalization in the hospitality business has a considerably broader scope that ranges from the micro to the macro level. Figure 1 of the introduction section showed the Middle East as the first region in the tourism world to reach and surpass the pre-pandemic level of 2019. It also demonstrated how a unified visa system in the Middle East streamlined the travel process for tourists visiting the Gulf countries, fostering a sense of ease and convenience to the extent that hotels achieved higher occupancy and RevPAR rates, as explained through figure 2. Dubai saw additional hotel establishments, as shown in figure 3 of the introduction section. It is indeed guest personalization on a macro level. And, if we place figures 1, 3 and 7 on the table; in a nutshell, we can develop a correlation.

Figure 7 displays the fastest-growing travel categories. The first, second, and third positions in this category were held by eco-friendly trains, duty-free shopping, and museums and cultural sites, respectively. Therefore, in the realm of appealing tourism experiences provided by the Middle East, an enticing package for global travelers consists of duty-free shopping at Dubai airport, environmentally friendly train connections between states, and an abundance of cultural sites- not to mention 4<sup>th</sup> ranked category of food dining, which also offers travelers cultural and local food experience.

On the other hand, examples of micro-level personalized experience of guests are, Marriott's Moxy Hotels tech-friendly ambiance and hospitality giant, Hayatt's personalized application through which guests can customize their stay and preferences even before they arrive.

## **CONCLUSION**

There is an ample amount of material accessible across the internet related to the hospitality industry. Furthermore, there is no shortage of diversity in topics as well. The prosperity of global tourism will inevitably have a cascading effect on the hospitality industry, and the personalization of guests will also evolve in parallel with this process. This evolution does not cease here, as the behaviors of tourists are rapidly evolving too. Therefore, in this competitive business, it is imperative for hotels and industry experts to stay ahead in this race, as discussed in detail throughout the paper. The primary objective of this research paper was exactly this: to aid hospitality professionals in achieving this goal.

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