

THE EFFECT OF TECHNOLOGICAL CHANGES IN HUMAN RESOURCE POLICIES. THE CASE OF HOTEL SECTOR OF BARCELONA

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Abstract: The context of digital technologies and robotization has strongly influence over industry, especially over working environment. Hospitality sector does necessarily involve personal contact with clients. Therefore, in hotels, digital development represents a solution to improve operational processes, but it means a modification of recruitment and retention of talent policies. The purpose of this article is to analyse the real impact of digital transformation on the human resources policies, particularly in reception, room service and housekeeping departments, focusing on high quality hotels of Barcelona (four and five star hotels). Methodologically, a qualitative research is done using face-to-face semi-structured interviews with CEOs, Human Resource managers, heads of reception and housekeepers to verify the effective adaptation of this sector towards digitalization and changes to human resource strategies.

Key words: hospitality, accommodation industry, robotization, technology transformation, human resources, digital era, Barcelona.

Resumen: El contexto de las tecnologías digitales y la robotización tiene una fuerte influencia en la industria, especialmente en el entorno laboral. El sector de la hotelería implica necesariamente un contacto personal con los clientes. Por tanto, en los hoteles, el desarrollo digital representa una solución para mejorar los procesos operativos, pero supone una modificación de las políticas de captación y retención del talento. El objetivo de este artículo es analizar el impacto real de la transformación digital en las políticas de recursos humanos, particularmente en los departamentos de recepción, *room service* y *housekeeping*, centrado en los hoteles de categoría superior de Barcelona (hoteles de cuatro y cinco estrellas). Metodológicamente, se realiza una investigación cualitativa mediante entrevistas personales semiestructuradas a directores generales, gerentes de recursos humanos, jefes de recepción y *housekeepers* para verificar la adaptación efectiva de este sector hacia la digitalización y los cambios en las estrategias de recursos humanos.

Palabras clave: hotelería, industria del alojamiento, robotización, transformación tecnológica, recursos humanos, era digital, Barcelona.

INTRODUCTION

Hospitality and robotization are presumably controversial concepts. Human beings necessarily build social relationships, mainly when they travel. Concurrently, one of the most important current drivers in the world is the technology. In this digital era,

the challenge and the debate focus on the replacement and disappearance of job positions by robots. These changes can also happen in hospitality sector.

Hospitality has a broad range of applications, definitions and perspectives. Despite there is no single accepted definition, it tends

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to consider that hospitality experience is an interaction among people (Hepple et al., 1990). Nevertheless, in the era of Internet, hospitality industry, hence accommodation sector, must constantly adapt to digital trends to improve volume sales, brand image and competitiveness. Some innovations are related with automated systems to speed up some processes and, perhaps, to displace some workers.

Labour costs are traditionally a common handicap for hotels managers due to its high salaries and to the difficulty to get qualified employees. In this scenario, the use of robots is seen as an innovative solution to ensure the quality of service improvement and the cost reduction. However, robots cannot replace all human works. It is complex or impossible for the moment, to expect that robots handle a customer complaint or answer unexpected questions (Lee et al., 2019). In this context, and focusing on the accommodation sector, this article intends to analyse the following hypotheses: (H1) Digital transformation in hotel industry has direct effects on its staff. (H2) Organizational strategies in hotel industry support digital transformation as a clear innovative objective. (H3) Human Resource strategic policy changes and aligns with digital transformation processes.

To reach these objectives, this paper has the following structure. Firstly, there is a theoretical review related to current strategic organizational policies in hotel sector, taking into account disruptive effects of robotization, digital transformation and automation. Furthermore, hospitality concept is analysed in order to have a clear context in this research. Secondly, it is used the case

study of Barcelona labour market in accommodation sector to analyse the aforementioned hypotheses, in particular, 4 and 5-star hotel, both independent and chain hotels. It is used qualitative methodology and therefore, face-to-face semi-structured interviews to CEOs, Human Resource managers, heads of reception and housekeepers were conducted to collect data. Secondary sources are also analysed related to labour market in accommodation sector. Next, the results are presented and discussed in relation to the research hypotheses and the conceptual framework. The most interesting finding states that hotel managers prefer hospitality rather than robotization, without denying that digital transformation of some processes facilitate specific tasks. That is, they do not find viable the binomial robot-customer hospitality.

1. LITERATURE REVIEW

Job destruction or creation depend on various conditions of the labor market. Academics argue that due to technological changes, many jobs will disappear (Frey and Osborne, 2013), as well as the habit of occupying a job for all the life and the mere fact of working for a single organization (Gratton, 2010). Despite of the possibility of job loss due to technological changes, some recent research (Cho and Kim, 2018) do globally demonstrate that the status of employment destructive related to robotization is not very pronounced. However, they confirm that robotization has the potential to complement, to enhance, the human workforce. They conclude that human and robots can (have to) coexist. This job future sce-

nario affects organisations, in their strategy and CSR (Corporate Social Responsibility) and in their human resource policies, specifically, in their talent management (recruitment and talent retention) and, therefore, in their motivation and compensation policies (Cho and Kim, 2018).

The World Economic Forum (2016) forecasts that the fourth Industrial Revolution will have a positive impact on the economy with improved productivity. According to the World Economic Forum data (2018), 75 million jobs around the world may be displaced for new technologies, while 133 million additional new roles may emerge simultaneously. Specifically, 58 million jobs will be created during the next 5 years. In 2018, an average of 29 % of total task hours were performed by machines, compared to 71 % by humans. By 2022, this average it is expected to have shifted to 42 % task hours performed by machines and 58 % by individuals. However, how this new scenario will affect tourism sector, specifically hospitality industry?

1.1. Robotization in accommodation sector and Hospitality concept

Technological innovations will continue to change jobs in tourism and tourist experiences that have created a growing need for data analysts, programmers and AI specialists. The World Economic Forum (2016) notes that in many countries the most in-demand occupations did not exist ten or even five years ago and lots of tourism positions have adopted technology in their daily tasks, basically in mobility area (see Table 1).

Table 1
Technology adoption in aviation, travel and tourism (2018)

Technology	Percentage
Internet of things	95 %
App- and web-enabled markets	95 %
User and entity big data analytics	89 %
Machine learning	79 %
Cloud computing	79 %
Autonomous transport	58 %
Augmented and virtual reality	68 %
Wearable electronics	53 %
Encryption	53 %
Stationary robots	37 %
Distributed ledger (blockchain)	37 %
Quantum computing	32 %
New materials	32 %
Non-humanoid land robots	26 %
Humanoid robots	26 %
3D printing	21 %
Aerial and underwater robots	16 %

SOURCE: Own elaboration. World Forum Economic (2018).

Different scholars have analysed the concept of hospitality and the hospitality management. Cassee (1983, p. 14) defines hospitality as “a harmonious mixture of tangible and intangible components -food, beverages, beds, ambience and environment, and behaviour of staff” and emphasises “[hospitality] concept comprises much more than the classical ideas of preparing good food and providing a comfortable bed”. In that sense, Burgess (1982) suggested that hospitality may be subdivided into private, public and institutional contexts and that these are likely to embrace a wide spectrum of different forms of hospitality. Hanks

(1989) defines hospitality as the kindness and generosity in welcoming strangers or guests. According to Kasavana and Brooks (2009), some of the main characteristics of modern hospitality concept are the blend of tangible and intangible elements, the direct interaction between hosts and guests and the responsibility of guests to provide security and psychological comfort to hosts. The concept has generated varied and interesting definitions, but it refers to the direct and even face-to-face interaction between employee and customer. For the hotel sector, this conception is the big issue, the core objective. That is, providing qualitative service by hospitality management.

Due to the essence of hospitality service provided by hotels, there is some jobs that cannot be replaced by robots. Robots cannot provide high-quality services or immediate response, such as offerings for VIPs or handling customer complaints (Lee et al., 2019). These artificial intelligences can do simple requirements of customers that occur repeatedly and routinely, for instance, room services, which deliver the amenities and food requested by the customers (Osawa et al., 2017). Automated systems have been implemented in hotel processes, for instance in room service departments (Lee et al., 2019), but robots are not generalised in the “staff” structures. The exception is Henn-na hotel in Japan, the first hotel that reduced labour costs by sharing the duties of human employees with robots. This hotel installed several kinds of robots such as porter robot that delivers luggage to the guest room after customers check in and humanised receptionists who helped customers in the reception desk (Tung and Law, 2017).

The digital era and the globalization force hospitality industry to re-define their products and services in order to adapt to demand changes and increase revenues and maximize profits (Sfodera, 2006; Vaculciková et al., 2019). One of these new strategies is yield management. Yield management can be defined as a price control and capacity control management process with the objective to maximize revenues from the sales that cannot be stored (Vaculciková et al., 2019). It is a supply and demand management by a remarkable balance between prices and availability (Wirtz and Kimes, 2003; Nair, 2019). Yield management in hotels industry is enabled due to its high fixed costs, fixed capacity, market segmentation and expected demand (Vaculciková et al., 2019). Crystal (2007) insists that to measure the revenue management there are required two elements: technical possibilities (market forecast, IT, etc.) and social capabilities (knowledge, vision, incentives, etc.). In this way, Nair (2019), in his research about revenue management strategies adopted by Qatar hotels, considers that the performance of that strategy depends on pricing strategies (physiological pricing, promotional pricing, etc.) and on non-pricing strategies (length of stay control, loyalty, etc. Abad et al. (2019) stated that the category, chain affiliation and qualified full-time staff are the key factors for successful revenue management strategies.

1.2. Human Resource Management: recruitment and talent retention

Organizations use to have key positions in their value chain, occupied by staff with valuable and irreplaceable capabilities that may differentiate one firm among others for creat-

ing specific advantages. Employee attributes are directly influenced by human resource management (HRM) policies, practices, and capabilities of the organization, as well as organizational culture and climate (Barney and Wright, 1998; Coff 1997; Lado and Wilson, 1994; Mueller, 1996; Wright et al., 2001). In that sense, HRM involves a series of activities and decisions relating to manpower planning, job design and analysis, recruitment and selection, orientation, training and development, performance appraisals, compensation and benefits, promotion, and motivation (Dolan et al., 2007). As employees are viewed as strategic talent and valuable assets to be invested in and developed, HRM emphasizes the strategy and efforts in their recruitment, and mainly retention. That is, selective hiring, extensive training, self-managed teams, decentralized decision making, reduced status distinction, information sharing, performance-based compensation, employment security, flexible job assignments, employee participation and involvement, internal promotion, transformational leadership, etc. In that sense, HRM strategy and leadership style are determinant to achieve committed employees, aligned with organizational culture, organizational objectives and outcomes, as well as corporate social responsibility (Boria et al., 2013).

In the specific sector of tourism and hospitality, this approach is especially critical. Human capital is a key resource in tourism and hospitality organizations, as they are critical for service quality, customer satisfaction and loyalty, competitive advantage, and organizational performance (Kusluvan et al., 2010). Tourism services are intangible; they are produced and consumed simultaneously, and customers are present or participating in the

service, usually with interpersonal interaction between customers and service providers. Owing to these features, services are made tangible in the personality, appearance, attitudes, and behaviour of the service provider; thus, employees become part of the product, represent the organization, and help to form the image of the organization (Bitner et al., 1990; Nickson et al., 2003; Schneider, 2003).

Related to recruitment, most required skills for tourism employees have to do with “emotional intelligence”, “social skills” and “service attitude or predisposition, or customer orientation” (Hogan, et al., 1984; Lee-Ross 2000; Brown et al. 2002; Saxe and Weitz 1982; Morris and Feldman, 1996; Nickson et al., 2005), specifically those individuals who occupy frontline positions. Tourism employees have to highlight their disposition to be helpful, empathetic, thoughtful, considerate, sociable, open-minded, and cooperative in their interactive and interpersonal transactions. This personality trait also means feeling personal satisfaction with service provided. In addition, many scholars state that this customer orientation is strongly related to customers’ satisfaction with service in the hotel industry (Susskind et al., 2003; Grandey et al., 2005). In the context of tourism and hospitality organizations, one can rather speak of “service culture”, that is the appreciation for good service (Gronroos, 1990) to internal and, ultimately, external customers. Many researchers have argued that organizational or service culture directly or indirectly influence employee attitudes and behaviors, which, in turn, have an impact on organizational performance (Denison, 1996; Ferris et al., 1998).

In any case, academic research related to HRM practices in the tourism and hospita-

lity industry state that these organizations are unprofessional, underdeveloped, and inferior when compared to other industries (Kusluvan et al., 2010), as their HRM policies do not generate employee commitment, satisfaction, and retention (Anastassova and Purcell, 1995; Fulford and Enz, 1995; Guerrier and Lockwood, 1989; Head and Lucas, 2004; Hiemstra, 1990; International Labor Organization [ILO], 2001; Kelliher and Johnson, 1997; Lucas et al., 2004; McGunnigle and Jameson, 2000; Nolan, 2002). For example, there is ample evidence that a substantial number of minimum wage earners are working in the tourism and hospitality industry, and its organizations pay their employees less on average than do other businesses (Boella, 2000; ILO, 2001; Wordsfold, 1999). In terms of the current state of HRM practices, the only (and partial) evidence of good personnel management and practice are observed in a small number of large, foreign-owned, international chain establishments (ILO, 2001; McGunnigle and Jameson, 2000).

2. CASE OF STUDY: THE ACCOMMODATION SECTOR IN BARCELONA

The case presented in this study focuses on the Barcelona accommodation sector, particularly, 4, 5 star and grand luxury hotels, to analyse the current robotization and digital transformation processes in their operational processes and labour structure, and how these changes affect HRM policies. Barcelona is a consolidated tourist destination and its market position is high. It states as the 17th top destination city by international overnight visitors in 2018 (Mastercard's Global Destination Index, 2018).

In 2018, the hotel supply in Barcelona approached to 74 400 beds, 2.4% more than 2017. Almost 70% of this offer is four- and five-star hotels. The last decade, this accommodation typology has increased around 40%. Regarding hotel's affiliation, it is noted that between 2011 and 2018, the presence of international hotel chains has increased 150.0% and the independent hotels just a 12.258%. These data allow confirming the increase of international competitiveness of Barcelona. The decrease of national hotel chains is due to some Spanish hotel chains become international in order to benefit of scale economies.

Tourism sector represents 12.0% of the GDP and 9.0% of the employment rate in Barcelona (IDESCAT, 2019). According to the official data, tertiary sector, in particular tourism, financial activities, real estate companies and public administration are the most important employment sectors in Barcelona (Table 2).

Table 2
Employed population in tourism and retail sector in Barcelona 2014-2019

	Employed population (millions)			
	2016	2017	2018	2019
1 st . trimester	135.4	162,2	159,4	162.3
2 nd . trimester	156.3	154.2	172.6	164.5
3 rd . trimester	158.9	152.9	168.6	
4 th . trimester	159.9	150.9	163.3	

SOURCE: Own elaboration. Encuesta de Población Activa, Instituto Nacional de Estadística.

Finally, related to wages, it is worth to mention that, in Spain, tourism workers earn an average salary of 19 253 € per year (Turijobs, 2019), that is 17, 4% less than the Spain average salary and 55% more than the minimum wage. The most well-paid positions are those related to management and administration, and also foreign languages increase the salary in a 3, 4%. In Catalonia, the average salary is 19 500 €/year.

3. METHODOLOGY

This research adopts a qualitative approach in order to analyse the impact of robotization in staff structures in high quality hotels in Barcelona. The qualitative approach was chosen due to its appropriateness to capture in-depth details about the phenomena that cannot be conveyed in quantitative data (Bryman and Bell, 2015). Qualitative research is also crucial to study things in their natural settings, to understand how and why people view a particular issue (Walsh, 2003), and to try to understand the situation from a local perspective (Bartunek and Seo, 2002).

Semi-structured interviews method was used to collect primary data from the respondents. That methodological design allows researchers to get an interpretative approach in which respondents can easily express their points of views (Aguinis and Solarino, 2019). Respondents for this research were selected using purposive sampling which consists of General Managers, Human Resources managers, heads of reception and housekeepers of 4 stars, 5 stars, 5-star grand luxury hotels and bou-

tique hotels in Barcelona, both independents and chain-hotels. The study focuses on reception, room service and housekeeping departments since they have a daily face-to-face contact with the customer, and are directly linked to the hospitality management. Additionally, these departments represent the highest staff costs (Kasavana and Brooks, 2009).

The interviews were conducted in person, in the workplace of the interviewees, between April 2019 and November 2019 until the theoretical saturation. This theoretical saturation is reached when a new interviewee do no add more information, but using their own vocabulary, have the same point of view about the different issues. The semi-structured interview was based on three blocks of questions: (a) technologies applied during the last years in reception, room services and housekeeping departments; (b) impact of robotization on the salaries and on the staff's profile of these three departments; and (c) impact of robotization in the traditional concept of hospitality. Data that have been collected in the research was analysed using thematic analysis. Thematic analysis is appropriate "to ascertain using interpretations and offered ordered elements to data analysis" (Yin, 1994, *apud* Sabri et al., 2019, p. 18). The interviews were audio recorded and transcribed using the content analysis technique. The interviews were complemented with direct and participant observation in each of the hotels that were made at the end of each interview.

Furthermore, secondary data from INE (Instituto Nacional de Estadística), Idescat (Institut d'Estadística de Catalunya), and

Gremi d'Hotels complement de current tourism attraction and labour context in Spain and in Barcelona, specifically.

4. RESULTS

The findings of the analysis are organised following our hypotheses: (H1) Digital transformation in hotel industry has direct effects on its staff. (H2) Organizational strategies in hotel industry support digital transformation as a clear innovative objective. (H3) Human Resource strategic policy changes and aligns with digital transformation processes.

H1. Digital transformation in hotel industry has direct effects on its staff

The research process points out that in high-quality hotels in Barcelona, both independent and chain hotels, digital transformation and robotization processes are considered to improve the efficiency of reception, room service and housekeeping departments. That is, the implementation objective is to facilitate and accelerate the tasks of these units. The replacement of people for robots is not considered; it would mean the loss of the customization, one of the most important values for these hotel missions.

All the respondents state and coincide that robotization dehumanizes the services. They consider that hotels that use robots instead of people cannot use the word "hospitality" to refer to the service they offer to their customers. Hospitality means people

contact. These implications suggest that each person involved in the delivery of hospitality services, has a relevant role on the success of that service (Hepple et al, 1990).

All the interviewers use words linked to customer hospitality when they refer to the no necessity of robots in their organizational chart: "*feel at home*", "*customized service*", "*the staff is a vital part of the service*", "*we are here to make easy the client's stay*". They recognized that to schedule tasks and activities, robotization does not make sense. Furthermore, each day, each moment is different. This changing reality allows affirming that, for the moment, robots are considered complementary tools because they do not have the ability to react and to improvise yet. Robots are suitable for repeatedly and routinely tasks (Lee et al., 2019).

They also add that nowadays to be competitive, hotels have to offer personal experiences and human warmth, elements that, for the moment, robots cannot do. Hence, the robots cannot do upselling (to encourage customers to purchase an upgraded and expensive version of the chosen product or service) and cross selling (to offer an additional product or service to an existing customer), an important extra income for hotels. Neither robots can do the named "personal activities" of the employees, like claims resolution, smile, be friendly, etc.

Some respondents consider that people tend to trivialise and think that the robot implementation in reception, room service and housekeeping is a simple change because they don't know the tasks and the responsibilities of these units. An interviewee

says, “*housekeeping department is the great unknown. We make beds but also, we know their intimacy because we arrange their personal things everyday*”.

In light of these results and comments, Hypothesis 1 has only partial support. Managers of high-quality hotels in Barcelona consider that digital transformation and robotization have direct effect in the staff in the sense of improvement some operational processes and task efficiency, but not to replace employees. Hotel managers in high quality categories in Barcelona do not expect to replace human employees by robots, as they prioritise hospitality service. They also forecast that robotization in this sector is quite rare in the closer future, almost in Spain. They state that hotel managers are quite traditional related to the need to establish human links, friend and warm relationships with their customers. However, they insist on the need to adapt their daily tasks to digitalization procedures. Otherwise, chain hotels are more aware of digital transformations, and even more innovative due to the international strategic view.

H2. Organizational strategies in hotel industry support digital transformation as a clear innovative objective

The results indicate that all the studied hotels use different technologies to improve and to control tasks from different departments: finance and accounting (to control the incomes and the expenses, to analyse the occupancy), human resources (to define and to monitor work schedules), front-office operations (reservations, check-in/ check-

out procedures, room assignment, billing), housekeeping (to organize the checklist, to control occupied and unoccupied rooms) and F&B (stock's control, to take orders). According to Next Tourism Generation Skills Alliance (2019), electronic management systems allows to efficiently manage front-office operations, housekeeping and maintenance management, sales and revenue management, distribution across multiple channels, management of customer data to create customized guest experiences for more satisfaction and greater loyalty.

Respondents in this research state that they are introducing technologies to standardized processes into departments without customer contact. Most respondents consider that customers can do most of the automated activities using the applications of their smartphones. Smartphones are gradually becoming the main Internet access device for travellers (Leung et al., 2014). Furthermore, mobile applications are very popular and people use for many daily life activities and for leisure (Abou-Shouk et al., 2019).

All respondents stressed that the main objective to apply technologies is to offer a better service and to answer quickly to customers' demands and wishes. This also has a positive effect increasing the clients' satisfaction, what it uses to be the basic mission of these organisations. An interviewee explains: “*in each room there is a button next to the bed that clients can switch on and ask for room cleaning service (blue light) or for not disturb (red light), it is more comfortable and even discrete than to put the poster at the bedroom's door*”.

Some respondents comment that sometimes hotels use technological innovations (smart bedrooms, room service robots, etc.) for a short period of time as a marketing strategy to show that they are a creative and innovative company. A respondent explains: *“last year, during the World Mobile Congress (the most important MICE event in the city), we used big tablets on the tables in the hotel restaurant that allowed to send emails and messages while clients were waiting for the meal”*.

In light of all these data, Hypothesis 2 is supported. It is concluded that managers of high-quality hotels of Barcelona support digital transformation to improve operational processes, basically to enhance daily tasks of employees. Usually, these are monotonous tasks that even have to do with employees' job satisfaction.

H3. Human Resource strategic policy changes and aligns with digital transformation processes

The results indicate that there is no change on the requirements to work on reception, room service and housekeeping departments. Languages, academic background, professional experience, communication skills and commitment to teamwork are the most well considered competences.

All the interviewees agree that communication skills are more important than the technical knowledge, and they prefer to hire those candidates with this interpersonal and social competences that others than have more technical background. Techni-

cal competences can be learned because the majority of companies offer induction and continuous training programmes according to their company recruitment, hiring and career plans. Nevertheless, some respondents consider that in the near future the hotels will need attract and retain employees with a detailed knowledge of technologies. According to Next Tourism Generation Skills Alliance (2019), accommodation and food and beverage sector tend to prioritize soft skills (interpersonal, communication and language skills) and attitude (flexibility, service orientation) over digital skills in many cases.

Respondents state that the department modification and restructuring are linked to new market demands and to cost optimization, not to robotization. For instance, some respondents consider that *“conciierge position is currently disappearing to become guest relation manager or guest experience manager. This new polyvalent post allows to strength the customized services, especially for manage claims and complaints”*. As it has been aforementioned, high category hotel managers prefer adapt their organization to emotional trait with clients. They prefer the hospitality management than the digital innovation.

For the moment, the interviewees do not consider necessary to modify the salary policies because of the technology adaptation of their staff. Some respondents mention that is necessary to check the wage conditions of Spanish and Catalan hospitality sector because there is a substantial gap between core staff and General Management and intermediate positions. A respondent

affirms, “...if the salaries are low, the level of exigency has to be lower compared with other countries, like United Kingdom, for instance”. Another considers: “over several years, national companies do not be concerned about employee’s welfare, the only important issue are the external customers and their website reviews”.

Definitely, Hypothesis 3 is not supported. For the moment, the recruitment policies are not linked to digital transformations and robotization, but to the market demands. The work requests are still connected with hospitality concept. That is, competences (aptitudes and attitudes) that allows to offer to the customer a pleasurable, kind and warm stay. It has to be noted, that some jobs are changing because of the demand evolution, such as the new position called guest relations manager.

5. CONCLUSIONS

This paper has investigated the effects of digital transformation and robotization in reception, room service and housekeeping departments in four, five- and five-star grand luxury hotels in Barcelona. Barcelona is one of the most visited cities around the world, and consequently, tourism is one of its main economic sectors. Hence, tourist activity is the income source of many working population.

Results show as digital transformation have not displaced employees among reception, room service and housekeeping departments. Process automation means the loss of interpersonal contact, consequently,

the loss of hospitality idea and strategy. Therefore, accommodation sector in Barcelona refuses this robotization in their core service. Hospitality and “be like home” are well valued for the customers. However, it is true that organizational strategies support digital transformation and robotization as a tool to accelerate processes and to improve the efficiency of different activities, but it is just referred to monotonous tasks. Consequently, human resource departments do not consider, for the moment, to change the recruitment and talent retention policies because of the digital transformations and robotization. Interpersonal communication skills are still the most required attribute to employees. The technological knowledge to work in these three departments is simple and easy, and employees can learn it quickly during the continuous training programs.

In conclusion, digitalization in Barcelona high star hotels has not displaced employees and has not affected the recruitment and talent retention policies. The effect of the technological innovations is linked to operational processes that are not related with direct and face-to-face customer contact. Hotel managers still wager personal contact between client and employee as the basic strategy to achieve a nice hospitality and be competitive. That is, hotel employers still focus on external customers and forget internal ones.

5.1. Limitations and suggestions for future research

There are a number of limitations of the study that offer new research lines. Firstly,

only high-quality hotels are considered. Future research might additionally study other hotels categories, such as one, two- and three-star hotels, to analyse if the results and the hypothesis testing are similar or not to the ones presented in this article. Secondly, given that the data were collected only in a single tourism destination (Barcelona), future studies could include other geographical areas with different development background to determine if the findings are similar. Finally, the research is focused on the supply point of view. Future research should use demand's opinion using quantitative and qualitative research to compare supply and demand point of view about digital transformation and robotization presence in the tourism sector.

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