

MANAGING COMMUNICATION AND PARTICIPATION IN CANARY ISLAND FIRMS

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Abstract: Business organizations and management encompass a wide range of aspects requiring research and analysis. Two key issues are communications management and employee participation promotion within firms. This study focused on the variables of communication and participation in organizational structure, business decision making, transmission of orders, supervision, and control in small and micro-enterprises in the Canary Islands, Spain. The research examined the two variables' ability to generate increased involvement in and employee identification with their firm. The analytical framework applied sought to investigate Canarian managers' criteria and priorities regarding using communication and participation as management tools. The methodology included the Rasch analysis technique. The study analyses seven variables considered relevant in relation to communication that are communication between management and workers, fluid and informal communication, use of information technology in internal communication, access of all workers to new information technology, linking/relationship systems between units of the same level, linking/relationship systems between units of different levels and the existence of information disseminated as a tool. Likewise, among the variables related to participation, twelve variables recognized as relevant in the literature are analysed. These variables are setting specific objectives for workers, individual initiative, cooperation, decentralization of decision making, control, participation in decision making, participation in setting objectives, workers' autonomy in decision making when carrying out their work, initiative in their work, control of their work, commitment and involvement of managers in daily work and delegation of authority to lower levels. The predominance of small businesses, in many cases managed by their owners, allows us to appreciate a vertical communication based on direct supervision, from top to bottom. The results reveal a poorly balanced combination of communication and participation systems in Canarian firms. These marked imbalances have consequences for managers' coordination mechanisms and potential for effectively managing their firms.

Keywords: Management, Canary Islands, communication, participation, Rasch model.

JEL Classification: M12.

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Introduction

Business activities' significance in economies worldwide underscores the importance of

studying companies' operations to determine their managers' ability to adapt to changes arising from globalization. Business organizations

and management aspects, however, include such a wide range of factors needing analysis that these variables must first be defined and the most relevant factors selected. This study sought to deepen the existing knowledge about managers' preferences regarding the use of communication to generate employee participation in strategic business management processes.

This topic is of particular interest in the Canary Islands, which is a complex area from an economic perspective due to its geographical fragmentation and distance from the main production centres that stimulate trade. These islands also depend significantly on external supplies of essential goods and have limited industrial and agricultural sectors but a quite dominant service sector. The islands' business environment also exhibits various distinctive features such as firms' small size, which can be explained by the limited local demand that often makes larger business structures unviable. The business context under study thus mostly consists of micro, small, and medium-sized enterprises.

This research setting is particularly appropriate in terms of communication and participation because small units have a simple structure, as defined by Mintzberg's (1990) terminology. These minimal business structures have organic characteristics that allow flexibility and tend to rely on centralized management (Oreja et al., 2002). If the latter management style includes being close to and maintaining more fluid communication with employees, promoting initiative, motivation, and commitment among workers could be easier. Given that poor planning and execution and a reduced division of labor and unit differentiation (Mintzberg, 1997), define smaller businesses' structure, they have a greater capacity for implementing communication and participation mechanisms.

Despite this potential, Melchior (1999) points out that Canarian managers tend to be individualistic and controlling and to prefer centralized decision making. The present study, therefore, concentrated on determining whether these managers' distinguishing features influence their communication and participation practices. This effect can be demonstrated especially through managers' involvement in operational work, company communication pathways and systems, and employees'

contribution to their firm's management or their own work. Examining these patterns was this research's main goal.

The remainder of this paper begins with two theoretical sections: one focused on communication and the other on participation. This background material supports the study's objectives and methodology described in the third section. The fourth section presents the fieldwork, including the sampling procedure, the data analysis, and the results. The last section finishes with the most important conclusions.

1. Communication as a Business Management Tool

Executive communications' role in strategic management varies between organizations and often changes (Johansson & Ottestig, 2011; Lee & Kim, 2021). Many interrelated concepts, theories, and factors influence communication, so several authors consider a greater formalization of managerial communication a necessary organizational goal. Grandien and Johansson (2012) argue that creating a framework for this process requires multiple levels of analysis ranging from the social to the enterprise, organizational, and individual levels. Each aspect needs to be examined separately depending on the issue being researched. The present study thus focused on companies' organizational level.

Open communication among teams of workers positively and directly influences both the relationship between those participating in teamwork and their groups' results, as García Rubiano et al. (2007) research showed. Free and frank dialogue enables participants to consider not just their own but others' perspectives, encouraging information exchange through collaborative theoretical models or actions (Gergen & Thatchenkery, 1996) and thus enhancing firms' performance.

One key factor in these processes is effective communication (see Fig. 1) that provides participants will all the information they need about their company's policies, strategies, and objectives. In addition, communication should also take place at the right time, and managers must clearly specify what is being planned and the results expected by the time the communication is completed. Similarly, communication should disclose the consequences of these initiatives – or ways in which they will affect employees, namely,

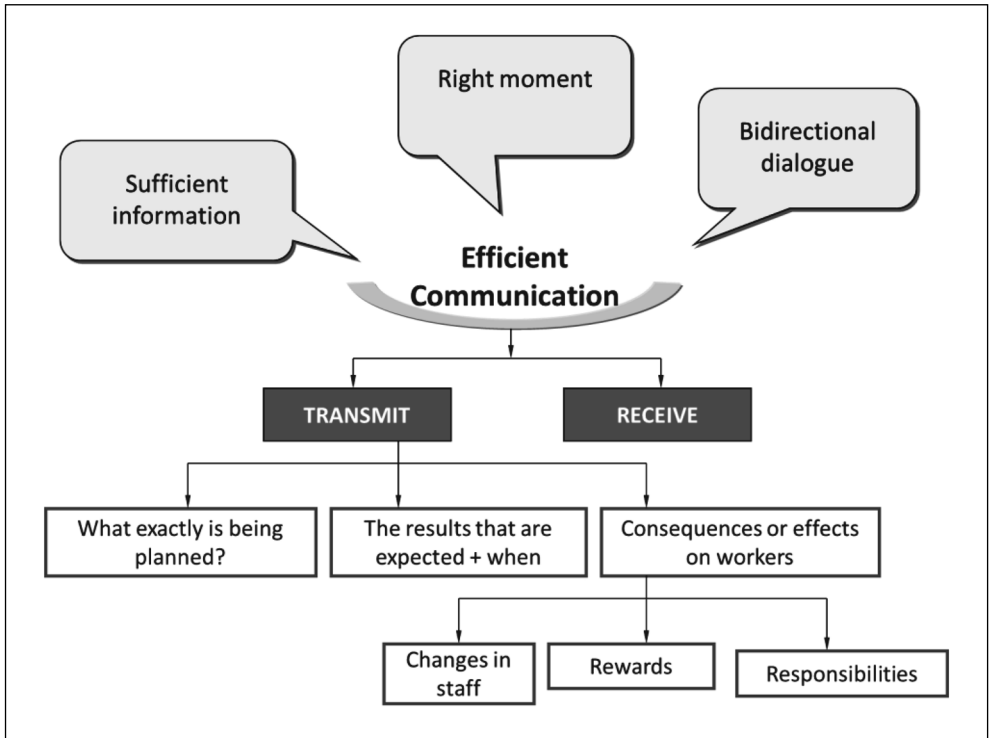
changes in jobs, other tasks' elimination, additional qualifications required, job security, new processes, fees, or contracts. Any other data that can address workers' natural concerns about the future should also be provided, ensuring that uncertainty is kept at an acceptable level (Plant, 1991).

Communication or dialogue must also be bidirectional, which requires a constructivist approach to communication. This approach allows workers to contribute ideas while receiving management-level information on the actions to be implemented, in the two-way process described by Frahm and Brown (2007). Managers need to abandon the idea of communication as a tool to transmit orders through press reports, memoranda, or unidirectional instructions and replace these with dialogues with employees, thus enabling them to engage more fully in the effort to

achieve objectives rather than simply tolerating these targets (Waddell & Sohal, 1998). This type of dialogue should become habitual in firms, allowing workers to make inquiries, suggestions, and contributions. Information must be abundant, and feedback should be given throughout the process of achieving targets and even after their completion (Ponti, 2009).

Effective managerial communication facilitates greater employee involvement, reducing misperceptions workers may have, as well as uncertainty about the goals to be met. This approach ultimately encourages employees to engage more with the policies implemented by their firms (Fuller et al., 2006; Groen et al., 2017). Apathy or lack of motivation in companies is often the result of ignorance or a lack of information about needs and possibilities.

Fig. 1: Efficient communication



Source: own

Effective communication is thus a tool that can help minimize these problems, in this case through upstream communication or information collected within the firm. This approach can be applied via qualitative or quantitative techniques, either through questionnaires or companies' intranet. The data collected are a useful tool to identify problems, possible improvements, needs, and even innovative ideas, which allow top management to assess requirements, possibilities' scope, and their probability of success before undertaking specific strategies.

Organizational silence limits information flow to workers, preventing them from expressing their ideas or thoughts, which means this pattern needs to be broken so that decisions can be made after all the necessary information is gathered (Nemeth, 1997; Sadeghi & Razavi, 2020). To this end, managers should develop effective information systems (Aláez, 2001) that can both identify and transmit relevant data from the surrounding business environment. Communication channels need to reach all of organizations' members and, simultaneously, provide historical and current internal information to all employees, thereby allowing evaluations of any ideas that arise throughout companies.

Jo and Shim (2005) assert that trust relationships in firms are positively related to measures involving communication management. The cited authors also found that workers who receive positive communications are much more motivated to establish trust relationships with their organization's management. Jo and Shim's (2005) research showed, first, that employees perceive relationships as based on trust when supervisors engage in interpersonal communication about the company with subordinates, such as useful instructions and advice or organizational news that strengthens internal relationships. Second, the cited authors also verifies that managers' interpersonal interactions with workers should be more important than formal channels in terms of how information is transmitted to workers. Jo and Shim (2005) concluded that direct communication through manager-worker dialogues constitutes a new direction in companies' internal public relations that can build relationships.

In addition, communication management becomes a particularly vital component in coping with change processes (Kotter & Schlesinger, 1980; Lies, 2012; Lemon &

Towery, 2020; Adamska, 2020; Subramaniam et al., 2021). From the beginning, companies undergoing change should establish a high level of dialogue and honesty in relationships with management members who have not initiated the transformations, as well as with other employees. Communication management further needs to promote information transparency, especially when the risk exists of resistance to change based on inadequate or inaccurate knowledge and analysis. These strategies can encourage a positive attitude to change, quickly detecting and clearing up misunderstandings about alterations and their consequences for workers.

Firms' managers, according to Kotter and Schlesinger (1980), must provide their staff with all the necessary information regarding changes, justify them, answer employees' questions, and join them in analyzing the changes' possible consequences. All workers should be informed and the planned alterations explained so that employees see changes as important and acceptable. Managers need to show their staff how transformations are necessary for business plans (Carnall, 1991) and help employees understand what the changes are expected to achieve (Plant, 1991). By influencing organizational climate, culture, and relationships, internal communication can affect how organizational changes are implemented, as well as providing solutions to problems (Taylor, 2010). Mazzei et al. (2012) assert that internal communication can even help direct workers' reactions, prevent crisis, encourage appropriate reactions, minimize damage, and ultimately produce positive results.

However, communication is also associated with disadvantages, so managers must take into account the time spent on this process (Kotter & Schlesinger, 1980), especially when many people are involved. The cited authors report that communication can involve a series of discussions or arguments, group presentations, memos, and reports. The process requires expending time and effort to work with individuals and groups in order to increase their level of confidence and understanding while seeking their support (Carnall, 1991).

Other studies have attempted to find ways to overcome these disadvantages. For example, Carballo (1999) underlines the need to develop communication strategies and even,

in some cases, internal communication plans. This approach avoids employees' natural tendency toward isolation because of problems arising from specialization, separation, and fragmentation within firms, which are often incompatible with workers' integration into a single project. One proposed remedy is the creation of formal and informal communication spaces available to all of firms' members.

2. Participation in Organizations

A management practice directly related to communication, which is a requirement for effective firms, is employees' participation in business strategy design, goal setting, or decision making. Researchers have extensively debated the convenience or inconvenience of staff members' participation in all processes or decisions within firms. Scholars and managers' opinions in this regard are often strongly aligned with or against this strategy. The present study was based on the assumption that participation leads to dedication and commitment and not just obedience, as indicated by Marrow et al. (1967) results. The classic principle of unity of command would be inappropriate for companies currently dealing with globalized business environments (Mintzberg, 1990). Decision-making processes need to be moved to the locations most conducive to promoting initiatives, skipping the chain of command if necessary.

All employees' widespread, active participation – without exception – within firms (Kotter & Schlesinger, 1980; Dyer et al., 2012; Yang et al., 2022) is the best mechanism to motivate workers and encourage them to identify with strategies' implementation. This approach also helps prevent employees' rejection of changes and ensure that they participate willingly in efforts to integrate the objectives set by their firm's management and in planning how to meet those goals (Prieto et al., 1997; Morgan & Zeffane, 2003; Van Dam et al., 2008), including deciding where and when they will be achieved (McMurry, 1980).

Plant (1991) argues workers should be involved in change processes from the beginning especially when they are affected by alterations as this early involvement, in many cases, prevents resistance to changes. Ponti (2009) also suggests that involving people who reject or have a negative attitude toward change and converting them into leaders

of that change strengthens their motivation and diminishes their opposition or incitement of others to resist. Regarding the timing of introducing new strategies in companies, one of the biggest spillover effects occurs in established interpersonal relationships. These impacts affect employees' expectations, so team representatives need to participate in the change process to increase the likelihood that the initiatives implemented will be accepted (Ordóñez, 2011).

Encouraging employee participation throughout business operations is particularly important to make sure that workers feel involved in more than just a single step or phase of these processes, preventing them from concluding that only one step is their sole responsibility. The latter attitude can also foster disengagement from the remaining stages or phases and an abstract view of their individual tasks. Burns and Stalker's (1994) research indicated that promoting participation entails conveying the idea to employees that all phases involve everyone. That is, any staff member can add value to processes at any stage, contributing to a more realistic view of individuals' functions and ensuring everyone appreciates the entire scope of their firm's business activities.

Many competitive strategies also require workers to engage in pluralistic and highly participatory processes (Hamel, 1998). In addition, when employees participate and become involved more fully in business strategies, they are more likely to be heard by the strategies' initiators, who can then follow any useful advice (Kotter & Schlesinger, 1980). Workers' uncertainty and fears will be diminished about the possible negative consequences of business strategies, thereby lowering resistance to any upcoming initiatives.

Finally, a basic element is co-responsibility in achieving objectives, which must include the delegation of necessary tasks – a fundamental aspect of generating a climate of trust (Kotter, 2012). The cited author argues that collaboration and cooperation at all levels should be fostered by delegating and giving real power to lower-level employees. Managers have to adopt and implement specific decisions that allow these workers to gain an even better understanding of the processes than their managers.

However, some researchers and managers oppose employee participation because

of participatory practices' disadvantages. Among those previously identified, careful management requires supervisors to avoid extremely unsatisfactory solutions (Kotter & Schlesinger, 1980) and a large amount of time is needed to realize participatory processes. In particular, those who oppose worker involvement note that, whenever a strategy has to be implemented immediately, participation becomes inconvenient to use.

3. Research Objectives and Methodology

3.1 Objectives and Hypotheses

After examining the constructs discussed in the previous sections, the present study's main objective was defined as to analyse Canarian managers' general patterns of communication and participation management. This research first investigated the level of priority given to implementing communication systems within firms, as well as managers' assessment of these systems within an island business environment. The study's second phase was dedicated to evaluating the opportunities for relevant initiatives and the degree to which employee participation is considered within management processes.

These empirical objectives were developed to test the following hypotheses using data obtained from a sample of businesses in Spain's Canary Islands autonomous region:

H1: Canarian managers believe that communication is an essential part of effective business management.

H2: The internal transmission of information is an essential element of communications systems implemented in Canarian firms.

H3: Communication promotes employee participation in the management of these firms' business operations.

H4: The communications systems implemented by Canarian managers promote cooperation and control.

3.2 Methodology

Many aspects of measuring both communication and participation management are qualitative or initially unquantifiable, but they still need to be analysed and examined. The usual procedure is first to qualify and then later quantify results through scores that reflect respondents' personal views. To this end, the present study used the Rasch

technique to delve into the business realities described in the previous sections because the Rasch model ensures that both firms and questionnaire items can be located on the same linear continuum. This technique allows items to be ordered hierarchically according to the research subject's (i.e., the firm managers) perceptions of the significance of the variables included in the research model, which simplifies the calculations involved. The Rasch method thus facilitates an evaluation of the variables' relative importance, as well as revealing any discordant response patterns.

The Rasch model applied depends on the type of data collected. In this case, a polytomous response format was used, specifically the Rasch-Andrich model for ordered categories (Andrich, 1978a, 1978b, 1988). In this model, the probability that a certain category of item i will be assumed by subject v is expressed as formula (1) (Oreja, 2005):

$$Pr\{X_{vi} = x\} = \frac{1}{y} \exp\left[-\sum_{k=1}^x \tau_{ki} + x(\beta_v - \delta_i)\right], \quad (1)$$

where v is the subject interviewed; i represents the item answered; k stands for the category of item i assumed by the respondent; y is the total of all possible numerators that arise according to the number of item categories. In addition, x is the latent variable representing subject v 's response to a category of item i used by the measurement instrument; \exp stands for the natural logarithm's base; β is the respondents' latent trait parameter; δ stands for the items' parameter. Finally, τ represents the threshold parameter that indicates the transition point between two categories of adjacent responses, namely, the cut-off points of the characteristic curves corresponding to the various categories of responses to the items (Andrich & Marais, 2005, cited by Oreja, 2005).

The Rasch model is a strict mathematical expression of the theoretical relationships that could exist between all items and respondents along a construct's continuum, so no item or subject will ever be a perfect fit (Bond & Fox, 2015). However, the current data analysis was conducted with a software program that develops the desired model, Winsteps 3.75.1 (Linacre, 2009), which enabled the identification, based on their statistical fit, of items and subjects whose response patterns

Tab. 1: Variables analysed

Constructs	Communication	Communication between management and workers
	Use of information technology in internal communication	
	Access of all workers to new information technology	
	Linking/relationship systems between units of the same level	
	Linking/relationship systems between units of different levels	
	Existence of information disseminated as a tool	
	Participation	Setting specific objectives for workers
		Individual initiative
		Cooperation
		Decentralization of decision making
		Control
		Participation in decision making
		Participation in setting objectives
		Workers' autonomy in decision making when carrying out their work
		Initiative in their work
		Control of their work
		Commitment and involvement of managers in daily work
	Delegation of authority to lower levels	

Source: own

deviated more than expected from the Rasch model. These results contributed to a more detailed analysis of these elements or their elimination as needed. The initial assumption made by the Winsteps program is that all items are equally difficult to understand and all individuals are equally capable of interpreting them.

3.3 Research Design

The data were collected with a questionnaire designed for various business management studies because adequate secondary information is rarely available on this research topic. The fieldwork was carried out between 2017 and 2020 using closed questions to interview individuals in Canarian firms with management duties. The objective was to gain an overall perspective on the respondents' opinions about the importance of the most strategic communication and participation variables listed in Tab. 1.

The responses to the questionnaire's items were quantified using a Likert scale of ordered categories ranging from 1 (i.e., quite unimportant) to 5 (i.e., extremely important), with the midpoint considered a neutral response. As suggested by Hernández Sampieri et al. (2014), the research subjects gave each item a score according to the variable's perceived degree of influence, facilitating the measurement of the lesser or greater importance of the attribute in question.

The sample was selected from the firms from all the sectors operating in the Canary Islands using data from the Instituto Nacional de Estadística (INE) (National Statistics Institute) (2021a) (see Tab. 2). Non-probability purposive sampling was applied to limit the sample to the Canarian firm population considered valid for the present study: those with three or more workers and a minimum of two years of activity. These selection criteria were deemed necessary to ensure the company managers

Tab. 2: Technical details of research

Universe of study	Canarian firms those main economic activity corresponds to sections CNAE-2009
Geographical scope of the investigation	Canary Islands
Population	152,756 Canarian firms
Data collection method	Interviews carried out with managers
Methodological process	Personal interview
Sampling procedure	Intentional non-probabilistic sampling
Size of the initial sample	318 firms
Sample size after the processing data	304 firms
Information processing	Program Winsteps 3.75.1

Source: own

could respond to most items regarding their experience of managing groups of employees, to which managers from newly created firms or companies with just one or two workers could not reply.

Managers from this target population of Canarian firms were randomly selected to be interviewed, resulting in a total of 318 completed questionnaires. The responses' internal consistency was subsequently analysed, and 14 questionnaires were discarded so that the final sample comprised 304 questionnaires.

The 2020 Instituto Nacional de Estadística base (INE, 2021a) (see Tab. 3) shows that the Canary Islands have 152,756 registered businesses, so the sample represented 0.2% of the total research population. This sample was deemed an adequate basis for an analysis of communication and participation management in firms in the Canary Islands autonomous region.

As mentioned previously, a Rasch (1980) model was used in the analysis because this approach can reflect dimensionality

Tab. 3: Canary Islands' firms

Number of firms in Canarian Islands Autonomous Region according to number of employees Units: number of firms									
Canary Islands	Total	From 0 to 9 employees	From 10 to 19 employees	From 20 to 49 employees	From 50 to 99 employees	From 100 to 199 employees	From 200 to 499 employees	From 500 to more employees	Total 10 or more employees
Total CNAE									
2020	152,756	146,132	3,544	1,982	565	314	155	64	6,624
2019	151,661	145,129	3,502	1,965	563	294	150	58	6,532
2018	146,126	139,503	3,521	1,946	616	326	166	48	6,623
2017	141,595	135,285	3,416	1,815	557	314	168	40	6,310
2016	135,909	130,028	3,167	1,720	512	291	154	37	5,881
2015	132,857	127,298	3,013	1,624	476	273	140	33	5,559
2014	128,518	123,225	2,837	1,569	445	263	148	31	5,293
2013	129,566	124,001	3,055	1,582	479	267	155	27	5,565
2012	131,315	125,451	3,216	1,686	515	287	130	30	5,864
2011	132,488	126,420	3,316	1,779	495	314	134	30	6,068

Source: adapted from INE (2021a)

characteristics and total scores' sufficiency and the model can be used with small samples. That is, the measures obtained are robust and inferable to the entire population since the relative location of the subjects and items' parameters on a linear continuum of the construct are independent of the sample (Oreja, 2015). According to Andrich and Marais (2005), this invariant property arises from the Rasch model's structure.

In 2011, the percentage of small and medium-sized enterprises (SMEs) and large firms in the Canary Islands was quite small, that is, only 4.58% of all firms compared to 95.42% for micro-enterprises, as shown in Tab. 3 above. This table also shows the sharp decline in the total number of firms from 2011 to 2014 in this region. The crisis was more marked among SMEs and large companies, whose total in 2014 fell to just 4.12% of all firms in the Canary Islands. As of 2015 we can appreciate a progressive recovery in all groups of companies until 2020 where the percentage of SMEs and large companies was 4.34%. The data analysis confirmed the predominance of micro- and small enterprises with fewer than 50 workers, as defined by the European Commission (2003b), which represented 99.28% of all companies in the Canary Islands by 2020 (INE, 2021a).

These data do not differ much from the rest of Spain (see Tab. 4), which also experienced decreases in the number of firms until 2014 and from then on the number of firms progressively increases until 2020. A full 99.23% of Spanish firms now belong to the micro and small category. In 2020, companies with 10 or more workers represented only 4.52% of Spain's companies (INE, 2021b).

Micro-enterprises predominate in the present study's sample, and, together with SMEs, their managers constitute 96.71% of the respondents, as shown in Tab. 5. Thus, the data used for analysis were coherent with the Canary Islands and the rest of Spain.

4. Data Analysis and Results

4.1 Evaluation of Model

The data on the constructs were first checked to confirm that they generated overall reliable measures of the variables and their corresponding items. The reliability and validity values of the communication and participation variables for both firms and items were acceptable, as shown in Tab. 6. The reliability of the companies' data is 83%, while the items' reliability is 98%. Both are above 70%, so they are suitable values, according to Nunnally and Bernstein (1994), and higher than the minimum acceptable reliability

Tab. 4: Firms in Spain

Number of firms in Spain (CNAE-National Classification of Economic Activities 2009) according to number of employees									
Units: number of firms									
National	Total	From 0 to 9 employees	From 10 to 19 employees	From 20 to 49 employees	From 50 to 99 employees	From 100 to 199 employees	From 200 to 499 employees	From 500 to more employees	Total 10 or more employees
Total CNAE									
2020	3,404,428	3,250,660	81,298	46,101	13,275	6,906	3,976	2,212	153,768
2019	3,363,197	3,213,557	79,393	45,082	12,625	6,658	3,789	2,093	149,640
2018	3,337,646	3,185,314	80,860	45,485	13,116	7,033	3,925	1,913	152,332
2017	3,282,346	3,136,869	77,632	43,079	12,540	6,674	3,756	1,796	145,477
2016	3,236,582	3,097,179	75,022	40,895	12,020	6,243	3,489	1,734	139,403
2015	3,186,878	3,053,761	71,518	39,101	11,503	5,928	3,340	1,727	133,117
2014	3,119,310	2,988,914	70,226	38,157	11,223	5,753	3,346	1,691	130,396
2013	3,146,570	3,009,906	74,204	39,506	11,745	6,130	3,450	1,629	136,664
2012	3,199,617	3,053,377	79,113	43,070	12,700	6,434	3,214	1,709	146,240
2011	3,250,576	3,094,721	84,834	46,160	13,279	6,585	3,288	1,709	155,855

Source: adapted from INE (2021b)

Tab. 5: Distribution of firms by number of workers

Workers	Number of firms	Percentages	Accumulated percentage
Fewer than 10 (micro firms)	186	61.18%	61.18%
From 10 to under 49 (small firms)	71	23.36%	84.54%
From 50 to under 249 (medium-sized firms)	37	12.17%	96.71%
From 250 to more (large firms)	10	3.29%	100.00%
Total	304	100.00%	

Source: own

Tab. 6: Reliability and validity analysis of variables

	Separation reliability		Validity of global fit							
			Firm measures				Item measures			
	Firm measures	Item measures	Infit		Outfit		Infit		Outfit	
			MnSq	S.D.	MnSq	S.D.	MnSq	S.D.	MnSq	S.D.
Variable of communication and participation	0.83	0.98	1.06	0.58	1.06	0.6	1.00	0.19	1.05	0.23

Source: own

(Oreja, 2015). Tab. 6 confirms the reliability of the firm and variable measures corresponding to the questionnaire items.

After the appropriate reliability conditions had been confirmed, the validity of the measures' overall goodness of fit and of each variable's measures could be evaluated. The firm and variable measures' validity was assessed based on their goodness of fit, which was determined by analyzing the outfit and infit for both the mean-square (MnSq) and Zstandard (Zstd) fit statistics, thereby confirming whether the data fit the measures. In this way, the measures could acquire the Rasch model's characteristics because the measures were linear and additive (Oreja, 2005).

The MnSq statistics of the outfit and infit and of the firm and variable items, as shown in the above table, are between 0.5 and 1.5 (Linacre, 2002; Oreja, 2005). These values are close to the unit value of a perfect fit between the data and measures, indicating a high level of reliability and accuracy in the attribute measures and a good overall goodness of fit, which confirms the variable measures' high level of reliability. The Zstd fit statistics (see Tab. 7) in both cases are within acceptable values, namely, between -2 and 2 (Bond & Fox, 2015; Oreja, 2005; Gonzalez, 2008). Thus, the subject and item measures were considered overall reliable and valid.

Next, the variables' fit was analyzed to determine the model's overall validity. Tab. 8

Tab. 7: Assessment of validity using standard deviations of measures

		Firm measures Zstd		Item measures Zstd	
		Infit	Outfit	Infit	Outfit
Variables of communication and participation	Mean	-0.1	-0.1	-0.1	0.5
	S.D.	1.7	1.6	2.3	2.5

Source: own

Tab. 8: Validity of variables' fit

Communication and participation variables		
Item	MnSq	
	Infit	Outfit
Existence of information disseminated as a tool	1.21	1.17
Decentralization of decision-making	1.17	1.38
Delegation of authority to lower levels	1.03	1.10
Access to communication for all workers	1.06	1.17
Participation in decision-making	0.86	0.94
Systems link/relationship to units of same level units	1.10	1.10
Use of information technology in internal communication	0.94	0.97
Participation in setting objectives	0.82	0.80
Systems for linking/relations between units of different levels	1.06	1.07
Setting specific objectives for workers	0.83	0.85
Fluid and informal communications	1.38	1.61
Individual initiative	0.87	0.92
Autonomy to make decisions when performing work	0.82	0.84
Initiative in work	0.66	0.62
Control of work	0.87	0.91
Control	1.07	1.33
Cooperation	0.78	0.80
Commitment and involvement of managers in daily work	1.31	1.24
Communication between management and workers	1.19	1.16

Source: own

gives the values for MnSq/infit and MnSq/outfit obtained for the items related to communication and participation. The MnSq values for the infit and outfit of these items fall between 0.5 and 1.5, which confirms that the variable measures are valid and the data fit the model.

The analysis confirmed, therefore, that the constructs are valid, namely, that the data fit the model and that the data have the Rasch model's required characteristics. The constructs reflect unidimensionality, so the firms and items' measures are located on the same linear continuum. The invariance was also confirmed, indicating that the construct measures are independent of the measures' contextual circumstances. Finally, the model showed local independence, which implies that the responses to any two items are independent of each other (Oreja, 2005). In

summary, acceptable conditions were present to conduct research (Linacre, 2002), and the present study's model was found to be reliable and valid in terms of Canarian firm and item measures for the entire sample.

4.2 Discussion

Canarian managers' management strategies regarding communication and participation were analyzed based on these professionals' responses during interviews focused on their opinions about these areas. Fig. 2 presents the combined measures of the two variables, and Tab. 9 lists the results of a calibration of the items' influence, ordered according to their score. Fig. 2 reveals that the Canarian firms' average is well above the individual items' averages. This result indicates that managers generally consider managing the

Tab. 9: Calibration of communication and participation variables

Communication and participation variables				
Item	Total score	Total count	Measure	Model S.E.
Existence of information disseminated as a tool	817	295	0.71	0.05
Decentralization of decision-making	809	286	0.66	0.05
Delegation of authority to lower levels	887	297	0.54	0.05
Access to communication for all workers	975	299	0.34	0.05
Participation in decision-making	1,006	298	0.26	0.05
Systems link/relationship to units of same level units	987	292	0.24	0.05
Use of information technology in internal communication	1,022	300	0.23	0.05
Participation in setting objectives	1,032	298	0.19	0.05
Systems for linking/relations between units of different levels	1,024	295	0.16	0.05
Setting specific objectives for workers	1,058	294	0.07	0.05
Fluid and informal communications	1,113	300	-0.03	0.05
Individual initiative	1,125	301	-0.06	0.06
Autonomy to make decisions when performing work	1,118	298	-0.06	0.06
Initiative in work	1,194	299	-0.30	0.06
Control of work	1,230	301	-0.41	0.06
Control	1,258	301	-0.54	0.07
Cooperation	1,269	300	-0.60	0.07
Commitment and involvement of managers in daily work	1,278	301	-0.62	0.07
Communication between management and workers	1,308	301	-0.78	0.07
Mean	1,079.5	297.7	0.00	0.06
S.D.	147.4	3.8	0.43	0.01

Source: own

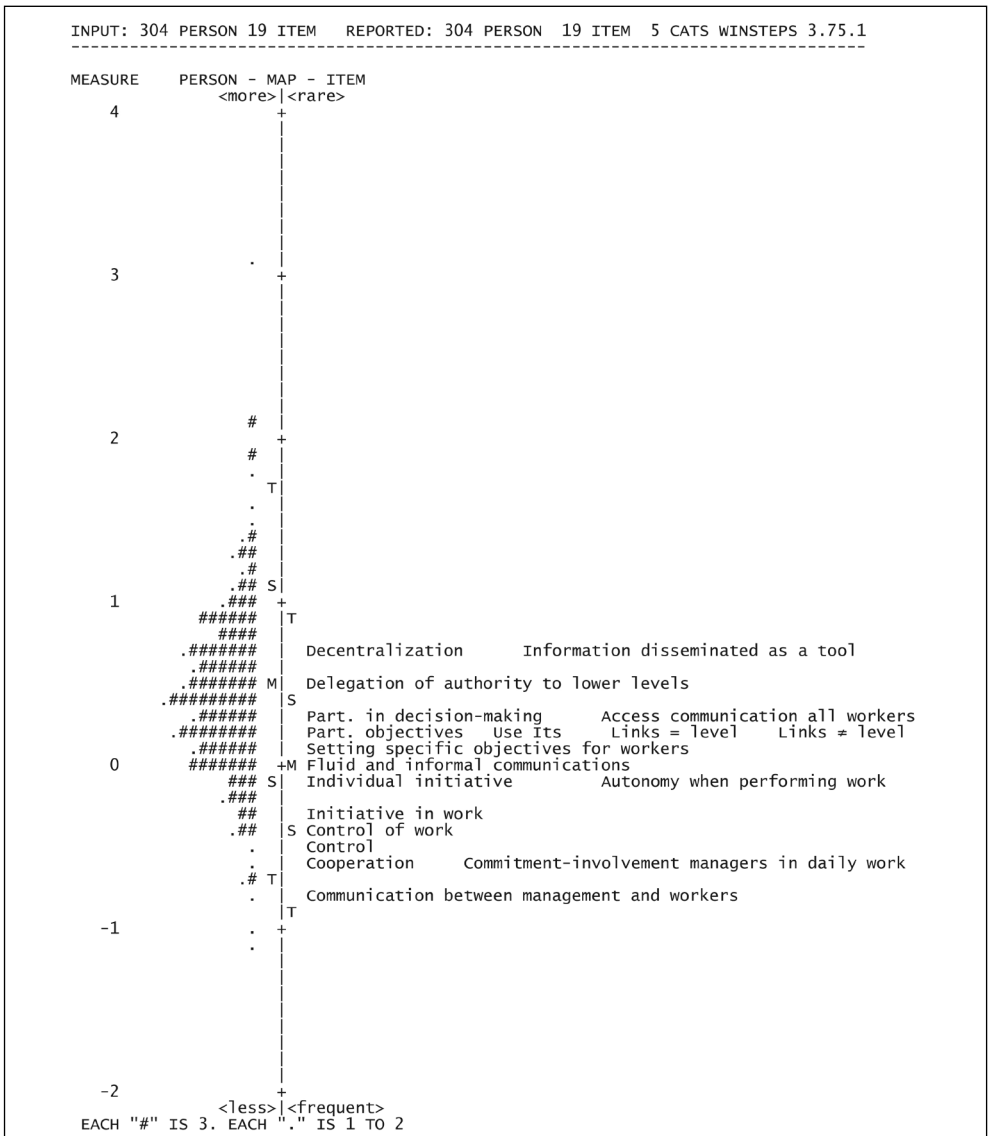
communication and participation variables defined in this study's theoretical framework to be quite important.

The item most often considered influential by managers is 'communication between management and workers', with high priority also given to the 'control' item. The respondents evaluated other parameters as unimportant, such as 'decentralization of decision-making', 'delegation of authority to lower-level employees of the firm', 'participation in decision-making' and 'participation in setting goals'. These results indicate that communication may simply be seen as the transmission of orders or objectives; requests for results, information, or other things; or part of problem solving.

Fluid and informal communication is rare within the firms surveyed, especially dialogues aimed at establishing interconnections between colleagues, as the item corresponding to this type of communication, 'using fluid and informal communication', is not among the variables most often considered important by the managers. This finding also appears to be confirmed by the respondents' lack of appreciation for 'linking/relationship systems between units at the same level' or even 'linking/relationship systems between units at different levels'. These items are also not among the highest ranked variables.

In contrast, the variable of 'managers' commitment to and involvement in daily work' is seen by most respondents as extremely

Fig. 2: Firm and joint item measures of communication and participation in firms



Source: own

important to their firms' management. This result appears to be reinforced by the high value given to the item 'control', which seems to be closely focused on facilitating and enabling more intensive supervision of tasks performed in the company rather than on strategic

issues. As well as strengthening controls and supervision of workers, Canarian managers also seek 'cooperation' from their workers, which is another highly rated variable.

Communications, as shown in Tab. 9, do not appear to favor 'participation in decision

making', 'participation in setting goals', or 'individual initiative'. These findings may mean that the importance given to management-worker communication is not translated into specific initiatives to stimulate participation. However, managers are possibly more committed to exercising 'control over their employees' work', along with some 'initiative at work', which the respondents rated among the most highly influential variables. Less attention is paid to workers' 'decision-making autonomy in carrying out their work', which was given a value close to the overall average (see Fig. 2).

Regarding the introduction of information and communications technologies (ICTs), Canary Island company managers do not show any interest in these tools for improving communication. This result seems to show a disregard for ICTs even though they are currently considered an affordable and essential technological tool in business management practices. According to Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (ONTSI) (2020), in 2019 ICTs are available in approximately 79.9% of micro-enterprises and 99.3% of SMEs and large firms in Spain.

Canarian managers clearly do not rule out the use of ICTs as their responses confirm that they consider these tools' implementation as slightly below average in importance, given their ratings of the item 'use of information technologies in internal communication' in their firms. Nonetheless, other related results cannot be ignored since the managers give little value to ICTs, as shown by the lowest scores given to the item 'all workers' access to communication with new technologies' and another item 'use of information dissemination as a tool'.

The managers interviewed thus highlight the need to strive for 'cooperation', but they attribute little importance to 'linking/relationship systems between units at the same level' and 'linking/relationship systems between units at different levels'. The associated variables also do not support this apparent desire for cooperation. Thus, the emphasis on cooperation is mostly imposed by management, who establish goals and give orders that lack a participatory element. This variable was, however, analyzed in a context in which small firms predominate, and, as mentioned in the theoretical background sections, communication and participation are facilitated in companies with fewer workers.

In the area of participation, the managers surveyed think that employees do not usually participate in setting goals or making decisions. In addition, no information is transmitted to enhance work performance because the item rated as the least frequently considered strategy is 'use of information dissemination as a tool'. Managers also place little value on related measures such as 'all workers' access to communication with new technologies'. This result – together with the infrequent implementation of 'decentralization of decision making' and 'delegation of authority to lower-level employees of the firm' – is a clear indication that managers evidently expect no contributions to management policies from subordinates.

The analysis of results fulfilled the main objective set at the beginning of this research, namely, identifying the general patterns of communication and participation management among Canarian managers. The variable of communication between management and workers can be highlighted as the most highly valued in Canary Islands firms despite the controlling policies that predominate among the archipelago's companies in general. This finding confirms *H1* (i.e., Canarian managers believe that communication is an essential part of effective business management).

According to ONTSI's (2020) study of companies in Spain, businesses are increasingly applying ICTs, including micro-enterprises. Thus, the present research's finding that managers of Canarian firms recognize the need for some applications of these technologies in internal communication is not unexpected, but the results show that the current use of ICTs is insufficient. This shortcoming is aggravated by the respondents' lack of appreciation for other strategies such as providing all workers access to communication through new technologies. Conceivably, the weak response to the idea of information disseminated as a tool could be due to the difficulty these companies experience regarding providing access to this information. *H2* (i.e., the internal transmission of information is an essential element of communication systems implemented in Canarian firms), therefore, had to be rejected.

However, the high value given to management-worker communication does not imply workers' participation in decision making, the delegation of authority to lower-level

employees, or decentralized decision making. The items that correspond to these variables are hardly considered of interest by Canarian firms' managers. This finding confirms that these respondents do not apply techniques to promote employee participation as part of their business management practices.

Canarian managers prefer policies that concentrate decision making at their firms' highest levels as can be confirmed by looking at the great importance given to the item 'managers' commitment and involvement in daily work'. This result further reinforces the high regard expressed for management-worker communication mentioned previously, although this is mainly oriented toward transmitting orders, problem solving, and reviewing results to improve managers' control. Thus, *H3* was not confirmed (i.e., communication improves employee participation in the management of firms' business operations).

The great importance given to control in business management combines with managers' involvement in daily work in order to constitute strategies possibly meant to enhance workers' cooperation. This approach led the Canarian managers interviewed to assert that they have an obligation to initiate communication with workers and to remain involved in their companies' basic operations, encouraging and motivating workers without neglecting continuous supervision. These findings confirmed *H4* (i.e., the communication systems implemented by Canarian managers promote cooperation and control).

The data analysis's main results reflect Canarian managers' attitudes toward communication and participation, thereby fulfilling the following research objectives:

To investigate the priority given by managers to implementing and assessing communication systems in firms in an insular business environment.

To evaluate the level of performance and attention paid overall to employee participation in Canary Island companies' management processes.

Conclusions

Canarian managers clearly have a high regard for management-worker communication, but this observation requires a number of clarifications. First, communication is facilitated by the firms' small size, helping to create

a climate of trust regarding management, although this study could not fully verify this trust exists in Canarian companies. Second, these firms are characterized by low levels of participation, with little decentralization and infrequent delegation of authority, which implies that communication goes in one direction – from top to bottom – to ensure compliance. Therefore, the managers' responses highlight the need to develop and incorporate initiatives that improve leadership practices in order to generate other attitudes and encourage values that more directly promote participation and address the market's expectations.

This study's theoretical framework includes that communication management requires easy access and connections between companies' different organizational units. The average rating of Canarian firms' implementation of linking or relationship systems between units at different or the same level was consistently low. This result confirms that communication management is motivated by the high priority given to direct supervision and is based on communication flowing from managers to workers, which is reinforced by managers' commitment to and involvement in daily work.

According to Brown and Duguid (1991), communication and interactions between firms' staff members is a major source of knowledge creation and potential improvements. Thus, managers need to facilitate connections and collaborative work between different types of positions or departments, thereby eliminating the tendency for companies to organize themselves into separate compartments isolated from other functions. These strategies prevent the generation of differentiated and/or conflicting departmental cultures.

Therefore, firms' internal coordination mechanisms should be reviewed, and the maximum number of vertical relationship processes such as hierarchical levels, delegation of authority, and forecasting and planning systems need to be implemented. In addition, horizontal relationship mechanisms must be strengthened, especially linking functions, designated coordinators, and group and team work. That is, the importance given to communication and participation should be matched by an emphasis on more diverse coordination mechanisms because the latter can strengthen the former's role as strategic management variables.

Firm size may influence Canarian managers' responses or generally preferred organizational parameters, but the sample's main characteristics, nonetheless, show a pattern of enhancing cooperation and facilitating management-worker communication. These results tend to create expectations of an open company culture that encourages participation, yet the remaining findings reveal that this is not the case. Instead, control-oriented centralization with little delegation and few decentralization values predominates, reinforced by the managers' lack of consideration or encouragement of the minimum possible participation of workers in terms of setting objectives or making decisions.

In a report on diversity's costs and benefits, the European Commission (2003a) argues that benefits cannot be extracted from diversity unless organizations harness the power generated by employees and ideas from different cultures and perspectives. Workers have varied backgrounds and professional experiences so that, ultimately, sharing heterogeneous knowledge leads to new approaches, projects, and/or strategies.

In addition, the absence of regular access to tools needed to manage communication and information exchange forces managers to rely on informal communication as the most effective mechanism to facilitate internal communication within their firm. In-house communication is an essential part of Canarian managers' efforts to achieve and improve cooperation, thereby becoming a highly valued strategy within Canary Island companies in general.

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