

Article

The Mediating Effect of Motivation between Internal Communication and Job Satisfaction

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Abstract: Communication in organisations is essential for them to be competitive in a global world that is constantly changing. Internal communication especially can be a highly effective and useful strategic tool for improving organisational performance through employee motivation and satisfaction. Based on a questionnaire survey completed by 426 employees of Portuguese organisations, this work aims to understand, using a partial least squares structural equation model, the importance of internal communication in the motivation and satisfaction of Portuguese employees. The results show that internal communication in organisations directly influences job satisfaction and also indirectly, through motivation at work, giving motivation at work the role of mediator. It is therefore important for Portuguese organisations to invest in effective internal communication strategies in order to promote employee motivation and satisfaction, recognising motivation as a key mediator in the relationship between internal communication and job satisfaction.

Keywords: organisational communication; internal communication; motivation; satisfaction; organisational performance



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1. Introduction

Organisations communicate on a daily basis. This will be a factor that differentiates a collection of random people from an organisation, i.e., it is the process of communication that helps us find a common purpose, agree on goals and work towards achieving those goals, expressing an organisation's culture (Yeomans and FitzPatrick 2017). In this sense, internal communication can influence the creation of a positive organisational climate, conducive to achieving positive results and pursuing organisational goals.

The aim of the study is to investigate the extent to which internal communication explains the job satisfaction of its employees.

In line with the contributions of some authors (Chitrao 2014; Downs and Hazen 1977; Jacobs et al. 2016), it is considered that internal communication is a tool of capital importance in organisations because it is through it that employees strive to achieve organisational goals and objectives and, ultimately, the main objective, the profit and general progress of the organisation. Less effective communication can lead to misunderstandings, a lack of information, lower performance and higher employee turnover. On the other hand, internal communication can influence the creation of a positive organisational climate, conducive to obtaining positive results and the pursuit of organisational objectives (Chitrao 2014).

Several studies reveal that effective and positive internal communication promotes employee motivation (Chikazhe and Nyakunuwa 2022; Petković and Rapajić 2021; Zivrbule 2015). Other research shows that job satisfaction increases when employees are motivated (Ali and Anwar 2021; Machova 2022; Urošević and Miljić 2012; Sari 2022). In this sense,

the proposed study aims to analyse the influence of internal communication in organisations on job satisfaction, assuming motivation has a measurable effect between internal communication and job satisfaction.

The innovative element of the proposed study is related to the fact that we introduce motivation as a mediating element between internal communication and job satisfaction. The research found only deals with the direct bilateral relationship of some of these variables: employee motivation; internal communication; and job satisfaction.

A quantitative methodology was used to achieve the objectives of the proposed research, based on a questionnaire survey to which 426 employees working in Portuguese organisations in the primary or extractive, secondary or industrial and tertiary or service sectors responded. Partial Least-Squares Structural Equation Modelling (PLS-SEM) structural equation modelling was used to analyse the defined objectives.

The results obtained corroborate the relevant empirical literature and reveal that internal communication has a positive impact on employee motivation, which in turn increases job satisfaction. Therefore, to improve employee performance, organisations must implement effective internal communication processes, as these will positively influence their satisfaction and, consequently, their performance.

2. Literature Review

2.1. Organisational Communication

The concept of organisational communication is marked by diversity, with many definitions reflecting a wide range of approaches and perspectives. In this sense, [P. Robbins and Judge \(2017\)](#) define communication as the transfer and understanding of meaning, playing important roles in management, feedback, emotional sharing, persuasion and information exchange.

While there are various types of communication in organisations, we can confirm that internal communication is developing and becoming increasingly important, particularly in the areas of strategic public relations, strategic communication and corporate communication. This is not just a concern for multinationals or large organisations but for all organisations in all sectors of activity ([Yeomans and FitzPatric 2017](#)).

Internal communication can be understood as the two-way exchange of information, ideas and feelings that results in dialogue and positive action at all levels of the organisation ([Chitrao 2014](#)).

Most research approaches internal communication as a complex multidimensional construct, made up of different segments, such as horizontal and vertical communication, communication climate or informal communication ([Borovec and Balgac 2017](#)).

Both [Karanges \(2014\)](#) and [Verčič et al. \(2012\)](#) consider internal communication to be a process that provides employees with information about their individual roles, as well as the organisation's overall goals and objectives. Along the same lines, [Yeomans and FitzPatric \(2017\)](#) consider that internal communication is closely linked to an organisation's need to effectively communicate information about important changes so that the "internal public" can understand their role in the "bigger picture".

Also, [Borca and Baesu \(2014\)](#) argue that it is important for organisations to understand that communicating with employees is a critical success factor, as the main aim of organisational communication should be to inform employees about the organisation's goals and policies and help them understand their merits.

2.2. Employee Motivation

Employee motivation has been studied by several authors over the years and, although everyone agrees with its importance at work, there is no consensual definition of the concept, as it is complex and difficult to realise ([Sousa et al. 2023](#)).

Motivation can be defined as the attitude of leaders and employees towards work situations in their organisational environment: those who have a positive attitude towards their work situation will show high motivation, and vice versa. The work situation in ques-

tion includes working relationships, facilities, organisational climate, leadership policies and standards or working conditions (Ampauleng et al. 2023). It can also be considered a psychological process that provides goals and direction for employee behaviour or an internal drive to meet job satisfaction (Marinak and Gambrell 2008).

Pasaribu et al. (2022) consider motivation to be a set of energetic forces that originate inside and outside an employee and influence work-related effort and determine its direction, intensity and persistence.

2.3. Job Satisfaction

As a multifaceted phenomenon that is subject to different definitions and perspectives, there is no single definition of job satisfaction (Jalagat 2016).

Some authors (Ampauleng et al. 2023) consider that job satisfaction is a positive feeling about work results based on the evaluation of its characteristics. It can be measured by indicators such as increased security of working in a group, satisfaction with superiors and satisfaction with one's job, salary and career opportunities (Ampauleng et al. 2023).

Armstrong (2006) considers that job satisfaction can be seen as a person's positive feeling in relation to their work and can be positively satisfied when expectations are in line with reality.

For Pasaribu et al. (2022), job satisfaction is a feeling of support from employees towards their work or an attitude of an employee in relation to situations at work such as cooperation between employees, rewards received and issues related to physical and psychological factors.

Due to the richness of the definitions that these authors point out for job satisfaction, for the present study, we will consider for this construct the positive feeling suggested by Armstrong (2006), capable of being measured by the indicators suggested by Ampauleng et al. (2023) and Pasaribu et al. (2022).

2.4. The Role of Organisational Communication in Employee Motivation and Satisfaction

Today, according to Chitrao (2014), internal communication is just as important as external communication and is often a tool used to motivate employees. This author's study confirms that internal communication is crucial for motivating employees, which leads them to perform better. He also argues that it is essential for organisations to develop an internal communication strategy that motivates employees to develop professionally and makes them feel valued.

Internal communication can, therefore, be a motivational factor for employees, resulting in greater customer engagement and personal satisfaction (Verčič et al. 2012).

The study by Motoi (2017) reveals that employee motivation is increased by good organisational communication and that there is a direct relationship between internal communication and satisfaction with communication on the part of the organisation's members.

If employees feel that the organisation's internal communication is efficient, they will be motivated to perform better and develop the team spirit that is essential for the smooth running of the organisation. There is, therefore, a direct and positive correlation between organisational communication and employee motivation (Rajhans 2012). Therefore, and taking into account the literature review explained, the following research hypothesis was formulated:

Hypothesis 1 (H1): *Internal communication in organisations positively influences employee motivation.*

Various studies have shown that organisational communication is positively correlated with job satisfaction (Muchinsky 1977; Mueller and Lee 2002).

Bakar and Mustaffa (2013) argue that organisational communication can increase job satisfaction because the flow of information, communication climate, message characteristics, communication structure, group bonding and mutual respect can inspire employees' job satisfaction.

The study by [Kulachai et al. \(2018\)](#) also shows this positive relationship between internal communication and job satisfaction is in line with the results of previous studies ([Borca and Baesu 2014](#); [Carriere and Bourque 2009](#); [Nikolić et al. 2013](#); [Tourani and Rast 2012](#)).

[Chitrao \(2014\)](#) argues that satisfaction with internal communication has a positive correlation with job satisfaction, leading to greater organisational identification and commitment and satisfaction with working relationships.

For an organisation to improve its performance, it must first establish effective internal communication processes that stimulate job satisfaction ([Jacobs et al. 2016](#)). Thus, knowing that job satisfaction is one of the factors that most affects employee performance and that this is enhanced by effective internal communication, it is important to create the conditions for this internal communication to be improved so that it meets the needs of the organisation and the people who work there ([Kulachai et al. 2018](#)). In view of the facts presented in the literature review, the following research question was formulated:

Hypothesis 2 (H2): *Internal communication in organisations positively influences employees' job satisfaction.*

The relationship between employee motivation and their level of satisfaction in the workplace was addressed by several authors ([da Cruz Carvalho et al. 2020](#); [Hidayah 2018](#); [Nurdiansyah et al. 2020](#); [Octaviannand et al. 2017](#); [Pasaribu et al. 2022](#)), who all show that motivation has a positive and significant effect on employees' job satisfaction.

[Paais and Pattiruhu \(2020\)](#) considered that creating job satisfaction is not easy because it implies motivating employees continuously and influencing organisational culture, which must be well accommodated and accepted by all employees. Their study showed that motivation is a trigger for increasing job satisfaction and quality, and has a significant psychological impact on a company's strategy.

According to the study by [Ampauleng et al. \(2023\)](#), job satisfaction has a positive and significant effect on employee motivation, which means that the higher the job satisfaction, the more motivated the employees are. By being more satisfied with their work and environment, they will also be more motivated to improve their skills, increasing their performance at work and, consequently, their satisfaction ([da Cruz Carvalho et al. 2020](#)). With this in mind, the following research hypothesis was formulated:

Hypothesis 3 (H3): *Motivation positively influences employee job satisfaction.*

Based on the literature review carried out, we are dealing with a mediation model, where the independent variable (internal communication) causes the mediating variable (motivation at work) and this, in turn, transmits the effect of an independent variable on the dependent one (satisfaction at work), which is why the following research hypothesis was formulated:

Hypothesis 4 (H4): *Motivation mediates the relationship between internal communication and employee job satisfaction.*

In short, Figure 1 shows the conceptual model and the hypotheses formulated.

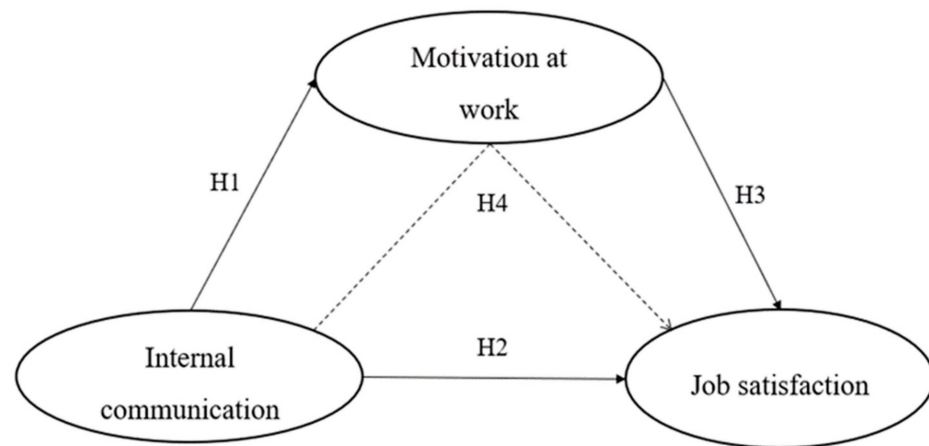


Figure 1. The conceptual framework and the hypotheses formulated. Source: own elaboration.

3. Methodology

3.1. Population and Sample

The target population for this study is the employees of Portuguese organisations in the primary or extractive, secondary or industrial and tertiary or service sectors. Initially, contacts were obtained from different Portuguese organisations in different sectors of activity and emails were sent to these organisations to share the questionnaire with their employees. In this way, the sampling technique used was nonprobability by convenience.

The sample consisted of 426 employees aged between 18 and 65, with an average of approximately 35 years ($SD = 10.33$). The majority of employees were male ($n = 215, 50.5\%$). In terms of educational qualifications, 6.6% ($n = 28$) had primary education, 13.8% ($n = 59$) had vocational education, 38.7% ($n = 165$) had secondary education and 40.8% ($n = 174$) had higher education. With regard to length of service in the organisation, 48.1% ($n = 205$) had worked in the organisation for less than 5 years, 29.6% ($n = 126$) had worked in the organisation for between 5 and 10 years and 22.3% ($n = 95$) had worked in the organisation for more than 10 years. With regard to the sector of activity, 3.8% ($n = 16$) worked in the primary or extractive sector, 60.6% ($n = 258$) worked in the secondary or industrial sector and 35.7% ($n = 152$) worked in the tertiary or service sector. The majority of employees did not have managerial positions (72.5%, $n = 309$). With regard to the size of the organisation in which the employees work, 11.7% ($n = 50$) worked in micro-enterprises, 15.3% ($n = 65$) in small enterprises, 42.2% ($n = 171$) in medium-sized enterprises and 32.9% ($n = 140$) in large enterprises.

3.2. Measuring Instruments

This study used a four-part questionnaire to collect data. The first part analyses internal organisational communication, the second part analyses levels of motivation at work, the third part assesses job satisfaction and the fourth and final part contains sociodemographic data (gender, age and educational qualifications) and professional data (length of service in the organisation, sector of activity, whether they have a managerial role and the size of the organisation).

To operationalise internal communication in the organisation, the 23 items (see Appendix A) of the internal communication perception scale developed for the Portuguese population and validated by Gomes et al. (2023) were used. This scale is made up of the following dimensions: organisational information (items C6, C11, C15, C16, C17, C18, C19, C20, C22 and C23), communication with supervisors (items C2, C3, C4, C5, C7, C8, C9, C12 and C14) and communication between colleagues (items C1, C10, C13 and C21), with Cronbach's alpha values in the work by Gomes et al. (2023) of 0.950, 0.945 and 0.833, respectively.

The 28 items (see Appendix A) of the Multi-Moti scale, which was developed for the Portuguese population by Ferreira et al. (2006), were used to measure work motivation.

The scale is made up of four dimensions: motivation considering work organisation (items M1, M5, M9, M13, M17, M21 and M25), performance motivation (items M2, M6, M10, M14, M18, M22 and M26), achievement and power motivation (items M3, M7, M11, M15, M19, M23 and M27) and, finally, aspects of motivation related to organisational involvement (items M4, M8, M12, M16, M20, M24 and M28). Note that the statements corresponding to items M8, M20 and M28 are worded in the negative. In the study by [Ferreira et al. \(2006\)](#), Cronbach's alpha values were above 0.7 (work organisation: 0.842, performance: 0.776, achievement and power: 0.773, involvement: 0.720).

The job satisfaction variable was measured using the 8 items of the one-dimensional job satisfaction scale ([Lima et al. 1994](#)), which analyses various aspects of the work environment (see Appendix A) and which was used in more recent studies with adequate reliability (e.g., [De Almeida and Orgambidez 2019](#); [Orgambidez et al. 2022](#); [Queimado et al. 2019](#)).

The perception of internal communication and motivation at work scales used scores from a Likert agreement scale with 5 response options (1—totally disagree to 5—totally agree). The job satisfaction scale used a 5-point Likert score, where 1—extremely dissatisfied and 5—extremely satisfied.

3.3. Data Collection and Ethical Procedures

The questionnaire was drawn up using the Google Forms tool and then applied from November 2021 to January 2022. An email was sent to each of these companies at the beginning of November 2021 asking their employees for permission to carry out the study. This email was accompanied by a short text setting out the objectives of the study, a guarantee of anonymity and confidentiality in the processing of the data and a link to the questionnaire built in Google Forms. Internally, the companies that agreed to take part in the study sent their employees the link to the questionnaire. It should be noted that companies were emailed again at the beginning of January 2022 in order to obtain more responses.

3.4. Analytical Procedures

Once the data collection was complete, the Microsoft Excel file generated by Google Forms with the answers to the questionnaires was downloaded. IBM SPSS Statistics 28 ([IBM Corporation 2023](#)) and SMART PLS 4 ([SMARTPLS GmbH 2023](#)) software were used to process the data statistically.

Descriptive statistics were used to characterise the participants (e.g., absolute and relative frequencies, minimum, maximum, mean and standard deviation).

Partial Least Squares structural equation modelling (PLS-SEM) was used to analyse the data and test the hypotheses formulated since there are no known studies in which the model presented was developed theoretically in its entirety ([Hair et al. 2011](#)).

According to [Cataldo et al. \(2017\)](#), as we are dealing with a second-order construct, the model was evaluated using the two-step approach, where in the first step the scores of the first-order latent variables are obtained and then the PLS-SEM algorithm is applied using the latent variables estimated in the previous step as the observed variables of the second order constructs.

The reliability of the indicators is assessed using the loadings, which must be greater than 0.708 to indicate that the construct explains more than 50% of the variance of the indicator, thus providing acceptable item reliability ([Hair et al. 2019](#)). Cronbach's alpha and composite reliability were used to analyse the reliability of the constructs, whose values must be greater than 0.7 to be considered acceptable ([Hair et al. 2019](#)). Convergent validity was assessed by the AVE (Average Variance Extracted) value, which must be greater than 0.5. To assess discriminant validity, it must be ascertained whether the correlations between the latent variables are less than the square root of the AVE ([Hair et al. 2022](#)) and whether the HTMT (Hetero-trait/Monotrait ratio) values are less than 0.90 for similar constructs and less than 0.85 for different constructs ([Hair et al. 2022](#); [Henseler et al. 2015](#)).

To assess the structural model, the coefficient of determination (R^2) of the independent variables was used and the bootstrapping technique with 5000 samples was used to determine the t -statistics and the significance of the paths and the f^2 to assess the effects (Hair et al. 2011). According to Cohen (1988), the coefficient of determination in the social and behavioural sciences is classified as follows: 2% small effect, 13% medium effect and 26% large effect. Values of f^2 of 0.02, 0.15 and 0.35 indicate the weak effect, moderate effect and strong effect of an exogenous construct, respectively, on an endogenous construct (Cohen 1988). The variance accounted for (VAF) test is used to analyse mediation effects, where values below 20% indicate no mediation, values between 20% and 80% indicate partial mediation and values above 80% are considered full mediation (Elshaer et al. 2023).

To avoid collinearity problems, VIF (Variance Inflation Factor) values should preferably be less than 3 (Hair et al. 2019).

4. Results and Discussion

4.1. Evaluating Measurement Models

The model being evaluated (Figure 1) is made up of second-order latent variables (internal communication and work motivation), which is why the two-step approach was adopted, where the scores of the first-order latent variables were first determined, i.e., the dimensions of the internal communication and work motivation constructs.

With regard to the internal communication construct, Table 1 shows that the reliability of the indicators, i.e., the loadings, is above 0.708 (Hair et al. 2019). With regard to the reliability of the constructs, this is considered adequate, as the values of the Cronbach's alphas and composite reliabilities are above 0.7 (Hair et al. 2019). Convergent validity is considered adequate because the AVE values are above 0.5 (Hair et al. 2022).

Table 1. Estimation of the measurement model parameters—internal communication.

| Construct | Item Code | Loading | α | CR | AVE |
|----------------------------------|-----------|---------|----------|-------|-------|
| Organizational information | C15 | 0.856 | 0.949 | 0.956 | 0.684 |
| | C17 | 0.850 | | | |
| | C20 | 0.844 | | | |
| | C22 | 0.834 | | | |
| | C18 | 0.831 | | | |
| | C11 | 0.828 | | | |
| | C16 | 0.817 | | | |
| | C6 | 0.816 | | | |
| | C23 | 0.799 | | | |
| | C19 | 0.795 | | | |
| Communication with supervisors | C7 | 0.913 | 0.950 | 0.958 | 0.718 |
| | C4 | 0.888 | | | |
| | C5 | 0.878 | | | |
| | C8 | 0.865 | | | |
| | C2 | 0.847 | | | |
| | C12 | 0.843 | | | |
| | C14 | 0.833 | | | |
| | C3 | 0.818 | | | |
| | C9 | 0.727 | | | |
| Communication between colleagues | C13 | 0.822 | 0.809 | 0.874 | 0.635 |
| | C21 | 0.799 | | | |
| | C1 | 0.783 | | | |
| | C10 | 0.782 | | | |

Note: All loadings are significant at $p < 0.001$. Source: own elaboration.

Table 2 shows that the values of the square root of the AVE of the dimensions of the internal communication variable (bold values in Table 2) are higher than the correlations between the constructs (Hair et al. 2022) and the HTMT values are lower than 0.90 (Hair et al. 2022; Henseler et al. 2015); therefore, there is evidence of discriminant validity.

Table 2. Discriminant validity—internal communication.

| | Fornell-Lacker Criterion | | | HTMT-Matrix | | |
|-----|--------------------------|--------------|--------------|-------------|-------|-----|
| | OI | CWS | CBC | OI | CWS | CBC |
| OI | 0.827 | | | | | |
| CWS | 0.816 | 0.847 | | 0.855 | | |
| CBC | 0.698 | 0.714 | 0.797 | 0.788 | 0.813 | |

Note: OI—organisational information, CWS—communication with supervisors, CBC—communication between colleagues. The values in bold in the table are the square root of the AVE. Source: own elaboration.

With regard to the work motivation construct, Table 3 shows that after eliminating the negatively worded items (because they had very low loadings), there are still some items whose loadings are below 0.708 (items M2, M9, M10, M17, M19, M21, M23 and M26). These items were kept in the model because they had loadings above 0.5 and because their elimination does not result in an increase in reliability and AVE above the values considered adequate (Hair et al. 2022). It should be noted that in the study by Ferreira et al. (2006), some items also had loadings between 0.4 and 0.7.

Table 3. Estimation of the measurement model parameters—motivation.

| Construct | Item Code | Loading | α | CR | AVE |
|-----------------------|-----------|---------|----------|-------|-------|
| Work organization | | | 0.844 | 0.880 | 0.515 |
| | M5 | 0.802 | | | |
| | M25 | 0.789 | | | |
| | M13 | 0.745 | | | |
| | M1 | 0.734 | | | |
| | M21 | 0.703 | | | |
| | M17 | 0.670 | | | |
| M9 | 0.551 | | | | |
| Performance | | | 0.845 | 0.883 | 0.521 |
| | M14 | 0.816 | | | |
| | M6 | 0.787 | | | |
| | M18 | 0.752 | | | |
| | M22 | 0.735 | | | |
| | M2 | 0.701 | | | |
| | M10 | 0.648 | | | |
| M26 | 0.590 | | | | |
| Achievement and power | | | 0.866 | 0.897 | 0.555 |
| | M15 | 0.816 | | | |
| | M3 | 0.796 | | | |
| | M7 | 0.761 | | | |
| | M27 | 0.756 | | | |
| | M11 | 0.715 | | | |
| | M19 | 0.703 | | | |
| M23 | 0.658 | | | | |
| Involvement | | | 0.768 | 0.852 | 0.589 |
| | M24 | 0.794 | | | |
| | M16 | 0.772 | | | |
| | M12 | 0.756 | | | |
| | M4 | 0.748 | | | |

Note: All loadings are significant at $p < 0.001$. Source: own elaboration.

The values of the Cronbach’s alphas and composite reliabilities are above 0.7; therefore, the reliability of the dimensions of the work motivation construct is considered adequate (Hair et al. 2019). Convergent validity is also considered adequate given that the AVE values are above 0.5 (Hair et al. 2022).

Table 4 shows that the AVE square root values for the dimensions of the work motivation variable (bold values in Table 4) are higher than the correlations between the constructs (Hair et al. 2022) and the HTMT values are lower than 0.90 (Hair et al. 2022; Henseler et al. 2015); therefore, there is evidence of discriminant validity.

Table 4. Discriminant validity—motivation.

| | Fornell–Larcker Criterion | | | | HTMT-Matix | | | |
|----|---------------------------|-------|-------|-------|------------|-------|-------|---|
| | WO | P | AP | I | WO | P | AP | I |
| WO | 0.718 | | | | | | | |
| P | 0.557 | 0.722 | | | 0.643 | | | |
| AP | 0.488 | 0.719 | 0.745 | | 0.536 | 0.821 | | |
| I | 0.709 | 0.626 | 0.636 | 0.768 | 0.838 | 0.780 | 0.772 | |

Note: WO—work organisation, P—performance, AP—achievement and power, I—involvement. Source: own elaboration.

4.2. Evaluating the Structural Models

After obtaining the scores of the first-order latent variables, the two second-order latent variables were modelled as if they were a first-order latent variable, where the scores of the internal communication and work motivation dimensions play the role of the observed variables (Figure 2). In this model, according to Figure 2, it can be seen that the items whose loadings are less than 0.708 refer to the job satisfaction construct (items S1 and S4). These items were not removed from the model because they refer to various aspects linked to job satisfaction that are important for defining the job motivation construct and also because indicators with external loadings between 0.40 and 0.70 should only be eliminated if they result in an increase in reliability and AVE above the values considered adequate (Hair et al. 2022). The reliability of the constructs is considered adequate because the values of the Cronbach’s alphas and composite reliabilities are above 0.7 (Hair et al. 2019). The convergent validity is also considered adequate as the AVE values are above 0.5 (Hair et al. 2022). The internal communication variable explains 43.7% of the work motivation variable, and these two variables together explain 59.8% of the variation in the job satisfaction variable. These values in the field of social and behavioural sciences are considered large effects (Cohen 1988).

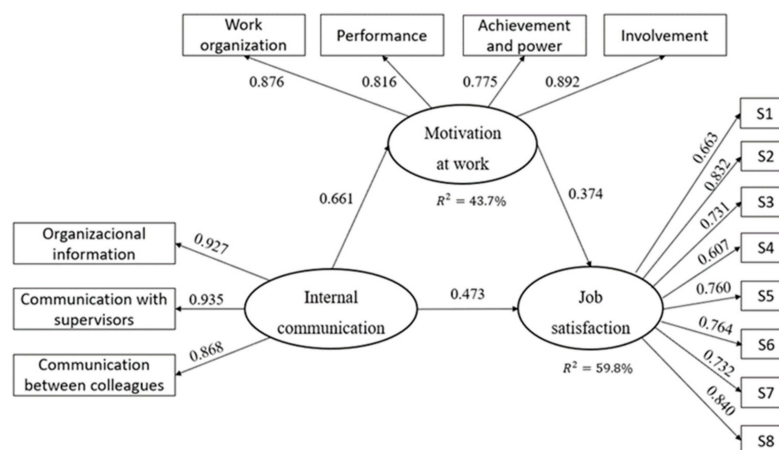


Figure 2. Estimation of the measurement model parameters—second-order model. Note: all loadings are significant at $p < 0.001$. Source: own elaboration.

Table 5 shows that the Cronbach's alphas and composite reliabilities of the three latent variables that make up the conceptual model under study are above 0.7; therefore, the reliability of the constructs is considered adequate (Hair et al. 2019). Convergent validity is also considered adequate given that the AVE values are above 0.5 (Hair et al. 2022). The AVE square root values (which are in bold in Table 5) are higher than the correlations between the constructs (Hair et al. 2022) and the HTMT values are lower than 0.85 (Hair et al. 2022; Henseler et al. 2015); therefore, discriminant validity is also considered adequate.

Table 5. Reliability, convergent and discriminant validity.

| | Fornell–Larcker Criterion | | | HTMT-Matrix | | | Reliability and Convergent | | |
|----|---------------------------|-------|-------|-------------|-------|----|----------------------------|-------|-------|
| | MW | IC | JS | MW | IC | JS | α | CR | AVE |
| MW | 0.841 | | | | | | 0.868 | 0.906 | 0.707 |
| IC | 0.661 | 0.910 | | 0.693 | | | 0.896 | 0.935 | 0.829 |
| JS | 0.687 | 0.720 | 0.745 | 0.720 | 0.798 | | 0.883 | 0.908 | 0.555 |

Note: MW—motivation at work, IC—internal communication, JS—job satisfaction. Source: own elaboration.

In Table 6, the analysis of the VIF values shows that there are no collinearity problems, as they are less than three as recommended by Hair et al. (2019). Regarding the hypotheses, we find that perception of internal communication has a significant influence on work motivation ($\beta = 0.661$, $t = 22.961$, $f^2 = 0.776$, $p < 0.001$), which empirically supports Hypothesis 1. There are several studies in the literature that confirm these results (da Cruz Carvalho et al. 2020; Hidayah 2018; Nurdiansyah et al. 2020; Pasaribu et al. 2022). Motivation is also considered to be a trigger for increasing satisfaction and quality at work and has a significant psychological impact on an organisation's strategy (Paais and Pattiruhu 2020). It should be noted that these two variables of job satisfaction and motivation have a significant two-way relationship (Ampauleng et al. 2023).

Table 6. Results of the structural model analysis.

| Path | Coefficient | t -Value ^a | VIF | Decision |
|------------------|-------------|-------------------------|-------|-----------|
| H1: IC → MW | 0.661 | 22.961 *** | 1.000 | Supported |
| H2: IC → JS | 0.473 | 9.825 *** | 1.776 | Supported |
| H3: MW → JS | 0.374 | 6.712 *** | 1.776 | Supported |
| H4: IC → MW → JS | 0.247 | 7.331 *** | | Supported |

Note: MW—motivation at work, IC—internal communication, JS—job satisfaction. *** $p < 0.001$. ^a t -values were obtained with bootstrapping procedure (5000 samples). Source: own elaboration.

Hypothesis 2 is empirically supported, i.e., internal communication positively and significantly influences job satisfaction ($\beta = 0.472$, $t = 9.825$, $f^2 = 0.313$, $p < 0.001$). Different studies in the literature argue that organisational communication can increase job satisfaction (Bakar and Mustafa 2013; Borca and Baesu 2014; Carriere and Bourque 2009; Kulachai et al. 2018; Nikolić et al. 2013; Tourani and Rast 2012). In order to increase levels of job satisfaction, it is important to have an open, two-way and responsive communication system, where employees can engage in dialogue and air their opinions and concerns (Men 2014). Given that job satisfaction is one of the factors that most affects employee performance (Kulachai et al. 2018), organisations should start by establishing effective internal communication processes in order to stimulate job satisfaction (Jacobs et al. 2016) and in this way, the organisation will be able to achieve better results in terms of performance.

Work motivation has a significant and positive influence on job satisfaction ($\beta = 0.374$, $t = 6.712$, $f^2 = 0.1963$, $p < 0.001$), which empirically supports Hypothesis 3. This result corroborates the literature, since internal communication is considered crucial for employee motivation (Chitrao 2014; Rajhans 2012) and greater personal satisfaction (Verčič et al. 2012).

Hypothesis 4 also has empirical support, i.e., motivation at work mediates the relationship between the perception of internal communication and job satisfaction, with statistical significance ($\beta = 0.247$, $t = 7.331$, $p < 0.001$), with a VAF value of 34.3% for the mediation effect of motivation at work on the relationship between internal communication and job satisfaction; therefore, there is partial mediation (Elshaer et al. 2023).

The sufficient statistics of the results obtained and the empirical evidence permit us to affirm that internal communication can influence worker satisfaction, through the mediating effect of motivation.

5. Conclusions

The proposed study, based on a questionnaire survey of Portuguese workers in the primary or extractive, secondary or industrial and tertiary or service sectors, aims to assess the relationship between internal communication in organisations and employee motivation and satisfaction.

The results obtained allow us to conclude that internal communication positively influences employee motivation and satisfaction, which means that employee motivation and satisfaction levels improve if effective communication strategies are used. On the other hand, motivation positively influences job satisfaction. The results also show sufficient statistical evidence to ensure that work motivation mediates the relationship between the perception of internal communication and job satisfaction.

Regarding theoretical implications, this investigation brings new information and a new model that explains the relationship between the variables under study. Although previous research has argued that internal communication can explain employee motivation and job satisfaction, to the best of our knowledge, this is the first empirical study showing work motivation as a mediating variable between internal communication and job satisfaction. In this way, this study fills a research gap by offering empirical evidence for this area and these variables.

In terms of practical implications, the study shows that internal communication can be a crucial tool for the success of organisations. Leaders with decision-making powers should, therefore, promote open communication mechanisms in their organisations, where employees can share their opinions and suggestions about the organisation. This commitment to undertaking a set of efforts that provide greater motivation for good and effective internal communication will promote better job satisfaction and commitment to tasks. Organisations should, therefore, implement effective communication systems, where employees perceive that the information they transmit is valued and has an influence on the organisation. In this context, leaders should create tools to assess the positive and less positive aspects that affect the organisation's internal communication, promoting fluid, two-way and effective communication channels.

One limitation of this study is that it is a cross-sectional study, which allows us to understand the behaviour of the target population at a specific point in time. For this reason, it would be interesting to complement this study with a longitudinal analysis, which would allow us to assess the behaviour of the population in relation to the variables under analysis over a certain period of time. Or alternatively, to compare the behaviour of the population in two or more specific periods of time (for example, before and after the pandemic).

Another limitation refers to the fact that it can be argued that the research design is supported by causal effects, which are based on observational data, requiring a (quasi) experimental design. Additionally, there is no empirical evidence that clearly supports the indirect effect mediated by employee motivation.

It would also be interesting to compare the employees' perspective on the indicators under analysis with the perspective of the organisations' leaders. This analysis could be introduced through a quantitative or qualitative study.

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Appendix A

Internal Communication

- C1. Communication among colleagues flows freely.
- C2. My manager and I discuss the best actions to carry out my duties.
- C3. My supervisor listens to me.
- C4. My supervisor understands the problems faced by employees.
- C5. My supervisor communicates with me frequently.
- C6. Conflicts are dealt with adequately through appropriate communication channels.
- C7. My supervisor values feedback.
- C8. My supervisor tells me how my tasks fit into the overall aims of the organisation.
- C9. Communication with my supervisor is accurate.
- C10. I can bring up work-related topics with my coworkers.
- C11. When information is provided, there is enough time for discussions/questions/feedback.
- C12. There is openness and tolerance in communication with my manager.
- C13. I can bring up personal issues with my coworkers.
- C14. The language used by my supervisor shows respect for the employees.
- C15. I receive information about strategic changes in the organisation.
- C16. I receive information about the organisation's failures.
- C17. The organisation's communication motivates me to meet the goals.
- C18. Our meetings are well organised.
- C19. The publications released by the organisation are useful.
- C20. I identify with organisational communication, feeling a vital part of it.
- C21. In the organisation employees respect each other.
- C22. I receive information about organisational policies and objectives.
- C23. I receive information about the government actions that affects the organisation.

Motivation

- M1. This organisation has satisfactory working conditions.
 - M2. I find that periodic evaluations motivate me.
 - M3. Having career prospects is important for my motivation at work.
 - M4. I usually consider myself a highly motivated person.
 - M5. I feel fulfilled in my role in the organisation.
 - M6. I would like to be assessed on my performance on a regular basis.
 - M7. I would like to fulfil roles with greater responsibility.
 - M8. I find my work monotonous.
 - M9. I feel satisfied with my pay.
 - M10. When performing tasks, it is important to show some emotion.
 - M11. I feel capable of managing a working group.
 - M12. I feel emotionally involved with the organisation.
 - M13. The feedback I receive at work contributes as a motivational factor.
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- M14. I like to be assessed on the performance of tasks.
 M15. I feel the need to grow more and more in my role.
 M16. My knowledge is decisive in the way I work.
 M17. All the organisation's employees take part in decision-making processes.
 M18. I usually develop strategies to achieve my goals.
 M19. If there were prizes awarded to the best employees, I would perceive them as a professional motivating factor.
 M20. I get upset when I do not understand the purpose of my job.
 M21. I feel that I work in an environment of cooperation between colleagues.
 M22. Diverse tasks are important for good job performance.
 M23. One of my goals is to reach the highest position in the organisation.
 M24. I identify with my job.
 M25. The organisation enables the development of professional goals.
 M26. There is competitiveness in my work group.
 M27. I feel motivated when my work is praised by my superior.
 M28. I would work harder if there were alternative forms of remuneration.
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Satisfaction

- S1. Promotion prospects.
 S2. Organisation and operation of the department where you work.
 S3. Collaboration and relationship climate with co-workers.
 S4. The pay you receive.
 S5. Competence and organisation of your line manager.
 S6. The work you do.
 S7. Competence and performance of your subordinates.
 S8. All in all, and considering all aspects of your work and life in this organisation, would you say that you are.
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