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Connecting Human and Information Resources in the Generation of Competitive Advantage

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Abstract

A key trend in recent decades is a growing standardisation of tangible digital resources. This trend coexists with development in the most advanced organisations of high-level technological, human and organisational resources teams built around advanced digital solutions. Digitisation has increased information asymmetries in organisations. However, it has changed the nature of the assets that support them. Accordingly, their effects are independent if unaccompanied by complementary investments in organisational design and human capital. This article focuses on relationships between information and cognitive asymmetries, their effects on developing strategic capabilities and their impact on competitive position. Partial least squares structural equation modelling (PLS-SEM) analysis was run on a data set of 418 Spanish tourism firms. The results show the positive effects of the interaction between human resources and information assets in strengthening the competitive position of modern organisations.

Keywords Information asymmetries · Cognitive asymmetries · Information technologies · Information assets

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Introduction

The strategy literature inspired by the resource-based view (RBV) has highlighted the strategic value of human and information resources and capabilities. The RBV identifies human resources as strategic assets based on their potential for making employees value-creating stakeholders (Barney & Wright, 1998; Wright et al., 1994). The RBV also advocates investment in developing information resources and capabilities that have the characteristics of strategic factors (Andreu et al., 1991; Porter & Millar, 1985). These resources and capabilities enhance information asymmetries in real markets to enable the exploitation of competitive advantages with undisclosed information. However, the connections between these two types of strategic assets have been systematically overlooked, except in some papers on peripheral topics, including the emergence of new digital positions such as Chief Information Officer (CIO), Chief Technology Officer (CTO) and Chief Digital Officer (CDO) roles (Korn Ferry Global Technology Officers Practice, 2018) and the relationship between information and communication technology (ICT) and learning (Gascó & González, 2004). This failure to examine these two fields prevents definitive conclusions on the importance of each type of asset as the source of competitive advantages and economic rents. This gap is particularly worrying given the transition from the industrial era to the information age, which has substantially increased investment in digital-based information assets. This paper explores the competitive contribution of management-oriented digital technology solutions and workplace reporting systems and the role of managerial capabilities and the workplace climate (in isolation and combined) when extracting value from information. The present research seeks to answer how information resources (mainly digital) and human resources interact to generate organisational capabilities that lead to a better competitive position for the firm.

The digital economy is the characteristic economic system of the information society (Bell, 1981). It features a growth of investment in ICT (McFarlan et al., 1983; Milgrom & Roberts, 1990), which has been at an economically high level since the 1980s. While digital resources have become increasingly standard, the most forward-looking organisations have developed high-level human resources and executive teams structured around advanced digital solutions, with organisational culture as a critical driver of adoption (Ali et al., 2022). Digitisation has reinforced information asymmetries while changing the nature of the underlying assets. Therefore, the positive effects of these assets and access to the most ground-breaking digital functionalities need to be accompanied by complementary investments in organisational design and human capital. Carr (2005) argued that digital resources—including the equipment and the programs used to store, process and distribute information—have become a standard asset. Their strategic value depends on the information that flows through the technology and the talent of the human capital that manages it. Competitive asymmetries between firms appear because they own complementary and co-specialised resources (e.g. Brynjolfsson et al., 2002) for building information management capabilities (Santhanam & Hartono, 2003). Although the literature has made progress

in validating this principle, only some studies provide empirical confirmation. The first significant contribution of the present research is to identify managerial capabilities and the quality of working life as the human capabilities that accompany management-oriented digital solutions and workplace information, respectively, to generate sustainable competitive advantages.

With the continuing development of the knowledge economy, the work environment is undergoing profound changes. Growing market competition and the rise of digitisation require innovative, adaptable and flexible organisations. However, this organisational design is only sustainable with a structure of professional positions that encourages the development of employee capabilities and commitment to strategic objectives. Again, a participatory organisational culture based on information sharing plays a crucial role in better using individual and collective knowledge (Muhammed & Zaim, 2020), commitment and employees' scouting behaviour (Lee & Kim, 2022). However, the literature has yet to provide definitive evidence of how human resource management can help optimise the exploitation of digital information systems. The second contribution of this research is to provide an explanatory framework to meet this challenge. It involves designing an efficient workplace reporting system and creating a high-quality work environment to ensure a substantial improvement in managerial capabilities.

In short, this paper aims to reveal the effects of internal information asymmetries and cognitive asymmetries on the development of strategic capabilities and their impact on the company's competitive position. It intends to clarify the differential strategic value generated by digital-based information management capabilities and information dissemination practices with key stakeholders. The study's main contribution lies in considering issues related to the management and dissemination of information, the perceived value of users or recipients of such information, and its consequences in improving the company's resources and capabilities and the relationships between information, cognitive and competitive asymmetries. Our results help clarify the conditions that ICT-based resources must meet to contribute to competitiveness and achieve extraordinary sustainable economic performance, helping managers and entrepreneurs understand how to manage these resources. At an academic level, the results help to clarify the inconsistencies revealed as information paradoxes by highlighting the heterogeneity present in information assets and the need for an integrated study of the interactions between different types of information, human and technological assets to explain their contribution to organisational performance.

This survey runs a partial least squares structural equation modelling (PLS-SEM) analysis on a data set of 418 Spanish tourism firms. The Spanish tourism industry has achieved high levels of competitiveness despite its fragmented structure, where global leaders mix with a broad base of small and medium-sized enterprises (SMEs) and micro-enterprises. Therefore, the competitiveness of Spanish tourism companies stems from something other than their size but from other intangible assets. Given the high level of customer contact in the tourism business model, such intangible assets are closely related to human assets. Likewise, because the tourism product is an experience service (Brush & Artz, 1999), such intangible assets are also

related to information assets. Therefore, the Spanish tourism industry offers an ideal setting to study the interaction between human and information assets.

The paper is structured as follows. "Theoretical Framework" presents the theoretical framework. "Hypotheses" develops the hypotheses. "Data" and "Method" describe the data set and method. "Variables" explains the variable selection. "Results" presents the results. "Discussion and Conclusions" discusses the findings. Finally, "Theoretical Implications" presents the conclusions of the study.

Theoretical Framework

Internal information circulates through the different channels that optimise processes, decision-making and communication between company members. Internal information is exchanged among organisational members, who usually belong to two main hierarchical groups: managers and workers. Based on this distinction, there are two types of internal information: management-oriented information (MOI) and workplace reporting information (WRI). Internal information plays a critical role in decision-making for the operational and strategic improvement of the company (MOI) and in meeting internal agents' need for information to maintain and renew their organisational commitment (WRI).

Internal information circulates along organisational channels to optimise processes, decision-making, and communication between company members, teams, and departments. Internal information exchange among organisational members occurs between two main hierarchical groups: managers and workers. Based on this distinction, there are two types of internal information: management-oriented information (MOI) and workplace reporting information (WRI). The first (MOI) is essential for decision-making, control and performance improvement. The second (WRI) is related to feedback to provide guidance and purpose, which is essential to generate commitment among organisation members.

Depending on the theoretical lens, internal information plays different roles in the value creation process. Firstly, according to agency theory, internal information reduces the agency problem by providing agents with the necessary knowledge to make informed decisions and act in the principal's best interest. When agents have access to internal information, they are less likely to engage in costly information distortion or use information imperfectly (Maggi & Rodriguez-Clare, 1995; Heiner, 1988), reducing the potential for moral hazard and adverse selection, as agents are more accountable for their actions and can be held responsible for their decisions. Internal information also allows principals to design optimal contracts that align the interests of all parties (Chris Hables, 2014). By incorporating the effects of information and decision errors on behaviour, decision problems can be internally consistent (Brockhoff, 2015). Overall, internal information is crucial in mitigating the agency problem and promoting efficient agency relationships (Jacobides & Croson, 2001).

A second view comes from stewardship theory that departs from a different postulate (Davis et al., 1997; Keay, 2017; Martin & Butler, 2017). It emphasises intrinsic motivation, which goes beyond economic ends. It predicts that organisational members will act as responsible stewards of the assets they control to serve

the organisation's objectives (Zahra et al., 2008). The fundamental postulate of this alternative theoretical approach is that cooperation, collective vision and behaviour in service of the common good provide a more excellent utility than individual action driven by personal selfishness (Davis et al., 1997). Such a management approach is closer to a partnership than a situation of control where setting goals and behaviours relies on sanctions (Donaldson & Davis, 1991). Under such a theoretical approach, mutual trust, open communication, participation, commitment, and training are essential elements. So, as an asset, information can be a strong incentive to prevent or reduce agency problems and bring about cultural change in the organisation, moving towards a joint responsibility model that helps develop strategically valuable human capital.

A third theory considering the strategic value of information resources and capabilities is RBV. According to this perspective, information (its scarcity, availability and quality) is a primary ingredient of many intangible assets that provide the basis for designing a competitive strategy that boosts performance and reduces the risks of strategic decisions. The management team and the company's members are the primary actors who can use information assets to generate a sustainable competitive advantage. Information asymmetries make it possible to maintain control of rare and valuable assets, preventing their appropriation or imitation. Therefore, the success of a strategy rests on a company's ability to maintain these information asymmetries (Brush & Artz, 1999) to achieve competitive asymmetries.

So, considering the three theoretical perspectives, increasing the information that a company disseminates internally to its employees can thus reduce agency problems and help ensure the trust and commitment of its human capital (Klimchak et al., 2020). Meanwhile, information reserved for management can give rise to new information and cognitive asymmetries when it takes the form of an information management capability. Information transparency with stakeholders and the asymmetric information accumulated by a company through advanced information systems combined with other complementary and co-specialised resources can positively affect its competitive position through the capabilities built from circumventing agency problems and developing managerial capabilities, respectively. However, different types of internal information have different levels of potential for value creation. Figure 1 depicts the theoretical model that is tested empirically in this study.

Hypotheses

The Role of Managerial Capabilities in the Information-Value Creation Relationship

Managerial capabilities are essential because they give rise to the skills needed to generate unique information. They enable the interpretation of the environment to identify opportunities and threats, supporting an organisation's strategy and actions. Management is thus a sensor that directs change according to the environment (Hambrick & Mason, 1984). Foreseeing is a relevant dimension of managerial

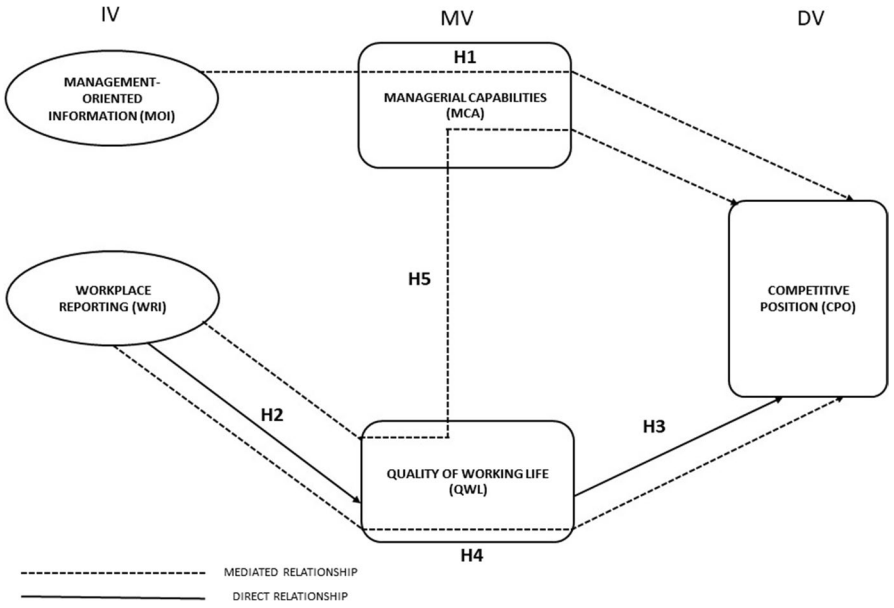

Fig. 1 Theoretical model

capabilities because it helps mitigate information processing difficulty. This difficulty is what Gersick & Hackman (1990) consider one of the main obstacles to exogenous change. Managerial capabilities are also crucial because they enable coordination, creating a strategic vision that shapes the formulation and implementation of strategy, upon which all other organisational capabilities can be developed (Lado & Wilson, 1994; Lado et al., 1992). In addition, management shows leadership ability when this vision is accurately communicated to the rest of the organisation, allowing other capabilities to emerge. It is like a group mind that gives members of the organisation the ability to act collectively rather than in isolation. In more pragmatic terms, the literature highlights the link between a company's competitiveness and a manager's ability to fully develop and use the experience and talent of all the organisation's members, integrating and encouraging the efforts of a complex team of people (Osbaldeston & Barham, 1992). Hence, managerial capabilities can be a source of sustainable competitive advantages because they determine the acquisition, development and deployment of other resources and capabilities, make it possible to convert them into valuable products, and enable the creation of value for all stakeholders. Hambrick et al. (1996), Lado et al. (1992), Castanias & Helfat (1991), Barney & Tyler (1990), Hambrick & Brandon (1988) and Hambrick (1988, 1989) have underscored the value of managerial talent (i.e. its heterogeneity) for improving a company's competitive position. Castanias & Helfat (1991) argued that managerial skills play the role of a resource that generates several outcomes: quasi-rents because their status as a specific asset makes them less valuable to other companies; Ricardian rents because of their scarcity and superiority; lasting competitive advantages because of the emphasis on learning through experience, which means they

are difficult to codify and thus become an isolating mechanism that impedes replication by competitors.

Improving managerial capabilities requires an information system that provides the managerial team with the information it needs to optimise decision-making, monitor and interpret trends within the environment, guide the strategic process, and lead the rest of the organisation's members. A recent study by Brockbank et al. (2018) showed that the involvement of human resources in leveraging business information had more impact on stakeholder value creation than any other human resources department activity. So, management, to carry out its functions, needs MOI, which comprises the internal information from or relating to operational activities, processes, products and persons linked to the organisation, as well as the company's strategies and results. MOI facilitates the optimisation of internal processes. A high level of inter-organisational transparency is an element that enriches managerial capabilities (Ravichandran & Lertwongsatien, 2002). MOI must also provide the external information required to visualise the competitive dynamics of the company's competitive markets, positioning and performance, and prospects. The growing complexity of the environment forces organisations to accumulate information assets to take advantage of opportunities and defend themselves from the threats presented by the market. These assets allow them to identify and compare decision-making alternatives, helping to develop and reinforce the mental models of the organisational environment (March, 1991). The ability to generate unique, helpful information to interpret the environment regarding opportunities and threats is essential in detecting and exploiting asymmetries in markets relating to strategic factors. This ability can represent an essential competitive advantage over companies that lack it. This advantage is due to its tacit nature, given that it is specific to the unique historical context of the organisation and its social construction (social complexity) through complex interactions between key stakeholders, known as system dependence (Lado & Wilson, 1994).

An organisation's internal and relevant external information needs to be processed to convert it into a helpful format for decision-making by its recipients and thereby turn it into knowledge (Cornellá, 1994). A perfect information system can be fruitless if it does not effectively create value. Therefore, MOI's economic and competitive value depends on whether it is delivered at the right time and format for optimal use. Developing digital information systems can enhance the usefulness of MOI (Grant, 1996). Digital solutions for next-generation management provide managers with valuable information on the critical success factors in the industry and the endowment of strategic assets that the company possesses or can develop to exploit them.

A critical component of managerial capabilities is the ability to generate unique information from which to interpret the environment regarding opportunities and threats (Hambrick & Mason, 1984). The support provided by MOI, underpinned by advanced digital solutions, will enable managers to leverage their entrepreneurial function. This ability can represent an essential competitive advantage by combining technological knowledge with tacit knowledge specific to the unique historical context of the organisation. Information technologies have thus become an enabler of managerial capabilities (Majhi et al., 2021). Authors such as Kalling (2003) have

pointed to the need for distinctive combinations of technological resources, such as enterprise resource planning (ERP), to achieve outstanding long-term results. More than these tools in isolation are needed to ensure an advantageous competitive position in the knowledge economy (McDermott, 1999; Somers & Nelson, 2003). Stemming from their use, however, the ability to generate and share information forms the basis for the social and intellectual capital from which organisations' competitive advantages arise (Nahapiet & Ghoshal, 1998). One of the keys to making good use of such tools is to ensure the coordination between strategy and operations, a task in which human resources play a central role. Thus, the formation and preservation of social capital require interaction (Adler & Kwon, 2002). Specifically, the information from ICT tools must be analysed and transformed into knowledge that the organisation can use (Hansen, 1999). Hence, the information generated by tools such as ERP must be conveyed to the strategic part of the organisation, interpreted, contextualised and transformed into actionable knowledge that modifies the patterns of behaviour and works within the operational core of the organisation (Lengnick-Hall & Lengnick-Hall, 2006). The manager's role, therefore, plays a fundamental role in this respect. The value creation potential of managerial capabilities is enhanced when underpinned by MOI that systematises trends and identifies patterns of success. The following is therefore proposed:

> **Hypothesis 1**: There is a positive relationship between the information reserved for management (MOI) and the strength of a company's competitive position, which is partially mediated by managerial capabilities.

The Impact of Work Reporting Information on the Organisation's Quality of Working Life

Internal information positively affects organisations' quality of working life (Hope et al., 2022). Higher information quality is associated with a safer and healthier work environment (Dovzhyk, 2023). Additionally, effective information acquisition during decision-making enables employees to understand their decision contexts better, generate innovative solutions, and anticipate changes in the organisational environment (Rai, 2015). Furthermore, internal information enhances the perception of procedural justice, fair distribution of resources and fair use of procedures that improve the quality of working life, including job and career satisfaction, working conditions, control at work, home-work interface, and general well-being (Rahimi et al., 2015).

More specifically, Ulrich (1998) highlighted the sharing of information among employees as an antecedent of workers' commitment related to the actions carried out by the company to promote employee autonomy and workplace safety. Greater information transparency not only impedes opportunistic behaviour (Allen & Meyer, 1990; Mowday et al., 1979) but also deter employees from engaging in such behaviour. More recent literature has reinforced this relationship between internal communication, engagement (Markos & Gossaye, 2021), affective commitment (Holzwarth et al., 2021; Ramos-Maçães & Román-Portas, 2022) and quality of working life (Bu et al., 2022). A company that improves its internal communication channels also

facilitates fluid interaction at all levels, improving the working climate by creating a more excellent perception of a meritocratic system, increasing transparency and ultimately reinforcing the intrinsic motivation of workers in line with the postulates of stewardship theory (Davis et al., 1997; Keay, 2017; Martin & Butler, 2017). This information flow determines employees' affective or attitudinal commitment because it strengthens members' knowledge, acceptance and internalisation of the organisation's strategy, mission, values and objectives.

Nowadays, the rise of automation and the accelerated incorporation of new business models with new kinds of tasks and positions that require digital skills are forcing companies to adapt to digital transformation. This requirement can be effectively addressed with the quality of the working life plan. Although technology may initially work against creating a more human space, it makes spaces more attractive and dynamic. Internal connectivity through social networks allows workers to be connected at all times and to justify their work based on measurable results, doing away with the need for mandatory physical presence in the workplace. Digitisation thus contributes to job flexibility and simplifies work-family balance, helping employees relocate within the organisation and increasing their level of motivation (Gascó & González, 2004). The quality of working life is therefore improving with this hyperconnectivity. ICT also enables gamification by, for example, motivating employees to form teams, sharing individual and collective achievements, and encouraging self-improvement.

On the contrary, the harmful effects of the lack of information transparency, even when unintentional, have also been studied in the literature (Blount & Janicik, 2001). For example, delays in the sharing of information can give rise to anger, frustration and interpersonal tensions (Rennecker & Godwin, 2005; Sheldon et al., 2006). Therefore, developing streamlined, efficient information channels is crucial in organisational design. Information should be available and timely, avoiding delays that damage relationships within the workplace (Guenter et al., 2016). There is thus a theoretical basis for the following hypothesis:

Hypothesis 2: There is a positive relationship between information internally disclosed as workplace reporting (WRI) and the quality of working life in an organisation.

The Impact of Quality of Working Life on the Organisation's Competitive Position

With the continuing development of a knowledge-intensive economy, the work environment is undergoing profound changes that call for innovative, adaptable and flexible organisations. However, this organisational design is only sustainable with a structure of professional positions that encourages the development of employees' talent and commitment, aligning them to strategic objectives. The know-how of an organisation's members includes employees' tacit knowledge and experience and the informal personal skills that set them apart (Barney, 1991; Hall, 1992, 1993; Hitt & Ireland, 1985). In addition to its specificity, the strategic nature of human capital rests on its durability. Hall (1993) described the

know-how of an organisation's members as one of the most important intangible assets for competitive success. Bartmess & Cerny (1993a, 1993b) recognised attracting, developing and retaining talented and experienced employees as a critical distinctive competence. Barney & Wright (1998) and Wright et al. (1994) emphasised that human resources have the defining characteristics of strategic assets.

The potential of an individual's knowledge to generate competitive advantage increases in combination with other behavioural resources such as organisational commitment. In this case, it becomes embedded knowledge because it arises from a complex social fabric that makes it challenging to identify and migrate (Hall, 1992). Organisational commitment is the degree to which a worker identifies with the organisation and wants to participate actively (Davis & Newstrom, 2001). This link that keeps a worker attached to an organisation may be due to a mix of affective, economic and normative motivations (Allen & Meyer, 1990, 1996). Affective commitment refers to employees' emotional identification with an organisation, which results in a sense of involvement and a desire to stay with the organisation (Allen & Meyer, 1990; Meyer & Allen, 1991).

Meanwhile, stakeholder pressure favouring social responsibility and workers' rights reinforces the need to create fair and equitable work environments and organisational climates. Workers and the pressure groups that represent them and strive to defend their rights have thus become indispensable interlocutors for management. They engage in bilateral dialogue to set working conditions concerning a broad range of topics, including pay, career paths, work-family balance, working hours, health and well-being at work, and social security. Job satisfaction is a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences (Locke, 1976). The determinants of job satisfaction include pay, the nature and variety of tasks, relationships with peers or work teams and superiors, and the physical conditions of the work environment (Davis & Newstrom, 2001). Thus, worker satisfaction cannot be sustained solely on the economic side but must also have other facets, such as fulfilling psychological and social expectations (Schweitzer & Lyons, 2008). The ability of organisations to generate genuine value for individual employees enables organisational value creation by improving performance and motivation (Strohmeier, 2013). The positive relationship between employee satisfaction and performance has been extensively documented (Megawaty et al., 2022; Nurlina, 2022; Yoopetch et al., 2021).

The crucial role of a company's human capital's commitment, participation, and satisfaction in business competitiveness means that the quality of working life significantly impacts organisational outcomes. Hence, a competitive company must develop its employees by securing commitment and satisfying their expectations and needs. Such companies must focus on improving workers' experiences of their working lives to enhance the ability to attract and retain talent. They must also emphasise commitment, motivation and satisfaction in the workplace and the economic dimension of well-being (measured by the change in productivity over time). This vision reflects the definition provided by Werther & Davis (2008), according to which the quality of working life is determined by how employees judge the activities they carry out and feel motivated to do them. Hence, the most appropriate individual

indicators for assessing the quality of working life are satisfaction, commitment and a willingness to participate in continuous improvement.

The quality of working life is critical to attract competitive human capital. Ensuring employees feel highly satisfied, committed and involved is challenging (Moynihan & Pandey, 2007) but crucial for competitiveness. The literature shows that a high degree of internalisation of the organisational code of ethics acts as a behavioural control device, improving job satisfaction and encouraging employees to be more involved in service quality, as well as reducing conflicts that arise in the course of their work (Schwepker & Hartline, 2005). Hence, the quality of working life has become a precondition for the success of an organisation, given its positive effects on organisational commitment (Aminizadeh et al., 2022; Sumarsi & Rizal, 2022). This statement may be particularly true in tourism firms, where human capital is of particular importance to the quality of the product. The key reason is found in the customer-contact model (Chase, 1978, 1981). Not only are employees in direct contact with the customer but the service is also provided in the presence of the buyer, who is actively involved in the service delivery process. The very nature of the tourism industry entails a high degree of interaction between the company, its employees and consumers. This type of relationship means that tourism organisations can be defined as providers of high-customer-contact services. Hence, they need to offer their clients a great deal of support to enjoy their services. This objective is attainable with employees with high organisational commitment and training levels. The competitiveness of a tourism company is therefore associated with the professionalism of the workers in providing a high-quality service that meets expectations and conveys a positive image (González, López-Guzmán & Sánchez, 2014; López-Guzmán, Borges & Canalejo, 2011).

In summary, an organisation's quality of working life can improve competitive advantage (Rony & Yulianti, 2023). When employees have a high level of job satisfaction and are loyal to their companies, they are more likely to provide quality services and maintain positive relationships with customers, which enhances the effectiveness of gaining a competitive advantage (Bednarska, 2013). Work engagement also plays a role in mediating the relationship between quality of working life and employee behaviours, further contributing to competitive advantage (Wahlberg et al., 2017). Therefore, by improving the quality of working life, organisations can create a more engaged and loyal workforce, leading to a competitive advantage in the market. Thus, a new relationship can be proposed:

Hypothesis 3: There is a direct positive relationship between the quality of working life and the strength of a company's competitive position.

The Mediating Role of Quality of Working Life (QWL) in the Positive Relationship between Workplace Reporting Information (WRI) and the Strength of a Company's Competitive Position

The decisions that workers make in their daily activities require an increasing amount and variety of knowledge, which ICT can feed (Bhatt & Grover, 2005;

Grant, 1996). A company has WRI of competitive value when each employee has the accurate information needed at every decision-making moment in the day-to-day business process. The digitisation of information and communication flows between and with employees, facilitating the introduction of new collaborative organisational models, which enable the classical concepts of work and learning as essentially individual activities to be replaced with new visions inspired by the idea of co-creation. An organisational culture based on exchanging information and knowledge among employees favours a better use of that knowledge and the development of organisational expertise (Muhammed & Zaim, 2020). The facilities for remote cooperation and instant, uninterrupted sharing of information and knowledge can stimulate creativity and the generation of ideas. In such a cooperative environment, people often become more motivated and give their best to find solutions and innovations that make a difference. Digital coworking spaces essentially brought about through corporate intranets can provide a platform for idiosyncratic improvements that are difficult for the competition to replicate because they are imbued with tacit knowledge and are strongly dependent on the system. Adopting these digital solutions has been widely linked to organisational culture (Ali et al., 2022; Chong et al., 2009; Melitski et al., 2010). This flow of information facilitates an increase in the quality of working life because workers have more opportunities to achieve high performance (Bloom & Reenen, 2006). Similarly, information generates better team cohesion, favours knowledge integration and fosters decision satisfaction (Mesmer-Magnus & DeChurch, 2009).

Larsen (2001) has extensively developed this topic, concluding that knowledge resides not only in the minds of individuals or employees but also in the interactions arising from their relationships. These social interactions and their impact on creating organisational knowledge are closely linked to the employee's satisfaction and are based on relationships of trust, reputation and personal affinity. Social coworking emerged as meeting spaces for independent experts who shared the physical means for their productive and commercial work. Now, companies that adopt digitally advanced WRI systems can configure digital ecosystems that give rise to new value propositions, thanks to the intense sharing of information and knowledge, participation in diverse projects, and relationships with people who have diverse profiles but are rich in talent. This kind of work environment is ideal for new digital professionals known as *knowmads*, who are wary of traditional talent retention but open to joining projects that facilitate cooperation and further their learning. The quality of working life that these human resources enjoy and opt for when making competitively differential contributions has a direct link with the intensity of opportunities for entrepreneurship and digital innovation provided to them in the ecosystem that the company offers. Various authors have attempted to study the relationship between ICT and other complementary factors within organisations. Communication between technical staff and management (Neo, 1988) and the fluidity of internal communication (Powell & Dent-Micallef, 1997) is critical in improving organisational performance. Bruque-Cámara et al. (2004) grouped some of them into what they refer to as human complementary resources, essentially related to the absence of conflict and the fluidity of communication within the organisation. Similarly, Leitão et al. (2019) recognise the effects of complementarity between human

resources and ICT, pointing out how good use of the latter is enhanced by the development of the former.

In short, the development of WRI that enhances information flows to employees, specific content and frequencies designed to meet the needs of each recipient, and digital and social coworking spaces help improve the quality of working life. These practices follow idiosyncratic patterns closely linked to the organisation's system and dependent on its time path, thus making them difficult to imitate or replicate. They must, therefore, be associated with the strength of a company's competitive position. Hence, a new hypothesis can be proposed:

Hypothesis 4: There is a positive relationship between workplace reporting information (WRI) and the strength of a company's competitive position, which is partially mediated by the quality of working life.

The Joint Mediating Role of Quality of Working Life (QWL) and Managerial Capabilities in the Positive Relationship between Workplace Reporting Information (WRI) and the Strength of a Company's Competitive Position

A significant challenge in managerial practice is ensuring the ethical compliance of employees' work, keeping them away from opportunistic behaviours. In addition, there is a positive relationship between work ethics and organisational performance (Schwepker & Ingram, 1996; Verschoor, 1999, 2003). Therefore, more outstanding organisational commitment is a crucial enhancer of managerial capabilities in high-customer-contact companies. A motivated, committed employee aligned with an organisation's objectives will make leadership tasks easier and be more open to dialogue and constructive discussion.

This participatory and dialogue-oriented type of leadership has often been described as knowledge-oriented, partly characterised by having high motivational and communicational elements (Donate & De Pablo, 2015) between the employee base and top management. Knowledge-oriented leadership favours knowledge management about the customer (Chaithanapat et al., 2022; Yang et al., 2014). The positive relationship between customer knowledge management and the organisation's financial, operational and marketing performance (Chaithanapat et al., 2022) gives companies a better competitive position. This idea is especially relevant in the tourism industry, where information on customer satisfaction, motivations or expectations often lies not with managers but employees who have direct contact with customers (Kim et al., 2017; Lee et al., 2015).

Stewardship theory (Keay, 2017; Martin & Butler, 2017) provides other arguments in support of the value of the quality of working life as an antecedent of managerial capabilities. A high-quality working environment can help the organisation's members internalise intrinsic motivation patterns that steer their behaviour towards the common good rather than personal selfishness (Davis et al., 1997). This postulate is based on the premise that contractual parties are not antagonists with conflicts of interest but partners who seek cooperation because they can achieve greater utility by making decisions that benefit both parties rather than acting out of self-interest.

This tendency towards cooperation is maintained even if individual utility is not maximised (Van Slyke, 2006). The key to this explanation is mutual trust, open communication, participation, commitment and training (Mayer et al., 1995). The challenge of governability thus translates into finding coordination mechanisms and structures to facilitate parties' simultaneous achievement of common and individual objectives.

Management displays leadership ability when the mission is appropriately communicated to the rest of the organisation, allowing other capabilities of an essentially collective nature to emerge. These capabilities include employees' commitment to company objectives and the generation of a group mind that endows members of the organisation with the ability to act collectively rather than in isolation. In more pragmatic terms, the literature stresses this last point, highlighting the link between a company's competitiveness and the managerial ability to fully develop and use the experience and talent of all the organisation's members, integrating and encouraging the efforts of a complex team of people (Osbaldeston & Barham, 1992).

A company's capacity to develop a group mind from within (McGrath et al., 1995; Weick & Roberts, 1993) is a valuable strategic asset that can generate sustainable competitive advantages. The performance of collaborative work by a group mind leads to the development of employee capabilities, in line with the principles of learning by doing and learning by cooperating. This situation, in turn, gives rise to a company's idiosyncratic capabilities. The causal ambiguity implicit in the social complexity of the effect of the group mind also plays a significant role because it impedes imitation. Thus, this capability cannot be acquired by recruiting organisation members or simply copying its rules and procedures. Moreover, the culture implicit in a group mind is integral to forming a climate of trust in human resources. Employees feel confident about their goals and capabilities, helping reduce the uncertainty inherent in decision-making and transaction costs in intra-organisational relationships.

Therefore, by helping foster mutual trust and internal cooperation, the quality of working life can enhance strategic managerial capabilities. Leadership capability development will be facilitated by creating a quality of working life that enables workers to carry out their tasks in a coordinated way to achieve their goals. This situation can be partly brought about by the existence of an information infrastructure that facilitates the horizontal and vertical communication of information flows related to objectives, strategies and processes with that aim and outcomes (McGrath et al., 1995); interpersonal relationships (Grant, 1991); the transmission of shared norms that enable effective problem resolution processes (Isaacs, 1993); teamwork (Hall, 1992); and a culture of cooperation. Because WRI contributes to developing this affective commitment and managerial capabilities that exploit the quality of working life as a cultural advantage for internal cooperation, the following hypothesis is proposed:

Hypothesis 5: There is a positive relationship between workplace reporting information (WRI) and the strength of a company's competitive position, which is partially mediated by the quality of working life and managerial capabilities.

Data

The sample used for the research consists of 748 tourism firms from the database *FAMITUR–The family tourism firm in Spain* from the Spanish Institute of Tourism Studies. This database contains data on a sample of tourism companies, selected from data provided by the Central Companies Directory (DIRCE), compiled by the Spanish National Institute of Statistics (INE). The sample was selected using stratified random sampling with proportional allocation to ensure representativeness in terms of activity, size and location. The data for the study were gathered from a questionnaire administered through personal interviews. The fieldwork was conducted by a company specialising in market research, working in close collaboration with the research team responsible for the project. The market research company conducted the personal interviews, while the research team was in charge of the questionnaire design, as well as the subsequent cleansing and exploitation of the database. Regarding the interviewees, the owners, general managers or managing directors of the sampled companies were targeted to provide responses to the questionnaire because of their suitability. Personal interviews with owners or top managers are especially appropriate in a study of the characteristics and complexity of the one carried out, given their higher response rate, flexibility, knowledge of the informant's identity, control over the distribution of the sample and the possibility of capturing higher quality information thanks to the interviewer's advice. As suggested by Armstrong & Overton (1977), the time trend extrapolation test was used to check for the possible existence of non-response bias. This test is based on a comparison of the first and last questionnaire respondents. The results of the pertinent *t*-tests show no significant differences in any of the explanatory or dependent variables. The fieldwork was carried out between December 2009 and March 2010.

Data cleansing of the initial database was required due to the methodological requirements of the proposed model and analysis technique of structural equation modelling. A more detailed description of this technique is presented in the next subsection. Following the recommendations of Hair et al. (2017), all observations where missing data exceeded 15% of the total were removed, leaving our original 748 firms database with 418 final observations. Similarly, the results indicate the absence of multicollinearity in the structural model, meaning that the presence of common method bias can be ruled out. A full collinearity test can be seen as a variance-based SEM common method bias test (Lindell & Whitney, 2001) and can be used to rule out such bias (Kock & Lynn, 2012). Table 1 presents the descriptive statistics and correlations between the variables in the model.

Method

This study was based on structural equation modelling (SEM), appropriate for the study of unobserved latent variables, which make representations of theoretical concepts that are not directly observable (Williams et al., 2009). The model

Table 1 Descriptive statistics and correlations

Construct	Mean	SD	MCA	QWL	MOI	CPO	WRI	SE1	SE2	SE3	SIZE
MCA	5.06	0.91	1.00	0.53	0.31	0.45	0.39	0.11	−0.05	0.06	0.14
QWL	5.26	0.97	0.53	1.00	0.16	0.35	0.29	0.00	−0.01	0.11	0.05
MOI	0.32	0.36	0.31	0.16	1.00	0.28	0.38	0.20	−0.31	0.27	0.18
CPO	4.20	1.34	0.45	0.35	0.28	1.00	0.30	0.14	−0.16	0.07	0.16
WRI	2.59	0.79	0.39	0.29	0.38	0.30	1.00	0.06	−0.10	0.04	0.10
SE1	0.37	0.48	0.11	0.00	0.20	0.14	0.06	1.00	−0.45	−0.33	0.17
SE2	0.16	0.36	−0.05	−0.01	−0.31	−0.16	−0.10	−0.45	1.00	−0.25	−0.12
SE3	0.26	0.44	0.06	0.11	0.27	0.07	0.04	−0.33	−0.25	1.00	0.04
Size	0.05	0.23	0.14	0.05	0.18	0.16	0.10	0.17	−0.12	0.04	1.00

involved a mix of composites and common factor variables. Since PLS can estimate models with estimated measures such as reflective and formative without any identification problems (Chin, 2010), we follow the recommendations of various authors (Rigdon et al., 2017; Sarstedt et al., 2017), and consistent partial least squares (PLS) was used to test the hypotheses. The required sample size was calculated using G*Power 3.1 software. Following the recommendations of authors such as Reinartz et al. (2009), the result was increased from below 100 to a requirement of 100 sample observations. This number was far lower than the number of observations in the data set for this study (418 observations).

The measurement scales were tested to verify that they met certain requirements for PLS (Wold, 1985). Specifically, the operation does not use continuous variables and uses dichotomous variables only as exogenous variables. Regarding the compliance of the Likert scales, based on the recommendations of Hair et al. (2014), they were symmetric and equidistant. Thus, although they were ordinal scales, they behaved more similarly to an interval scale and could therefore be used for SEM.

Variables

The proposed internal information and organisational capability categorisation of Camisón-Haba & Gonzalez-Cruz (2020) was used. This categorisation was chosen for several reasons. First, because it differentiates between external and internal information, which fits precisely with the objective of the article to specifically study communication within the organisation itself. Secondly, the chosen categorisation captures the concept of information management capabilities (Santhanan & Hartono, 2003), which is crucial throughout the theoretical development of the article. In addition, the scale has been recently published in a very high impact journal, so it is a quality scale adapted to the current context. The formative constructs for MOI and WRI were assessed using the size of the weights and their significance, as well as their potential multicollinearity (Chin, 2010). The construct MOI was measured using three questionnaire items (Table 2) aimed at assessing the level of implementation of managerial and management decision-making tools. A 7-point Likert

Table 2 Construct indicators and measurement model for MOI and WRI (source: authors)

Indicators/items	Code	Standardised weights (*t* value)	VIF
Management-oriented information (MOI)			
- Integration of computer reservation systems (CRS) or global distribution systems (GDS)	MOI1	0.372*** (2.752)	1.265
- Implementation of integrated management software (ERP)	MOI12	0.442*** (3.252)	1.315
- Integration of workflow management tools	MOI3	0.487*** (3.997)	1.240
Workplace reporting information (WRI) - Frequent multidirectional communication channels (horizontal and vertical, in both directions)	WRI1	0.904*** (15.308)	1.007
- Degree of implementation of a corporate intranet	WRI2	0.359*** (2.993)	1.007

Asterisks indicate statistical significance at the 0.01 (***), 0.05 (**) and 0.10 (*) levels

scale was used ranging from 1 (*very low*) to 7 (*very high*). The item with the highest weight (0.487) was the implementation of workflow management tools, followed by the implementation of integrated management software (ERP), with a weight of 0.442, and the integration of computer reservation systems (CRS) or global distribution systems (GDS), with a weight of 0.372. All three indicators were significant at the 1% significance level. The variance inflation factor (VIF) values ranged from 1.265 to 1.315, below the limit of 3.3 established in the literature (Cenfetelli & Bassellier, 2009; Petter et al., 2007). Hence, the presence of multicollinearity in the indicators of the construct can be refuted.

The WRI construct measured the presence of communication channels between management, ownership and employees, as well as the use of corporate intranet tools. All items except one were measured using an indicator on a 7-point Likert scale ranging from 1 (*very low*) to 7 (*very high*). A dichotomous variable was used for the use of an intranet. The presence of frequent multidirectional communication channels had a weight of 0.904. The use of a corporate intranet had a weight of 0.359. Both were significant at the 1% level (Table 2) and had a VIF value of 1.007, below the limits established in the literature (Cenfetelli & Bassellier, 2009; Petter et al., 2007).

The indicators MCA, QWL and CPO were measured reflectively, thus requiring compliance in terms of individual indicator reliability, construct reliability, and convergent and discriminant validity. The indicator MCA was measured with six items for which questionnaire respondents were asked to indicate the level of managerial capabilities within the organisation relative to the competition. The QWL construct used three items that measured the level of organisational commitment and satisfaction of the organisation's workforce relative to the competition. The CPO construct measured the company's level of competitive strength in domestic and international markets through two indicators. All indicators were measured on a 7-point Likert scale ranging from 1 (*very low*) to 7 (*very high*).

The individual reliability of each item was assessed using the loadings of the indicators with their construct. Loadings above 0.707 (Carmines & Zeller, 1979) indicate that the common variance between the construct and its indicators is greater than the

variance due to error. In the case of the MCA construct, the loadings of all indicators ranged from 0.793 to 0.865. For the QWL construct, the loadings ranged from 0.871 to 0.903. The CPO construct had a loading of 0.870 for both indicators. The loadings of all indicators (Table 3) were significantly greater than the limit of 0.707, thus verifying the individual reliability of the items for each of the three constructs.

The reliability of a construct refers to whether the items measuring the construct are similar in terms of their scores. It thus indicates whether they are measuring the same latent variable. The composite reliability measurement (p_c) of Werts et al. (1974) was used. A value above 0.7 (Nunnally & Bernstein, 1994) indicates internal consistency. The MCA construct met this criterion, with a value of 0.934, as did the QWL construct, with a value of 0.913, and the CPO construct, with a value of 0.861. These values were higher than the recommended threshold of 0.7, as well as the threshold proposed by Nunnally & Bernstein (1994) for more advanced stages of research. These values are shown in Table 3.

When a set of indicators represents a single underlying construct, convergent validity is confirmed. It is shown by their unidimensionality (Henseler et al., 2009). The average variance extracted (AVE) was proposed by Fornell & Larcker (1981) for this purpose. It refers to the amount of variance that is due to the indicators in a construct relative to the amount of variance due to measurement error. To ensure the convergent validity of a construct, the AVE should exceed 50%, indicating that each construct explains at least 50% of the variance of the assigned indicators. This measure was 0.702 for MCA, explaining 70.2% of the variance of the six assigned indicators. QWL had an AVE of 0.778, explaining 77.8% of the variance of the associated indicators. Lastly, CPO had an AVE of 0.756, explaining 75.6% of the variance of the assigned indicators. These values appear in Table 3.

Finally, discriminant validity indicates the extent to which a given construct differs from other constructs. Two criteria are used for this purpose: the Fornell & Larcker (1981) criterion and the Heterotrait-Monotrait (HTMT) ratio. The Fornell and Larcker criterion is met when the amount of variance that a construct captures from its indicators (AVE) is greater than the variance that the construct shares with other constructs in the model. The HTMT ratio represents the average of the Heterotrait-Heteromethod correlations in relation to the average of the Monotrait-Heteromethod correlations (Henseler et al., 2015). In a well-fitted model, the former should be smaller than the latter, such that the HTMT ratio is below 1. Some authors are more exacting, setting limits of 0.9 (Gold et al., 2001) and 0.85 (Kline, 2015). MCA, QWL, and CPO comfortably met the Fornell and Larcker criterion (Table 4). They also had HTMT ratios of 0.462 between CPO and MCA, 0.356 between CPO and QWL, and 0.525 between MCA and QWL, well below the limits of 0.85 and 0.9, indicating the discriminant validity of the model.

Results

Regarding the assessment of the structural model, Table 5 shows the degree to which the endogenous variables are explained by their antecedents at the individual level. In total, 32.6% of the variance of the MCA variable is explained by the variables

Table 3 Construct indicators and measurement model for MCA, QWL, QWL and CPO (source: authors)

Indicators/items	Code	Loading	p_c	AVE
Managerial capabilities (MCA)			0.934	0.702
- Managerial ability to support change and learning in the company	MCA1	0.836		
- Managerial proficiency in business management principles and methods	MCA2	0.851		
- Fostering a spirit of dialogue and acceptance of diverse views	MCA3	0.849		
- Effective leadership by management	MCA4	0.865		
- Entrepreneurial orientation focused on the exploitation and creation of opportunities	MCA5	0.832		
- Strategic vision of management	MCA6	0.793		
Quality of working life (QWL)			0.913	0.778
- Employee commitment to continuous improvement and quality at work	QWL1	0.903		
- Employees' emotional commitment to the company, which makes them feel proud to be part of it	QWL2	0.871		
- Staff satisfaction	QWL	0.872		
Competitive position (CPO)				
- Competitive strength relative to international competition	CPO1	0.870	0.861	0.756
- Competitive strength relative to domestic competition	CPO2	0.870		

Table 4 Correlations and discriminant validity for CPO, MCA, QWL and WRI (source: authors)

Construct	1	2	3
Competitive position (CPO)	0.870	0.462	0.356
Managerial capabilities (MCA)	0.448	0.838	0.525
Quality of working life (QWL)	0.346	0.526	0.882

The elements on the diagonal are the square root of the common variance between the construct and its measurements (AVE). The elements below the diagonal are the correlations between constructs. The elements above the diagonal are the values of the HTMT ratio

Table 5 Results of the structural model, internal information (source: authors)

Endogenous variable	R^2	Adjusted R^2
Managerial capabilities (MCA)	0.329	0.326
Quality of working life (QWL)	0.084	0.082
Competitive position (CPO)	0.265	0.250
SRMR	0.057	
NFI	0.934	

Table 6 VIF values of the structural model, internal information (source: authors)

Construct	MCA	QWL	CPO
Management-oriented information (MOI)	1.025		1.466
Workplace reporting information (WRI)		1.000	1.327
Managerial capabilities (MCA)			1.594
Quality of working life (QWL)	1.025		1.421
Competitive position (CPO)			
Belonging to sector 1			1.837
Belonging to sector 2			1.645
Belonging to sector 3			1.622
Size			1.064

MOI and QWL, whereas 8.2% of the QWL variable is explained by the variable WRI. Furthermore, 26.5% of the variance of the last dependent variable, PCO, is explained by its immediate antecedents MOI, WRI, MCA and QWL. The R^2 of QWL is below 0.10, which is considered weak (Chin, 1998). The R^2 for CPO is 0.19. MCA has a value of around 0.33, which is considered moderate (Chin, 1998). With respect to the overall validity of the model, the standardised root mean square residual (SRMR) has a value of 0.057 (Table 5), below the level of 0.08 (Hu & Bentler, 1998). The normed fit index (NFI), proposed by Bentler & Bonett (1980), has a value of 0.934, above the proposed threshold 0.9, thus indicating a good overall fit of the model to the data.

The analysis of the multicollinearity of the structural model (Table 6) also shows positive results. All VIF values are below 5. Thus, according to Hair et al. (2011),

Table 7 Relationships between variables, direct effects, internal information (source: authors)

Relationship	Coefficient	SD	*T* value	f^2	Intervals	Conclusions
MCA → CPO	0.268	0.064	4.160***	0.074	0.160–0.375	–
QWL→ MCA	0.490	0.051	9.663***	0.349	0.408–0.575	
QWL→ CPO	0.141	0.066	2.153**	0.022	0.030–0.249	H3 confirmed
MOI→ MCA	0.232	0.046	5.026***	0.078	0.159–0.310	–
MOI→ CPO	0.086	0.048	1.802**	0.008	0.006–0.164	
SE1 → CPO	0.034	0.058	0.588	0.001	−0.059–0.129	–
SE2 → CPO	−0.081	0.065	1.248	0.006	−0.187–0.025	–
SE3 → CPO	−0.003	0.050	0.057	0.000	−0.084–0.081	–
Size → CPO	0.079	0.034	2.310*	0.007	0.023–0.136	–
WRI→ QWL	0.303	0.054	5.651***	0.092	0.218–0.394	H2 confirmed
WRI → CPO	0.087	0.050	1.736**	0.008	0.005–0.167	

Asterisks indicate statistical significance at the 0.01 (***), 0.05 (**) and 0.10 (*) levels

Table 8 Relationships between variables, indirect effects, internal information (source: authors)

Relationship	Coefficient	SD	*T* value	Intervals	
WRI×QWL → MCA	0.148	0.034	4.401***	0.098–0.210	
WRI×QWL×MCA→ CPO	0.040	0.014	2.823***	0.021–0.067	H5 confirmed
MOI×MCA→ CPO	0.062	0.018	3.455***	0.035–0.094	H1 confirmed
WRI×QWL → CPO	0.043	0.022	1.950**	0.009–0.081	H4 confirmed

problems of multicollinearity among the antecedent variables of each endogenous construct can be ruled out.

To test the hypotheses, the beta coefficients of the direct relationships between the constructs and their level of significance were calculated (Table 7). The results are positive, confirming Hypotheses 2 and 3 in this second model of the relationships between internal information and competitive position. The effect size (f_2) was also calculated (Cohen, 1992). This value indicates the degree to which an exogenous construct explains a particular endogenous construct, in terms of R^2.

Analysing the effect of WRI on QWL, the results show a positive and significant effect, a coefficient of 0.303, and an effect size of 0.092, which despite being considered small (Cohen, 1992) indicates that Hypothesis 2 can be confirmed. The relationship between QWL and CPO is also positive and significant, with a coefficient of 0.141 and a low effect size of 0.022, confirming Hypothesis 3. Analysing the direct relationships between WRI/MOI and CPO, positive and significant results are observed in both cases. Finally, considering the control variables, only size has a positive and significant effect, with a coefficient of 0.079. However, the effect size of the relationship is below the 0.02, which is considered the minimum level.

The analysis of the indirect effects (Table 8) of the relationships between variables is also revealing, allowing a more in-depth analysis of the conclusions derived from the analysis of the direct effects and confirming the rest of the hypotheses of

the model. Analysing the indirect effects of the development of capabilities in managing information for managers and employees (MCA and WRI), the most powerful effect is that of MOI on CPO through the development of managerial capabilities (MCA). It has a positive and significant coefficient of 0.062, confirming Hypothesis 1. However, the indirect effect of WRI acts in two ways. First, it acts through the development of QWL, with a positive and significant coefficient of 0.043, confirming Hypothesis 4. Second, given the powerful effect of the development of WRI on MCA, it acts through the improvement in QWL, with a coefficient of 0.148. Given the increase in MCA as a result of this QWL, with a positive and significant coefficient of 0.040, Hypothesis 5 is confirmed.

Discussion and Conclusions

This article takes an interesting step towards consolidating knowledge about the value of information. This goal cannot be achieved without first distinguishing between the variety of information inputs that companies manage to gain competitive advantages. The key to the value of each information resource lies in its potential to be combined with other complementary resources and capabilities to build information management capabilities that meet the requirements to be strategic factors.

ICT enables a more intelligent use of information, but the deterministic hypothesis of the strategic sufficiency of ICT has received inconclusive evidence (Berndt & Morrison, 1995; Dedrick et al., 2003; Raz & Goldberg, 2006; Tanriverdi, 2006), in line with the productivity paradox articulated by Solow (1987). When ICT is combined with sets of complementary, co-specialised and difficult-to-replicate assets, it unleashes its true power to generate competitive advantages that are sustainable over time. These hypotheses of complementarity and co-specialisation (Santhanam & Hartono, 2003; Sauer & Willcocks, 2003; Brynjolfsson & Hitt, 2000, 2000; Dewett & Jones, 2001; Heracleous & Barrett, 2001; Bharadwaj, 2000; Powell & Dent-Micallef, 1997; Clemons & Row, 1991) help explain the transformation of simple information assets and ICT, through their combined use, into technology-based information management capabilities from which economic rents can be extracted.

Management-oriented information (MOI) provides such an example. It is an information management capability with direct effects on the competitive position of the company. It can also improve the quality of decision-making. The accumulation of information assets, in conjunction with the development of other resources and capabilities of the organisation, facilitates the managerial function. Thus, it is a central mechanism for improving managerial capabilities, thereby boosting the competitive strength of the organisation.

The second type of information asset is workplace reporting information (WRI). It is a key element of intra-organisational communication and one of the pillars supporting the quality of working life in the company. The development of employees' affective commitment, their alignment with the practices of continuous improvement and total quality, and their job satisfaction are all consequences

of the information aimed at the workers themselves, leading to an impact on the organisation's competitive position.

The results of this study enhance the understanding of the models of interaction between internal information and organisations' competitive position. They underscore the problem of the competitive value of ICT and highlight how managerial capabilities and the quality of working life, when accompanied by digital solutions for management and workplace information, generate sustainable, long-lasting competitive advantages. This study is an interesting step towards consolidating knowledge on the value of information, which cannot be addressed without first identifying the variety of information inputs that companies can manage to achieve competitive advantages. The key to the value of each information resource does not lie in its origin or dissemination but in its potential to be combined with other complementary resources and capabilities to form information management capabilities coupled with strategic factor requirements.

The paper sheds light on the conditions that ICT-based resources must meet in order to contribute to competitiveness and the achievement of extraordinary and lasting economic results. Understanding these criteria is essential to know how to prioritise and optimise the allocation of ICT investment resources, which already represent a considerable outlay for all companies wishing to keep up with digital change. The real challenge lies not in the data and whether or not to activate it (i.e. quantifying its value and recording it in the accounts), but in learning how to develop information management capabilities that integrate complementary and co-specialised assets to give rise to exceptional competencies in the provision of information on key value-generating factors. It is therefore not a matter of turning organisations and individuals into consumers of information, but of creating the necessary skills to prevent the communicative overload caused by the multiplication of information flows, to efficiently manage information traffic, and to sift and retain information with strategic value that can accentuate information asymmetries and, with them, the differential in economic results between companies.

This paper postulates that, by increasing the content and quality of reserved information, labour information management capabilities accentuate competitive asymmetries between a firm and its competitors in real markets. They therefore contribute to strengthening a firm's competitive position by generating organisational commitment or managerial capabilities through labour information aimed at managers or employees. Digitisation has led to the expansion of the universe of data, with a large amount of low-quality and unreliable data. More information should not be interpreted as more information transparency if much of the former is noise that can lead to errors in analysis, and if, in order to differentiate between good and bad digital information, it is necessary to have information management skills to help sift through it. It is therefore possible to conclude that ICTs will generate an increase in competitive advantages in markets, opening up new paths to digital competition.

The real challenge is therefore not in the data, but in learning to develop information management capabilities that combine complementary and co-specialised assets to give rise to strong competencies in the provision of information on key value drivers.

Theoretical Implications

This paper has major academic implications, shedding light on the interaction of information and human resources, two assets that are often considered strategic when constructing information management capabilities. Moreover, the informative typology presented here illustrates the heterogeneity naturally present in information assets, partially clarifying the empirical inconsistency captured by information paradoxes. The paper also sheds light on the conditions that ICT-based resources must meet to contribute to competitiveness and the achievement of extraordinary sustainable economic performance. Understanding this heterogeneity, as well as the conditions that information must meet to generate better organisational results, is a fundamental step in the study of the discipline.

Our research helps to understand how employee-oriented information assets reduce potential agency conflicts and opportunistic behaviour by fostering greater organisational commitment. The results thus help to understand the emerging advantages of the joint development of human and informational assets within the framework of agency and stewardship theories.

Moreover, in the context of information provided to management, the results shed light on how information enhances managerial capabilities, generating competitive asymmetries in the markets. The use of information through advanced digital solutions provides managers with critical information regarding the key success factors of their businesses and the industries in which they operate. In this way, our research offers a deeper understanding of how information assets and managerial capabilities interact within the RBV framework in the ultimate pursuit of competitive advantages.

Managerial and Practical Implications

At a practical level, the results are equally relevant because they help managers and entrepreneurs understand how these resources should be managed, thus influencing their communication strategies as well as human resources management strategies. Management-oriented information is an information management capability with direct effects on the company's competitive position. However, it also increases the quality of decision-making. The accumulation of information assets, in conjunction with the development of other resources and capabilities of the organisation, facilitates the management function. It is a key element in improving managerial capabilities that result in strengthening the competitive position of an organisation, especially in those industries subject to technological disruptions that threaten traditional business models, such as tourism.

Workplace reporting information is a key element of intra-organisational communication and one of the foundations on which the quality of working life is built. The development of the affective commitment of employees, their alignment with continuous improvement and total quality practices, and their satisfaction in the workplace are consequences of the information addressed to employees and have an impact on the competitive position of the organisation. In the tourism industry, due

to its highly customer-focused business composition, internal communication to all the organisation's employees is even more relevant when it comes to guaranteeing the quality and homogenisation of the service. The fact that, in experience goods, among which is tourism, the condition of information predominates, and therefore the judgement of quality can only be issued by the customer after having been consumed or enjoyed, so that the uncertainty about its value is high until the end of the act of consumption, gives an advantage to companies skilled in managing the information prior to the purchase and enjoyment of the service.

Communication is a way to align people with an organisation's objectives by focusing them on priorities, to develop an understanding of the role that everyone must play in improving quality and to commit to doing the right things. Communication is at the heart of empowerment; without its role in providing employees with crucial information about the company's values, objectives and plans, along with information relevant to their area of responsibility, it is impossible to maintain people's enthusiasm for quality initiatives and to motivate participation. Communication is also vital to support other practices such as performance-based reward and training systems, informing them of what is expected of them and providing feedback on their progress to facilitate their self-monitoring and improvement initiative.

Initially, information about the organisational vision, mission, objectives and policies on quality must be disseminated throughout all hierarchical levels, sections, departments and divisions. Only informed and aware employees can be positively committed to quality improvement. Communication must be both vertical, in both directions (bottom-up and top-down), and horizontal. Organisations should use appropriate communication channels for top-down communication, such as publications and campaigns. Bottom-up communication can benefit from practices such as suggestion systems and other ways that allow employees to present ideas, opinions and even feelings. Lateral communication is supported by regular meetings and gatherings, as well as corporate intranets that facilitate direct, real-time contact between any two points in the organisation to obtain information or share knowledge.

Limitations and Future Lines of Research

This study has certain limitations that are worth pointing out. First, the sample was limited to the Spanish tourism industry. Both the consideration of a single industry, despite its strategic status in Spain, and the limitation to a single country should be considered when extrapolating the results to other industries or regions. Furthermore, a cross-sectional approach was used. The effect of the sample was analysed at only a single time. This characteristic of the data set prevented the investigation of causal models. Future lines of research should seek to solve these two problems attributed to the data set. First, a longitudinal data set should be constructed and studied. In addition, a global and multisector approach should be followed.

Finally, the paper does not consider the possible existence of a non-linear relationship or possible quadratic effects between the variables. Non-linear behaviour could be studied in future research to explore to the existence of variables that

moderate these relationships, mainly referring to corporate governance and ownership structures. The map of critical decisions of companies can be enhanced by adding a third group of decisions, in addition to strategic and financial, in reference to the ownership structure and nature of the owners. Agency theory has been used extensively to study these interrelationships between structural decisions, financial decisions and the economic performance of firms. The challenge is now to contextualise them within the strategic process of the firm, revealing their interactions with its resources and capabilities and its orientation towards competition based on tangibles or intangibles.

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Declarations

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