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A new scale to measure customer's expectations about service dimensions: Application to the hotel service

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Abstract: The main purpose of this research was to create and test a scale to measure customer's expectations about new service dimensions. Quantitative methodology, using exploratory factor analysis, was used to validate the scale for new service dimensions. This transnational research involved hotel service, and data were collected from 10 Latin countries: Portugal, Spain, France, Italy, Romania, Brazil, Mexico, Uruguay, Bolivia, and Chile. About 1262 customers answered a questionnaire about their expectations regarding service dimensions of the hotel service. Findings show that there is a set of new dimensions that are accurate to measure customer's expectations about service, namely, the degree of customer involvement, convenience level, contact personnel performance, complexity degree, information and communication power, and environment and social responsibility. The major contribution is that these dimensions were outlined to be tested from the customers' point of view for any service, as all these service dimensions can be controlled by the service provider to fulfil customers' expectations. This research goes beyond the usual service quality dimensions, including other dimensions of the service. However, owing to the dynamic nature of customers' expectations, researchers should continue to search for new aspects that customers consider in the service process and test new service dimensions.

Keywords: service dimensions; hotel; tourism; services scale; customer's expectations; Latin countries

1 Introduction

Since 1990 (Bowen, 1990), understanding customer service expectations has been vital for designing services that satisfy needs and achieve satisfaction. However, research on analysing customer expectations has made little progress due to the difficulty of measuring them pre-service (Song et al., 2012). It is crucial to measure expectations before customer-service provider contact. Some studies focused on the moderating role of expectations in satisfaction and service quality, while others examined their information sources (Torres, 2014; Trișcă, 2013; Wong & Dioko, 2013; Wu et al., 2014; Yuen & Thai, 2017). Evaluating customer expectations often involves analysing service quality dimensions using the SERVQUAL scale (Parasuraman et al., 1988), although customers consider additional dimensions beyond service quality for satisfaction (Midor & Kučera, 2018).

Service dimensions have been outlined in previous research (Bowen, 1990; Lovelock, 1980, 1983; Van der Valk & Axelsson, 2015; Salegna & Fazel, 2013; Venkateswaran & Maleyeff, 2011) but primarily from providers' perspectives (Cunningham et al., 2006; Liu et al., 2008). This study focuses on dimensions that service providers can influence and control, necessitating an exploration of key concepts and an analysis of existing dimensions (Hofstede et al., 2002; Jesuino, 2002; Stankov, 2011). New service dimensions, untested previously, aim to bridge a gap in measuring customer expectations beyond service quality, from the customer's viewpoint. Thus, the research question of this study is: What are the key service dimensions that effectively capture customer expectations across diverse cultural and management contexts in the hospitality industry, and how can these dimensions be integrated into a comprehensive scale? The scale was tested in 10 Latin countries, chosen for their cultural proximity and the significance of the hotel sector in the global economy (Dortyol et al., 2014).

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2 Literature Review

2.1 Customer's expectations about services

Customer expectations represent what a service should deliver, serving as an anticipation of the service experience (Parasuraman et al., 1988; Wu et al., 2014). In satisfaction literature, expectations are viewed as predictions assessed by customers during the service interaction, influenced by perceptions, attitudes, and emotions (Torres, 2014; Parasuraman et al., 1988). Satisfaction is achieved when there is a balance between expectations and the actual experience, with higher satisfaction occurring when this gap is smaller. This leads to customer loyalty and positive feedback (Wu et al., 2014).

The “Cognitive Model – Expectancy Disconfirmation” (Oliver, 1980) posits that customers form attitudes towards service providers based on prior expectations of performance. These attitudes influence purchase intentions and are revised based on satisfaction or dissatisfaction from subsequent experiences. Expectations, acting as a baseline, are either confirmed or disconfirmed during the service encounter (Oliver, 1980; Parasuraman et al., 1988; Wu et al., 2014).

Parasuraman et al. (1988) introduced the SERVQUAL model to measure service quality as the gap between customer expectations and perceived performance (Service Quality = Performance – Expectations). SERVQUAL remains widely used (Devlin et al., 2002; Midor & Kučera, 2018). Service quality significantly impacts customer satisfaction, with superior service quality exceeding customer expectations and creating value (Torres, 2014; Yuen & Thai, 2017). Consequently, managing customer expectations is crucial for service design and delivery (Kurtz & Clow, 1992). Additionally, understanding expectations extends beyond service quality to encompass other service dimensions.

In the hospitality sector, frameworks like SERVQUAL focus on core dimensions such as reliability, tangibility, and responsiveness (Saleh & Ryan, 1991). However, modern studies emphasise evolving expectations influenced by technology and innovation, such as automation and robotics to enhance efficiency and personalise services (Saravanakumar & Narayanan, 2018).

Recent research also explores the multidimensional nature of customer relationships, particularly in hotels. Hyun and Perdue (2017) highlight engagement, commitment, and word of mouth as key factors affecting customer satisfaction and financial performance. This view suggests that service quality transcends functional aspects, incorporating relational and emotional elements.

The next section discusses various service dimensions and the degree of control service providers have over them and proposes new dimensions.

2.2 Service dimensions

Judd (1964) initiated the classification of services by identifying key dimensions, such as customer contact, used to evaluate services. This effort continues today, with ongoing development of new service dimensions, though few frameworks are universally applicable across all service industries (Salegna & Fazel, 2013).

The role of technology in shaping customer expectations has been explored in diverse cultural contexts. For example, a study in Malaysia and Singapore demonstrated that cultural factors significantly influence how service dimensions, particularly those involving technology, affect customer satisfaction (Suryanarayanan et al., 2021). This underscores the importance of considering cultural nuances when applying standardised service dimensions globally.

Sustainability has also emerged as a key focus in service innovation. In Taiwan's hospitality sector, sustainable practices were shown to enhance customer satisfaction and competitive advantage, reflecting growing consumer demand for environmentally and socially responsible businesses (Horng et al., 2018).

Information management technology has been linked to improved service quality and customer satisfaction. For instance, in Kenya, such tools enhanced customer interactions and streamlined service delivery (Gichia, 2023). Similarly, artificial intelligence (AI)-driven feedback systems now provide real-time insights, enabling businesses to address customer needs more effectively (Ramnarayan et al., 2022).

These findings indicate a shift towards dynamic, personalised service dimensions that incorporate technological innovation, sustainability, and cultural diversity. This aligns with proposed scales that include customer involvement, convenience, and social responsibility, making them adaptable to modern expectations across various service settings.

The identification of service dimensions is critical to this research, as these define how services are evaluated. Customers form expectations for each dimension, making it essential to understand which dimensions can be influenced by service providers. From a customer-centric perspective, this research identifies the controllable dimensions that service providers can design to meet customer expectations. Table 1 summarises these dimensions and categorises them by the level of control service providers can exert.

Table 1: Level of controllability of service dimensions by the service provider.

Dimensions	Brief definition	Control by the service provider	Authors
Degree of customisation or standardisation/service package structure	Level of adaptation of the service to each customer's needs and/or desires.	Yes	Salegna and Fazel (2013); Cunningham et al. (2006); Cunningham et al. (2004); Silvestro et al. (1992); Bowen (1990); Lovelock (1980); Lovelock (1983); Liu et al. (2008); Shafiti et al. (2007); Cunningham et al. (2005); Van der Valk and Axelsson (2015); Ostrom and Iacobucci (1995); Karmarkar (2004); Lovelock (1984); Dotchin and Oakland (1994); Verma (2000); Trinh and Kachitvichyanukul (2013)
Degree of customer contact	Level of customer's presence in the service process.	Yes	Salegna and Fazel (2013); Cunningham et al. (2006); Cunningham et al. (2004); Silvestro et al. (1992); Bowen (1990); Shafiti et al. (2007); Cunningham et al. (2005); Chase (2010); Van der Valk and Axelsson (2015); Lovelock (1984); Dotchin and Oakland (1994); Verma (2000)
Tangibility/Intangibility	Level of physical features in the service.	N/A	Salegna and Fazel (2013); Cunningham et al. (2004); Cunningham et al. (2006); Bowen (1990); Lovelock (1980); Lovelock (1983); Shafiti et al. (2007); Cunningham et al. (2005); Parasuraman et al. (1985); Lovelock and Gummesson (2004); Parasuraman (1998); Judd (1964); Lovelock (1984); Grönroos (1983); Venkateswaran and Maleyeff (2011); Kotler and Armstrong (2010); Dotchin and Oakland (1994); Dey et al. (2015)
Relationship or interpersonal interaction	Type of relation between the customers and the service provider (formal or no formal).	Yes	Cunningham et al. (2006); Cunningham et al. (2004); Lovelock (1983); Liu et al. (2008); Shafiti et al. (2007); Cunningham et al. (2005); Solomon, et al. (1985); Lovelock and Wirtz (2011); Dotchin and Oakland (1994)
Nature of service delivery (continuous or discrete transactions)	Level of service continuity between the customers and the service provider.	N/A	Cunningham et al. (2006); Cunningham et al. (2004); Silvestro et al. (1992); Bowen (1990); Lovelock (1980); Lovelock (1983); Cunningham et al. (2005); Lovelock (1984); Vandermerwe and Chadwick (1989); Lovelock and Wirtz (2011)
Riskiness	Level of risk that customers perceive across different types of services.	Yes	Cunningham et al. (2006); Cunningham et al. (2004); Cunningham et al. (2005); Murphy and Enis (1986); Zeithaml (1981)
Judgement/Decision	Level of judgement exercised by the contact personnel about customers and the nature of necessary information for accomplishment of a task by the employee.	Yes	Cunningham et al. (2006); Cunningham et al. (2004); Lovelock (1983); Shafiti et al. (2007); Cunningham et al. (2005); Mills and Margulies (1980)
Switching	Level of easiness of customers to change the service provider.	Yes	Cunningham et al. (2006); Cunningham et al. (2004); Bowen (1990); Cunningham et al. (2005); Lovelock (1984)
Effort	Level of energy and value that customers spend in achieving the service.	No	Murphy and Enis (1986)
Consumer involvement or customer participation	Level of customers' contribution to the service process.	Yes	Bowen (1990); Van der Valk and Axelsson (2015); Larsson and Bowen (1989); Karmarkar and Pitbladdo (1995); Trinh and Kachitvichyanukul (2013); Dey et al. (2015)

Place orientation or value added back office/front office	The places that the service process use.	N/A	Silvestro et al. (1992); Liu et al. (2008); Shafti et al. (2007)
Degree of labour intensity	Level of resources offered by the provider to accomplish the service process.	Yes	Liu et al. (2008); Shafti et al. (2007); Dotchin and Oakland (1994); Verma (2000)
Extent of demand/supply imbalances or variety of customer demands	Level of demand fluctuations over time.	No	Lovelock (1980); Lovelock (1983); Lovelock (1984)
Diversity of demand	Level of uniqueness of customers' demands.	Yes	Larsson and Bowen(1989)
Physical environment or physical goods and facilities	General, functional, and environment characteristics of the service provider.	Yes	Lin et al. (2013); Lovelock (1980)
Product/process focus	The type of emphasis of the service provider can be on the product or on the service process.	N/A	Silvestro et al. (1992); Shafti et al. (2007); Grönroos (1983)
Personal quality of an employee: behaviour/contact person/friendliness	The behaviour characteristics of the contact personnel	Yes	Lin et al. (2013); Crosby and Stephens (1987); Ostrom and Iacobucci (1995); Jankalová (2016)
Value (pricing and timing)	The price paid for the service and the time spent for acquiring or consuming the service.	No	Lin et al. (2013)
Service delivery (collective and individual)	Customers can share time, space, or equipment when consuming the service.	N/A	Ng et al. (2007); Lovelock (1980); Hill (1977); Lovelock (1984)
Customer's service encounter activity sequence	The steps that form the service encounter.	Yes	Collier and Meyer (1998)
Number of pathways built into the service system design by management	The steps that form the service encounter defined by the service provider.	Yes	Collier and Meyer (1998)
Communication/Communication time	All the forms of communication made between the service provider and the customers.	Yes	Kellogg and Chase (1995); Parasuraman et al. (1985); Mills and Margulies (1980); Venkateswaran and Maleyeff (2011)
Intimacy/Attachment	The level of confidence and trust between the service provider and the customers, and employee's identification with customers	Yes	Kellogg and Chase (1995); Mills and Margulies (1980)
Information (richness or asymmetry)	The level of information exchange between the service provider and the customers.	Yes	Kellogg and Chase (1995); Mills and Margulies (1980); Krishnan and Hartline (2001); Zeithaml (1981)
Differentiation or divergence	The definition of the service mix in order to distinguish it from competitors.	Yes	Bowen (1990); Shostack (1987)
Importance of people/employees	The level of significance that service provider employees have in the service process.	Yes	Bowen (1990); Lovelock (1984)
Multi-site vs. single-site delivery	The location of the service delivery.	N/A	Lovelock (1980); Lovelock (1984)
Breadth of service package	The number of services that compose the whole service.	Yes	Lovelock (1980)
Timing and duration of benefits; permanent effect vs. temporary effect	The duration of the benefits received when acquiring the service.	N/A	Lovelock (1980); Hill (1977)

Allocation of capacity to customers	The management of service capacity by the service provider according to demand fluctuations.	Yes	Lovelock (1980)
Time-defined vs. task-defined transactions	The definition of the service according to the duration or to the accomplishment of a task.	N/A	Lovelock (1980)
Nature of customer/service system interaction	The level of customer interaction in the service system.	Yes	Wemmerlöv (1990)
Nature of service (customer-provider interaction)	The effort of acquiring the service can be from customers or from the service provider.	N/A	Lovelock (1980); Vandermerwe and Chadwick (1989)
Method of service delivery (nature of interaction and availability)	The way that the service is delivered according to its availability.	Yes	Lovelock (1983)
Purpose of delivery/consumption	The core benefit that customers search from acquiring a service.	No	Ng et al. (2007); Parasuraman (1998)
Reliability	The ability of the service provider to perform the service as promised, right at the first time.	Yes	Parasuraman et al. (1985); Jankalová (2016)
Security/Riskiness	The level of physical safety, financial security and confidentiality that customers perceive across different types of services.	Yes	Cunningham et al. (2006); Cunningham et al. (2004); Cunningham et al. (2005); Murphy and Enis (1986); Zeithaml (1981); Parasuraman et al. (1985); Venkateswaran and Maleyeff (2011)
Credibility	The level of trust, believability and honesty of the service provider perceived by customers.	Yes	Parasuraman et al. (1985)
Speed or responsiveness	The level of employees' determination to offer a service.	Yes	Parasuraman et al. (1985); Venkateswaran and Maleyeff (2011)
Understanding/knowing the customer	The level of knowledge that the service provider has about customers.	Yes	Parasuraman et al. (1985)
Courtesy or empathy	The personnel of contact professionalism, respect, education, consideration, friendliness and polite appearance.	Yes	Parasuraman et al. (1985); Venkateswaran and Maleyeff, (2011)
Access/Convenience	The easiness of contact and level of availability that customers require to the service provider.	Yes	Cunningham et al. (2006); Cunningham et al. (2004); Cunningham et al. (2005); Venkateswaran and Maleyeff (2011); Jankalová (2016); Parasuraman et al. (1985)
Competence	The service provider skills, competences and knowledge to provide the service.	Yes	Parasuraman et al. (1985)
Complexity/Degree of specifying	The number and difficulty of service performance steps definition.	Yes	Shostack (1987); Karmarkar (2004)
Role similarity	The roles of each service provider.	N/A	Solomon et al. (1985)
Tie strength with a client	The power of the interaction between the service provider and the customers.	Yes	Smedlund (2008)
Service scope (degree of bundling)	Combinations of individual services into one integrated service.	Yes	Kowalkowski et al. (2009)

Service focus (level of customer integration)	The type of focus of the service regarding the level of customers' integration.	Yes	Kowalkowski et al. (2009); Fitzsimmons et al. (1998)
Service process	The structure of the service offers regarding service scope and focus.	Yes	Kowalkowski et al. (2009); Lovelock and Yip (1996)
Service core	The essential aspects of the service.	Yes	Crosby and Stephens (1987); Iacobucci and Ostrom (1993)
Overall satisfaction	The customer's evaluation of satisfaction with the service.	No	Crosby and Stephens (1987)
Heterogeneity	The service is not uniform, it is always performed differently.	Yes	Lovelock and Gummesson (2004); Kotler and Armstrong (2010)
Perishability	Service's inability to be saved, stored or reused.	N/A	Lovelock and Gummesson (2004); Kotler and Armstrong (2010)
Price	Customers can be price sensitive, depending on the purchase situation.	Yes	Ostrom and Iacobucci (1995)
Degree of routinisation of the service process	The level of technology used on service process to make it more predictable.	Yes	Wemmerlöv (1990)
Serviced objects in service process	The service can be processed on goods, people or information/ images.	N/A	Wemmerlöv (1990); Dotchin and Oakland (1994)
Degree of consumer internal research or Problem awareness	The customers' knowledge about a service.	No	Davis et al. (1979); Mills and Margulies (1980)
Transferability	The easiness of replacing employees in the service workflow.	N/A	Mills and Margulies (1980)
Power	The control of critical information by the service provider.	Yes	Mills and Margulies (1980)
Physical effect vs. mental effect	Services can make changes on either the physical or mental conditions of the customers.	N/A	Hill (1977)
Inventories absent	The lack of inventory in services as a result of intangibility.	N/A	Karmarkar and Pitbladdo (1995)
Extent to which customer needs to be physically present	Services that involve the customers in its processing.	Yes	Lovelock and Yip (1996)
Usefulness	Customer's evaluation of the utility of the service.	No	Venkateswaran and Maleyeff (2011)
Knowledge of service providers	The level of information that service providers have about customer's needs.	Yes	Venkateswaran and Maleyeff (2011)
Ease of service generation	The number of skills required to generate the service.	N/A	Chakraborty and Kaynak (2014)
Value of service	What the customers spend in a service encounter.	No	Chakraborty and Kaynak (2014)
Type of user	The type of customer can be individual or organisational.	N/A	Dey et al. (2015)
Environmental orientation	The green attributes and practices that care for environment protection.	Yes	Chen et al. (2015)
Ecologic	Eco-friendly practices, activities, and education.	Yes	Ban and Ramsaran (2017)

Environmentally friendly and healthy equipment	The use of natural and eco-friendly materials in the service process.	Yes	Bastič and Gojčič (2012)
Eco-behaviour of hotel staff	Employee's environmentally conscious attitude.	Yes	Bastič and Gojčič (2012)
Efficient use of energy and water	The implementation of actions to reduce water and energy consumption.	Yes	Bastič and Gojčič (2012)

Yes: dimension controlled by the service provider.

No: dimension not controlled by the service provider.

N/A (not applicable): dimension related to the nature of the service.

Only the controllable service dimensions by the service provider were considered to be part of the new service dimensions, as these are the ones that service providers can modify to achieve customer satisfaction.

2.3 New proposition of service dimensions

Taking into account a re-grouping of the previous service dimensions' definitions controlled by the service provider, a new classification for service dimensions is proposed.

2.3.1 Degree of customer involvement (DCI)

DCI can be defined as the level of connection and interaction between the service provider and the customers during the service process or system. One of the main aspects is the degree of contact between customers and the provider: a physical contact has a higher involvement (e.g., face to face) and an indirect contact (e.g., mail or online contact) has a lower involvement. However, this contact can have a level of participation and interaction in the service creation, delivery, and consumption, where customer participation in the service encounter also defines the level of involvement, sometimes with a physical involvement in the service process. Moreover, the formality of the interaction is directly linked to the involvement, as a higher formality in the interaction reflects a higher involvement from customers. Another main aspect related to customers' involvement in the service is the level of personalisation of the service, where a low personalisation of the service is related to a lower involvement from customers with the service. However, services have a high degree of variability that complicates the standardisation of the service. Another aspect is related to the customers' visit to the service provider to acquire the service: if customers go to the organisation to acquire the service (higher involvement), if the organisation goes to customers to perform the service, or if it is at an arm's

length (lower involvement). This is very important for the service provider to manage the service process, to assure service quality, and to determine the level of customer involvement and co-production in the service or if customers only consume the service after the service production (no involvement).

2.3.2 Convenience level (CL)

Before and during the service process, customers evaluate the availability of the service and its effort to achieve it (money, time, and energy spent in the service process), with the ultimate goal that the service provider will satisfy their needs in the expected time and appropriate space. In this evaluation, customers consider the amount of risk, the physical safety, the financial security, and the level of confidentiality. In addition, the cleanliness, the comfort, and the convenience of the physical environment, physical goods, and/or facilities can also influence customers' behaviour and image of the service. Considering the previous conditions, service providers have the main goal of performing a service as promised. To do that, service providers have to be informed about customers' needs and give attention to what each customer desires. In addition, service providers have to be able to allocate services in advance or in sequential order, taking into consideration the diversity of customers' demands. Focusing most of the service providers' attention on customers, i.e., building their reputation, will make customers trust and believe in an honest company.

2.3.3 Contact personnel performance (CPP)

Services can be distinguished as being performed by people (as a part of the service core) or by equipment (where some kind of equipment to the service core is needed). The contact personnel are a very important player in service performance, especially when front-line employees can

be a source of differentiation of the service because they know how to fulfil customers' needs. The contact personnel judge and evaluate customers' needs, based on the level of resources that they have at their disposal. Another aspect that influences the contact personnel's performance is their professionalism, respect, education, courtesy, consideration, friendliness, empathy, polite appearance, and the ability to provide quick feedback to customers (make simple decisions that do not cause problems in the service workflow). Giving a prompt service and an accurate feedback to customers is only possible when employees have adequate skills and knowledge to provide the service. All of these aspects influence customers' satisfaction with the contact personnel and, ultimately, customers' satisfaction with the service. This leads to an eventual relation of confidence and trust between the service provider and customers during the service encounter, where there is a bond and a connection between customers and employees. The employees are an important asset to build customers' loyalty, as they anticipate, fulfil, and satisfy customer's needs, and can contribute to design the service competitive advantage.

2.3.4 Complexity degree (CD)

Every service has a structure regarding its scope and focus, including a provider's internal structure (front office, back office, and eventually the customer as a co-producer). The focus of the service is defined by the level of customers' integration in the service; it can be either on product efficacy or on process efficacy. The service provider has the power to define and design service encounter steps and their number, according to the customer's degree of repeatability of service steps and to the degree of freedom that customers have in defining them. This involves the balance of levels of judgement, discretion, and situational adaptation from the service provider, in order to ultimately distinguish the service from competitors and to prevent customers from switching service providers. Hence, the service provider can define the level of control in the service delivery system, defining characteristics of facilities, jobs, and process design. Moreover, the service provider defines the degree of accuracy or the fluidity of the service process regarding task variety, technical skills, and the level of information exchange between customers and employees. Besides the importance of defining the number and service steps, it is even more important for the service provider to define the complexity level of those steps. This affects the way that the service provider customises the service, while, at the same time, managing service capacity.

2.3.5 Information and communication power (ICP)

The information exchange between the service provider and the customers is fundamental to establish a bond, perform a task, clarify doubts, and promote and sell the service. Information is a power that can be controlled by customers or by the service provider (employees), and who controls information has more power in the service process. It can be measured by information quantity, quality, and confidentiality. The information exchange can take the form of communication made between the service provider and the customers, by exposure to media, advertising, and contact with employees, which affects customers' expectations about a service.

2.3.6 Environment and social responsibility (ESR)

Nowadays, ESR aspects play a major role in every service, not only in the aspects related to cost reduction and efficiency of the service process, but also because customers are now more conscious about their role in any activity they engage in. Consequently, it is important for the service provider to offer a service that has an environmental orientation, which can be changed into eco-friendly service processes using equipment that can improve, for example, the efficient use of water and energy, such as the use of eco-friendly materials, recycled products, and recycling practices. Ultimately, the service provider can also have an educational role in creating customers' awareness to environmental protection and in participating in social projects in the community where the service is offered.

The next stage is to test this new service dimension proposition; thus, research methodology and data collection procedures are presented in the next section.

3 Methodology

3.1 Hospitality services and Latin countries

A cross-cultural study explored new service dimensions among customers in Latin countries, highlighting the impact of cultural diversity—such as religious beliefs, language, education, family structure, gender roles, and time orientation—on customer expectations and behaviours (Javalgi & White, 2002; Schumann et al., 2010). Given the shared linguistic and historical ties of Latin countries, influenced by Roman civilisation and religious traditions,

research into culturally homogeneous groups is essential (Hofstede et al., 2002; Schneider & De Meyer, 1991; Stoiculescu et al., 2014).

The study centred on hotel service dimensions, vital within the global tourism economy. Hospitality services, where customers actively engage, play a significant role in economic development and have been widely studied (Ali et al., 2021; Dortyol et al., 2014). Current research continues to define and validate service quality dimensions in hotels and restaurants (Chen, 2014; Dortyol et al., 2014; Chen et al., 2015; Kukanja et al., 2017; Lee et al., 2016), as these dimensions contribute to customer satisfaction and loyalty (Oliveras-Villanueva et al., 2020). Tangible and intangible elements such as staff behaviour, physical environment, and service reliability significantly affect customer perceptions and satisfaction (Marić et al., 2016). Additionally, cultural factors have a critical influence on service expectations, as regional differences shape service standards and preferences (Hyun & Perdue, 2017). This study addresses customers' expectations of hotel service dimensions in Latin European and Latin American countries, acknowledging the significant role cultural nuances play in shaping service experiences and perceptions.

3.2 Data collection and analysis

The literature review on customers' service expectations and service dimensions provided the foundation for developing a new scale. The study population comprised university students (postgraduate, master's, and PhD programmes) from selected Latin countries. Schwartz (2006) identified countries as meaningful cultural units and students as an ideal sample for cross-cultural research due to their comparable characteristics.

The Latin European countries selected were France, Italy, Portugal, Spain, and Romania, while the Latin

American countries included Bolivia, Brazil, Chile, Mexico, and Uruguay. A structured questionnaire was used to assess customers' minimum acceptable service expectations for hotels, based on Parasuraman et al. (1994). The questionnaire consisted of two sections: the first measured expectations for each new service dimension, and the second collected demographic data and moderating variables. A 7-point Likert scale was employed to ensure precision and comparability (Asad & Tim, 2010; Rachau et al., 2015; Ladhari, 2012). Anonymity and confidentiality were assured to respondents.

Data collection was conducted online to efficiently access a geographically dispersed population, a method particularly appealing to students (Lefever et al., 2007). The online questionnaire was distributed via email to universities in the selected countries with an introductory text, a link to the questionnaire, and a brief explanation of the doctoral research. Universities were asked to disseminate the survey, and respondents were encouraged to share it with colleagues, making it impossible to calculate the response rate. The questionnaire was available online from 10 April to 4 June 2018, with all questions set as mandatory to enhance completion rates and validity.

The questionnaire was developed iteratively. Constructs, questions, and scales from the literature were identified and categorised into subdimensions of the new service dimensions. Repetitive or unclear questions were removed, and for subdimensions without pre-existing measures, new questions were created based on the literature. A pilot test in Portugal, involving tourism and hotel research professionals, was conducted to refine the questionnaire. Respondents provided feedback on unclear or redundant questions, ensuring conceptual clarity. Table 2 summarises the questionnaire variables and their supporting references.

The questionnaire was drafted in English and then translated to the native languages of the Latin countries

Table 2. Variables included in the questionnaire.

Main dimensions (variables)	Authors
Degree of customer involvement (DCI)	Adapted from Kalamas et al. (2002); Ariffin and Maghzi (2012); and own Elaboration
Convenience level (CL)	Adapted from Lee et al. (2016); Ladhari (2012); Rachau et al. (2015); Ayeh and Chen (2013); Ariffin and Maghzi (2012); Manhas and Tukamushaba (2015); Dortyol et al. (2014); and own elaboration
Contact personnel performance (CPP)	Adapted from Ariffin and Maghzi (2012); Lee et al. (2016); Asad and Tim (2010); Blešić et al. (2014)
Complexity degree (CD)	Adapted from Dortyol et al. (2014); Asad and Tim (2010); and own elaboration
Information and communication power (ICP)	Adapted from Chen (2014); Ayeh and Chen (2013); Ladhari (2012); and own elaboration
Environment and social responsibility (ESR)	Adapted from Bastič and Gojčič (2012) and own elaboration

(Portuguese, Spanish, Italian, and Romanian) by a local native speaker, which was followed by a back translation to assure that the words have the same meanings in both languages. Special attention was also paid to idiomatic and conceptual equivalence (Sekaran, 2003).

The next step is to validate this new set of service dimensions using an exploratory factorial analysis. In order to proceed to a successful regression analysis, namely with the application of exploratory factorial analysis, Marôco (2010) advises that a sample should have between 10 and 15 observations for each observed variable or 5 observations for each parameter. In the case of this research, there are 49 observed variables. According to this author, the sample size of this research should have, at least, between 490 and 735 observations. Hill and Hill (2002) mention that the sample should have at least 5 observations for each variable; thus, according to this author, the sample should have at least 430 observations. Following the suggestions of the previous authors, the sample of this research is adequate ($n = 1262$).

4 Results

The data collected were subjected to analysis. Firstly, a preliminary analysis was made to characterise the sample, then an exploratory factor analysis (EFA) was carried out to validate the service dimensions scale.

A total of 1400 filled questionnaires were received from all the countries. From these, 138 were excluded, as they were not from students, but from professors. This can be explained by the fact that some of the professors who were asked to disseminate the questionnaire to the students filled it. The final sample had 1262 questionnaires available. About 97% of the sample belong to 10 countries, namely, Portugal (15.3%), Spain (9.2%), France (8.6%), Italy (6.1%), Romania (8.9%), Brazil (11.6%), Mexico (12.8%), Uruguay (7.6%), Bolivia (9.8%), and Chile (7.2%).

Table 3 presents the socio-demographic profile and moderator variables of the sample. The majority of respondents are male (56.9%), and 93.3% hold a higher education degree. Most respondents are of working age, with 35.5% aged 26–40 and 31.3% aged 41–60, totalling 66.8%. In Portugal, Romania, and Bolivia, over 75% of participants are aged 18–40. Regarding income, 31.8% have annual earnings aligned with their country's average, while 46.4% earn above the average, aligning with the study's aim of examining hotel service expectations among financially capable individuals. The sample is well-suited for this study, as 93.8% of respondents stay in hotels at least once

a year, with 80% choosing 3- or 4-star hotels. Additionally, 96.3% do not work in the travel and tourism sector, ensuring objectivity in responses. These characteristics suggest that the sample has the resources and cognitive ability to evaluate hotel services effectively.

4.1 Reliability and consistency analysis

Because the service dimension's variables are new, they needed scale verification and validation. The factorial analysis is an exploratory data analysis technique where the main goal is to discover and analyse the structure of a group of variables that are interrelated, to elaborate a measurement scale for the intrinsic factors that control the original variables (Marôco, 2011). Thus, the relational structure of the degree of customer involvement (DCI), convenience level (CL), contact personnel performance (CPP), complexity degree (CD), information and communication power (ICP), and environment and social responsibility (ESR) classifications were analysed by EFA with factor extraction through the method of principal component analysis with Varimax rotation. This reduces the number of variables with loading on a factor, where the factorial structure attains only one of the original variables that is strongly associated with a single factor, and residually associated with others (Marôco, 2011).

The analysis was conducted on the general sample ($n = 1262$). Bartlett's test of sphericity in all service dimensions presents a p-value inferior to 0.001; therefore, H_0 is rejected, which indicates that the variables are significantly correlated.

Regarding the service dimension DCI, EFA results are shown in Table 4. The KMO measures the variables' homogeneity, which compares the simple correlations with the partial correlations observed between the variables. The KMO test indicates a good homogeneity ($KMO = 0.879$), as it is between 0.8 and 0.9 (Marôco, 2011); thus, EFA is recommended to be performed. All the variables present positive loadings, with only one factor (component 1) without any discrimination of any variable. To ensure the quality of the research, the accuracy of the results of the collected data was verified, where the internal consistency for reliability and the validity of data was estimated (Sekaran & Bougie, 2016). The Cronbach alpha (score reliability) allows the determination of the inferior limit of the internal consistency of a group of variables or items. $\varphi = 0.819$ indicates a good internal consistency for DCI variables, as it is between 0.8 and 0.9 (George & Mallery, 2003).

Table 3. Socio-demographic profile and moderating variables by country of residence.

	PT	ES	FR	IT	RO	BR	MX	UY	BO	CL	NLE	NEL	NENL	Total
Age														
18 to 25	59%	14%	27%	12%	32%	16%	25%	22%	48%	17%	25%	0%	0%	29%
26 to 40	31%	32%	36%	40%	46%	41%	31%	32%	33%	37%	63%	29%	50%	36%
41 to 60	11%	50%	30%	44%	22%	38%	39%	44%	15%	35%	13%	42%	50%	31%
Above 60	0%	4%	7%	4%	0%	4%	6%	2%	4%	11%	0%	29%	0%	4%
Sex														
Female	26%	36%	29%	22%	50%	42%	33%	47%	43%	30%	63%	46%	17%	43%
Male	74%	64%	71%	78%	50%	58%	67%	53%	57%	70%	38%	54%	83%	57%
Education qualification														
Primary	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Secondary	22%	3%	0%	1%	3%	1%	0%	4%	18%	4%	0%	4%	0%	7%
Bachelor's	36%	13%	6%	36%	24%	17%	35%	40%	48%	23%	13%	29%	0%	28%
Master's/PhD	42%	84%	94%	62%	73%	82%	65%	56%	35%	73%	88%	67%	100%	65%
Annual household income (in relation to country's average)														
Far below	3%	3%	4%	1%	1%	1%	0%	0%	1%	1%	0%	0%	0%	2%
Below	17%	10%	9%	1%	3%	3%	2%	2%	12%	0%	0%	0%	0%	7%
Average	42%	38%	27%	55%	25%	21%	26%	29%	38%	19%	50%	29%	33%	32%
Above	36%	42%	48%	42%	48%	45%	57%	62%	39%	53%	38%	46%	33%	46%
Well above	3%	7%	12%	1%	23%	30%	15%	7%	11%	28%	13%	25%	33%	14%
Work in the tourism/travel industry														
Yes	6%	9%	1%	3%	1%	1%	3%	0%	8%	4%	13%	4%	0%	4%
No	94%	91%	99%	97%	99%	99%	97%	100%	92%	96%	87%	96%	100%	96%
Frequency of hotel stay														
I do not stay in hotels	13%	4%	4%	3%	2%	3%	3%	3%	14%	8%	0%	0%	0%	6%
Once per year	39%	13%	15%	12%	8%	16%	19%	30%	32%	25%	37%	13%	50%	22%
2 to 3 times per year	32%	30%	32%	31%	45%	38%	36%	33%	36%	32%	25%	29%	50%	35%
More than 3 times per year	16%	53%	49%	54%	45%	43%	42%	34%	18%	35%	38%	58%	0	37%
Hotel category type														
I do not stay in hotels	13%	4%	6%	3%	4%	4%	3%	3%	15%	9%	0%	0%	0%	6%
1 star	2%	0%	6%	0%	0%	0%	0%	2%	2%	0%	0%	0%	0%	1%
2 stars	4%	2%	14%	4%	4%	4%	1%	0%	7%	1%	0%	0%	0%	4%
3 stars	38%	23%	50%	52%	59%	46%	15%	38%	38%	32%	62%	33%	83%	38%
4 stars	41%	68%	20%	41%	32%	41%	47%	54%	27%	44%	38%	54%	17%	42%
5 stars	2%	3%	4%	0%	1%	5%	34%	3%	11%	14%	0%	13%	0%	9%

Notes: Portugal (PT); Spain (ES); France (FR); Italy (IT); Romania (RO); Brazil (BR), Mexico (MX); Uruguay (UY); Bolivia (BO); Chile (CL); Non-Latin Europe (NLE); Non-European Latin (NEL); Non-European Non-Latin (NENL).

The average variance extracted (AVE) evaluates the way that data are explained by each variable and by the groups of variables that, on average, correlate positively between them. The composite reliability (CR) comprises the observations of internal consistency values prioritising the variables according to their reliability. After excluding the items that had loadings under 0.7 from the DCI service dimension, which were the place of acquisition of the service (1.DCI_acq), the contact by the loyalty program

(5.DCI_loyalty), the absence of humane intervention in the service (6.DCI_mach), and the delivery of complete packages during the service (8.DCI_pack), it was possible to have a higher AVE value of 0.480 (previously 0.369) and a CR value above 0.7 (CR = 0.820), which is a satisfactory value (Hair et al., 1998). The minimum value of the AVE is, approximately, higher than 0.5, and the CR is greater than the AVE (Marôco, 2010), which indicates an adequate convergent validity of the construct (Hair et al., 1998).

Table 4. Consistency and reliability analysis of the dimension *degree of customer involvement* (DCI).

Variable	KMO test	Cronbach's alpha (score reliability)	Item	Component 1	Component 2	AVE	CR
Degree of customer involvement (DCI)	0.879	0.819	1.DCI_acq	0.522			
			2.DCI_be	0.706			
			3.DCI_stff	0.762			
			4.DCI_prof	0.765			
			5.DCI_lyt	0.683		0.480	0.820
			6.DCI_mach	0.349			
			7.DCI_cst	0.696			
			8.DCI_pack	0.650			
			9.DCI_ad	0.728			

Notes: AVE (average variance extracted); CR (composite reliability).

Table 5. Consistency and reliability analysis of the dimension *convenience level* (CL).

Variable	KMO test	Cronbach's alpha (score reliability)	Item	Component 1	Component 2	AVE	CR
Convenience level (CL)	0.955	0.947	10.CL_24h	0.615	0.340		
			11.CL_prb	0.758	0.321		
			12.CL_eqp	0.739	0.397		
			13.CL_cent	0.318	0.620		
			14.CL_rom	0.813	0.356		
			15.CL_hom	0.360	0.696	0.669	0.948
			16.CL_dsg	0.105	0.859		
			17.CL_pro	0.833	0.303		
			18.CL_cnf	0.855	0.201		
			19.CL_sec	0.865	0.256		
			20.CL_sub	0.840	0.230		
			21.CL_pri	0.801	0.178		

Notes: AVE (average variance extracted); CR (composite reliability).

The service dimension DCI (without the excluded items) has good values of consistency and reliability.

The service dimension CL EFA is shown in Table 5.

The KMO test indicates an excellent homogeneity (KMO = 0.955), as it is above 0.9 (Marôco, 2011); thus, EFA is recommended to be performed. All the variables present positive loading, with two factors (components 1 and 2). Component 2 is composed of items that are related not with the service process and with convenience, but with physical characteristics (13.CL_cent and 16.CL_dsg) and involvement aspects (15.CL_hom). Hence, component 1 has the highest number of items, and it was decided to just maintain one component (component 1) to measure the convenience level. The items with lower scores in component 1 were eliminated: “13.CL_cent”, “15.CL_hom” and “16.CL_dsg”. $\varphi = 0.947$ indicates an excellent internal consistency for CL

variables, as it is above 0.9 (George & Mallery, 2003). The CR value (CR = 0.948) is above 0.7, which is a satisfactory value (Hair et al., 1998), and above the AVE value (AVE = 0.669) (Marôco, 2010), and the AVE value is above 0.5 (Hair et al., 1998), which indicates that the service dimension CL has good values of consistency and reliability.

Regarding the service dimension CPP, EFA results are shown in Table 6. The KMO test indicates an excellent homogeneity (KMO = 0.902), as it is above 0.9 (Marôco, 2011); thus, EFA is recommended to be performed. All the variables present positive loadings, with only one factor (component 1), without any discrimination of any variable. After determining the Cronbach alpha once an item is excluded, it was possible to verify that excluding the item “22.CPP_frd” (treat the customer as a friend) resulted in a Cronbach alpha that was higher in the CPP dimension,

Table 6. Consistency and reliability analysis of the dimension *contact personnel performance* (CPP).

Variable	KMO test	Cronbach's alpha (score reliability)	Item	Component 1	Component 2	AVE	CR
Contact person- nel performance (CPP)	0.902	0.941	22.CPP_frd	0.463			
			23.CPP_knw	0.867			
			24.CPP_spc	0.834			
			25.CPP_clm	0.905		0.733	0.943
			26.CPP_prof	0.898			
			27.CPP_edu	0.891			
			28.CPP_hel	0.881			

Notes: AVE (average variance extracted); CR (composite reliability)

from $\varphi = 0.905$ to $\varphi = 0.941$, which indicates an excellent internal consistency for CPP variables, as it is above 0.9 (George & Mallery, 2003). The CR value (CR = 0.943) is above 0.7, which is a satisfactory value (Hair et al., 1998), above the AVE value (AVE = 0.733) (Marôco, 2010), and the AVE value is above 0.5 (Hair et al., 1998), which indicates that the service dimension CPP has good values of consistency and reliability.

EFA for the service dimensions CD, ICP, and ESR is shown in Table 7. The KMO test indicates an excellent homogeneity for CD (KMO = 0.910) and for ESR (KMO = 0.917), as they are above 0.9 (Marôco, 2011), and a good homogeneity for ICP (KMO = 0.840), as it is between 0.8 and 0.9 (Marôco, 2011). Thus, EFA is recommended to be performed. All the variables of each service dimension present positive loadings, with only one factor (component 1), without any discrimination of any variable. The service dimensions CD ($\varphi = 0.895$) and ICP ($\varphi = 0.855$) have a good consistency for all the variables in each dimension. $\varphi = 0.929$ indicates an excellent consistency for ESR variables. The CR values for CD (CR = 0.900), ICP (CR = 0.865), and ESR (CR = 0.926) are above 0.7, which are satisfactory values (Hair et al., 1998), as well as the AVE values for CD (AVE = 0.532), ICP (AVE = 0.563), and ESR (AVE = 0.611), which are above 0.5 (Hair et al., 1998). Therefore, because the CR values for all the three dimensions are above the AVE values (Marôco, 2010), it indicates that the service dimensions CD, ICP, and ESR have good values of consistency and reliability.

5 Discussion

Researchers over the years have tried to create service dimensions (Salegna & Fazel, 2013; Van der Valk & Axelson, 2015; Lovelock, 1983), although there was a lack of studies from the customer's point of view that apply the framework to an extended cross-cultural analysis. Unlike previous approaches to measuring customers' expectations

about a service, which relied on traditional service quality dimensions (Donthu & Yoo, 1998), recent studies emphasise the increasing role of technology in shaping customer expectations. Specifically, advanced technologies such as AI and automation are now central to customer interactions and satisfaction strategies. For instance, AI and machine learning applications enhance customer feedback systems, enabling personalised service adjustments in real time (Ramnarayan et al., 2022). This shift highlights the need to integrate digital tools into service dimensions to meet modern expectations in a technology-driven era.

Furthermore, the rapid adoption of automation and robotics in hospitality has redefined customer service by improving efficiency and service personalisation. Studies reveal that these technologies allow for a more tailored experience that aligns with customers' growing desire for convenience and immediacy (Saravanakumar & Narayanan, 2018). Additionally, the role of information management technology has been noted as essential for enhancing customer satisfaction by improving service quality and competitive advantage in industries like hospitality (Gichia, 2023).

Cross-cultural factors also play a significant role in customer satisfaction, particularly in diverse regions like Malaysia and Singapore, where cultural backgrounds influence how customers perceive and value technology-driven service quality (Suryanarayanan et al., 2021). These insights reinforce the need to consider cultural nuances in service dimensions, particularly when designing technology-oriented hospitality solutions.

Therefore, this study's new scale, tested across 10 countries, effectively captures customers' expectations regarding service dimensions, including DCI, CL, CPP, CD, ICP, and ESR. This multidimensional scale reflects the current hospitality landscape, where service providers can leverage these controlled dimensions to fulfil customer expectations effectively, especially in a digitally influenced environment.

Table 7. Consistency and reliability analysis of the dimensions complexity degree (CD), information and communication power (ICP), and environment and social responsibility (ESR).

Variable	KMO test	Cronbach's alpha (score reliability)	Item	Component 1	Component 2	AVE	CR
Complexity degree (CD)	0.910	0.895	29.CD_buy	0.751			
			30.CD_ort	0.639			
			31.CD_cfm	0.783			
			32.CD_spc	0.797		0.532	0.900
			33.CD_do	0.779			
			34.CD_ins	0.850			
			35.CD_flex	0.818			
Information and communication power (ICP)	0.840	0.855	36.CD_exp	0.699			
			37.ICP_pro	0.696			
			38.ICP_ling	0.804			
			39.ICP_con	0.852		0.563	0.865
			40.ICP_det	0.840			
			41.ICP_acc	0.820			
			42.ESR_clm	0.569			
Environment and social responsibility (ESR)	0.917	0.929	43.ESR_mat	0.853			
			44.ESR_wtr	0.893			
			45.ESR_recy	0.885		0.611	0.926
			46.ESR_eco	0.903			
			47.ESR_pol	0.862			
			48.ESR_stff	0.741			
			49.ESR_vol	0.808			

Notes: AVE (average variance extracted); CR (composite reliability)

6 Conclusions

Customers form expectations based on their desires and wishes about a service and evaluate its performance against these expectations after the service encounter, resulting in satisfaction or dissatisfaction. Service dimensions are essential for evaluating these expectations. This study successfully defined and validated new service dimensions in 10 Latin countries: Bolivia, Brazil, Chile, France, Italy, Mexico, Portugal, Romania, Spain, and Uruguay. The validated scale measures dimensions such as customer involvement, convenience, personnel performance, complexity, information and communication, and environmental and social responsibility.

The findings highlight that dimensions like customer involvement, convenience, and responsiveness are key drivers of customer satisfaction in the hospitality industry. These results align with trends in technology-driven personalisation and sustainability (Ruel & Njoku, 2020). Additionally, cultural differences significantly impact customer expectations, emphasising the need for

region-specific service quality frameworks in Latin America and Europe (Suryanarayanan et al., 2021). Convenience and customer involvement consistently emerged as critical factors shaping service quality across cultural contexts.

The new service dimension scale effectively captures key elements, including convenience, social responsibility, and personnel performance, providing a structured approach to evaluating service quality and aligning with diverse customer expectations globally.

6.1 Implications, limitations, and future research

This research empirically validated a new service dimension scale, offering hotel service providers a tool to design and refine services, including communication, distribution, and marketing strategies, particularly during internationalisation. Cross-country comparisons highlight how cultural differences influence customer expectations,

enabling international hotel chains and local businesses to adapt service quality standards for global travellers. Managers can prioritise key service dimensions like responsiveness and convenience to enhance customer satisfaction and loyalty, using the scale for benchmarking and improving service quality in various markets.

However, the study has its limitations. It was conducted solely in the hotel service context, although the scale was designed for broader application. Future research could test the scale in other service industries. Additionally, because customer expectations are dynamic (Parasuraman et al., 1991), new insights into service evaluation may emerge, necessitating updates to the dimensions. Future studies should explore evolving customer considerations and test new service dimensions.

While a stratified sampling method ensured representation, the geographic scope of 10 countries may limit generalisability. Expanding the research to include observational or longitudinal data could strengthen validation. Differences in hotel management styles across the sampled countries may not fully account for unique national characteristics. Future research could examine country-specific factors in greater detail to provide deeper insights into the relationship between management practices and customer satisfaction.

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Bionotes

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