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Credit default swaps, investor protection, and audit cost: international evidence

Credit default
swaps and
audit cost

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Abstract

Purpose – Credit Default Swap (CDS) trading alters equilibrium interactive monitoring of external corporate monitors due to a possible change in private lenders' incentive to monitor client firms. This study explores how audit fees change in response to CDS trade initiation on client firms and how this effect is moderated by investor protection.

Design/methodology/approach – With 6,052 cross-country firm observations, the author conducts estimations in the systems dynamic general methods of moments framework.

Findings – The author documents that audit fees rise on average after CDS trade initiations with and/or without investor protection. Meanwhile, change in auditors' risk perception result in increased audit costs when CDS trade initiation and investor protection interact. The effect of CDS trading on audit fees remain after controlling for firm, audit, and auditor features are robust to different proxies of audit cost.

Practical implications – The need for firms in high investor protection jurisdictions to initiate CDS trade to implement policies in order to maximize their gains from investor protection activities to lessen the overall impact of any increased audit cost that may arise. Furthermore, CDS regulation may be strategically targeted to lessen the effect of increased audit costs on firms after initiation. This would ensure that the resulting increase in audit cost may not materially impact the cash or profitability position of such firms.

Originality/value – This study is distinct from previous ones by focusing on variation in private lenders incentive to monitor after CDS trade initiation after controlling for possible monitoring by short-term creditors. Given that monitoring is not costless for private lenders and CDS trading on their borrowers causes a change in this cost structure, the author documents how auditors react to such changes in incentive to monitor.

Keywords Audit pricing, Credit default swaps, Investor protection, Interactive monitoring

Paper type Research paper

1. Introduction

Interactive monitoring – a situation in which multiple corporate observers have the task of examining various actions of firms presents spillover effects of actions of one group of monitors on monitoring effort of others [1]. Banks mitigate the information asymmetry and moral hazard associated with firms such that a credit relationship with banks and other private lenders who are considered expert monitors alters concerns of insider opportunism (Gallimberti *et al.*, 2017). Lower bond spreads and positive abnormal returns for firms after their bank loan announcements (Li and Ongena, 2015) as well as varying demand for disclosure by shareholder monitors after changes in firm-bank relations (Chen and Vashishtha, 2017) are empirical evidence of bank monitoring value to other stakeholders of a firm.

Auditors also value the monitoring of banks and other expert monitors like rating agencies. The monitoring effort of these expert institutions has a direct effect on the control



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risk of auditors. The general control environment of a client firm mitigates managers incentive for opportunistic behavior and misreporting. Auditors charge premiums for their engagement risk after internal monitoring failures (Ashbaugh-Skaife *et al.*, 2008; Hogan and Wilkins, 2008), while they charge lower fees for firms with additional external monitors – rating agencies and short term debt providers (Gul and Goodwin, 2010). The evidence that the monitoring environment of client firms may relate to their audit fees is not without empirical inferential challenges since several endogeneity concerns undermine prior documented evidence. A typical concern is that firms have an incentive to choose one capital provider and timing over another. The varying types and levels of agency problems in firms motivate firms to choose intense monitoring from banks and private lenders over general public debt monitoring or equity holders monitoring (Lin *et al.*, 2013). Similarly, credit ratings are paid for by firms before raising credit capital. Despite the possible differences in the control environments of firms with and without bank relationships, it is unclear if any changes in audit fees are a result of the varying expert monitoring or fundamental features of the firm which influences the decision to seek such funding or rating.

Furthermore, the argument that managerial opportunism is lower in high investor protection countries (Cao *et al.*, 2017) suggest that varying auditors' control risk perception in countries with differing agency problems could influence the extent to which credit default swaps (CDS) trade affect audit costs. Since investor protection could result in differing levels of auditory perception, a moderated relationship between CDS trade and the cost of audits could be envisaged. I draw insights from Simunic *et al.* (2016), who model the disparities in auditors' response to auditing standards in different legal regimes on the premise that legal enforcement, interpretation of auditing standards and consequent damages awarded against audit failure differ across countries. Hence, I expect auditors to react differently to similar risk factors based on investor protection levels.

In this study, I reexamine the possible relation between audit fees and private creditor monitoring by using a variation in lenders' incentive to monitor after CDS trading begins on client firms. The variation in lenders incentive to monitor is exogenous to borrower firms who are termed reference entities in CDS contracts. CDS contracts are similar to insurance contracts that lenders can purchase to protect against the credit risk of their borrowers. According to the contract, lenders pay a premium to a CDS seller who promises to pay a face value triggered by a credit event of a reference entity. This contract, which can be sold over-the-counter, has increasingly become a very popular financial instrument over the years with \$62.2 trillion notional outstanding value in 2007 (ISDA, 2013). After the onset of CDS trading on a firm, its lenders can reexamine their monitoring costs, namely, the opportunity to transfer or hedge credit risk associated with the firm. This can significantly change the monitoring incentive of lenders. Under this setting, I am able to test whether or not auditors consider and price monitoring efforts of private lenders in their audit engagements and distinguish this effect from other risk factors that may influence client firms' choice of private lenders over other capital providers.

Two contrasting theoretical predictions motivating this study include the argument that banks become empty creditors and lack the incentive to screen and monitor their borrowers when they have the opportunity provided by CDS to transfer credit risk (Subrahmanyam *et al.*, 2017) and the other view that banks have a reputation to keep as expert monitors at least so to maintain lower premium payments on repeated business with CDS contract sellers (Parlour and Winton, 2013). If auditors perceive an increase in their control risk induced by the empty creditor problem associated with CDS trading, then we expect them to charge a premium to cover this risk. However, if auditors do not perceive a change in the monitoring effort of lenders after CDS trade initiation, then audit fees are expected to remain unchanged. Which of these two stories or predictions would be borne by the data is an empirical question examined in this study?

Using audit fee information for 6,052 unique firms spread across 16 countries over a 17-year period starting 2000, in my systems dynamic panel research design, I document that audit fees increase significantly after CDS trade initiation, consistent with the argument that auditors perceive increased control risk due to private lenders disincentive to monitor client firms. Following the argument that managerial opportunism is lower in high investor protection countries (Cao *et al.*, 2017), I also test if auditors' control risk perception vary in countries with differing agency problems. The results show that auditors' reaction to CDS trade initiation is relatively higher for firms located in high investor protection countries. Impliedly, agency problems and the incentive for opportunistic insider action with associated misreporting may not necessarily be mitigated by the institutional setup and legal enforcement characterized with investor protection.

CDS trade initiation, my treatment variable, occurs at different times for different firms allowing the same firms to be included in both control and treatment samples at different times. This allows the same firms to serve as their own controls, thus apart from CDS trade initiation, the sampled firms have similar characteristics mitigating the concern of fundamental differences among firms driving my results. Despite similarities in firm characteristics, I include firm, audit, and auditors' features shown by prior studies to affect audit fees. In addition, I employ a modeling technique that caters for the firm, time, industry and country effects to assume away possible heterogeneities at firm, industry and country levels as well as any time trend in audit fees. Understanding the dynamic nature of audit costs is essential. The cost of audit incurred in the current year may most likely determine, in part, the audit cost for the next period and, hence, audit cost is not static.

It is instructive to note that although CDS trading may cause auditors to increase their fees due to the perception of increased engagement risk, there are a few concerns that are likely to undermine such the specification of a model. First, it is likely that audit fees have a generally upward trend over the years including the sampled period and coincides with CDS trade initiating on most firms. For example, due to macroeconomic downturns, firms have increased incentive to misrepresent their bottom-line, a risk that auditors perceive and increase their fees consequently. Secondly, perhaps some risk factors or need for increased effort unique to firms induces auditors to increase fees, which may correlate with CDS trade. These unique risk factors can be industry-specific too; thus, influencing audit fees for all firms in a similar industry, and these result in endogeneity issues.

To mitigate the endogeneity concerns noted above, the application of appropriate estimation techniques – which would influence the model specification – is essential. The systems dynamic general method of moments is, hence, employed. By its application, the dynamic model is more appropriate than the static model since the dependent variable is dynamic, and, independent variables may not be strictly exogenous such that they are likely to be correlated with past and possibly current error terms (Asiamah *et al.*, 2022a, b). Unlike a static model, employing a dynamic estimation technique for a study on this subject would correct for omitted variable bias, control for the endogeneity problem of the lagged dependent variable, and also control for differences across panels (Bossman *et al.*, 2022). Moreover, a dynamic model would use more observations and therefore, makes it more efficient relative to a static model (Tackie *et al.*, 2022).

The following contributions to the literature are noteworthy. First, I document evidence on interactive monitoring. I distinguish this study from notable existing studies (e.g. Gul and Goodwin, 2010; Chen and Vashishtha, 2017) by focusing on variations in private lenders' incentive to monitor post-CDS trade initiation after controlling for possible monitoring by short-term creditors. Given that monitoring is not costless for private lenders and CDS trading on their borrowers causes a change in this cost structure, I document how auditors react to such changes in incentive to monitor. Second, I document a channel through which developments in the capital affect audit pricing. I show that increased control risk associated

with CDS trading is associated with an increase in audit fees. My result extends Martin and Roychowdhury's (2015) evidence that reporting policies change after CDS trading to the context of auditors. I show how auditors react to changing reporting incentives following developments in the capital market.

The rest of the paper is organized as follows. Section 2 discusses related literature leading to the development of my hypotheses. Section 3 describes the research design specifying models used to test each hypothesis explored and our data collection process. Empirical results and their discussion are presented in Section 4 while Section 5 concludes.

2. Literature review and hypotheses development

Banks and other private lenders engage in extensive private information production before granting loans to borrowing firms. The possibility of high-risk firms pooling together with those with acceptable risk profiles – information asymmetry – motivates lenders to screen their clients before any loan initiation. Successful borrowing firms earn the reputation of having low business risk. Consistent with this expectation, other capital market participants react favorably to bank-firm relationships. For example, public debt providers charge lower spreads for firms with prior bank loans (Datta *et al.*, 1999). Similarly, Li and Ongena (2015) provide evidence of positive abnormal stock returns for firms after bank loan announcements.

In addition to the low business risk certification indicated above, banks have an incentive to monitor their clients after granting them credit. Bank monitoring includes frequent site visits, demand for timely financial reports and clarification of some accounting numbers (Martin and Roychowdhury, 2015). This monitoring role of banks matters not only to capital providers (Beatty *et al.*, 2012; Zhang, 2019) but to other stakeholders and external monitors including auditors. The value of bank certification and monitoring increases with the information asymmetry and agency costs of firms. Consistent with the argument that the need for an expert monitor like bank creditors is lesser for firms with low agency costs and information asymmetry, Beatty *et al.* (2012) provide evidence of delegated monitoring for firms with high discretionary accruals.

Foroughi *et al.* (2019) show that agency costs decrease with the level of investor protection such that there are usually low free cash flow problems in high investor protection countries. Follow-up studies document for firms in higher investor protection countries, better investment efficiency; differential executive compensation plans; performance-driven CEO turnover; and a generally low opportunistic insider behavior crucial to outsiders including auditors (Bryan *et al.*, 2010; Haw *et al.*, 2011; McLean *et al.*, 2012). Therefore, it is expected that certification and monitoring by banks may be less valuable or needed in jurisdictions with higher investor protection.

2.1 Bank monitoring and audit risk

An auditor's total engagement risk consists of the inherent risk associated with the client firm's business or operating environment; control risk influenced by both internal and external control or monitoring environment of the client firm; and the auditor's risk of failing to detect material misreporting – detection risk. Given a client firm's inherent risk, auditors have the incentive to increase effort to lower detection risk (DeFond *et al.*, 2016). The control environment of a client firm influences the level of managerial opportunistic behavior. Gleason *et al.* (2019) show that the accruals quality of firms that report internal control weakness are low compared to firms that do not report such weaknesses. Consequently, auditors adjust fees to reflect increased effort in providing opinions on financial reports in such situations (Hogan and Wilkins, 2008).

Given that auditors are expert monitors who certify financial reports and the going concern possibility of client firms (Fama, 1980), this fact does not preclude auditors reliance on other monitors of the firm like banks creditors and rating agencies. As pointed out in Triantis and Daniels (1995) monitoring can be interactive. A bank's acceptance to start or renew credit facilities for a client firm can signal the quality of the firm, given that banks assure themselves of acceptable future operational outcomes and good management before granting credit – certification role of banks. Auditors are likely to lower control risk associated with such clients with such control mechanisms. This interactive monitoring underpins the inclusion of rating agencies in the audit fee model. Gul and Goodwin (2010) show that audit fees are lower for firms with credit ratings because ratings provide an additional monitoring mechanism that lowers the auditors' control risk. The exit of a bank from a prior credit relationship with a client firm elevates the engagement risk of the auditor.

Having shown the interaction in monitoring levels of auditors and bank creditors, I extend the argument to when auditors rely more or less on bank monitoring. Banks' incentive to monitor increases with the amount of credit provided. At first glance, it seems auditors rely more on bank monitoring when banks provide substantial credit to a client firm. Indeed banks' incentive to monitor increases with their economic interest in the borrower; however, financial risks associated with high debt levels increase auditors' litigation risk in case of bankruptcy (Bhaskar *et al.*, 2017; Boone *et al.*, 2015; DeFond *et al.*, 2016). An increase in the amount of bank credit does not necessarily imply high levels of monitoring from banks. Typically, lenders hedge against the credit risk of their clients through loan syndication and/or buying CDS which have become popular recently. CDS allow lenders to transfer credit risk associated with their clients to a third party who for a premium agrees to pay compensation triggered by a credit event of the borrowing firm.

2.2 Credit default swaps, bank monitoring and audit pricing

Thus far, I have shown how bank certification and monitoring can lower auditors' control risk. Banks have a strong incentive to mitigate information asymmetry and moral hazards associated with their clients through screening and continuous monitoring. However, Subrahmanyam *et al.* (2017), in their theoretical work, show that banks have less incentive to monitor borrowers after buying CDS to transfer the credit risk of their clients. They refer to this decline in monitoring incentive as the "empty creditor problem". Amiram *et al.* (2017) provide empirical evidence of an increase in loan spreads and loan share retained by a lead arranger after CDS trade initiation on a reference entity. From their diagrammatic presentation, if lead arranging banks in a loan syndicate were indeed screening clients for reduced business risks, there should be a decrease (an increase) in loan spreads (share of loan retained) of any loan arrangements after CDS trade initiation. The evidence of increased loan spreads provided by the authors is consistent with CDS trade reducing any screening and/or monitoring effectiveness of banks.

If auditors rely on the monitoring role of banks as shown above to assess the audit risk of their clients, do they (auditors) alter the extent of this reliance following CDS trade initiation by the banks? Theoretical prediction on this question is not unambiguous. Parlour and Winton (2013) model the effect of reputation in mitigating the possible disincentive to monitor after banks layoff their credit risk by buying CDS. This contrasts with the empty creditor conclusion in Bolton and Oehmke (2011). According to Parlour and Winton (2013) model, banks continue their monitoring role after buying CDS on their borrowers to maintain their reputation with CDS sellers such that they (banks) do not have to pay increased premiums for insuring their loans in the future.

Given that auditors respond to increased audit risk by increasing their effort or charging a fee premium, both of which are proxied by audit fees (Gul and Goodwin, 2010), audit fees are

expected to increase after CDS trade initiation if auditors view CDS trading as an increase in audit risk due to increased financial risk and reduced monitoring. In the other instance, where auditors are more likely to view bankers as playing certification and monitoring roles which is unaffected after CDS trade initiation, there should be no relation between CDS trade initiation and audit fees. In sum, if auditors' negative view of CDS trading dominates the unrelated view then on average, an increase in audit fees will be observed, otherwise, no significant association should be observed. I, therefore, present the following non-directional hypothesis:

H1. Audit fees change after bank loan initiations.

2.3 The effect of investor protection on audit pricing and CDS trade relation

Based on evidence documented by Cao *et al.* (2017) and subsequent studies providing evidence of low agency problem and managerial opportunism in high investor protection countries, it is expected that the relation between audit fees and CDS trade initiation should be affected by the level of investor protection. In low investor protection countries, a marginal decline in monitoring is expected to increase managerial or general insider opportunism and agency costs more than for a similar decline in monitoring for high investor protection countries. This is because the higher likelihood of managerial opportunism being uncovered and punished mitigates the incentive to act opportunistically *ex ante*. Therefore, if we observe a positive association between CDS trading and audit fees from above, we expect this relationship to be constrained in high investor protection countries. However, we expect a positive relation between audit fees and CDS trade initiation for low investor protection countries. Thus, the investor protection status of a firm could limit the relationship between CDS trade and audit cost. This is presented in the hypothesis below:

H2. The association between audit fees and CDS trade initiation is moderated by investor protection.

3. Methods and data

3.1 Methods

The study assessed the effect of CDS trade initiation on audit fees after controlling for firm-specific fee determinants and country-level variables likely to influence audit fees as well as general financial viability and client-specific risks perceived by auditors, using the system dynamic general methods of moments (GMM) technique. The study included audit fee information for 357 unique firms spread across 16 countries over a 17-year period between 2000 and 2016. The basic model specifies the effect of CDS trade initiation with the basic control variables. The basic model is supplemented by another model with the inclusion of investor protection to assess its influence on audit cost. Furthermore, I modeled the moderating effect of investor protection on the relation between audit fees and CDS trade initiation as hypothesized by *H2*. Proxied by audit fees, Equations (1) and (2) represent the basic models while Equation (3) represent the moderating effect model. These models influenced the modeling of similar relationships using the ratio of audit fees to sales as a second proxy for audit cost.

$$InAuditfees_{it} = \beta_1 InAuditfees_{it-1} + \beta_2 CDstrade_{it} + \sum_3^{14} \beta Controls_{it} + \mu_i + \varepsilon_{it} \quad (1)$$

$$InAudfees_{jit} = \beta_1 InAudfees_{jit-1} + \beta_2 CDstrade_{jit} + \beta_3 CDstrade_j + \sum_4^{15} \beta Controls_j + \mu_i + \varepsilon_{it} \quad (2)$$

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$$InAudfees_{jit} = \beta_1 InAudfees_{jit-1} + \beta_2 CDstrade_{jit} + \beta_3 CDstrade_j + \beta_4 (CDSTrad \times protection_j) + \sum_5^{16} \beta Controls_{jit} + \mu_i + \varepsilon_{it} \quad (3)$$

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Where the variables and their meanings are as captured in Table 1 below.

Equations (1), (2), and (3) were estimated using Roodman's (2009a, b) estimation technique for systems dynamic panel. The use of this technique creates room for the presence of the lag dependent variable (Agyei *et al.*, 2021) to help assess the autoregressive nature of audit cost measured by the natural logarithm of *lnAudfees* and *lnAudF2Sales*. The introduction of biases by way of differencing as propagated by Arellano and Bond (1991) for catering for the issue of endogeneity brought about by the presence of the autoregressive variable is also corrected by Roodman's technique.

Furthermore, endogeneity is resolved by this technique through the application of the instrumental variable approach and lessens overidentification in the course of accounting for cross-sectional dependence (Agyei *et al.*, 2021). Thus, the system GMM approach by Roodman (2009a, b), popularized by Agyei *et al.* (2020, 2021), Boateng *et al.* (2018), and Bossman *et al.* (2022) was found appropriate for the study given that the sampled firms used for estimating each of the models were more than the number of years. The general form of the system GMM estimation used is specified in Equations (4) and (5).

$$InAudfees_{it} = \gamma_0 + \gamma_1 InAudfees_{it-\tau} + \sum_{n=1}^n \gamma_n W_{hit-\tau} + \theta_i + \mu_i + \varepsilon_{it} \quad (4)$$

Variable	Variable meaning/construction (data source)
<i>lnAudfees</i>	Log transformation of annual audit fees paid by client firms. (World scope)
<i>l.lnAudfees</i>	The lag dependent variable representing the first lag of <i>lnAudfees</i>
<i>CDSTrade</i>	Equal to one in the year and after the record date of CDS trade initiation and zero otherwise. (Markit)
<i>lnTA</i>	Log transformation of total assets of client firms. (World scope)
<i>Lev</i>	The ratio of total liabilities to total assets. (World scope)
<i>WSPTB</i>	Equal to price-to-book ratio. (World scope)
<i>ROA</i>	Net income divided total assets. (World scope)
<i>OCF2TA</i>	The ratio of net operating cash flows to total assets. (World scope)
<i>FS2TSales</i>	Foreign sales to total sales ratio. (World scope)
<i>STCredMon</i>	Short-term creditor monitoring
<i>InvRec2TA</i>	The ratio of the sum of total receivables and total inventories to total assets. (World scope)
<i>big_5</i>	Indicator variable equal to one if a firm is audited by a Big 5 auditor (PwC, KPMG, Ernst and Young, Deloitte, PKF (Pennell Kerr Foster)) and zero otherwise. (World scope)
<i>economyclass</i>	Economic classification of countries: 1 (0) for developed (developing)
<i>protection</i>	The indicator variable equals 1 if a firm's country of location is labeled as high investor country by La Porta <i>et al.</i> (2000) and 0 otherwise. Based on the Global Competitiveness index
<i>CDSProt</i>	Interaction of CDS trade and protection, i.e. $CDSTrade_{it} \times protection_j$

Source(s): By Author

Table 1.
Variables and their
meanings

$$\begin{aligned}
InAudfees_{it} - InAudfees_{it-\tau} = & \gamma_1 (InAudfees_{it-\tau} - InAudfees_{it-2\tau}) + \sum_{h=1}^n \gamma_h W_{h,it-\tau} - W_{h,it-2\tau} \\
& + (\mu - \mu_{t-\tau}) + \varepsilon_{it-\tau}
\end{aligned}
\tag{5}$$

where $InAudfees_{it}$ is the audit cost for firm i in time t ; γ_0 is a constant; W is a vector of control variables; τ represents the coefficient of autoregression which is one for the specification, μ_t is the time-specific constant, θ_i is the firm-specific effect, and ε_{it} the error term.

Following Agyei *et al.* (2020, 2021), and Bossman *et al.* (2022), the explanatory indicators are defined as suspected endogenous or predetermined and only time-invariant variables are considered to be strictly exogenous (Roodman, 2009b). The results from Sargan overidentification and the Hansen J tests reported in Tables 4 and 5 support the strict exogeneity of the time-invariant variables.

3.2 Data

I begin by collecting all publicly traded firms with non-missing audit fee data and data to compute control variables from World scope for the period 2000–2016. This returns 168,557 observations with 27,157 unique firms spread across 68 countries. I merge the World scope audit fee data with Markit to identify firms on which CDS is traded. According to the database user guide, Markit is a contributor-based database with more than 22 global banks who are dealers contributing data on CDS trades across the world as of 2012. Based on data contributions from its numerous partners, Markit calculates a composite CDS spread if it receives prices from at least three different dealers after some data cleaning process. This process suggests that the date a reference firm first appears in the Markit database may mismeasure the actual date on which CDS begins trading on the firm. However, this problem seems trivial because auditing is done typically on annual basis. Auditors have enough time to become aware of CDS trading on a client firm. Also, the Markit database contains CDS contracts written on bonds, not private loans which are the actual focus of this study. But due to the general illiquidity of loan CDS, private lenders often use CDS contracts written on bonds to hedge their risk (Amiram *et al.*, 2017). Despite the few problems with Markit's CDS data, it is widely used in prior CDS studies and shown to be most reliable compared to other databases providing CDS trading data (Mayordomo *et al.*, 2014).

Following prior studies, I note the date of a firm's first appearance in the Markit database as its CDS trade initiation date. I assume that firms in the World scope sample not appearing in the Markit database do not have CDS trading and mark my treatment variable in the models above as zero. In the final sample used to estimate the models, 357 unique firms with corresponding 6,052 firm-years spread across 16 countries and have CDS trading in the sample period were considered. I present a summary of the sampling procedure in Table A1.

3.2.1 Descriptive statistics. Table 2 shows the descriptive statistics of the sample. About 6% of the full sample have CDS trading which should make it difficult to document any significant relationship between our treatment variable and audit fee. On average, firms in the sample have more than 21% leverage and positive ROAs with the average firm reporting negative operating cash flows during the period. Over eighty-nine percent of the sampled firms belong to developed economies while about forty percent of the sampled firm-years have short-term creditor monitoring.

3.2.2 Correlation matrix. I evaluate the existence of multicollinearity among the explanatory variables – which may impact the reliability of the models – using the

Variable	Observations	Mean	Std. Dev	Min	Max	Credit default swaps and audit cost
WSAuditfees	6,052	3.154941	27.911	0	1610.73	
AudF2Sales	6,052	0.0039747	0.0505367	0	3	
CDSTrade	6,052	0.0601454	0.2377757	0	1	
WSPtB	6,052	2.692227	9.60823	−289.68	238.72	
TA	6,052	4515.826	15549.77	0.07	304819.3	
ROA	6,052	0.0457411	0.6514856	−18.15126	45.55738	
InvRec2TA	6,052	0.3106406	0.1885262	0	0.9654658	
FS2TSales	6,052	4.438656	150.9345	0	10,000	
STCredMon	5,083	0.3961483	0.3350278	0	1	
Lev	6,052	0.2143717	0.4314681	0	26.93705	
OCF2TA	6,052	−0.0861452	12.94394	−1006.857	0.8261937	
big_5	6,052	0.8342697	0.3718691	0	1	
economyclass	6,052	0.8960674	0.3051983	0	1	

Note(s): Variable names are as defined in Table 1
Source(s): By Author based on data taken from World scope, Markit, and World Bank

Table 2.
Descriptive statistics of the sample

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correlation matrix to ascertain the pairwise correlations between the regressors. The results were presented in Table 3.

With the rule of thumb of 0.7 as the cut-off point for determining the presence of multicollinearity, the results suggest that the existence of multicollinearity among the explanatory variables is low. I observe a low-to-moderate correlation between the regressors. Hence, their inclusion in the specified models in Equations (1), (2), and (3) is appropriate.

4. Empirical results

In this section, I present the results of tests of the two hypotheses developed for the study. I first present evidence on H1, which focuses on the effect of CDS trade initiation on audit fees. Next, I present evidence of the moderating effect of investor protection as argued and summarized in H2.

The regression outputs of the system GMM estimations were summarized in Tables 4 and 5. Contained in Table 5 are Models 1, 2, and 3 as labeled in the columns. The effect of CDS trade initiation on audit cost without investor protection is explained by model 1. Model 2 caters for the model's inclusion of investor protection while model 3 incorporates the interaction variable between CDS trade and investor protection. In Table 5, these three sub-models are reproduced in models 4, 5, and 6 using a different proxy (i.e. the ratio of audit fees to sales) for audit cost.

From the tabulated results, the diagnostics – in terms of autocorrelation, Sargan, and Hansen J-tests, and the number of instruments vis-à-vis the number of observations and cross-sections – suggest that exogenous instruments were used in the study and the models were not constrained by instrument proliferation. As a result, to a large extent, there is an indication that the models were well specified.

4.1 The average effect of CDS trade initiation on audit fees

The regression results in Tables 4 and 5 suggest that the current levels of audit fees are informed by their previous (lagged) levels. All the lagged proxies for audit cost revealed a positive and significant relationship at a 1% significance level with their respective current values except for Models 5 and 6 whose significance levels are at 5%. Specifically, when proxied by audit fees, the current year audit cost is predicted by approximately 0.53 and 0.55 of their previous levels for models 1 and 2. Similarly, when proxied by the ratio of audit fees to

Table 3.
Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) lnAudfees	1.000												
(2) lnAudF2Sales	-0.006 ^{***}	1.000											
(3) CDSTrade	0.187 ^{***}	0.001	1.000										
(4) WSPTB	0.036 ^{***}	0.006	0.019	1.000									
(5) lnTA	0.809 ^{***}	-0.425 ^{***}	0.143 ^{***}	0.012 ^{***}	1.000								
(6) ROA	0.005 ^{***}	-0.026 ^{**}	-0.005 ^{***}	0.041 ^{***}	0.012 ^{***}	1.000							
(7) InvRec2TA	-0.175 ^{***}	-0.123 ^{***}	-0.048 ^{***}	0.008 ^{***}	-0.346 ^{***}	0.000	1.000						
(8) FS2TSales	-0.052 ^{***}	0.164 ^{***}	0.077 ^{***}	-0.002 ^{***}	-0.072 ^{***}	-0.018 ^{***}	-0.040 ^{***}	1.000					
(9) STCredMon	-0.384 ^{***}	0.060 ^{***}	-0.075 ^{**}	-0.026 ^{***}	-0.406 ^{***}	-0.012 ^{***}	0.261 ^{***}	0.080 ^{***}	1.000				
(10) Lev	0.145 ^{***}	-0.021 ^{***}	0.023 [*]	-0.001 ^{***}	0.086 ^{***}	-0.184 ^{***}	-0.080 ^{***}	-0.007 ^{***}	-0.072 ^{***}	1.000			
(11) OCF2TA	0.029 ^{***}	-0.053 ^{***}	-0.051 ^{***}	0.029 ^{***}	0.053 ^{***}	0.017 ^{***}	0.018 ^{***}	-0.045 ^{***}	-0.112 ^{***}	0.006 ^{***}	1.000		
(12) big_5	0.416 ^{***}	-0.099 ^{***}	0.047 ^{***}	0.030 ^{***}	0.366 ^{***}	0.014 ^{***}	-0.040 ^{***}	-0.007 ^{***}	-0.201 ^{***}	-0.011 ^{***}	-0.005 ^{***}	1.000	
(13) economyclass	0.245 ^{***}	0.293 ^{***}	0.086 ^{***}	0.018 ^{***}	0.035 ^{***}	-0.014 ^{***}	-0.028 ^{**}	0.010 ^{***}	-0.165 ^{***}	0.000 ^{***}	-0.005 ^{***}	0.220 ^{***}	1.000

Note(s): [1%] [5%] and [10%] significance levels are denoted by ^{***}, ^{**}, and ^{*}, respectively. Variable names are as defined in Table 1

Source(s): By Author based on data taken from World scope, Markit, and World Bank

				Credit default swaps and audit cost
Variables	(1) lnAudfees	(2) lnAudfees	(3) lnAudfees	
L.lnAudfees	0.531*** (0.196)	0.545*** (0.165)	0.518*** (0.136)	415
CDSTrade	0.185*** (0.0535)	0.201*** (0.0690)	-0.194 (0.139)	
protection		-0.369 (0.854)	-0.128 (0.398)	
<i>cdsprot</i>			0.439*** (0.154)	
WSPTB	-0.00118*** (0.000365)	-0.00136** (0.000545)	-0.00137*** (0.000452)	
lnTA	0.311** (0.147)	0.286** (0.136)	0.311*** (0.110)	
ROA	0.364** (0.158)	0.415** (0.196)	0.347* (0.183)	
InvRec2TA	-0.200 (0.275)	-0.349 (0.405)	-0.317 (0.361)	
FS2TSales	0.00388*** (0.00140)	0.00323** (0.00126)	0.00339** (0.00147)	
STCredMon	0.0161 (0.0475)	0.0110 (0.0515)	0.0166 (0.0490)	
Lev	0.450** (0.200)	0.492** (0.248)	0.425* (0.234)	
OCF2TA	-0.335*** (0.114)	-0.353*** (0.125)	-0.347*** (0.118)	
big_5	0.308 (0.352)	0.305 (0.437)	0.417 (0.475)	
economyclass	0.0941 (0.731)	0.374 (0.824)	0.359 (0.773)	
Constant	-2.594* (1.354)	-2.304* (1.395)	-2.771** (1.210)	
AR(1)	0.001	0.000		
AR(2)	0.104	0.118	0.103	
Hansen OIR	0.170	0.244	0.257	
DHT for Instruments				
GMM Instruments for levels				
H excluding group	0.139	0.222	0.218	
Diff(null, H = exogenous)	0.961	0.458	0.821	
Fisher	1002.29***	950.53***	1506.21***	
Instruments	42	37	42	
Observations	4,773	4,668	4,668	
Number of Firms	344	343	343	
Note(s): Variable names are as defined in Table 1 Source(s): By Author based on data taken from World scope, Markit, and World Bank				Table 4. Regression results when audit cost is proxied by audit fees

sales, the current audit cost increases but in a lower magnitude relative to the other proxy. Under models 4 and 5, present audit cost is influenced by 0.265 and 0.276 respectively of the previous year's levels for when investor protection is uncontrolled and controlled for. Thus, for both proxies, the magnitude of the predicted audit cost intensifies after controlling for investor protection. The implication is that audit costs follow a partial adjustment process but the speed of adjustment is proxy-dependent. Therefore, managing present audit costs informs their future levels.

Variables	(4) lnAudF2Sales	(5) lnAudF2Sales	(6) lnAudF2Sales
L.lnAudF2Sales	0.265*** (0.0856)	0.276** (0.127)	0.278** (0.127)
CDSTrade	0.220*** (0.0848)	0.212*** (0.0716)	-0.745 (1.084)
protection		-0.529 (1.535)	-0.561 (1.407)
<i>cdsprot</i>			1.062 (1.198)
WSPTB	-0.00123** (0.000516)	-0.00160** (0.000818)	-0.00176** (0.000832)
lnTA	-0.142** (0.0555)	-0.162*** (0.0534)	-0.167*** (0.0546)
ROA	0.478* (0.285)	0.300 (0.346)	0.279 (0.341)
InvRec2TA	-1.286*** (0.337)	-1.512*** (0.587)	-1.643*** (0.529)
FS2TSales	0.0213*** (0.00677)	0.0204*** (0.00596)	0.0198*** (0.00654)
STCredMon	-0.00611 (0.0597)	0.0173 (0.0833)	0.00436 (0.0733)
Lev	0.633* (0.364)	0.412 (0.410)	0.389 (0.412)
OCF2TA	-0.651*** (0.177)	-0.660*** (0.173)	-0.701*** (0.181)
big_5	0.476 (0.511)	0.548 (1.126)	0.576 (1.047)
economyclass	-0.501 (1.200)	-0.300 (1.068)	-0.500 (0.987)
Constant	-3.715*** (1.210)	-3.137* (1.615)	-2.859* (1.631)
AR(1)	0.000	0.001	0.001
AR(2)	0.209	0.208	0.198
Hansen OIR	0.733	0.702	0.794
DHT for Instruments			
GMM Instruments for levels			
H excluding group	0.703	0.814	0.797
Diff(null, H = exogenous)	0.523	0.104	0.339
Fisher	44992.09***	42903.70***	43334.86***
Instruments	34	32	33
Observations	4,773	4,668	4,668
Number of Firms	344	343	343

Table 5.
Regression results
when audit cost is
proxied by the ratio of
audit fees to sales

Note(s): Variable names are as defined in Table 1

Source(s): By Author based on data taken from World scope, Markit, and World Bank

I test whether or not audit fee changes after CDS trade begins on a firm and how using the model specified in Equations (1) and (2) above. The results for all specifications of the model in Tables 4 and 5 consistently show a significant increase in audit fees after the initiation of CDS trade on a client firm, confirming the position of H1, that, audit fees change after CDS initiation. In Models 1 and 3, when investor protection is 'uncontrolled for', audit cost increases by approximately 0.185 and 0.220, respectively, with CDS trade initiation. Similarly, when investor protection is controlled for, audit cost increases by 0.201 and 0.212, respectively, in response to CDS trade initiation. These findings, in part, communicate the

effect of investor protection audit cost on amid CDS trade and support the conclusion of Cao *et al.* (2017).

It is instructive to note that the models control for other known firm and auditor characteristics in the audit cost models, yet, the results divulge significant increment in fees of firms in my cross-country sample subsequent to CDS trade initiation on them. These results are consistent with the argument that auditors perceive a decline in bank creditors' incentive to monitor which increases the control risk of auditee firms (Martin and Roychowdhury, 2015). It is important to note that the significance of my results does not disappear after controlling for investor protection in Models 2 and 5.

The relation of audit fees with the bunch of control variables included in my model is generally consistent with that documented in prior audit fee studies. Indicatively, my results also show that audit fees increase with the ratio of a firm's foreign sales to total sales, profitability, and leverage level. Similar relations have been documented both in the US, non-US and cross-country studies (see, e.g. Choi *et al.*, 2008, 2009; Gul and Goodwin, 2010; Kim *et al.*, 2012). Notwithstanding, I report that audit cost reduces with growth proxied with market-to-book ratio and the ratio of operating cash flow to total assets. Impliedly, the cost incurred on audits may not be overly material to companies with rapidly growing operating cash flows and those firms at their growth stage. This makes the negative relationship between audit cost and firm growth (proxied with market-to-book ratio) and the ratio of operating cash flow to total assets practically reasonable.

4.2 Moderating effect of investor protection

I now discuss the results on the moderating effect of investor protection on the relationship between audit cost and CDS trade. The results of the moderating hypothesis, i.e. *H2*, are presented in the last columns of Tables 4 and 5 as Models 3 and 6. In Table 4, when audit cost is proxied by audit fees, the results suggest that the variable, $CDSTrade_{it} \times protection_i$, has a significant positive effect ($\beta = 0.439$; $p < 0.01$) on audit cost, indicating a 0.439 average increase in audit fees for firms in high investor protection countries. A similar observation is reported in Table 4 (when audit cost is proxied by the ratio of audit fees to sales) where the interaction variable has a positive but statistically insignificant effect ($\beta = 1.062$; $p > 0.05$).

The results suggest that from the perspective of auditory perception and skepticism, more investor protection activities in my cross-country sample would result in extended audit procedures to enable auditors to scrutinize the activities of investor protection in the various firms. From the perspective of agency costs, my findings are rather counterintuitive but justifiable. Although agency costs decrease with the level of investor protection such that there are usually low free cash flow problems in high investor protection countries (Foroughi *et al.*, 2019), my findings divulge that in the presence of both CDS trade initiation and investor protection, there is the tendency that audit costs may rise when investor protection activities deepen in countries in which firms are situated. The implication is that, based on skepticism, auditors may exercise caution despite high degrees of investor protection in a given country. Thus, extra charges are likely to be introduced by auditors to intensively conduct effective audits on client firms in high investor protection countries. For instance, as documented by follow-up studies (see, e.g. Bryan *et al.*, 2010; Haw *et al.*, 2011; McLean *et al.*, 2012) that firms in higher investor protection countries may be characterized by better investment efficiency, differential executive compensation plans; performance-driven CEO turnover; and a generally low opportunistic insider behavior crucial to outsiders including auditors, it is not surprising that audit costs may rise to reflect the increased audit activities on such firms.

Largely, the findings support those of Simunic *et al.* (2016) who modeled the differences in auditors' response to auditing standards in different legal regimes. According to them, legal enforcement, interpretation of auditing standards and consequent damages awarded against audit

failure differ across countries. This phenomenon derives varying auditor responses to similar rules in different legal regimes. I view this in the light of the auditor's risk perception. Similar to moderating effect of legal regime on audit behavior, I argue that auditors react differently to similar risk factors given levels of investor protection. As argued above and summarized in my second hypothesis (*H2*), auditors' perception of risk associated with CDS trading on client firms in high versus low investor protection countries differ. Hence, I maintain that the association between audit fees and CDS trade initiation is moderated by investor protection.

5. Conclusion

Under the systems dynamic general methods of moments paradigm, I investigated the effect of CDS trade initiation on the audit cost of client firms with 6,052 cross-country firm samples from 357 firms over the period 2000–2016. Two contrasting theoretical predictions advanced include one, auditor perceive an increase in control and bankruptcy risk after CDS trade initiation on client firms. By controlling for firm, audit and auditor features (viz. firm size, leverage, profitability, inventory intensity, short-term creditor monitoring, economy class, and audit firm size), the I proxy audit cost by the natural logarithm of audit fees and the ratio of audit fees to sales, to first ascertain the effect of CDS trade initiation on audit cost without investor protection, and second, the effect of CDS trade initiation on audit cost amid investor protection.

I present results consistent with the argument that auditors perceive increased engagement risk after the initiation of CDS trading on a client firm. The evidence provided extends beyond the US market which has been the primary focus of most prior audit studies. These findings are robust when investor protection is introduced in the various Models. In addition, I test if the increase in audit fees response to CDS trade initiation is moderated by investor protection. I show that the level of investor protection, which varies across countries, moderates my primary results. Auditors' perception of increased engagement risk and the associated increase in audit fees is higher for countries with high investor protection and this may be ascribed to skepticism on the part of auditors and the relative intense audit activities that may be done on firms in high investor protection countries.

It is prudent, therefore, for firms in high investor protection jurisdictions who have also initiated CDS trade to implement policies that ensure that they continue benefiting from among others, investment efficiency, differential executive compensation plans, and a generally low opportunistic insider behavior crucial to outsiders including auditors, which result from investor protection activities. This would ensure that the resulting increase in audit cost may not materially impact the cash or profitability position of such firms.

Note

1. Diamond (1984) model how equity shareholders delegate costly monitoring to banks who are considered expert monitors. Prior evidence suggests that shareholders' demand for disclosure varies with bank monitoring (Chen and Vashishtha, 2017; Vashishtha, 2014)

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Credit default
swaps and
audit cost

Appendix

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	Firm-years	Unique firms
Firms with audit fee data from World scope for 2000–2016	236,911	35,929
Drop observations with missing data for an audit fee model	68,354	8,772
	168,557	27,157
World scope observations with non-missing audit fee model data recorded in Markit database	6,052	357
Source(s): By Author		

Table A1.
Sample construction

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The role of engagement and knowledge-sharing in the high-performance work systems–innovative behaviour relationship

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Abstract

Purpose – This paper aims to examine two indirect mechanisms through which employees' perceptions of high-performance work systems (HPWS) foster employees' innovative behaviour (IB). Particularly, this study analyses the sequential mediating role of work engagement and knowledge-sharing in this relationship at the individual level.

Design/methodology/approach – Using researchers and professors working at a Spanish state university as an empirical sample and applying partial least squares structural equation modelling (PLS-SEM), the authors test hypotheses regarding the impact of the indirect and sequential effect of engagement and knowledge-sharing on the relationship between employees' perceptions of HPWS and IB.

Findings – Findings indicate the existence of a sequential mediating effect of work engagement and knowledge-sharing. The authors' results suggest that the existence of engagement is necessary for the influence of HPWS on IB to become effective.

Social implications – The authors' results also highlighted the importance of suitable design and implementation for HPWS so that employees feel motivated and dedicated to their work.

Originality/value – The authors' findings contribute to the understanding of the mechanisms by which HPWS enhance employees' IB, and the results are especially salient in advancing the theoretical understanding of how HPWS, engagement and knowledge-sharing are relevant variables for IB.

Keywords Human resource management, Knowledge-sharing, High-performance work systems, Work engagement, Innovative behaviour, Employees' perceptions

Paper type Research paper

1. Introduction

Universities and research institutes, as knowledge-intensive organisations, develop several key knowledge processes such as knowledge creation, knowledge dissemination and learning (Trifonova and Ronchetti, 2006). Individual lecturers and researchers are key actors in developing these processes, particularly in the case of knowledge creation and dissemination through publications (Fullwood and Rowley, 2017). In this context, learning is essential for academic excellence and innovation to occur (Tan, 2016). In turn, knowledge-sharing is necessary for learning to take place, especially in universities where individuals need to share knowledge in order to further their professional career (Patel and Ragsdell, 2011).



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Knowledge-sharing is an imperative in this type of institutions as it has an impact on collaborative research work (Tan, 2016). Fullwood *et al.* (2019) analyse the factors that facilitate the sharing of knowledge in a university context, highlighting the culture of collaboration, regular face-to-face relationships and trust. According to Chen *et al.* (2011) and Tamta and Rao (2017), an essential aspect that makes employees share their knowledge is engagement. Research has shown that engaged employees can generate higher organisational performance, job satisfaction and greater employee creativity (Harter *et al.*, 2002). In addition, the use of a human resource (HR) strategy and its deployment through HR practices plays a key role in facilitating creativity and, consequently, employees' innovative behaviour (IB), especially in the case of service firms (Laursen and Foss, 2013). Therefore, an increasing amount of research on human resource management (HRM) has focussed on exploring the effects of HRM systems on employees' IB (Alfes *et al.*, 2013b; Agarwal *et al.*, 2012; Radaelli *et al.*, 2014; Sanders *et al.*, 2010; Sanders and Lin, 2016), as well as the factors explaining this relationship (Escribá-Carda *et al.*, 2017; Sanders and Lin, 2016). We suggest, in this work, that engagement plays an important role in explaining this link.

Consequently, the study of HR practices as a driver of knowledge-related processes, in general, and knowledge-sharing, in particular (Collins and Smith, 2006; Sergeeva and Andreeva, 2016), is becoming of utmost importance in extant literature. Most of the research analysing these relationships is conducted in private-sector organisations (Fullwood and Rowley, 2017). However, there is growing recognition of the role that knowledge management can play in public-sector organisations (Brown and Brudney, 2003; Singh Shandu *et al.*, 2011), yet research on knowledge management at universities is very limited (Fullwood and Rowley, 2017; Veer-Ramjeawon and Rowley, 2020).

Universities, at large, are suffering from an increasing pressure to create innovations and generate new knowledge. However, Veer-Ramjeawon and Rowley (2020) affirm that universities not always have an explicit knowledge-management strategy. Thus, it is important to design the adequate context and strategic initiatives in order to promote knowledge processes within them (Sanchez-Barrioluengo and Benneworth, 2019). Particularly, an evolution from the mass rejection of innovation activities to the current situation where academics see innovation and entrepreneurship as part of their duties has taken place in the Spanish university context (Miranda *et al.*, 2017). This impulse towards innovation and knowledge transfer was facilitated by the 2015 Spanish University Strategy (Arias-Coello *et al.*, 2020), which established that universities had to define their mission including knowledge transfer and technology as one of the basic pillars.

From a structural perspective, Spanish universities are highly formalised and have a stable nature, where employees enjoy a high level of job stability and HR policies have not changed much in the last decade. This static nature is clearly conditioned by the Spanish legislative landscape, where Spain is a country with a unitary university structure, with a homogeneous conception of higher education institutions and where higher education laws configure the similar basic structure of universities (Sanchez-Barrioluengo, 2014). As this author summarises Sanchez-Barrioluengo, 2014, p. 1764, “although universities depend on regional government, a model of homogeneity prevails within the Spanish Higher Education system at the national level”.

However, Spanish universities have also been affected by successive crises, recession and environmental changes (Pascual and Conejero, 2015). As a result, these events have generated, for example, decreases in the purchasing power of employees (whose salary has been reduced proportionally), an excessive workload (caused by the greater competitive demands of the sector and the reduction in an ageing workforce) and an increasing use of recognition policies excessively linked to individual results. For all of the above, factors such as engagement and the transfer of knowledge that allow professional and intellectual

development are a key tool for motivating and retaining talent and, consequently, acquire a fundamental interest for our study.

Bearing in mind these ideas, our main contribution through this research lies in shedding light on the extent to which employees' engagement and knowledge-sharing act as intermediate mechanisms between HR systems and IB. In addition, we aim to expand on the existing literature showing that there is a necessary sequential effect between engagement and knowledge-sharing in order to explain the link between HRM systems and IB.

2. Theoretical framework

2.1 *How HRM systems relate to IB*

The study of the relationship between the application of high-performance work systems (HPWS) and IB has become a fundamental topic of interest (Escribá-Carda *et al.*, 2017; Laursen and Foss, 2013). IB is seen as a driving force for organisational effectiveness, efficacy and survival (Scott and Bruce, 1994). Employees' IB refers to the ability of individuals to generate new ideas and viewpoints, which are subsequently transformed into innovation.

HPWS are sets of practices designed to promote firm performance by developing employee skills, motivation and participation (Van De Voorde and Beijer, 2015). Despite a lack of agreement in the specialist literature about the HR practices contained in them (Boxall and Purcell, 2011), numerous important studies on the topic suggest that HPWS are a bundle of practices that normally include and refer to selection, training, career development and motivation practices, such as performance appraisal, pay for performance and job security (Escribá-Carda *et al.*, 2017).

Additionally, when analysing the effect of HPWS on IB it becomes of utmost importance to consider not only how these practices have been designed and applied by managers but also how they are perceived by employees (Alfes *et al.*, 2013a; Bowen and Ostroff, 2004; Ostroff and Bowen, 2016). The way employees perceive how HR practices are applied (e.g. the perception about the usefulness of a training program) is what really causes an actual impact on employees' actions and behaviours.

Diverse authors have analysed how HPWS can encourage knowledge creation and particular behaviours (Kehoe and Wright, 2013) as IB (Bednall *et al.*, 2014; Escribá-Carda *et al.*, 2017; Sanders *et al.*, 2010; Sanders and Lin, 2016). Previous studies establish that there are certain variables (i.e. knowledge and learning processes, motivational aspects, engagement) that act as mediators (Alfes, 2013a, b; Chen and Huang, 2009; Jyoti and Rani, 2017; Radaelli *et al.*, 2014). Thus, based on the analysis of previous studies we assume that the relationship between HPWS and IB is indirect. Therefore, our interest is to study these mediating processes in depth and establish whether there is a sequence in these mediating effects that could explain better the relationship between perceived HPWS and IB.

2.1.1 The role of engagement in the relationship between perceptions of HPWS and IB. Since the seminal work of Kahn (1990), the concept of engagement has gained in importance, leading to the development of multiple definitions, measures, conceptualisations and theories of engagement (Harter *et al.*, 2002; Macey and Schneider, 2008; Salanova and Schaufeli, 2008; Schaufeli and Bakker, 2004). Schaufeli and Bakker (2004) defined work engagement as a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication and absorption. According to Alfes *et al.* (2013a), engagement refers to a positive attitude held by the employee towards the organisation and its values suggest that people become engaged with their work by investing intellectual effort and experiencing positive emotions and meaningful connections with others.

Most of the research analysing the factors that mediate the HR–performance relationship is grounded in the Social Exchange Theory (Alfes *et al.*, 2013a, b; Jiang *et al.*, 2013). According to this theory, Alfes *et al.* (2013a, p. 334) argued that HRM practices as a system and employee

engagement are closely related. HPWS create favourable work conditions and a productive workplace for fostering engagement (Cooke *et al.*, 2019; De Oliveira and da Silva, 2015; Huang *et al.*, 2018; Karadas and Karatepe, 2019). Given that employees feel that their organisation is investing in them through the positive experiences they have of HRM policy and line manager behaviour, they are more willing to reciprocate through high levels of engagement and performance (Alfes *et al.*, 2013b). In the same vein, Huang *et al.* (2018) state that when an organisation employs HPWS, there will be an expectation that employees will return this investment through higher engagement and commitment.

Specialist literature has established strong relations between engagement and individual performance (Alfes *et al.*, 2013b; Bailey *et al.*, 2017; Christian *et al.*, 2011) as well as with IB (Alfes *et al.*, 2013a). Adopting IB requires an important effort on the part of employees and they will only be willing to deploy IB if they are focussed on their work, have energy to perform and feel that their work is challenging (Agarwal *et al.*, 2012). These authors specifically point out that there is a direct and positive relationship between work engagement and IB.

Further research is needed to reveal the mechanisms through which HRM practices impact on individual behaviours like IB. In this vein, Rabiul *et al.* (2021) discuss the factors that mediate the relationship between HR practices and engagement, establishing that this relationship is indirect and takes place through two psychological states, namely, safety and availability. Also, there is some evidence to support the notion that engagement mediates the relationship between HPWS and positive outcomes (Alfes *et al.*, 2013a; Karadas and Karatepe, 2019). We suggest that engagement may be a crucial underlying mechanism in the workplace for explaining the relationship between HPWS and IB, as engagement explains a wide range of behavioural and attitudinal outcomes (e.g. Christian *et al.*, 2011; Rich *et al.*, 2010; Stirpe *et al.*, 2022).

With respect to the mediating role of engagement, previous studies explicitly state that engagement mediates the relationship between the role of the supervisor and IB (Agarwal *et al.*, 2012). These authors showed that perceived organisational support and the presence of adequate job resources (i.e. characteristics) affect IB through the mediating role of work engagement. Therefore, when employees are enthusiastic about their work, they are willing to try or put forward new ideas.

Salanova and Schaufeli (2008) also found that work engagement fully mediates the impact of job resources on proactive behaviour. The concept of proactive behaviour is implicitly and indirectly related to IB as they (Salanova and Schaufeli, 2008) defined this concept in terms of personal initiative and seeking new challenges. Consequently, work engagement becomes a mediating variable between job design and IB. Using the Social Exchange Theory as a framework, Garg and Sharma (2015) provided empirical evidence of the mediating role of employee engagement in the relationship between HPWS and job performance.

Alfes *et al.* (2013a) studied the role of work engagement as a primary link between HRM practices as individual behaviours. More specifically, Alfes *et al.* (2013b) reached the conclusion that employee engagement becomes necessary if perceived HRM practices are to facilitate employees' IB. Likewise, engaged employees will feel more determined to carry out their work more efficiently, and consequently, they will have time to look for new and improved ways of doing things. Similarly, Huang *et al.* (2018) recognised that the implemented HPWS practices affect the workplace atmosphere and, in so doing, individual moods and attitudes at work undergo change, ultimately generating increased satisfaction with the subsequent effect on employee engagement and behaviours. In turn, Stirpe *et al.* (2022) also showed the mediating role of engagement between HR practices satisfaction and extra-role performance.

Based on the aforementioned arguments, we highlight the mediating role of work engagement in the relationship between employees' perceptions of HPWS and IB. When

employees have a clear perception about established HPWS, they will feel more passionate about what they do, about their work and about the relations they create and nurture with their colleagues and the organisation. This emotional state of employee happiness and vigour may boost their interest in compensating the firm with new (or evolved) behaviour that is more oriented towards contributing with new ideas and viewpoints, as individual feel that they are in possession of the tools and methods required to effectively do this. Therefore, taking this logic as a starting point we can assume that work engagement mediates the relationship between HPWS and IB and, consequently, we propose our first hypothesis.

H1. Work engagement mediates the relationship between employees' perceptions of HPWS and IB

2.1.2 The role of knowledge-sharing in the relationship between employee perceptions of HPWS and IB. As a knowledge process, knowledge-sharing has been conceptualised in many different ways (Chen and Huang, 2009, p. 108; Yi, 2009, p. 68). According to Van den Hooff and de Ridder (2004, p. 118), it has to do with "the process of mutually exchanging knowledge and jointly creating new knowledge". As suggested above, this knowledge exchange and creation may be stimulated by HR practices. In this sense and using the Ability, Motivation and Opportunity (AMO) framework, Radaelli *et al.* (2014) state that motivation is a clear antecedent of knowledge-sharing. Employees need to perceive the benefits of sharing knowledge in order to be willing to do it. In addition, they need to acquire or possess the necessary abilities to carry out this process. Likewise, the organisation has to provide them with the context and mechanisms to facilitate knowledge-sharing (e.g. through HPWS). In this sense, Almadana *et al.* (2022) point out that HR practices have the creation of a favourable environment for knowledge-sharing as one of their main objectives. Similarly, Kuvaas *et al.* (2012) found that training intensity increases knowledge-sharing. More specifically, knowledge-sharing requires individuals willing to share new knowledge and experiences. In addition, training actions oriented towards changing values and attitudes in individuals facilitate this knowledge process. In turn, Carmeli *et al.* (2013) argued that knowledge-sharing may stimulate individuals to think more critically and creatively, so they can ultimately generate new knowledge. Therefore, considering that IB requires searching for new ideas, creative thinking, proactivity and risk-taking (Bednall *et al.*, 2014), knowledge-sharing may become an essential process for IB to occur.

Despite the logical arguments set out above, there is scarce empirical evidence to support the idea that knowledge-sharing affects IB (Kamasak and Bulutlar, 2010). In a preliminary attempt to address this issue, Sousa *et al.* (2012) argued that the essence of IB takes place at individual level, as this is where the emotional process of creation occurs. As the process of sharing knowledge implies the development, combination and transformation of knowledge into new practices, the process of innovation begins in individuals who compare new knowledge and new ways of thinking with existing streams of thought (Radaelli *et al.*, 2014, p. 401). As a result, individuals involved in knowledge exchange will try to adopt new strategies and take advantage of new opportunities (i.e. become more innovative). More recently, the work of Anser *et al.* (2022) also sustains this argument and points out that knowledge-sharing affects positively the IB of employees in small businesses.

With respect to the mediating role of knowledge-sharing, there is scarce literature at organisational level that shows the potential mediating effect of knowledge-sharing in the relationship between managerial practices and innovation performance (e.g. Chen and Huang, 2009). Chen and Huang (2009, p. 112) established the positive mediation of knowledge-management capacities between strategic HR practices and innovation performance, considering knowledge-sharing as one of the three components of knowledge management. In addition, recent theorisation in the literature on strategic HRM emphasises that it is precisely the impact that knowledge exerts on individuals that influences the relationship of

HR practices on knowledge-based performance and IB (Bowen and Ostroff, 2004; Minbaeva *et al.*, 2012; Ahmed *et al.*, 2018; Saleem *et al.*, 2023). Hence, the individual level acquires special significance in this new literature stream (e.g. by considering different contexts from the traditional Western economies, like the work of Saleem *et al.* (2023)) and the mediating role of knowledge-sharing becomes particularly relevant. Bhatti *et al.* (2021), using the AMO framework to analyse HR practices, establish (at an individual level) that knowledge-sharing mediates the relationship between HPWS and innovation. Their results showed that the mediation hypotheses regarding ability and motivation practices are met. Also, Anser *et al.* (2021) establish at an individual level the mediating role of knowledge-sharing between knowledge-management infrastructure capabilities (KMICs) and IB. KMICs are defined as “organizational mechanisms for promoting learning activities within an organization” (Anser *et al.*, 2021, p. 462), and this supportive environment is measured through different HR practices as pay for performance, participation, autonomy and continuous training. Similarly, Nguyen and McGuirk (2022) find that commitment mediates the relationship between job control (autonomy), supervisor and co-workers’ support (considered as HR practices) and IB. The research we present here is in line with these approaches.

Thus, we argue that perceived HPWS affect IB through knowledge-sharing, as the perception of HPWS creates the conditions to encourage individuals to share knowledge and subsequently, to display IB. As a result, we put forward the following hypothesis:

H2. Individual knowledge-sharing mediates the relationship between perceived HPWS and IB

2.2 The sequential mediating role of engagement and knowledge-sharing between employees’ perceptions of HPWS and IB

The main contribution of this paper resides in the consideration of a sequential mediating effect of work engagement and knowledge-sharing between employees’ perceptions of HPWS and IB. Scarce literature has analysed the link between work engagement and knowledge-sharing (i.e. Chen *et al.*, 2011; Gupta, 2011; Jacobson *et al.*, 2004). In this respect, Jacobson *et al.* (2004) conducted a theoretical analysis of the organisational factors influencing researcher engagement in knowledge transfer activities at universities. They considered that some HR practices such as promotion, together with a long-term strategy that concentrates on developing a knowledge transfer infrastructure (e.g. resource availability and training opportunities), are the cornerstone for making knowledge transfer engagement into an organisational priority.

Engagement contributes to create and reinforce a collaborative atmosphere based on trust, thus helping to attain the long-term goals of the organisation (e.g. innovation, change, knowledge-sharing) (Song *et al.*, 2012).

Some works have obtained empirical evidence to support the positive relationship between work engagement and knowledge-sharing behaviour (Chen *et al.*, 2011; Gupta, 2011; Tamta and Rao, 2017). In this sense, Yadav *et al.* (2019) reveal that transformational leadership, through engagement, moves employees (freelancers) to a knowledge-sharing behaviour, considering engagement as an antecedent of knowledge-sharing. Additionally, Fullwood and Rowley (2021), through a qualitative work, determine that culture, the creation of a positive environment, socialisation and engagement, contribute, in the ambit of non-profit and voluntary workers, to knowledge-sharing in a formal and, sometimes, tacit way. The work of Falt *et al.* (2023), however, poses that the creation of a knowledge-sharing facilitating environment generates employee engagement. In this particular work, knowledge-sharing is an antecedent of engagement, unlike what occurs in our proposed model.

According to Chen *et al.* (2011), three basic reasons explain the relationship between engagement and knowledge-sharing (Chen *et al.*, 2011, p. 1015): (a) only when employees are

dedicated to their work will they accumulate enough professional knowledge to share with their colleagues; (b) for employees to share their task-related knowledge, they need to care about what they do and believe that it is worth making an extra effort; and (c) when employees are engaged in their work and are enthusiastic about it they will be more willing to share their task-relevant knowledge to further improve their performance. Some other works (Ford *et al.*, 2015) use Engagement theory to put forward a positive relationship between employee engagement and knowledge-sharing. An engaged employee tends to be fully absorbed by and enthusiastic about their job and, as a result, will develop positive actions such as knowledge-sharing. Nevertheless, they add a new approach, that is, the Adaptive Costs Theory (Cohen, 1978, 1980), to analyse the possible negative effects of engagement on knowledge-sharing behaviours. The authors state that “as individuals become more engaged in their job, they allocate more of their attention to specific job tasks. Due to this allocation of attention to in-role task performance, there would be a cost to knowledge sharing performance” (Ford *et al.*, 2015, p. 484), giving less priority to that new task (i.e. knowledge-sharing) that is excessively demanding for the employee.

Therefore, in order to ultimately affect IB, firstly HPWS need to generate work engagement (Alfes *et al.*, 2013b; Huang *et al.*, 2018) and in so doing produce a willingness in employees to share knowledge (Chen *et al.*, 2011). Taking these ideas as a starting point we establish our third theoretical relationship.

H3. Work engagement and knowledge-sharing sequentially mediate the relationship between perceived HPWS and IB

Figure 1 illustrates the theoretical framework and relationships proposed by this study.

3. Research methodology

3.1 Procedure and sample

A survey was drawn up to measure the constructs involved in this study. All the variables were measured using multiple-item scales (seven-point Likert scales) that had been used in previous studies (Kehoe and Wright, 2013; Kuvaas *et al.*, 2012). The questionnaire was pre-tested with a sample of thirty-one individuals from the same faculty. This pre-test was developed to ensure proper understanding of the items (due to item translation) and to assess the ability of the scales to capture the desired information. The information obtained was used to refine the questionnaire understanding. The final version of the survey was sent by email to a population of approximately 2,500 employees, whose faculties or research institutes agreed to participate in the study and all of them belong to the University of Valencia, university that becomes the focus of our study because of the nature of the work developed in this institution and its relevant position in international research rankings. As we considered individuals to be our unit of analysis, we used primary data sources. The

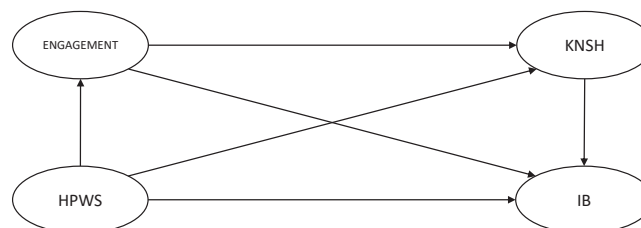


Figure 1.
Theoretical framework

Source(s): Figure by authors

questionnaire was sent to scholars and researchers working in nine faculties and ten research institutes (out of a total of eighteen faculties and twelve research institutes that this university has). The final sample comprised 304 valid questionnaires, what implies a response rate of 12%. Data was collected in 2014–2015. Control variables were also collected from respondents and subsequently double-checked using secondary sources of information. Non-response bias was checked by comparing the characteristics of the respondents to those of the original population sample. A comparison was made to establish whether the differences in demographic variables (i.e. gender and educational level) between the sample and the population were significant. No significant differences were found, which increased our confidence in the representativeness of the sample. Common-method bias was also checked using the test proposed by Kock (2015) for PLS-SEM analysis. In our study, all variance inflator factor (VIF)-level values were lower than 3.3. Therefore, we deemed our model to be free of common-method bias.

3.2 Measures

The scale measuring HPWS was based on Gaertner and Nollen (1989), Vandenberg *et al.* (1999) and Sun *et al.* (2007). This scale referred to five key HR practices: training and development (four items), pay for performance (four items), career development (three items), job security (two items) and participation in decision-making processes (four items). The scale used for measuring work engagement was the short version from the Utrecht Work Engagement Scale: a 9-item scale proposed by Schaufeli and Bakker (2004). The IB measure was obtained from the work of Scott and Bruce (1994) (6 items). Additionally, the scale measuring knowledge-sharing (8 items) was taken from the work of De Vries *et al.* (2006) and used by Kuvaas *et al.* (2012). According to these authors, this scale considers both sides of sharing, namely, providing co-workers with knowledge and obtaining knowledge from co-workers. These scales have been broadly used in the specialist literature (e.g. Kehoe and Wright, 2013).

The control variables used were educational level (Dummy_1: 1 = degree level; 0 = other higher studies; Dummy_2: 1 = PhD level; 0 = other lower studies), gender (1 = male; 0 = female), position (Dummy_3: 1 = teaching and research; 0 = technical and trainee researchers) and tenure in the organisation. The inclusion of these variables was based on previous studies, as they can have an impact on IB (Scott and Bruce, 1994). Table 1 provides a descriptive analysis and correlations of the variables.

3.3 Data analysis

SmartPLS 3.2 (Ringle *et al.*, 2015) was used to test the hypotheses proposed in our model. Bootstrapping with 5,000 subsamples is performed, then the bootstrap standard errors, confident intervals and *p*-values, are used to assess the statistical significance of individual parameters. Besides, to test mediation hypotheses H1–H3, we followed Preacher and Hayes' (2008) recommendations and the process suggested by Castro and Roldán (2013).

This study focussed especially on testing a three-path mediation model (Hayes, 2009; Taylor *et al.*, 2008; Castro and Roldán, 2013). Figure 2 describe the different effects proposed.

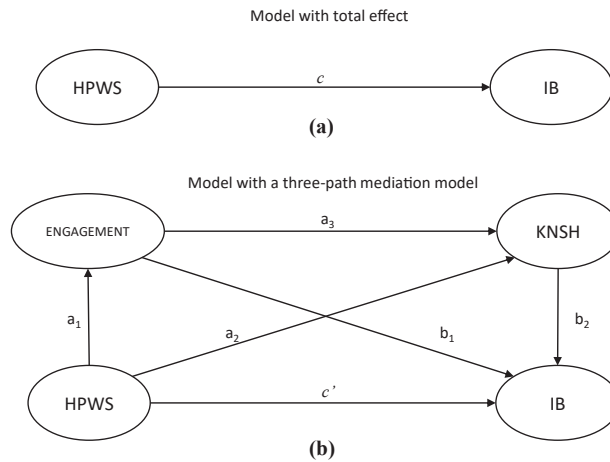
Figure 2a describes the total effect of employee perception of HPWS on IB, with *c* being the path coefficient of HPWS on IB. This total effect may be attained via a variety of direct and indirect forces (Hayes, 2009). In detail, the total effect in Figure 2b can be stated as the sum of the direct and indirect effects, the latter being estimated by the product of the path coefficients for each of the paths in the mediated chain (Alwin and Hauser, 1975). Thus, $c = c' + a_1b_1 + a_2b_2 + a_1a_3b_2$, where the latter three terms are specific indirect effects and their sum is the total indirect effect (Hayes, 2009); whilst *c'* is the direct effect of employee perceptions of HPWS on IB, controlling for both mediators (engagement and knowledge-

Table 1.
Descriptive and
correlation analysis

	Mean	SD	1	2	3	4	5	6	7	8
1. HPWS	4.43	1.08								
2. Engagement	5.36	1.07	0.29**							
3. KNSH	5.43	1.02	0.16**	0.36**						
4. IB	5.11	1.141	0.25**	0.52**	0.31**					
5. Tenure	13.81	9.91	0.25**	0.10	−0.00	0.03				
6. Gender	−	−	0.09	0.01	0.02	0.10				
7. D1 Education	−	−	−0.07	−0.14*	0.01	−0.14*	−0.31**	−0.17**		
8. D2 Education	−	−	0.09	0.12*	−0.04	0.16**	0.40**	0.17**	−0.84**	
9. D3_Position	−	−	0.1	0.11	−0.09	−0.05	0.36**	0.14*	0.36**	0.45**

Note(s): * $p < 0.05$ and ** $p < 0.01$

Source(s): Table by authors



Source(s): Figure by authors

Figure 2.
Three-path
mediation model

sharing) (Taylor *et al.*, 2008). In addition, this approach allows the analysis of indirect effects through both of these mediators in a series (H3 a1a3b2) (Van Jaarsveld *et al.*, 2010). Bootstrapping was used to generate standard errors and t-statistics.

4. Results

4.1 Measurement model

The measurement model properties were evaluated according to Hair's *et al.* (2014) recommendations for partial least squares path modelling (PLSPM). All the indicators were significantly associated with their respective constructs ($p < 0.01$) with standardised loadings equal to or greater than 0.7 (Barroso *et al.*, 2010), proving high indicator reliability. Table 2 shows values for internal consistency and discriminant validity. To assess internal consistency, composite reliability (CR) was calculated and average variance extracted (AVE) was used to check convergent validity. All constructs had CR values greater than 0.7 (Bagozzi and Yi, 1988) ranging from 0.83 to 0.94 (Guenther *et al.*, 2023). The AVE values for each construct were equal to or higher than the 0.50 threshold confirming the convergent validity of the measurement model.

Discriminant validity was assessed using two criteria. First of all, we checked that the square root of the AVE values (diagonal bold values in Table 2) was greater than all of the inter-construct correlations. Secondly, we also added a relatively new criterion that considers

	CR	AVE	1	2	3	4
1. HPWS	0.83	0.50	0.71			
2. Engagement	0.94	0.85	0.29**	0.92		
3. KNSH	0.91	0.64	0.16**	0.36**	0.8	
4. IB	0.88	0.60	0.25**	0.52**	0.31**	0.77

Note(s): Diagonal values are the AVE square roots. Below the diagonal values are correlations between constructs

Source(s): Table by authors

Table 2.
Convergent validity
and discriminant
validity

the heterotrait-monotrait correlation ratio (HTMT) developed by Henseler *et al.* (2015) in which the HTMT values have to be lower than 0.85 (Clark and Watson, 1995). As illustrated in Table 3, our HTMT values comply with this criterion. We also checked that each item had a greater load on the factor it measured than its cross loadings with the rest of the latent variables (Henseler *et al.*, 2009).

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4.2 Structural model

The structural model was estimated through PLSPM using SmartPLS 3.2. Our study used reflective constructs. Employees' perceptions of HPWS and work engagement were measured as a second-order variable. However, IB and knowledge-sharing were measured as first-order factors.

The predictive relevance of the three dependent variables in the model was assessed using Stone–Geisser's Q^2 (Hair *et al.*, 2014), which can be measured using blindfolding procedures. As shown in Table 4 below, all dependent latent variables exhibited a Q^2 higher than 0, suggesting the predictive relevance of the model (Chin, 1998). A power analysis was performed using G*Power 3 (Faul *et al.*, 2009) to test whether our sample assured a power for the R^2 deviation from zero test that was greater than 80%. The achieved power was greater than 95%.

The R^2 value of the dependent latent variables was used to determine the amount of variance explained by the model (see Table 4). According to Falk and Miller (1992), this index must be higher than 0.1. As Table 4 shows, all R^2 values are equal to or higher than the threshold: IB ($R^2 = 0.30$), work engagement ($R^2 = 0.10$) and knowledge-sharing ($R^2 = 0.14$).

Results show (see Table 5 and Figure 3) that four out of the six direct effects described in Figure 2b are significant. Regarding testing of the hypotheses, the path coefficient of employees' perception of HPWS was not significantly linked to IB (0.08 $p > 0.05$), which indicates, as suggested in previous studies (e.g. Escribá-Carda *et al.*, 2017), that this relationship does not take place directly.

We applied the analytical approach described by Preacher and Hayes (2008) and Taylor *et al.* (2008) to test our mediation hypotheses (H1-H3). The indirect effects were specified and contrasted with the mediators (engagement and knowledge-sharing) (see Table 6). We also checked the total (c) and direct (c') effects of the independent variable (i.e. employees' perceptions of HPWS) on the dependent variable (i.e. IB). As Figure 3a and Table 6 show,

Table 3.
HTMT values

	1	2	3
1. HPWS			
2. Engagement	0.339		
3. KNSH	0.228	0.391	
4. IB	0.287	0.559	0.361

Source(s): Table by authors

Table 4.
Structural model
evaluation

	R^2	Q^2
Engagement	0.10	0.06
KN sharing	0.14	0.08
IB	0.30	0.16

Source(s): Table by authors

employees' perception of HPWS had a significant total effect on employee IB. When mediators were introduced (Figure 3b), HPWS no longer had a significant direct effect on IB (c'). This means that mediators have an effect on this relationship. Conversely, not all mediating effects show a significant indirect effect. The results show that engagement mediates the relationship between HPWS and IB (H1 a1b1). However, the mediating effect of knowledge-sharing was not confirmed (H2: a2b2). Finally, we found that employees' perception of HPWS was positively associated with higher employee engagement and knowledge-sharing, which relates to higher levels of IB (H3 a1a3b2).

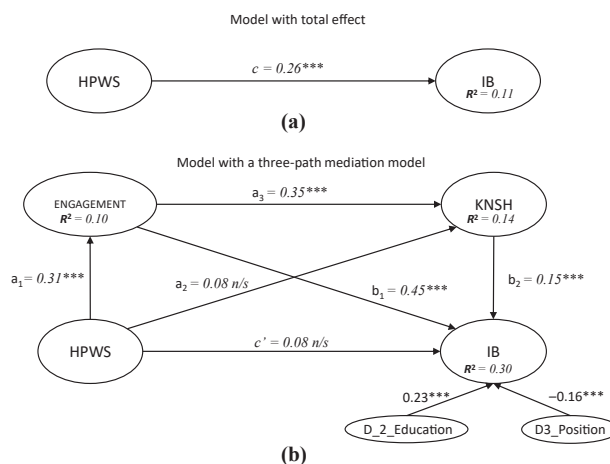
5. Discussion and implications

Our study has focussed on the mediating role that engagement and knowledge-sharing play in the relationship between employees' perceptions of HPWS and IB. We also focussed on the existence of a sequential mediation of engagement and knowledge-sharing in this relationship. With respect to the single mediating role of engagement, the specialist literature (Alfes *et al.*, 2013b; Argawal *et al.*, 2012; Huang *et al.*, 2018; Salanova and Schaufeli, 2008; Stirpe *et al.*, 2022) recognises that work engagement mediates the relationship between HRM practices and employees' attitudes and behaviours such as IB (Alfes *et al.*, 2013a).

Effects on endogenous variables	Direct effect	T-value
HPWS→Engagement	0.31***	5.49
Engagement→KNSH	0.35***	5.05
KNSH→IB	0.15**	2.38
HPWS→KNSH	0.08 n/s	1.13
Engagement → IB	0.45***	8.29
HPWS→IB	0.08 n/s	1.59
D_2_Education → IB	0.23**	2.6
D3_Position → IB	−0.16***	3.11

Note(s): * $p < 0.05$; ** $p < 0.01$ and *** $p < 0.00$. Note: Only D_2 and D_3 showed a significant effect on IB
Source(s): Table by authors

Table 5.
Effects on endogenous
variables



Source(s): Figure by authors

Figure 3.
Structural model:
results of the three-
path mediation model

Table 6.
Summary of the
mediating effect tests

Total effect of HPWS on IB		Direct effect of HPWS on IB			Indirect effect of HPWS on IB		
<i>Coefficient</i>	<i>t-value</i>	<i>Coefficient</i>		<i>t-value</i>	<i>Point estimate</i>		<i>t-value</i>
0.25***	4.54	Direct effect: ^c	0.08 n/s	1.59	Total	0.17***	4.79
					H1: a_1b_1 (via Engagement)	0.14***	4.44
					H2: a_2b_2 (via KNSH)	0.01 n/s	0.94
					H3: $a_1a_3b_2$ (via Eng + KNSH)	0.02 *	1.74

Note(s): * $p < 0.05$; ** $p < 0.01$ and *** $p < 0.00$
Source(s): Table by authors

Our results clearly run along the same lines (see Figure 3b and Table 5) suggesting that, in the university context, the existence of engagement is necessary for the influence of HPWS on IB to become effective. Only when researchers positively perceive the application of practices such as intensive training (e.g. continuous training programmes, international research stays and exchanges, consultancy projects, etc.), participation in decision-making and collaboration, job security and career development, will they become engaged with their work and intrinsically motivated, as the specialist literature (Fullwood and Rowley, 2017; Fullwood *et al.*, 2019) has suggested. Consequently, these engaged individuals will be more likely to introduce new ideas and approaches in their daily work. It is important to highlight that recent regulations and laws affecting the Spanish public higher education sector as well as the economic recession (dramatically reducing funding for research) may have created indifference and a lack of enthusiasm and dedication in civil servants towards their work. However, in relative terms, working conditions are better compared to many other Spanish economic sectors, which implies that HRM practices as a system (e.g. job security, autonomy and participation in decision-making) can still become a powerful enabler of engagement and, consequently, of IB.

In general, there is insufficient empirical evidence to support the idea that individual knowledge-sharing behaviour can affect IB (see: Kamasak and Bulutlar, 2010) although recently more works have tried to shed light on this phenomenon (Anser *et al.*, 2022). Consequently, our research provides new empirical evidence about the role that knowledge-sharing plays in encouraging IB. In addition, previous studies have suggested that knowledge governance mechanisms, like HRM practices, enhance knowledge mechanisms such as knowledge-sharing (Jansen *et al.*, 2006). The literature also states that knowledge-sharing plays a mediating role between HPWS and IB (Chen and Huang, 2009; Bhatti *et al.*, 2021). However, our results do not support these relationships (see Tables 4 and 5). The results obtained in this research show that there is a positive and significant link between knowledge-sharing and IB; but contrary to previous studies (e.g. Radaelli *et al.*, 2014), the relationship between HPWS and knowledge-sharing is not significant giving no support to the mediating effect of knowledge-sharing in the relationship between HPWS and IB. Partially in line with our results, the work of Bhatti *et al.* (2021) didn't support the mediation for opportunity practices (in the AMO framework) either.

There are some reasons which could explain this result. First of all, the type of HRM practices adopted in Spanish public universities to foster research and specially to pay for performance are more oriented towards compensating individual behaviours and not collective ones. Thus, in many cases, individuals tend to adopt opportunistic and competitive

behaviour, setting aside the sharing of knowledge and cooperation. Consequently, our results can be explained by considering previous research focussed on academia which affirms that the increasingly competitive pressure to generate publications, compete for positions and obtain funding has been shown to lead secrecy and knowledge hiding (Walsh and Hong, 2003; Hernaus *et al.*, 2019). Secondly, there is a lack of culture as well as specific training for Spanish public university-based researchers on knowledge-sharing. Thirdly, these individuals have to comply with an excessive amount of bureaucracy when performing their research work which, ultimately, and taking into account the adaptive cost theory, could disengage them from knowledge-sharing (Ford *et al.*, 2015; Issac *et al.*, 2021). In this sense, the Spanish governmental entities responsible for designing compensation mechanisms for universities and research centres should modify these measures to compensate collective work to a greater extent.

With regard to the sequential mediating effect of knowledge-sharing and engagement in the relationship between HPWS and IB, previous studies have shed light on the relevant role of engagement to promote knowledge-sharing (Chen *et al.*, 2011; Gupta, 2011; Tamta and Rao, 2017). Our results are in line with these studies, as we conclude that work engagement and knowledge-sharing sequentially mediate the relationship between perceived HPWS and IB (see Table 5). This means that HPWS positively affect the degree of engagement of the researchers included in our sample. Consequently, their level of knowledge-sharing is also greater as they feel enthusiastic about their work and are more likely to share and search for new sources of knowledge which, ultimately, affects their creative processes. This means that, in order to avoid knowledge hiding, a recent and relevant topic in the current literature on knowledge (Issac *et al.*, 2021), it is important to foster knowledge-sharing behaviours amongst scholars, so these finally enhance IB.

On the other hand, although our data was collected in the years prior to the pandemic, the context was comparable to the current situation of economic crisis (loss of purchasing power of academics and researchers, increase of controls based on results), and consequently, our results are still valid, given that HR policies have not changed substantially and also given the stability of the staff at the institution (Sanchez-Barrioluengo, 2014). In this respect, our results are still relevant and can make an important contribution both theoretical and empirically. From the theoretical viewpoint, our study extends the outcomes of previous studies highlighting the relevance of work engagement as a necessary condition for knowledge-sharing as a mechanism explaining the relationship between HPWS and IB. In this sense, we recommend the joint consideration of different yet interrelated frameworks such as knowledge management and HRM, as their combined effect can better explain the antecedents of innovation at individual level.

From a practical perspective, our results may contribute to better orientate organisational HRM practices. Our results have shown no significant relationship between the HPWS perceived by researchers and knowledge-sharing. As a consequence, HRM practices should be modified by governmental entities and public universities in order to facilitate knowledge-sharing and IB. This is especially relevant if we see these processes as being essential for universities and research centres set in modern contexts. Spanish universities are relatively flat organisations that permit a high degree of participation and encourage teamwork. However, pay for performance practices are basically focussed on individual and not on collective results. Therefore, it would be wise to design pay for performance practices bearing in mind not only individual contributions but also team performance (e.g. positively assessing manuscripts and research jointly carried out by a research team and not penalising cooperative work).

Additionally, teamwork is encouraged but usually takes place within a department or knowledge area. HRM practices in Spanish universities should be more oriented towards developing lateral coordination mechanisms to facilitate interdepartmental knowledge-

sharing (e.g. creating multidisciplinary research groups, implementing graduate and postgraduate programmes in which individuals from different and diverse knowledge areas can take part, implementing information technology (IT) tools for facilitating communication and knowledge-sharing between co-workers, etc.).

6. Conclusions

In an innovative context such as universities in which our empirical study has been conducted, individuals should be engaged with their institution and, consequently, share knowledge through the different mechanisms that the institution offers them. This sequential effect of both variables should ultimately lead to greater IB. This sequential mediation considers that HPWS perceptions affect an employee's state of mind (their vigour, enthusiasm and dedication to their work) and, consequently, the employee will adopt processes (i.e. knowledge-sharing) and behaviours (i.e. IB) that are encouraged by the organisation. Consequently, if knowledge-intensive organisations want to foster IB in their employees they will need to design and properly implement a set of HR practices which increase the level of engagement of employees as a whole and, simultaneously, reduce the barriers that make it difficult for knowledge-sharing to occur. This is not only valid for the university context but also for any organisation using knowledge as its main competitive resource.

We tested our hypotheses in a knowledge-intensive context (researchers and faculty members) in which knowledge should be shared to obtain better innovation results (e.g. new ways of lecturing, new scientific results, new protocols, new applications). Our results show that for individual knowledge-sharing to take place, employees should correctly perceive HPWS and be engaged with their work. Hence, beyond the university context, our results show that organisations should make efforts to check that there is no gap between intended and perceived HR practices. Our results also revealed that work engagement is necessary for knowledge-sharing and IB to take place and highlighted the importance of suitable design and implementation for HPWS so that employees feel motivated and dedicated to their work. Thus, the main contribution of the research presented here lies in analysing the sequential mediating effect of engagement and knowledge-sharing in the relationship between perceived HPWS and IB from an individual viewpoint.

Despite the contribution of this study, our work has limitations that should be addressed in future studies. Firstly, future research should consider other additional HR practices in the system (e.g. family-friendly and wellbeing HR practices) so as to obtain a more comprehensive perspective of the set of HR actions implemented by organisations. Furthermore, the use of other sources or respondents (e.g. research teams) could also represent a new research avenue. In addition, the use of longitudinal data is needed to confirm the causality assumed in this research. Finally, the application of a qualitative methodology (e.g. case studies) taking our quantitative results as a starting point could help us to forge an in-depth analysis of how the relationship between HPWS, engagement, knowledge-sharing and IB takes place. In this respect, it would be interesting to study how internal communication policies, organisational culture and investment in collaborative IT solutions to facilitate knowledge-sharing affect this relationship.

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The effect of perceived corporate social responsibility on purchase intention in mobile commerce: mediating roles of trusting beliefs and satisfaction

The effect of
perceived CSR

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Abstract

Purpose – Corporate social responsibility (CSR) activities of companies have been reported to generate favorable consumer attitudes towards the business, which in turn, encourages positive consumer behavior. But the application of this conclusion in the mobile commerce domain remains limited. Drawing on social exchange theory, the authors examined the mediating role of trusting beliefs and satisfaction in the relationship between CSR and purchase intention in mobile commerce.

Design/methodology/approach – Using nonprobability convenience sampling, the authors administered a cross-sectional survey with 314 students from Keimyung University in Korea. Initially, SPSS-Amos was utilized to run confirmatory factor analysis. The proposed hypotheses were tested using structural equation modeling.

Findings – This study showed that two components of trusting beliefs, namely benevolence and competence, had a positive effect on the association between CSR and the purchase intention on mobile shopping applications. This relationship was partially mediated by trusting beliefs. Further findings demonstrated that the impact of CSR on purchase intention was also partially mediated by satisfaction.

Originality/value – The authors' contribution includes extending the social exchange theory to the mobile commerce setting by establishing mechanisms that explain the ways CSR influences purchase intention in the mobile commerce framework. The authors integrated trusting beliefs and satisfaction in the CRS chain link with purchase intention. Additionally, the authors examined the individual effects of three trusting beliefs components. Based on the results, the authors proposed suggestions for the mobile shopping application business on the methods they can implement to boost the outcomes of their CSR activities.

Keywords Mobile commerce, Mobile shopping applications, Social exchange theory, Perceived CSR, Trusting beliefs, Benevolence, Integrity, Competence, Purchase intention

Paper type Research paper

1. Introduction

Mobile commerce is a new subset of e-commerce (Siau and Lim, 2003) that facilitates monetary transactions via smartphones and other mobile devices. Mobile commerce made up



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nearly two-thirds (65.7%) of all worldwide e-commerce retail sales as of January 2022. Even though this trend is projected to continue growing, most of the academic research is confined to the e-commerce context and existing studies centered primarily on the adoption of mobile shopping applications (Chopdar and Balakrishnan, 2020).

A growing body of literature attempted to analyze the antecedents of purchase intention both online and offline. Consumers' corporate social responsibility (CSR) perceptions of companies have been consistently acknowledged to have a positive influence on purchase intention. A recent survey conducted by Certus Insights (2019), revealed that 51% of the US millennials consider CSR efforts of a business when making their purchase decisions. The same survey also reported that 70% of the consumers showed interest in learning about the CSR efforts of the businesses they buy services or products from. Despite the plethora of evidence on the associations between CSR and consumer purchase intention, its application in the scope of mobile commerce is highly limited.

Chopdar and Balakrishnan (2020) advocated the importance of treating mobile shopping applications as a distinctive research domain from online and mobile websites. The authors indicate that a lack of face-to-face communication between customers and marketers in mobile shopping applications will affect consumers' purchase behavior. Thus, our research intends to examine the mechanisms regulating the relationship between perceived CSR and purchase intention on the mobile commerce context. We specifically looked at customer CSR perception of Korean top mobile shopping application named Coupang. This mobile shopping application provides the sales of millions of unique items with the same day delivery. Mobile Index, a Korean mobile analysis platform announced that the users of Coupang mobile shopping application reached a total of 11 million in 2019. Coupang's strength is not only their quick delivery, but also the recognition that the business treats its customers well, which is an important component of such success (Sang-Bong *et al.*, 2020).

Businesses that implement social responsibility initiatives acquire credibility, which in turn, boosts consumer trust and satisfaction (Islam *et al.*, 2021). Accordingly, trusting beliefs and satisfaction have been consistently studied in combination with CSR to explain purchase intention. Several studies researched the role of corporate social responsibility in improving purchase intentions and reported that trusting beliefs mediated the relationship between corporate social responsibility and purchase decisions (e.g. Samuel and Chandra, 2014; Hameed *et al.*, 2018). Similarly, a growing body of literature demonstrated a mediating impact of satisfaction in the link between CSR and purchase intention (Bianchi *et al.*, 2019; Rehman *et al.*, 2019).

Nevertheless, very few studies integrated trusting beliefs and satisfaction in the association of CSR with purchase intention. Besides, most studies tended to focus on the combined effect of trusting beliefs in their frameworks. Yet, trusting beliefs is widely accepted to have three components, namely, benevolence, competence, and integrity (McKnight and Chervany, 2001). We propose a model that is intended to fill these gaps.

Based on this, the first goal of our research is to investigate the direct link between perceived CSR and the purchase intention in the context of mobile shopping applications. The second goal is to look at the individual mediating impact of three trusting beliefs between perceived CSR and purchase intention. The third goal is to analyze whether satisfaction plays a mediating role in the relationship between perceived CSR and purchase intention in mobile shopping applications.

The results from this research will contribute to literature in several ways. Theoretically, integrating trusting beliefs and satisfaction in the link between CSR and purchase intention will provide a broad view that will improve our understanding the causal chain that links CSR perception to the purchase intention within the mobile commerce context. In addition, studying three dimensions of trusting beliefs separately will yield different implications and contribute to a better theoretical understanding of them. At the practical level, providing

evidence of the distinct impact of the three trusting beliefs will aid businesses to understand the specific role of each trust dimension. Overall, our study will help in a better understanding of how CSR activities of a business can get consumers to act as well as offer suggestions on how to boost the impact of CSR on consumer purchase decision making in the mobile commerce domain.

2. Literature review

2.1 Conceptual framework

Social exchange theory has been widely used to clarify the impact of CSR on the intention to purchase (Quang Tran *et al.*, 2022). The theory proposes that people evaluate the potential benefits and costs of a social exchange, and if they believe they can obtain more of a reward from the relationship they choose to resume the social association. Contrarily, when people feel the costs outweigh the reward, the relationship will be suspended (Blau, 1964; Wong, 2003).

CSR activities provide an ability that the businesses can use as a type of socioeconomic resource that is deliberately “exchanged” with the hopes of reciprocation from the customer (Abd Rahim *et al.*, 2011). Research suggests positive exchanges lead a customer to reciprocation and a desire to maintain the relationship by enacting positive behaviors (Hakimi *et al.*, 2023). These positive interactions eventually increase the desire to maintain the relationship and the interdependency of the two exchange partners. Accordingly, our research investigates the consequences of consumer CSR perceptions in the company and consumer relationship and proposes that consumers’ CSR perceptions of the mobile shopping application are reflected in their trusting beliefs and satisfaction with the business, which in turn, leads to purchase intention on the mobile shopping application platform.

2.2 CSR and intention to purchase through mobile shopping applications

There have been numerous conceptualizations of CSR since the mid-twentieth century when business community started directing its attention to the social sides of the company behavior (Rivera *et al.*, 2019). Regardless of the variations in the conceptualization of CSR, at least two agreed conceptualizations exist in the literature, which are the company’s responsibilities that transcend economic interests, and its accountability to its stakeholders like customers (Rivera *et al.*, 2016). Furthermore, consumers consider a company socially responsible if it shows respect for human rights, or in other words, consumer rights (Bigné *et al.*, 2006).

Thus, many researchers utilized customer-oriented CSR as a special dimension of CSR in their studies (e.g. Martínez *et al.*, 2014; Úbeda-García *et al.*, 2021). In parallel with these studies, our research approaches CSR from the perspective of CSR oriented to customers and defines it in line with Perez and Rodríguez del Bosque (2014, p. 225) as “the CSR oriented to customers basically includes the complete and honest communication of corporate products and services and the management of customer complaints”.

Many researchers have concluded that an individual’s intention is an influence that leads to perform a follow-up behavior (e.g. Ajzen, 1985; Venkatesh and Davis, 1996). In line with the existing literature, we define the intention to purchase on mobile shopping applications as the consumer’s willingness to engage in a financial transaction on mobile shopping applications that will translate into actual purchasing behavior.

Previous studies have shown that perceived CSR has a significantly positive effect on the purchase intention. Liu *et al.* (2018) conducted experiments that looked into how consumer’s perception of CSR influences their decision to make a purchase. Their results reveal that

consumers were more willing to buy high-CSR, compared to low-CSR, products (p. 1654). They also showed that customers who consider CSR when making purchases are more likely to be engaged in actual purchase behavior. Similarly, Dincer and Dincer (2012) report that when customers choose a particular company's product over another, they base their purchase decision on a product's CSR information. Another similar finding by Popa *et al.* (2022) examines the influence of CSR on consumer purchase intention in the context of cosmetic products on e-commerce and indicates that consumers tend to purchase more from cosmetic product companies engaged in CSR. Based on these works, our research proposes the following hypothesis:

- H1. CSR will have a positive effect on intention to purchase on mobile shopping applications.

2.3 Mediating role of trusting beliefs

Building and sustaining a long-term relationship between consumers and the business requires a high level of trust (Ghondaghsaz and Engesser, 2022). In the e-commerce literature, various definitions of trust can be found, as narrow conceptualizations of trust are developed by scholars to be line with the nature of each study (McKnight and Chervany, 2001). McKnight *et al.* (2002) stressed the need for conceptual clarity and proposed a multidimensional model of trust including five aspects: disposition to trust, institutional-based trust, trusting beliefs, trusting intention and trust-related behavior. For our study, the trusting beliefs component is adopted as a mediating variable.

Dimensions of trusting beliefs have periodically been recognized as vital mediating variables generating positive behavioral relationship effects (Krisch and Grabner-Kräuter, 2017). In our study, trusting beliefs are defined as the belief by mobile shopping application users that the mobile shopping application has beneficial characteristics to them (McKnight and Chervany, 2001). Those characteristics include the competence, benevolence, and integrity of the mobile shopping applications to act according to its customers' benefits. Competence is identified as the ability of the mobile commerce application business to perform a successful transaction (McKnight *et al.*, 2002) and reflects the consumers' belief that goods and services are delivered in an efficient and proper manner by the mobile shopping application vendor. Benevolence indicates the extent to which mobile shopping application user attributes the mobile shopping vendor's response as benevolent (Simões Coelho *et al.*, 2023). Integrity describes "the honesty and promise keeping" of the mobile shopping business (McKnight and Chervany, 2001).

As discussed earlier the reciprocity notion of the theory of social exchange can specify the link of CSR to trusting beliefs (Yadav *et al.*, 2018). The SET postulates that relationships thrive only in the presence of reciprocity, which can take either attitudinal or behavioral shapes (Yadav *et al.*, 2018). Thus, our study suggests that consumers reciprocate CSR activities of mobile shopping application businesses with increased levels of trusting beliefs, which consequently serves as a reward to the business. What is more, CSR serves as a manifestation that positively affects consumers' attitudes toward the mobile shopping application platform and their evaluation of its products and services (Yadav *et al.*, 2018). Research examining the direct relationship between CSR and trusting beliefs proved that CSR activities substantially influenced consumer decisions to respond to CSR by boosting consumers' confidence in the competence, benevolence and integrity of the business (Park *et al.*, 2017). For example, in their study with South Korean consumers, Park *et al.* (2014) verified that CSR initiatives of a company were positively related to all three dimensions of trusting beliefs. Consistent with this finding, a study by Puwirat and Tripopsakul (2019) found that corporate social responsibility significantly and positively predicted consumer trust in the domain of social commerce.

Trusting beliefs was an important antecedent of positive consumer behaviors such as consumer satisfaction, loyalty and, more importantly, consumer purchase intention (e.g. Sahi *et al.*, 2016; Xu *et al.*, 2016; Shaker *et al.*, 2021). Because of the lack of direct encounters between a buyer and seller in e-commerce and m-commerce, consumers need to deal with uncertainties when engaging in online transactions (Hajli *et al.*, 2017). Trusting beliefs are perceived to substantially minimize such confusion and skepticism, thereby fostering consumers' assurance in the reliability of mobile shopping application vendor's actions (McKnight *et al.*, 2002; Hajli *et al.*, 2017). Hence, consumers determine whether to engage in purchasing behavior with a mobile shopping application by assessing the competence, benevolence and integrity of the mobile shopping vendor (Hajli *et al.*, 2017). Previous research has demonstrated that trusting beliefs significantly predict consumers' intention in the e-commerce domain. McKnight and Chervany (2001) substantiate that if the consumer "has high beliefs in the competence, integrity and benevolence" of the e-commerce vendor, then they would be more likely to rely on the mobile shopping application, which in turn strengthens their purchase related intention. Similarly, Lu *et al.* (2016) evinced the direct and partially indirect effect of trusting beliefs on intention to purchase in the context of social commerce. They specifically emphasize that consumers must have "a significant degree of trusting beliefs in sellers' traits of integrity, benevolence and competence" to engage in buying behavior.

Despite this plethora of research, few studies attempted to look at the influence of individual trusting beliefs in the relationship between CSR and purchase intention. Therefore, our research proposes that dimensions of trusting beliefs enhance purchase intention in the mobile shopping application domain. Building upon the literature review above, we suggest that CSR of mobile shopping application companies may establish consumers' trusting beliefs in terms of benevolence, competence, and integrity and these in turn will increase consumer's intention to purchase through the mobile shopping application platform. In line with the preceding literature, we propose the following hypotheses:

- H2. Benevolence will mediate the relationship between perceived CSR and intention to purchase on mobile shopping platforms.
- H3. Competence will mediate the relationship between perceived CSR and intention to purchase on mobile shopping platforms.
- H4. Integrity will mediate the relationship between perceived CSR and intention to purchase on mobile shopping platforms.

2.4 Mediating role of satisfaction

Satisfaction generally refers to the customer evaluation process of how effectively a business performance have met their needs and wants (Mili and Ferro-Soto, 2023), and it is considered a result of perceptions. Perception of CSR is well-documented as a source of satisfaction. Higher levels of CSR perceptions are reported to lead to stronger levels of satisfaction in many domains. Using two different studies, Rivera *et al.* (2016) found a positive direct relationship between CSR and satisfaction. Likewise, Shiau and Luo (2012) conclude that companies that are more well-liked for their CSR efforts gain higher consumer satisfaction.

Furthermore, consumer satisfaction is a vital resource for a company to cement long-term relationships with its customers and a leading indicator of consumers' positive attitude and behavior towards the business (Lee *et al.*, 2008; Shiau and Luo, 2012). Several studies reported a positive influence of satisfaction on consumer purchase behavior. In a survey of 215 consumers, Shiau and Luo (2012) examined the interrelationships between satisfaction, trust, seller activity and online group buying. A high level of satisfaction was found to be the strongest predictor of intention to engage in online group buying. Similarly, that higher

e-satisfaction resulted in higher consumer spending and higher levels of e-commerce loyalty in American based e-commerce platforms (Nisar and Prabhakar, 2017). In line with the previous literature, our study proposes the following conceptual framework as shown in Figure 1, and the following hypothesis:

- H5. Consumer satisfaction will mediate the relationship between perceived CSR and purchase intention on mobile shopping applications

3. Method

3.1 Participants and data collection

To examine our research hypotheses, we recruited students from Keimyung University (known as KMU) in South Korea by applying nonprobability sampling technique. South Korean students were selected because South Korea is one of the countries with highest mobile commerce share worldwide (IMARC, 2021) and 99% of the South Korean population aged 20 to 59 own smartphones (Statistica, 2021). Respondents answered the online questionnaire on a 7-point Likert scale ranging from 1 (Strongly Agree) to 7 (Strongly Disagree). The total number of completed surveys was 324, but due to the screening question to select the participants who use mobile shopping applications, 316 responses were qualified for our study. We utilized a total of 304 answers for the analyses after data cleaning.

The demographic section contained questions on gender, age, and level of education in addition to frequency of use of mobile shopping apps and mobile commerce credit card utilization. The proportion of female participants in our survey was 59% while male was 41%. In terms of age range, most of the participants fell in the age range between 20 and 29 (87.2%) years old. Accordingly, most respondents were undergraduate students (77.9%).

3.2 Measurements

To collect data for our study, we adopted measurement scales from previous studies. A group of four language experts translated the items from English to Korean utilizing a back translation method (Brislin, 1976). We slightly modified the items to be consistent with our study context. All items of measurement scales have been extensively utilized in prior literature and showed high reliability and validity (Table 3).

CSR was measured by 3 items adopted from Perez and Rodríguez del Bosque (2014) and Turker (2009). The measurement scale evaluates the perception of mobile shopping application users on the mobile shopping application's integrity, complaint responding procedure regarding social, environmental and ethical issues, and respect of consumer rights

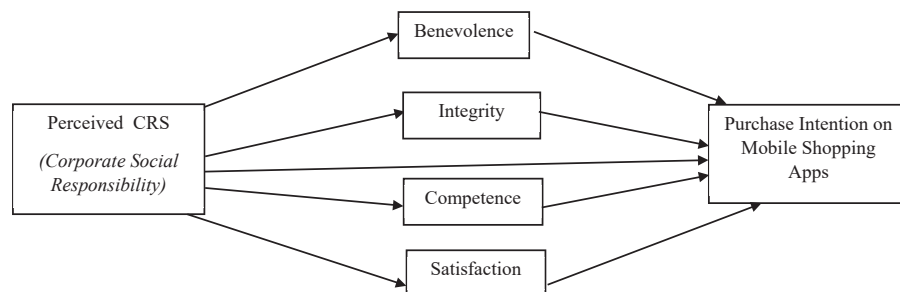


Figure 1.
Conceptual framework

Source(s): Figure by authors

(e.g. “The mobile shopping application has established procedures to respond to all consumer social, environmental, ethical, etc. complaints”).

To measure trusting beliefs, we used nine items developed by McKnight *et al.* (2002). The scale is composed of three dimensions, namely, perceived benevolence, perceived integrity, and perceived competence. Each dimension was measured by three items. One item was dropped from the perceived competence during the confirmation factor analysis due to low factor loading. Sample items are: “I believe that the mobile shopping application would act in my best interest”; “Promises made by the mobile shopping applications are likely to be reliable”; and “The mobile shopping applications are competent and effective”. Since our hypotheses focused on trusting beliefs from a general perspective, we combined three dimensions into an overall score of trusting beliefs. This is in line with existing studies (e.g. Coffey and Kabadayi, 2020; Whang and Im, 2018) and our confirmatory factor analysis perfectly proved that three dimensions were nested under a second-order factor.

Satisfaction was assessed using 3 items adopted from Oliver (1980) and Russell-Bennett *et al.* (2007). The scale features mobile shopping application users’ overall satisfaction as well as satisfaction with the decision and experience of using the vendor. A sample item included is: “I am satisfied with my decision to use mobile shopping applications”.

We measured purchase intention in mobile shopping applications with 3 items adopted from Gefen and Straub (2004) and Lu *et al.* (2016). The scale weighs the degree of continuous engagement in buying through mobile shopping applications. A sample item is: “I will keep use of the mobile shopping applications in the future”.

3.3 Analysis method

To test our model, we analyzed our data in a two-step process as suggested by Anderson and Gerbing (1988). The first step involved conducting confirmatory factor analysis (CFA) in SPSS-Amos version 21.0 and reliability analysis in SPSS version 21.0 to test the measurement model which incorporated goodness of fit of the data along with convergent validity and discriminant validity as well as reliability. In the second step, we examined our hypothesis utilizing SEM.

To conduct CFA and SEM, each observed variable is suggested to have 10–20 participants for each observed variable (Kyriazos, 2018). The number of observed variables in our study were between 17 and 20 from the total of 304 respondents (after exclusion of unsuitable responses) participated. Therefore, the sample size was sufficient in order to conduct CFA and SEM.

4. Results

4.1 Common method bias

To assess the potential common method bias in our study, we conducted two statistical analyses. First, we performed Harman’s single factor test by placing all the measurement items in an exploratory factor analysis. The results showed that a single factor accounted for 35.73% of the total variance, which is lower than 50%. Next, we conducted a CFA analysis with a single factor model which demonstrated less good model fit than the proposed model fit ($\chi^2/df = 1056.177$, GFI = 0.640, CFI = 0.630, NFI = 0.603, TLI = 0.580, RMSEA = 0.160). Thus, the common method bias did not pose a challenge to our study (Jiang *et al.*, 2018; Nguyen and Pervan, 2020; Podsakoff *et al.*, 2003; Song *et al.*, 2019).

4.2 Descriptive statistics

Table 1 reports the descriptive statistics for the constructs in our study. The means of the constructs ranged between 4.60 and 5.71.

4.3 Measurement model

We conducted CFA using SPSS-Amos 21.0 to evaluate the overall model fit of our hypothesized model (Figure 2). It is important to note that the Chi Square test statistic is sensitive to sample size. Therefore, in addition to the χ^2/df goodness-of-fit indicators such as CFI, NFI, TLI, and RMSEA were examined.

The absolute fit measures of our measurement model exceeded the recommended threshold values for goodness-of-fit indices, providing strong evidence for the acceptability of our hypothesized model. The model demonstrated a χ^2/df ratio of 2.088 and a significant p -value of 0.000, indicating rejection of the null hypothesis. Additionally, the Comparative Fit Index (CFI) was 0.953, the Normed Fit Index (NFI) was 0.914, the Tucker–Lewis Index (TLI)

Table 1.
Descriptive statistics

Constructs	Mean	SD
PCSR	4.60	1.04
Benevolence	5.12	1.06
Integrity	4.56	1.03
Competence	4.94	0.93
SAT	5.47	0.87
INT	5.71	0.93

Note(s): n = 304, PCSR: perceived corporal social responsibility

Source(s): Table by authors

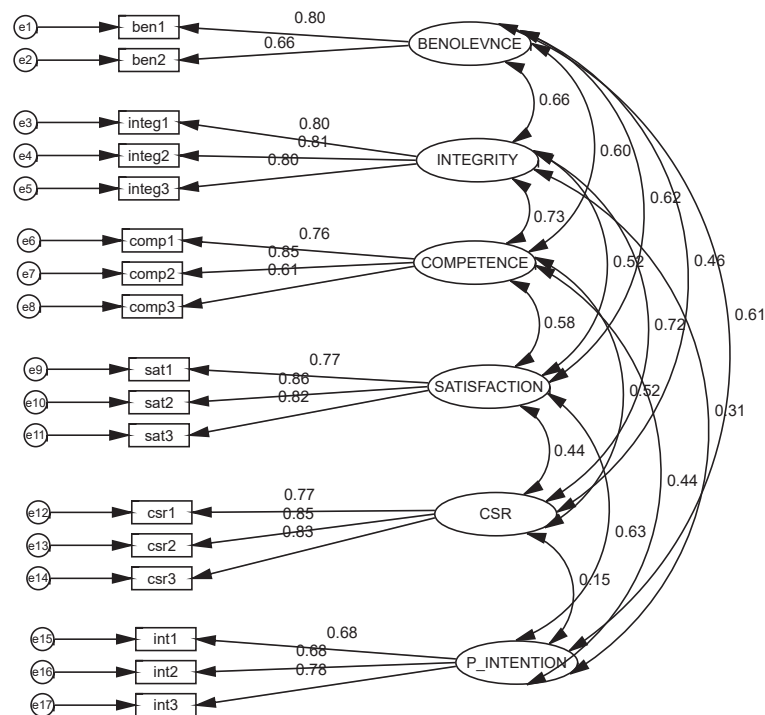


Figure 2.
Confirmatory factor
analysis

Source(s): Figure by authors

was 0.941, and the Root Mean Square Error of Approximation (RMSEA) was 0.06. These results suggest a good fit between the proposed model and the observed data.

We employed the Master Validity Tool for CFA in Amos, which automatically generated key indicators such as Composite Reliability (CR), Average Variance Extracted (AVE), the square root of AVE, and correlations between the variables. These indicators were crucial in assessing convergent validity and discriminant validity of our model, providing a more comprehensive evaluation beyond the significance test. Furthermore, to ensure the reliability of our measurement instruments, we conducted Cronbach's alpha analysis. This allowed us to determine the internal consistency of the instruments.

Table 2 and Table 3 show validity and reliability statistics. We measured the discriminant validity by comparing the squared correlation to AVE values. Cheung *et al.* (2023) suggest that "for construct X and construct Y, discriminant validity is established when AVEs associated with both constructs are greater than the shared variance (i.e. squared correlation; SV)" (p). In addition, we checked the confidence intervals of correlation values. It is suggested that intervals should not contain a value of 1. As can be seen from Table 2, AVE values are greater than the squared correlations of the constructs and a value of 1 is not observed in any of the correlation intervals, indicating discriminant validity.

Table 3 presents standardized estimates (factor loadings) along with the values of CR, AVE, and Cronbach's alpha. As can be observed, Cronbach's alpha demonstrated satisfactory internal consistency and reliability by surpassing the acceptable value of 0.700 (Nunally and Bernstein, 1978). Similarly, CR scores were higher than the suggested threshold limits of 0.7. The values for AVE also were all above the recommended level of 0.5. This supports the evidence for high-convergent validity. In other words, the issues of validity and reliability were fulfilled in our study (Hair *et al.*, 2010).

4.4 Hypothesis testing

To examine our propositions, we conducted SEM in SPSS-Amos using maximum likelihood estimation and bootstrapping procedure with 5000 bootstrap samples (Tables 4 and 5 and Figure 3). As can be observed from the direct effects, significant relationships exist between all the variables except for the path from integrity to purchase intention ($\beta = -0.786$, p -value = 0.770). Hypothesis 1 predicted that perceived CSR would positively affect purchase intention on mobile shopping applications. H1 was supported because the direct path from perceived CSR to purchase intention was significant ($\beta = 0.0478$, p -value = 0.021).

In terms of indirect effects, all mediating variables except for Integrity partially mediated the relationship between perceived CSR and Purchase Intention. Specifically, benevolence ($\beta = 0.316$, p -value = 0.00), competence ($\beta = 0.168$, p -value = 0.028) and satisfaction

Construct	PCSR	BEN	INTEG	COMP	SAT	P_Intention
PCSR	<u>0.670</u>	[0.327, 0.589]	[0.668, 0.768]	[0.520, 0.619]	[0.432, 0.525]	[0.049, 0.250]
Benevolence	<u>0.212***</u>	<u>0.537</u>	[0.590, 0.717]	[0.540, 0.654]	[0.573, 0.665]	[0.518, 0.683]
Integrity	<u>0.516***</u>	<u>0.436***</u>	<u>0.646</u>	[0.617, 0.748]	[0.588, 0.726]	[0.468, 0.572]
Competence	<u>0.271***</u>	<u>0.358***</u>	<u>0.540***</u>	<u>0.556</u>	[0.511, 0.642]	[0.403, 0.566]
Satisfaction	<u>0.191***</u>	<u>0.389***</u>	<u>0.270***</u>	<u>0.336***</u>	<u>0.671</u>	[0.558, 0.696]
P_Intention	<u>0.023*</u>	<u>0.368***</u>	<u>0.094***</u>	<u>0.190***</u>	<u>0.401</u>	<u>0.760</u>

Note(s): * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Above diagonal: values (in underline) represent AVE, values in brackets represent intervals for correlation

Below diagonal: squared correlation values

Source(s): Table by authors

Table 2.
Discriminant validity

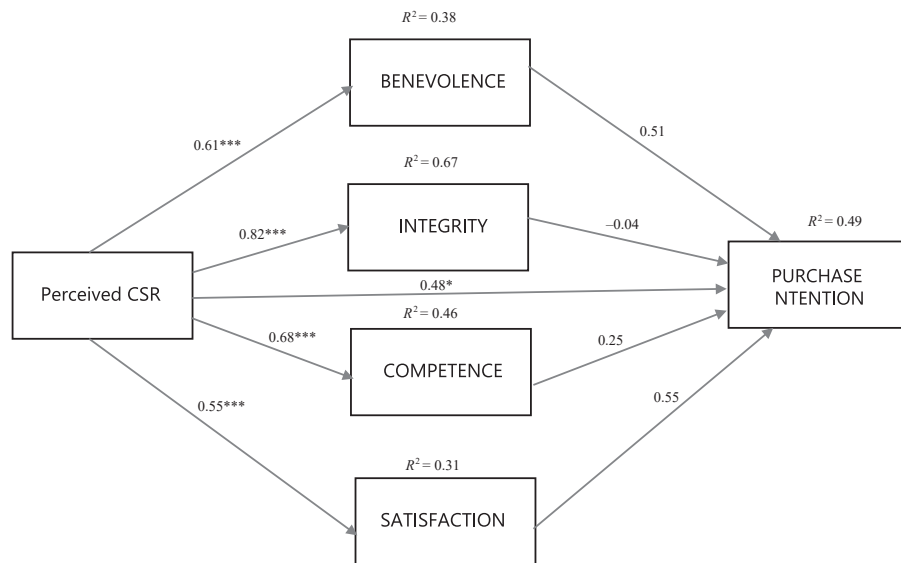
Construct	Items	SE	CR	AVE	Cronbach's alpha
PCSR	The mobile shopping app has established procedures to respond to all consumer social, environmental, ethical, etc. complaints	0.773	0.859	0.670	0.855
	The mobile shopping app respects consumer rights beyond the legal requirement	0.854			
	The mobile shopping app provides full and accurate information about its products to its customers	0.828			
TBLF	<i>Benevolence</i>		0.701	0.537	0.711
	If I required help, mobile shopping app would do his/her best to help me	0.800			
	The mobile shopping app is interested in my well-being	0.658			
	<i>Integrity</i>		0.845	0.646	0.845
	Promises made by the mobile shopping apps are likely to be reliable	0.802			
	I believe these mobile shopping app is honest to its customers	0.807			
	The mobile shopping app is sincere and genuine	0.801			
	<i>Competence</i>		0.787	0.556	0.768
	The mobile shopping apps know about its products	0.760			
	The mobile shopping apps know how to provide excellent service	0.848			
Satisfaction	I believe this mobile shopping app has sufficient expertise to do business on the Internet	0.610			
	Overall, I am satisfied with shopping on the mobile shopping apps	0.774	0.859	0.671	0.855
	I am satisfied with my decision to use mobile shopping apps	0.860			
Purchase intention	Using mobile shopping apps is a good experience	0.821			
	I will keep use of the mobile shopping apps in the future	0.684	0.760	0.514	0.760
	I will use the mobile shopping apps rather than online shopping malls for purchasing products	0.681			
	My intention to engage purchase on mobile shopping apps is very high	0.781			

Table 3. Measurement model
Note(s): PCSR: perceived corporal social responsibility; TBLF: trusting beliefs
Source(s): Table by authors

($\beta = 0.306$, p -value = 0.00) partially mediated the relationship between perceived CSR and Purchase Intention. In other words, Hypothesis 2, Hypothesis 4, and Hypothesis 5 were supported. As mentioned above, no mediation effect was found between the relationship perceived CSR and purchase intention through Integrity ($\beta = -0.003$, p -value = 0.851). Thus, Hypothesis 3 was rejected.

5. Discussion

Our study developed a model for the investigation of the processes that regulate the relation of perceived CSR and purchase intention in the scope of mobile shopping applications. In particular, we examined the direct link between perceived CSR and purchase intention. Additionally, we studied the mediating effects of each dimension of trusting beliefs along



Note(s): * $p < 0.05$, ** $p < 0.01$, *** $p < 0.00$

Source(s): Figure by authors

Figure 3.
Structural
equation model

Path	Estimate	SE	<i>t</i> -value	<i>p</i> -value
CSR→Benevolence	0.656	0.082	8.019	0.000
CSR→Integrity	0.786	0.076	10.393	0.000
CSR→Competence	0.706	0.079	8.927	0.000
CSR→Satisfaction	0.503	0.065	7.732	0.000
CSR→P_Intention	0.356	0.154	2.316	0.021
Benevolence→P_Intention	0.360	0.085	4.243	0.000
Integrity→P_Intention	-0.031	0.106	-0.293	0.770
Competence→P_Intention	0.177	0.073	2.430	0.015
Satisfaction→P_Intention	0.455	0.078	5.821	0.000

Source(s): Table by authors

Table 4.
Direct effects

Path	Estimate	SE	<i>t</i> -value	CI		<i>p</i> -value
				Lower	Upper	
CSR→Benevolence→P_Intention	0.079	0.023	3.216	0.035	0.132	0.000
CSR→Integrity→P_Intention	-0.053	0.042	1.276	-0.133	0.032	0.851
CSR→Competence→P_Intention	0.070	0.032	2.208	0.005	0.132	0.028
CSR→Satisfaction→P_Intention	0.138	0.030	4.631	0.093	0.215	0.000

Source(s): Table by authors

Table 5.
Indirect effects

with satisfaction in the association of perceived CSR with purchase intention. Our findings are as follows.

In terms of the direct link between perceived CSR and purchase intention, our findings demonstrated a positive effect of CSR on purchase intention in mobile shopping applications. This finding is in-line with previous results in the literature. The main reason may be due to the fact that CSR activities of the mobile shopping application can influence consumers' mindset in the direction of the mobile shopping business, which will result in increased buying intention.

Regarding indirect results, the findings on the mediating effect of trusting beliefs, we found that two of the trusting beliefs dimensions, namely, benevolence and competence partially mediated the relationship between perceived CSR and purchase intention. This finding is consistent with the existing literature on the mediating role of trust between CSR and its outcomes. Specifically, Fatma and Khan (2015) found the mediating role of overall trusting beliefs between CSR and its outcomes by measuring trusting beliefs with the benevolence and competence. One explanation for this result can be consumers' judgment whether mobile shopping application is concerned about their welfare can be more significant in influencing their intention to engage in transactional interactions. In terms of competence, since consumers are driven to gain monetary benefit, they prioritize the performance of the businesses compared to the elements of its moral character.

Mediation effect of integrity in the link between perceived CSR and purchase intention was not observed. Specifically, integrity was not significantly related to purchase intention. This is in-line with the findings of Xu *et al.* (2015). Truth-bias can be a possible explanation for this result (Xu *et al.*, 2015). It refers to the tendency to believe others without questioning. Given the truth bias presumption that messages sent between people should represent reality, it is conceivable that consumers would anticipate a business to adhere to a professional code of conduct. Hence, integrity of the business might not play a special role in influencing consumers' purchase decisions.

Finally, regarding satisfaction, our study established a partial mediation of satisfaction on impact of perceived CSR on purchase intention. This aligns with consistent findings in the literature (e. g. Hameed *et al.*, 2018; Bianchi *et al.*, 2019).

5.1 Theoretical implications

Our research has made several academic contributions to business literature. We extended the theory of social exchange through perceived CSR and purchase intention to the context of mobile shopping applications. To our knowledge, this association has been tested in different study settings such as online and offline shopping, but not in the context of mobile shopping applications. Additionally, integrating the mediating role of three components of trusting beliefs and satisfaction in the causal chain that associates perceived CSR with purchase intention in mobile shopping applications contributes to increasing the understanding of the link between perceived CSR and purchase intention. Moreover, our study confirms the essential role of the individual effect of the trusting beliefs dimensions and satisfaction in this relationship. And we demonstrate incorporating trusting beliefs and satisfaction in the study of CSR and purchase intention.

Another notable contribution is that unlike most preceding research that focused on the overall impact of trusting beliefs, our research examined the role of each dimension of trusting beliefs in the relationship between perceived CSR and purchase intention. The fact that trust facilitates exchange and also aids trustees and trustors to transmit their exchange into future is well-established. Notwithstanding, the degree to which trusting views in a seller's goodness, competence, and integrity can be influenced by perceived CSR as well as which individual trusting beliefs can influence a consumer's purchasing decisions have not been studied in the existing literature. Our study bridges this gap by shedding light on different effects of trusting beliefs. Taken together, our research contributes to a broader

understanding of the theoretical process of how CSR influences purchase intention on mobile shopping applications.

5.2 Practical implications

Our study found that perceived CSR significantly influenced consumers' purchase intention on mobile shopping applications both directly and through trusting beliefs and satisfaction. Our results indicate that CSR activities of a mobile shopping application business are crucial in gaining consumer trust and satisfaction, which in turn result in intention to purchase. Based on our findings, we strongly suggest that mobile shopping application vendors reinforce their customers' perception of the CSR by putting more effort into socially responsible activities. Since information transparency determines consumers' behavior (Zhou *et al.*, 2018) in mobile commerce, mobile shopping applications should establish clear transparency policies for their retailers.

Furthermore, mobile commerce businesses should be aware that consumers place different importance on the different aspects of trust. Based on our results, benevolence and competence of a mobile commerce business play more important roles in affecting purchase intentions compared to integrity. Therefore, we suggest that the mobile shopping applications should communicate their benevolence to consumers by providing a high-quality customer support. For example, the mobile shopping application may develop on-page customer support where customers will be able to find immediate answers to their questions without having to leave the mobile shopping application to contact the business with phone calls or emails. Chat support is another option that can facilitate talk in real-time with the customer support agent by utilizing texts or voice calls. In addition, we also suggest mobile commerce businesses try to earn consumer trust in their competence through, for example, presenting a thorough description of the attributes of their products.

5.3 Limitations and future research

Our study bears some limitations that need to be addressed in future works. First, we examined CSR in the mobile shopping application context from a general perspective. Thus, a more detailed picture will be derived if CSR is implemented as a multidimensional construct and the effects of different subcontracts of CSR on purchase intention with mobile shopping applications is explored.

Moreover, given that our study surveyed a student sample, the age range of respondents may be restricted. Future research can validate our model with different age groups. Finally, we collected our data in South Korea, and thus the findings may differ in other nations. Future research may examine these results across different countries.

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Institutional pressures for sustainability: a triple bottom line approach

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Abstract

Purpose – This paper empirically addresses the effect of coercive, normative and mimetic pressures on sustainability results, focussing on the three dimensions of the triple bottom line approach: environmental, economic and social. The mediating role of compliance, analyser or proactive corporate strategies towards sustainability is also considered.

Design/methodology/approach – The hypotheses developed in this study were tested using data from a sample of private companies from two industries: manufacture of chemicals and chemical products, and manufacture of basic metals.

Findings – The results confirm the role played by institutional pressures for sustainability in explaining the involvement of organisations in economic, social and environmental aspects. The mediating effect of corporate strategy is also confirmed, although only for environmental aspects.

Originality/value – Research into sustainability development is evolving rapidly; however, few studies have explored its diffusion amongst organisations from a triple bottom line perspective by considering the role of different current external pressures, the corporate strategy and the diverse results.

Keywords Institutional pressures, Triple bottom line, Corporate strategy, Sustainability

Paper type Research paper

Introduction

Despite the growing concern about sustainability, the lack of consensus continues to present a unique challenge in the literature (Alhaddi, 2015). The term sustainable development has been defined as the “*development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs*” (Brundtland, 1987, p. 43). Since that definition appeared, several studies have analysed sustainability by focussing on respect for society and the environment (Dyllick and Hockerts, 2002). Elkington (1998) coined the term triple bottom line (TBL) to refer to a sustainability-related construct that aims to extend the environmental agenda to cover economic and social aspects, including profit, people and the planet, for a more consistent and coherent measurement of the performance and success of an organisation (Goel, 2010).



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In today's rapidly changing environment, organisations face massive pressures to pursue high standards of environmental responsibility, such as reducing their carbon footprint, mitigating their impact on land degradation (Wijethilake *et al.*, 2017), preventing abusive labour practices, and complying with human rights standards (Bansal, 2005), using the lens of institutional theory to analyse their reasons for adopting these practices. Corporate performance and competitiveness are increasingly dependent on economic, environmental, and social expectations (Forés and Fernández-Yáñez, 2023). Nevertheless, most of these studies have focused on a certain type of pressure (coercive, mimetic or normative) or a specific aspect of sustainability, without addressing each of the three TBL dimensions – environmental, social and economic – as equally important (Haleem *et al.*, 2022).

The institutional theory considers organisations embedded in institutional environments that influence the practices and policies adopted by those institutions (DiMaggio and Powell, 1983). Organisations face mimetic, normative and coercive forces which act as three forms of institutional isomorphism. Organisations may adopt practices in response to these pressures to conform to institutional pressures (IP) in order to achieve legitimacy, as they will have to adjust to what their environment considers desirable, proper or appropriate (Suchman, 1995). Consequently, the diffusion of sustainability should be analysed as an isomorphic process, since the existence of coercive, mimetic and normative pressures could explain an organisation's predisposition towards sustainability. Therefore, the first aim of this paper was to analyse the relationship between IP and organisational involvement in environmental, social and economic aspects.

Although institutional theory provides a useful lens to clarify how sustainable practices spread amongst organisations, it does not fully explain the variations in the responses to IP for sustainability (Clemens and Douglas, 2005). IP for sustainability may oblige organisations to initiate strategic processes while seeking congruence with the expectations of their surroundings (De Prins *et al.*, 2014). The commitment to sustainability demands a strategic approach to ensure that corporate sustainability is an integrated part of the business strategy and processes (Engert *et al.*, 2016). Specifically, previous research has highlighted the existence of different sustainable corporate strategies that may explain organisations' involvement in social, economic and environmental issues (López-Cabrales and Valle-Cabrera, 2020), responding to the increasing concern about integrating these areas (McKinsey, 2013). Different sustainability strategies and pursuing the TBL may lead to diverse results. However, little is known about sustainable corporate strategies, since studies are scarce and mainly focus on the environmental dimension (Adams *et al.*, 2016).

Firms can adopt different strategies in response to IP, from passive conformity to active manipulation (Oliver, 1991; Zheng and Iatridis, 2022). Thus, the second goal of this study was to shed light on the mediating role that corporate strategies can play in the relationship between IP and organisational involvement in sustainability from a TBL approach. Diverse strategies may imply differences in the way sustainability is present in an organisation's behaviour and culture (Linnenluecke and Griffiths, 2010), and they could also have an impact on the results derived from employers' involvement in sustainability.

Therefore, we contribute to the sustainability literature by exploring how IP on firms affect TBL through the design of a sustainable business strategy. Since IP influence the adoption of a given corporate sustainability strategy, it is important to know the outcomes of such a strategy on TBL. To our knowledge, this is the first study to examine the association between IP, corporate sustainability strategies and business performance in all three dimensions of sustainability (economic, social and environmental).

The study is structured as follows: the next section discusses the theoretical framework for sustainability from a TBL perspective, IP and the role of sustainable corporate strategies. We then describe the empirical analysis and the results. Finally, we present the conclusions, contributions and limitations of this research.

The theoretical framework of sustainability

Elkington (1998) set out to enlarge the concept of sustainability by including three dimensions on which sustainable development should be based: environmental integrity, social equity and economic prosperity, which he referred to as the TBL. Consistency and coherence are inherent to the construct, as the TBL is explicitly based on the integration of the three dimensions, each of which is given equal emphasis (Santoyo-Castelazo and Azapagic, 2014). Environmental integrity refers to promoting practices that do not compromise environmental resources for future generations, which requires protecting ecosystems' limited regeneration capacity. For instance, business organisations may contribute by reducing their emissions, minimising environmental degradation, or producing ecologically oriented goods and services (Kozica and Kaiser, 2012). Social equity refers to people, guaranteeing beneficial and fair practices in the labour market and society at large. By building transparent relationships, and promoting fair wages or health care coverage, an organisation may focus on its interaction with the community while creating value. Companies should contribute by ensuring that all members of society have equal access to resources and opportunities (Bansal, 2005). Finally, the economic dimension refers to the impact on the economic system, by tying organisational growth to general economic prosperity and promoting support for future generations. Companies should ensure their future viability by maintaining their competitiveness in dynamic environments (Dyllick and Hockerts, 2002).

Nevertheless, there is a situation of confusion about the theoretical concept of sustainability and how organisations should put it into practice, which has also been transmitted to empirical research on corporate sustainability. The vast majority of studies reviewed in the literature with empirical evidence use a reduced version of sustainability (environmental sustainability) and there are hardly any works analysing TBL (Cardoso de Oliveira Neto *et al.*, 2018). In this sense, many sustainability studies have discussed environmental (Soni *et al.*, 2020) or social issues (Mariappanadar and Kramar, 2014), although only a few of them have combined two or three dimensions (Haleem *et al.*, 2022).

Institutional pressures and sustainability

The diffusion of different organisational practices amongst organisations has been widely explained through the lens of institutional theory (Pedersen and Gwozdz, 2014). Organisations in a similar environment face similar pressures and become isomorphic as they adopt similar practices in their attempt to gain legitimacy (Kostova and Roth, 2002; Paauwe and Boselie, 2007). Companies tend to become more alike through this response mechanism, since they adopt similar measures in response to the external forces they face to increase their legitimacy (Chua and Rahman, 2011).

Therefore, the diffusion of practices related to sustainability is considered an isomorphic process, as the existence of coercive, mimetic and normative pressures could explain an organisation's predisposition towards sustainability. Although some previous studies have already used this theoretical approach (see Table 1), most of them have only analysed the environmental dimension and usually have taken into account only some of the external forces that companies may face (Haleem *et al.*, 2022).

According to DiMaggio and Powell (1983), institutional isomorphism is based on three mechanisms: coercive, mimetic and normative forces, which influence decision-making in organisations (Teo *et al.*, 2003). Through their responses to these institutional forces, organisations adopt structures, programmes, policies and procedures for reasons of legitimacy, and not necessarily efficiency (Meyer and Rowan, 1991).

Institutional pressures

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Article	Pressures	Sustainability performance	Sample/Case	Method	Key findings
Tate <i>et al.</i> (2010)	Stakeholder pressure	Economic, social and environmental performance	100 socially and environmentally responsible global companies	Secondary data: content analysis	IP are the major driving force behind strategy development for all of the industries studied. Companies emphasise different facets of social, environmental and economic responsibility in supply chains
Shnayder <i>et al.</i> (2016)	Regulative, normative, and cultural-cognitive pillars	People, planet and Profits	Sixteen sustainability reports, each from a different multinational packaged food company	Secondary data and interviews	External pressures can explain motivations that are framed as intrinsic or value-based. In addition to legislation and normative obligations, social pressure is an effective driver for CSR
Chen and Kitsis (2017)	Stakeholder pressures	Sustainable supply chain performance: economic, social and environmental sustainability performance	200 articles published in major supply chain management and sustainability journals	Secondary data	Sustainable supply chain management implementation entails linking stakeholder pressures, moral motives, and management commitment with relational practices
Ni and Sun (2018)	Stakeholder pressure on sustainability	Economic, social and environmental performance	898 cases from International Manufacturing Strategy Survey (IMSS)	Survey	The synergistic effect between supplier assessment and collaboration to achieve better performance is verified when environmental dynamism and stakeholder pressure are high
Thong and Wong (2018)	Environmental and social institutional pressures	Economic, social and environmental performance	193 manufacturing firms in Malaysia	Survey	External and internal factors positively impact sustainable supply chain management practices, which is fundamentally in disagreement with the findings of previous similar studies

Table 1.
Empirical research on pressures and TBL

(continued)

Article	Pressures	Sustainability performance	Sample/Case	Method	Key findings
Fung <i>et al.</i> (2020)	Cognitive, regulative and normative dimensions	Triple bottom line: sustainable development goals to analyse the successfulness of sustainable planning strategies	Public data on the fashion giant brand Nike	Case study: secondary data	Strategic planning of fashion companies on sustainability can improve the performance of the stakeholders throughout the whole sustainable fashion supply chain
Kitsis and Chen (2020)	Instrumental motives, relational motives and Moral motives	Economic, social and environmental performance	A sample of 205 supply chain companies in the USA	Survey	It highlights the critical role of robust instrumental, relational and moral motives in driving sustainable supply chain management practices and achieving improvement in all three dimensions of economic, environmental and social sustainability performance
Raj <i>et al.</i> (2020)	Mimetic, normative and coercive pressures	Economic, social and environmental sustainability performance; level of sustainability adoption in public procurement	546 public procurement practitioners from 102 countries	Secondary data	IP and citizens' attitudes towards sustainability significantly impact the level of sustainability adoption in public procurement, which, in turn, improves sustainability performance
Famiyeh <i>et al.</i> (2021)	Mimetic, normative and coercive pressures	Economic, social and environmental sustainability from global reporting initiative's sustainability reporting guidelines (2000–2006)	164 respondents from the mining sector in Ghana	Survey	Coercive and normative pressures emerge as potent drivers of the triple bottom line of sustainability. However, mimetic institutional pressures can influence environmental and social sustainability but not economic sustainability
Fritz <i>et al.</i> (2021)	Mimetic, normative and coercive pressures	Economic, social, environmental and managerial sustainability in supply chains	A comparative study of twelve cases of six family and six non-family businesses	Case studies: secondary data and interviews	Family businesses tend to accentuate social concerns while non-family businesses pay much less attention, focussing on the environmental dimension. Such differences are due to institutional pressures

Table 1.

(continued)

Article	Pressures	Sustainability performance	Sample/Case	Method	Key findings
Habib <i>et al.</i> (2022)	Mimetic, normative and coercive pressures	Cleaner production and sustainable firm performance	246 textile and garments manufacturing units in the clothing industry of Bangladesh	Survey	The study findings show a direct and positive relationship between institutional pressure and cleaner production, environmental performance and cleaner production, and firms' environmental and economic performance
Shamil <i>et al.</i> (2022)	Institutional pressure and external stakeholder pressure	Corporate sustainability strategy	127 companies in Sri Lanka	Survey	The adoption of corporate sustainability strategy is positively influenced by external stakeholder pressures, whereas institutional pressures have no significant impact
Ijaz Baig and Yadegaridehkordi (2023)	Stakeholder pressure	Organisational sustainable performance: financial, environmental and social aspects	269 Malaysian manufacturing organisations	Survey	The results showed significant effects of stakeholder pressure, organisation capabilities, green marketing, and green entrepreneurial orientation on organisational sustainable performance
Pereira <i>et al.</i> (2023)	Mimetic, normative and coercive pressures	Sustainability certification adoption	Managers of 20 export-oriented firms were interviewed	Case studies: secondary data and interviews	Normative and mimetic pressures are central to sustainability implementation by coffee suppliers. Additionally, as a result of suppliers' sustainability improvement in their operations, new competencies emerged beyond the triple bottom line dimensions

Source(s): Table by authors

Table 1.

Coercive mechanisms are based on “political influence and the problems of legitimacy” (DiMaggio and Powell, 1983, p. 150). They result from pressures exerted by other organisations such as government regulatory bodies or the legal system (Kreuzer, 2017). Previous research offers various examples of the effect regulations have on the control of environmental pollution (Aragon-Correa *et al.*, 2018), and penalties for violating environmental and labour laws (Bansal, 2005). In this sense, the search for compliance with the legislation, the avoidance of legal consequences or the requirements of employees and unions may affect the different degrees of implementation of organisational health and safety practices (López-Fernández and Pasamar, 2019). Failure to respond to these coercive

pressures may have negative consequences for earnings or reputation, or may even prevent companies from operating if licences are revoked (Oliver, 1991; Wijethilake *et al.*, 2017). In this paper, we define organisational responsiveness in sustainability from a TBL perspective as a combination of economic, social and environmental practices. Therefore, we can propose the following.

- H1. Coercive pressures are positively related to sustainability from a TBL perspective (economic, social and environmental).

Even without legal coercion, organisations may face other forces such as mimetic pressures (Combs *et al.*, 2009). Mimetic pressures refer to those situations of uncertainty in which an organisation imitates the practices of companies that are perceived as more legitimate and successful than others, such as corporate environmental reporting (Aerts *et al.*, 2006). Thus, mimetic pressures act in two ways: the likelihood of imitation is increased through the prevalence of a certain practice in the organisation's industry, and through the perceived success of organisations that have adopted the practice in this sector (Teo *et al.*, 2003). For instance, organisations that fail to respond to mimetic pressures to provide work-life programmes for their employees may suffer a competitive disadvantage in recruiting and retaining skilled personnel (Wang and Verma, 2012). However, organisations may pursue legitimacy through imitation, even if this legitimacy-based imitation could negatively affect their profitability in the short term (Barreto and Baden-Fuller, 2006). Mimetic forces may include pressures to adopt practices implemented by other companies, such as environmentally friendly policies, corporate social responsibility practices or other economic practices designed to guarantee the growth of the general economy.

- H2. Mimetic pressures are positively related to sustainability from a TBL perspective (economic, social and environmental).

Finally, normative systems are relevant to explain institutional diffusion processes (Peters and Heusinkveld, 2010). A conducive normative environment leads to the adoption of practices consistent with the norms, values and beliefs of members of the organisation (Kostova and Roth, 2002). Therefore, organisations that are more sensitive to normative pressure will be more inclined to adopt socially desirable policies, and this responsiveness confers legitimacy (Baek *et al.*, 2012). Organisations are observant of the norms, standards and institutionalised responses to problems in their environments and professional circles. Indeed, different studies have shown how normative pressures are more important than coercive power or mimetic efforts to explain corporate social responsibility behaviours (Roszkowska-Menkes and Aluchna, 2017) or sustainability reporting (Martínez-Ferrero and García-Sánchez, 2017).

More socially sustainable organisations may be rewarded with enhanced reputation and new customers, which may create a virtuous cycle that steadily increases their level of social sustainability implementation (Huq and Stevenson, 2020). Previous research on normative pressures for sustainability has focused on the environmental and social aspects, analysing compliance with industry trade associations and professional bodies related to environmentally friendly practices (Aragon-Correa *et al.*, 2018), the adoption and use of work-life benefits (Pasamar and Alegre, 2015), or firms' participation in the United Nations Global Compact and Global Report Initiative (Perez-Batres *et al.*, 2010), amongst others. We can therefore suggest the following.

- H3. Normative pressures are positively related to sustainability from a TBL perspective (economic, social and environmental)

Sustainable corporate strategies

While institutional theory has been widely used to explain the diffusion of practices amongst organisations, it has been also criticised for its inability to expound the strategic approach. Business strategies play a fundamental role in achieving business objectives (Magerakis and Habib, 2021). In this sense, previous literature has pointed out that many companies assume responsibility and start corporate sustainability initiatives focussing only on an operational level, instead of integrating corporate sustainability at all business levels (Engert *et al.*, 2016), and the reasons for this lack of a clear strategy may be related to different factors, such as uncertainty (Hahn, 2013). Nevertheless, although strategy may be vital to explain organisational involvement in sustainability, the few studies in the literature focus mainly on the environmental dimension (Adams *et al.*, 2016), but fail to integrate the environmental, social and economic dimensions.

To date, the relationship between business strategy and sustainability has been addressed in two main ways: on the one hand, business sustainability strategies have been specifically defined and the results of this strategy on sustainability variables (mainly environmental sustainability) have been analysed (Kraus *et al.*, 2020); and, on the other hand, Miles and Snow's classification of generic strategies has been used to detect which type of strategy is most linked to sustainability results (again, almost exclusively sustainability results understood as environmental sustainability). Forés (2019) confirms that, whereas defender strategies reduce the impact of green technology on environmental performance, analyser and prospector strategies enhance its influence. Other studies considered prospector-type firms make efforts and take more environmentally protective actions (Magerakis and Habib, 2021).

In any case, these studies link generic business strategies that are not designed to consider the three dimensions of sustainability together. Therefore, in our view, the use of the generic strategies of Miles and Snow's Theoretical Framework does not adequately capture the behaviours of companies that, in the face of IP, are obliged to design and develop strategies that jointly promote the economic, social and environmental dimensions of sustainability.

To try to overcome strategies that are too generic or too specific, while dismissing the efforts of the organisations to maintain a coherent strategy with TBL, López-Cabrales and Valle-Cabrera (2020) recently proposed a theoretical classification of sustainable strategies: from reactive or unsustainable to proactive strategies. Companies in the first group are characterised by their unsustainable behaviour; they have no planned sustainable activities, may reject sustainability initiatives (Dunphy *et al.*, 2007) or simply act in accordance with their limited capacities to maintain their position, without considering any standards or regulations in terms of sustainability. The second group of organisations follow a compliance sustainability strategy, which implies a step forward in that they aim to meet the legal requirements established concerning the three dimensions of sustainability: environmental, social, and economic. Although these companies accept the need to comply with environmental, social and economic legislation and regulations, their main goal is to maximise returns for their shareholders (Aragon-Correa, 1998), at the expense of pursuing positive impacts for the community or generating wealth for other stakeholders. Organisations following this strategy will have low involvement in sustainability from a TBL perspective, as their compliance with minimum legal environmental requirements is simply a short-term strategy to avoid paying fines (Aragon-Correa and Sharma, 2003). The third sustainable strategy group includes companies that develop an "analyser" behaviour to respond to competitors through imitation (Miles and Snow, 1984). This strategy falls between compliance and proactive strategies in terms of impact on the TBL. These companies may have not assimilated the concept of sustainability, but they do understand that they need to act. They recognise the need to respond to pressure from external forces, competitors, customers or the community (DeSarbo *et al.*, 2005). Finally, the fourth type of sustainable

strategy is proactive. Organisations in this category do not simply comply but anticipate sustainability-related actions as an integral part of their culture and their competitive strategy. This way of operating has the highest positive impact on the TBL, as the companies that implement it are committed to outperforming in environmental, social and economic dimensions, and to securing long-term benefits as part of their competitiveness (Aragon-Correa and Sharma, 2003).

We can therefore expect that the sustainable corporate strategy adopted by companies will affect the organisational involvement in sustainability from a TBL perspective. The different types of strategies may imply diverse responses, from the lack of sustainable results in the reactive/unsustainable strategies to higher social, environmental and economic development in the proactive strategies.

Nevertheless, the relationship between strategies and IP should not be dismissed. Coercive, mimetic and normative pressures may impact sustainable corporate strategies by obliging companies to comply with laws, regulations, and social and ethical obligations (Epstein and Roy, 2003). Moreover, although institutional theory initially proposed that organisational success is based on conforming to IP, several studies have shown that it is not blind conformity which leads to success, but an active process of resistance, ranging from passive conformity to proactive manipulation (Oliver, 1991; Wijethilake *et al.*, 2017). The strategic responses to these pressures may lead companies to adopt sustainable practices (Beddewela and Fairbrass, 2016).

Consequently, we propose the following.

- H4.* The relationship between IP – coercive, mimetic and normative – and sustainability from the TBL perspective (economic, social and environmental) will be mediated by a sustainable corporate strategy.

Methodology

Setting and data collection section

A survey was conducted to empirically explore the relationship between IP, sustainable corporate strategies, and sustainability from a TBL perspective. Data were collected via a survey of companies with more than 50 employees in Spanish. Specifically, we used the SABI (Iberian Balance Sheet Analysis System) database, which is the most comprehensive database of Spanish companies. It was employed to identify all the companies meeting the firm size criteria. For the sampled firms, we focused on industries with heavy influences by IP (Yang *et al.*, 2019). In our case, we chose the sectors of chemicals/chemical products and basic metals manufacture, as they are subjected to strong environmental, social and economic pressures. This population allows us to analyse the existence of differences in IP. Additionally, the country of our population is a country in which high efforts for sustainability have been made (Bebbington *et al.*, 2012), and we consider that it is a good context (and heterogeneous enough) to analyse the differences in IP from the TBL perspective.

Telephone contact was established with all firms in the sample to clarify the purpose of the study, request their collaboration, and discuss the mailing of the questionnaire. Each firm was sent two questionnaires concerning its IP, corporate strategy and economic, social and environmental aspects of sustainability. Specifically, we asked the CEO and marketing managers from the top management team, since they were regarded as reliable sources to perceive IP. Our valid population comprised 678 firms, and the final sample consisted of 206 firms that returned the questionnaires completed by the CEO and marketing manager (412 responses), yielding a response rate of 30.38%.

To check for non-response bias, we compared the respondents with the non-respondents, via mean difference, based on their general features (industry membership, number of

employees and revenue). The *t*-test for equality of means for independent samples showed that the difference between the mean scores was not statistically significant. Therefore, a non-response bias related to industry, number of employees or revenue was not present in the data.

To test our hypotheses, we used the bootstrapping method (Hayes, 2017). Specifically, mediation analyses were performed using PROCESS macro (Model #4 from Hayes, 2017) on 5,000 bootstrapped samples with a 95% confidence interval, which is a more convenient method (Keenan *et al.*, 2006).

Measures

In general terms, we used existing multi-item scales and verified them through various analyses as described in the following section. All the variables were measured using a five-point Likert scale.

To test the reliability and validity of the measures, we conducted a first-step exploratory analysis to identify possible factors that might support the expected dimensionality of the scales, using the varimax rotation method (Luque-Martínez, 2000) with SPSS v.22. All measures showed the expected dimensionality. We then performed a confirmatory factor analysis (CFA) separately for each construct using structural equation modelling (SEM) software EQS 6.1. The confirmatory factor analysis fulfilled all the requirements noted by Hair *et al.* (1999). The factor loadings were statistically significant and had values of, or close to, 0.7. On this point, some authors argue that loadings of 0.5 or 0.6 are acceptable (Barclay *et al.*, 1995). Appendix 1 presents the items used, factor loadings, R^2 , and CFA indexes. The average variance extracted (AVE) exceeded 0.5 in all of the constructs, providing evidence of convergent validity (Fornell and Larcker, 1981). To test discriminant validity, we used Fornell and Larcker's (1981) criterion; namely, the average variance extracted (AVE) should be greater than the square of the correlations between the pair of factors. Discriminant validity was confirmed, as can be seen in Appendix 2. These values, together with a satisfactory Cronbach's alpha score, provide evidence of the scale's reliability (Hair *et al.*, 1999). Specifically, Cronbach's alphas ranged from 0.63 to 0.80, all above the suggested cut-off value (Bagozzi and Yi, 1988). While the alpha value of "economic and social sustainability" was relatively low (0.63 and 0.64), we considered, in line with previous studies (Xiao and Björkman, 2006), that this is largely due to a contextual difficulty of data collection at the company level. Despite this consideration, the alpha was still greater than the suggested concessive criterion of 0.60 (Nunnally, 1978). A detailed description of each measure is provided below.

IP were measured by an adaptation of the scale proposed by Kostova and Roth (2002) for the institutional profile, which provides a consistent analysis of the three types of IP, as in previous studies (Lavandoski *et al.*, 2016). Specifically, we used four items for coercive pressures, four items for mimetic pressures, and five items for normative pressures. For confirmatory purposes, one item from coercive pressures, two items from mimetic pressures, and one item from normative pressures were dropped (confirmatory analyses are displayed in Appendixes 1 and 2).

Corporate strategy was measured using the paragraph method. Despite its limitations, this method has been widely accepted in research on strategy, since managers' perceptions have been proved to be very close to the strategic reality of the firm (Aragón-Sánchez and Sánchez-Marín, 2005; St-Pierre and Audet, 2011). The descriptions used for strategic types were adapted from López-Cabrales and Valle-Cabrera (2020), corresponding to each strategic archetype: compliance, analyser, and proactive. The companies were presented with strategic archetypes in which the situations were carefully formulated to be neutral, in order to avoid desirable response bias.

Sustainability was measured by Gallardo-Vázquez and Sánchez-Hernández's (2014) scale. These authors aimed to define a measurement scale of corporate social responsibility as a variable that incorporates the three dimensions of Elkington's theoretical TBL framework (Elkington, 1998). We used the original validated scale, with three items for the economic dimension, four items for the social dimension and four items for the environmental dimension. For confirmatory purposes, two items were dropped: one item from the economic dimension and one item from the social dimension (the scales are reproduced in Appendixes 1 and 2).

Control Variables. *Firm size* was measured by the number of employees. The average was 120 employees and the standard deviation was 112.8. The firm size ranged from 30 to 1,000 employees. *Tenure* was measured by the number of years working in the organisation. It ranged from 1 to 41 years and the average was 11.63 years.

Inter-group agreement (data aggregation). We asked the CEO and the marketing manager to respond to the questions related to IP, corporate strategy and economic, social and environmental aspects of sustainability. Thus, for each firm, we obtained two responses related to IP, corporate strategy and TBL dimensions. Under the assumption that the scores reflect a shared reality within each firm, we predicted that the scores obtained from the two firm managers would be similar. These arguments can be measured using the inter-group agreement coefficient (r_{wg}) (Bliese and Halverson, 1998). These expectations were confirmed by measuring the inter-rater agreement coefficient (r_{wg}), which has been used to aggregate data (James *et al.*, 1984). The average r_{wg} values were 0.90, 0.89 and 0.90 for coercive, mimetic and normative pressures, respectively; 0.92 for corporate strategy; and 0.92, 0.91 and 0.92 for economic, social and environmental aspects of sustainability, respectively. These results confirm the response consistency within each firm.

Analyses and results

Table 2 displays the main statistics and correlations amongst the study variables, showing that all theoretical relations are significant at the correlational level. IP positively correlate to corporate strategy and sustainability.

Figure 1 represents our statistical model. To test our hypotheses, the bootstrapping method was used (Hayes, 2017). Specifically, mediation analyses were performed using PROCESS macro (Model #4 from Hayes, 2017) on 5,000 bootstrapped samples with a 95% confidence interval. In doing so, we performed three different models for each of the IP, considering the effects on the three dimensions of sustainability (as dependent variables), taking into account the role played by corporate strategy.

In the first step, we present the results for the direct relationships between IP and TBL dimensions (H1, H2 and H3). The results in Table 3 show that coercive pressures were directly and statistically related to sustainability. The hypothesis was confirmed for economic ($\beta = 0.459^{**}$), social ($\beta = 0.241^{**}$) and environmental dimensions of TBL ($\beta = 0.447^{**}$), giving full support to H1.

Concerning Hypothesis 2, which posits the relationship between mimetic pressures and sustainability, Table 4 shows that the direct effect of the perception of mimetic pressures is positive and statistically significant for all the sustainability dimensions, giving support to the hypothesis. Specifically, we found a significant relationship between mimetic pressures and economic ($\beta = 0.326^{**}$), social ($\beta = 0.169^{**}$) and environmental dimensions ($\beta = 0.321^{**}$) of sustainability.

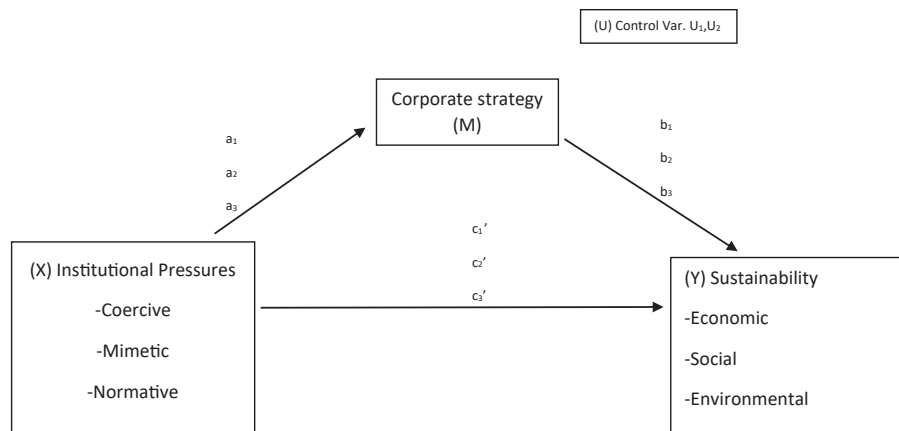
The results of our analyses also fully supported Hypothesis 3. Table 5 shows that normative pressures had a positive and direct effect on sustainability, achieving statistical significance for the economic ($\beta = 0.114^{**}$), social ($\beta = 0.066$) and environmental ($\beta = 0.101^{**}$) aspects of TBL, thereby confirming Hypothesis 3.

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Tenure	11.63	5.86	1								
2. Firm Size	120.1	112.8	-0.091	1							
3. Coercive pressures	4.16	0.463	0.045	-0.174*							
4. Mimetic pressures	4.04	0.624	0.090	-0.200**	(0.70)						
5. Normative pressures	16.50	1.76	0.073	-0.197**	0.753**	(0.76)					
6. Corporate strategy	2.60	0.609	0.071	0.184**	0.373**	0.390**	(0.80)				
7. Economic sustainability	4.23	0.401	0.139*	-0.165*	0.582**	0.564**	0.431**	1			
8. Social sustainability	4.33	0.309	0.031	-0.124	0.429**	0.413**	0.440**	0.278**	(0.63)		
9. Environment sustainability	4.24	0.382	-0.238**	0.238**	0.634**	0.623**	0.575**	0.258**	0.344**	(0.64)	
								0.338**	0.783**	0.353**	(0.80)

Note(s): ^an = 206; **p < 0.01, *p < 0.05; when appropriate, Cronbach's alpha coefficients are reported in parentheses on the diagonal

Source(s): Table by authors

Table 2.
Descriptive statistics
and correlations^a

Figure 1.
Statistical model**Source(s):** Figure by authors

Variables	Paths	Model 1		Model 2		Model 3	
		Economic sustainab β (se)	p-value	Social sustainability β (se)	p-value	Environmental sustainab β (se)	p-value
Coercive pressures (X)	a ₁ , a ₂ , a ₃	0.546 (0.083)	0.000	0.546 (0.083)	0.000	0.546 (0.083)	0.000
Corporate strategy (M)	b ₁ , b ₂ , b ₃	0.057 (0.041)	0.172	0.070 (0.035)	0.050	0.101 (0.037)	0.006
Coercive pressures (direct effect)	c ₁ ', c ₁ '	0.459 (0.054)	0.000	0.241 (0.047)	0.000	0.447 (0.048)	0.000
Coercive pressures (total effect)	c ₁ , c ₂ , c ₃	0.491 (0.049)	0.000	0.280 (0.043)	0.000	0.502 (0.044)	0.000
Size	U ₁	0.006 (0.003)	0.077	−0.000 (0.000)	0.195	−0.000 (0.000)	0.003
Tenure	U ₂	−0.000 (0.000)	0.184	−0.000 (0.003)	0.961	0.005 (0.003)	0.145
R ²		0.347		0.186		0.436	
F		28.30		12.74**		40.70**	
Note(s): **p < 0.01; *p < 0.05							
Bootstrap for indirect effects							
		Data	Boot	Bias	SE	Bias corrected CI	
						Lower	Upper
Corporate strategy (Model 1)		0.031	0.032	0.001	0.025	−0.017	0.083
Corporate strategy (Model 2)		0.038	0.040	0.002	0.027	−0.006	0.101
Corporate strategy (Model 3)		0.055	0.057	0.002	0.023	0.013	0.104

Table 3.
Results for the test of mediation between coercive pressures and TBL sustainability**Source(s):** Table by authors

Finally, concerning Hypothesis 4, which establishes the mediator role of corporate strategy between IP and sustainability, we show paths and coefficients in Tables 3–5 for coercive, mimetic and normative pressures, respectively. Specifically, Table 3 shows that a mediator

								Institutional pressures
Variables	Paths	Model 4		Model 5		Model 6		
		Economic sustainab β (se)	p-value	Social sustainability β (se)	p-value	Environmental sustainab β (se)	p-value	
Mimetic pressures (X)	a ₁ , a ₂ , a ₃	0.429 (0.061)	0.000	0.429 (0.061)	0.000	0.429 (0.061)	0.000	
Corporate strategy (M)	b ₁ , b ₂ , b ₃	0.057 (0.043)	0.185	0.071 (0.036)	0.051	0.099 (0.038)	0.009	
Mimetic pressures (direct effect)	c ₁ , c ₁ , c ₁	0.326 (0.042)	0.000	0.169 (0.035)	0.000	0.321 (0.037)	0.000	
Mimetic pressures (total effect)	c ₁ , c ₂ , c ₃	0.351 (0.037)	0.000	0.200 (0.032)	0.000	0.364 (0.034)	0.000	
Size	U ₁	−0.000 (0.000)	0.241	−0.000 (0.000)	0.222	−0.000 (0.000)	0.006	
Tenure	U ₂	0.005 (0.004)	0.168	−0.000 (0.003)	0.790	0.003 (0.000)	0.302	
R ²		0.320		0.171		0.413		
F		25.21**		11.60**		37.11**		
Note(s): ** <i>p</i> < 0.01; * <i>p</i> < 0.05								
Bootstrap for indirect effects								
		Data	Boot	Bias	SE	Bias corrected CI		
						Lower	Upper	
Corporate strategy (Model 4)		0.024	0.026	0.001	0.019	−0.012	0.063	
Corporate strategy (Model 5)		0.030	0.031	0.001	0.020	−0.004	0.075	
Corporate strategy (Model 6)		0.042	0.044	0.002	0.018	0.008	0.082	
Source(s): Table by authors								

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Table 4.
Results for the test of mediation between mimetic pressures and TBL sustainability

role for corporate strategy is not supported for the economic and social dimensions of sustainability, but it is supported for environmental aspects. On the one hand, corporate strategy is not directly related to economic sustainability ($b_1 = 0.057$), and, although the relationship between corporate strategy and social ($b_2 = 0.070$) sustainability was statistically significant, the bootstrap for the indirect effect of coercive pressure and social sustainability showed no statistical significance (Model 2, BCCI = [−0.006, 0.101]). However, we found an indirect and statistically significant effect of coercive pressures on environmental aspects through corporate strategy (BCCI = [0.013, 0.104]). These results lend partial support to H4, in that corporate strategy plays a mediator role between coercive pressures and environmental dimensions of sustainability.

In the case of mimetic pressures (Table 4), the obtained results were similar to those obtained for coercive pressures. Specifically, the relationships between corporate strategy and social and environmental dimensions of sustainability were statistically significant, although the test mediation effect was only significant in the relationship between mimetic pressures and environmental sustainability (BCCI = [0.008, 0.082]). Finally, the same outcome was obtained for normative pressures (Table 5): normative pressures had an indirect effect on environmental sustainability (BCCI = [0.002, 0.033]).

Taking into account the results of the mediation test, H4 was partially supported, specifically concerning the mediator role played by corporate strategy and environmental sustainability.

In relation to the control variables, firm size was negative and statistically significant for all the environmental dimensions of sustainability, meaning that the smaller the size, the lower the effect.

Variables	Paths	Model 7		Model 8		Model 9	
		Economic sustainab β (se)	p -value	Social sustainability β (se)	p -value	Environmental sustainab β (se)	p -value
Normative pressures (X)	a_1, a_2, a_3	0.167 (0.021)	0.000	0.167 (0.021)	0.000	0.167 (0.021)	0.000
Corporate strategy (M)	b_1, b_2, b_3	0.045 (0.044)	0.316	0.054 (0.037)	0.141	0.102 (0.040)	0.012
Normative pressures (direct effect)	c_1, c_1'	0.114 (0.015)	0.000	0.066 (0.012)	0.000	0.101 (0.014)	0.000
Normative pressures (total effect)	c_1, c_2, c_3	0.121 (0.013)	0.000	0.075 (0.011)	0.000	0.118 (0.012)	0.000
Size	U_1	−0.000 (0.000)	0.260	−0.000 (0.000)	0.304	−0.000 (0.000)	0.005
Tenure	U_2	0.006 (0.004)	0.124	−0.000 (0.003)	0.866	0.004 (0.003)	0.234
R^2		0.306		0.187		0.360	
F		23.60**		12.85**		29.85	
Note(s): ** $p < 0.01$; * $p < 0.05$							
Bootstrap for indirect effects							
		Data	Boot	Bias	SE	Bias corrected CI Lower	Upper
Corporate strategy (Model 7)		0.007	0.008	0.0005	0.007	−0.008	0.022
Corporate strategy (Model 8)		0.009	0.009	0.0003	0.008	−0.004	0.027
Corporate strategy (Model 9)		0.017	0.017	0.0007	0.008	0.002	0.033

Table 5.
Results for the test of
mediation between
normative pressures
and TBL sustainability

Source(s): Table by authors

Discussion and conclusions

This study aimed to advance the understanding of the relationship between IP and organisational involvement in sustainability from a TBL perspective, including the mediating role that corporate strategies can play in that relationship. Unlike most previous studies, by adopting a TBL perspective and not only targeting individual dimensions, we offer a further understanding of sustainability, which may cover synergies and trade-offs between different dimensions (Cardoso de Oliveira Neto *et al.*, 2018; Ijaz Baig and Yadegaridehkordi, 2023).

Theoretical implications

Our findings confirm that firms feel pressure from the environment to engage in more sustainable behaviour. Institutional theory has proved effective in explaining the process by which these pressures are realised (DiMaggio and Powell, 1983). Nevertheless, previous research linking IP and sustainability almost exclusively reports results on the environmental dimension of sustainability (Haleem *et al.*, 2022). From an academic point of view, analysing business performance in terms of the TBL can be complex (Hubbard, 2009) or exceed the boundaries of specific research. Moreover, the urgency to reverse climate change and the impact of business on the environment may have led to the study of environmental sustainability performance over social and economic aspects.

Specifically, our results show that IP explain the organisational involvement in sustainability concerning social, economic and environmental goals. This finding is consistent with the institutional argument that organisations tend to adopt socially

desirable policies related to sustainability that can grant legitimacy (Llamas-Sánchez *et al.*, 2013). The study is therefore amongst the first to consider the three IP (coercive, mimetic and normative) and the three different lines of sustainability (social, economic and environmental dimensions).

Nevertheless, the expected mediating role of corporate strategy in the abovementioned relationship was only found for environmental aspects. Our findings confirm that the different strategy types involve diverse responses to environmental issues, whereas they have no significant effect on the social and economic dimensions. Although the TBL perspective implies balancing the ecological, social and economic sustainability aspects under the assumption that all three lines must be viable and healthy (Evans *et al.*, 2017), corporate sustainability strategies seem to focus more on environmental issues.

Practical implications

From the practitioners' point of view, different reasons may explain their focus on environmental sustainability actions, such as the greater regulation and control of these issues in comparison, for example, to social issues. Indeed, large corporations are required to comply with increasingly stringent controls on, for example, pollution and CO₂ emissions (Habib *et al.*, 2022), and they also require their suppliers to adopt sustainability-related certifications (Hajjar *et al.*, 2019; Pereira *et al.*, 2023). In addition, as highlighted by several authors (Dyllick and Muff, 2016; Landrum, 2018), confusion persists between the concepts of corporate sustainability, corporate social responsibility, and environmental management. This may have led companies to focus on environmental sustainability. Thus, IP lead them not to coordinate economic, social and environmental sustainability actions, but to isolate environmental care practices that are in line with social demands in this area. Additionally, the concept of balance that is implicit in the TBL could explain this confusion, and practitioners and academics should also consider other approaches.

In that sense, the framework for Strategic Sustainable Development may contribute to a more effective management of system boundaries, and it offers the possibility of more effective collaboration between disciplines, sectors, regions, value chains and stakeholder groups. All this *"prevent damages, even from yet unknown problems, and not the least, to guide selection, development and combination of supplementary methods, tools, and other forms of support, which makes it possible to increase their utility for strategic sustainable development"* (Broman and Robert, 2017, p. 17).

Additionally, Strong Sustainability emerges as a response to the paradox that, despite companies' increasing embracement of sustainability, the environment continues to deteriorate rapidly (Landrum, 2018). It is important to understand that sustainability has been flawed, leading to a "huge disconnect" between companies' sustainability actions and their actual impact on environmental deterioration. Different reasons explain this disconnection. On the one hand, there is a limited understanding of the meaning of corporate sustainability, which has focused exclusively on the company's point of view and has ignored broader social and global concerns. On the other hand, the confusion between similar terms such as corporate sustainability, corporate social responsibility, and environmental management interferes with the implementation of effective measures.

The response to those external pressures still has to overcome certain difficulties. Firstly, there is a need to design sustainable corporate strategies that cut across all aspects of the organisation, which usually involve a thorough exercise of reflection and analysis, and which may be accompanied by major organisational changes in aspects such as product design and manufacturing, supply chain management and customer relations. Secondly, sustainable corporate strategies must be implemented to develop organisation-wide strategic capabilities

(Hart and Dowell, 2011). This takes time and requires commitment from top management and HR practices that can deploy these sustainable corporate strategies through the organisations' human capital (Chen and Kitsis, 2017). There is a need for balance, since each pressure represents a necessary but insufficient condition for sustainable development (Bansal, 2005). If the most proactive companies only incorporate environmental concerns in their strategies, without investing efforts in social and economic sustainability goals, real sustainable development will not be achieved. Organisations are also challenged to create sustainable workplaces with fair employment conditions to foster social integration and reduce inequality and discrimination, while paying attention to basic economic requirements to ensure their viability over time (Kozica and Kaiser, 2012).

In sum, business management should make an effort to integrate the social and economic pillars in their sustainable strategies to reach the necessary balance from a TBL approach. To this end, the more proactive companies should go beyond strict compliance by anticipating actions and integrating them into their culture. True concern should mean an exceptional performance in the three environmental, social and economic dimensions and long-term benefits, and should be an integral part of their competitiveness (Aragon-Correa and Sharma, 2003).

Despite all the recent attention to sustainability, much confusion on the topic remains in business circles (Dyllick and Muff, 2016). Although corporate sustainability is gaining adhesion, it seems to be strongly connected to environmental goals and practices related only to environmental issues, but under the generic label of sustainable challenges (Larossi *et al.*, 2013). Growing pressure from stakeholders, especially government, investors and customers, has led companies to increasingly implement sustainable business practices in their strategies and business models to ensure short and long-term improvements in environmentally sustainable performance (Hussain *et al.*, 2018). These improvements focus primarily on reducing pollution, energy consumption and waste disposal by enhancing the company's circular capabilities and incorporating measures to reduce the use of finite resources (Amankwah-Amoah, 2020). These results may be explained by the industries selected for the study (manufacture of chemicals and chemical products, and manufacture of basic metals), which have traditionally been concerned about environmental issues, and which could explain the greater relevance of this dimension compared to the other two.

At the same time, coercive, mimetic and normative pressures have proved effective in promoting sustainable development from a TBL perspective. This finding could be considered in public administration and institutional policies designed to encourage the development of sustainable initiatives.

Limitations and future research

However, our findings should be interpreted in light of the following limitations. Firstly, the study was conducted in two industries, which may partially explain our results. Future research could address this limitation by analysing other industries and companies in other contexts. Additionally, our research offered a cross-section of IP and TBL and may require a longitudinal perspective if we are to prove causality. The present study's design did not permit us to investigate causality amongst the variables; it only allowed us to test relationships amongst IP, business strategy and TBL sustainability. In this line, a longitudinal study could also explain the evolution of the pressures and their effect on sustainability responsiveness from a TBL approach. Additionally, future studies may also consider other independent variables, such as the role of CEO values and leadership, in the promotion of sustainable strategies and economic, social and environmental goals.

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Items	Factor loadings	R^2	CFA statistics
<i>Institutional pressures (IP)</i>			
<i>Factor one: coercive pressures</i>			
1 All sustainability issues are mandated by law	0.633	0.400	$\chi^2 = 28.93$
2 Laws and rules about sustainability are strictly enforced	0.587	0.345	$p = 0.22$
3 There are laws to protect sustainable development	0.761	0.579	RMSEA = 0.032
4 There is a large number of regulatory bodies that promote and enforce sustainability	Removed	–	CFI = 0.99 GFI = 0.96
<i>Factor two: mimetic pressures</i>			
1 Most successful companies are implementing sustainable practices	0.777	0.603	
2 Companies know a great deal about sustainability	Removed	–	
3 There is a lot of talk about sustainability going on in the media	Removed	–	
4 There is a very strong message in companies that you cannot stay in business nowadays if you do not adopt work-life benefits	0.781	0.611	
<i>Factor three: normative pressures</i>			
1 Companies care a great deal about sustainability	0.748	0.560	
2 Ensuring sustainability is a moral obligation	0.591	0.350	
3 Companies are expected to promote sustainability	0.629	0.395	
4 Sustainability is at the heart of who we are as a company	Removed	–	
5 The company would promote sustainability even if it was not required	0.723	0.523	
Source(s): Adapted from Kostova and Roth (2002)			
<i>Sustainability (TBL)</i>			
<i>Factor one: economic</i>			
1 We provide our customers with accurate and complete information about our products and/or services	Removed	–	$\chi^2 = 4.61$ $p = 0.099$
2 We strive to enhance stable relationships of collaboration and mutual benefit with our suppliers	0.544	0.297	RMSEA = 0.02 CFI = 0.99
3 We understand the importance of incorporating responsible purchasing (i.e. we prefer responsible suppliers)	0.715	0.511	GFI = 0.99
<i>Factor two: social</i>			
1 We support the employment of people at risk of social exclusion	0.561	0.314	
2 We value the contribution of disabled people to the business world	0.641	0.411	
3 We are aware of our employees' quality of life	Removed	–	
4 Equal opportunities exist for all employees	0.501	0.262	
<i>Factor three: environmental</i>			
1 We take energy savings into account to improve our efficiency levels	0.630	0.397	
2 We are aware of the relevance of firms' planning their investments to reduce the environmental impact that they generate	0.772	0.596	
3 We are in favour of recycling material and reducing gas emissions and waste production	0.669	0.448	
4 We value the use of recyclable containers and packaging	0.641	0.411	
Source(s): Gallardo-Vázquez and Sánchez-Hernández (2014, p. 18)			

Table A1.
Items, factor loadings,
 R^2 and CFA statistics
for all the study
variables

Table A2.
Composite reliability
(CR), average variance
extracted (AVE) and
squared correlations
between variables

	CR	0.793	0.846	0.847	0.681	0.690	0.850
AVE	0.625	0.589	0.683	0.542	0.585	0.685	
	Coercive pressures	Mimetic pressures	Normative pressures	Economic sustainability	Social sustainability	Environmental sustainability	
Coercive pressures	–						
Mimetic pressures	0.501	–					
Normative pressures	0.567	0.512	–				
Economic sustainability	0.338	0.318	0.303	–			
Social sustainability	0.184	0.170	0.193	0.097	–		
Environment sustainability	0.401	0.388	0.330	0.050	0.519	–	
Source(s): Table by authors							

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The informal role of marketing control systems

Informal role of
marketing
control

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Abstract

Purpose – The implementation of control systems allows marketing managers to improve operational decisions and organizational results. This paper aims to identify the relationship between control combinations and organizational results and analyze the relationships between the variables attributed to the marketing managers and with marketing control combinations. Decisions involving marketing control combine formal and informal mechanisms and generate control systems that have a favorable relationship with organizational results.

Design/methodology/approach – The paper is based on 301 cross-sectional surveys among marketing managers. The classification procedure based on metric distance was implemented to identify the marketing control combinations. A hierarchical cluster analysis was carried out with perceptions about formal and informal control, to validate the control combination classifications. Finally, a discriminant analysis and ANOVA test were carried out for exploring factors associated with the managers. The data analysis was supported by IBM SPSS Statistics 24 software.

Findings – The authors found evidence that, when managers perceive high-control systems, the perception of non-financial and financial results is always better, but the presence of high-clan control also returns optimal results. In addition, the manager's satisfaction levels and work motivation are higher with high control systems than with other control systems.

Originality/value – This study contributes to the existing knowledge by providing a broader empirical basis to extend conceptual frameworks about marketing control combinations that emerge in practice.

Keywords Marketing control combinations, Organizational results, Professional control, Capability control

Paper type Research paper

1. Introduction

Because marketing productivity increases when managers use appropriate control systems and metrics, control is a fundamental activity in the marketing-related decision-making process that allows for the timely evaluation of the goals' scope (Verhoef and Leeflang, 2009). To design marketing control systems, organizations must establish the metrics that best measure the objectives of their marketing plan (Morgan *et al.*, 2021) and managers need skills to make short-term and long-term diagnoses (Edeling and Fischer, 2016). Traditionally,

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control has been analyzed in isolation, indicating the existence of a formal and informal typology (Malek *et al.*, 2018). Formal control is related to a professional's assessment of skills, capabilities and results, the aim being to avoid dysfunctional behavior (Jaworski and MacInnis, 1989), while informal control is related to professional and cultural aspects to foster teamwork and influence the scope of results.

To examine the relationships that may emerge among marketing control mechanisms that result from combining or substituting different control types (Conde *et al.*, 2021; Malek *et al.*, 2018; Moorman and Day, 2016) is still a latent need. Based on earlier studies, it has been estimated that, when it comes to marketing control decisions, combining formal and informal typologies can result in high, bureaucratic, clan and low levels of control (Cravens *et al.*, 2004). By contrast, another exploratory study identified five control categories, some of them related to pure control, such as informal control, others related to mechanisms such as result and activity control or associated with combinations of formal and informal typologies (Bedford and Malmi, 2015). Recent research, on the other hand, focuses more on the interactions of typologies of control to demonstrate how formal and informal control coexist at a practical level (Liang and Frösén, 2019; Zang *et al.*, 2020). These distinctions suggest that organizations need to recognize the variety of nuances resulting from the control combinations that emerge in decision-making, to align the efforts of their work teams and the empirically extracted configurations provide broader descriptions of how forms of control tend to combine and identify alternative control patterns not captured or explained by existing structures (Bedford and Malmi, 2015). Above all, compared to formal control, informal control is almost always led by employees and it is influenced more by external and cultural factors than by management (Krafft, 1999), which leads to the presence of different levels joined to formal mechanisms and the need to understand their main determinants.

To assess the productivity of the marketing process, it is also essential to analyze the relationships between marketing decisions and organizational results (Edeling and Fischer, 2016; Katsikeas *et al.*, 2016). From a marketing manager's perspective, Jaworski *et al.* (1993) determined that the size of organizations, the interdependence among work groups, the level of routine in their tasks and the evaluation of their activities all help predict the four alternatives of control combinations, although they found insufficient evidence to conclude that control combinations affect people's performance. By contrast, Cravens *et al.* (2004) indicate that, with a high-level control system, people tend to perform better. Furthermore, the implementation of bureaucratic control emerges as the most important factor, while in Jaworski *et al.* (1993), that is high level control, followed by clan control. As such, there appear to be differences between the control systems implemented by the marketing department compared to other areas of the organization. The studies have different results, making it necessary to continue exploring this topic. Additionally, the influence of marketing control decisions on organizational performance has been examined more than any other type from the perspective of employee performance, rather than other control aspects, like employee capabilities and skills and work environment, which also means that we have a limited understanding of the effect of other control types on business performance as capability and professional control.

There is limited empirical evidence involving the relationship that certain characteristics of marketing managers have regarding control decisions, despite the importance of evaluating how the presence, level of training, motivation and experience of a manager affect a company's performance (Moorman and Day, 2016). Our study contributes to existing knowledge by providing a broader empirical basis to extend conceptual frameworks about marketing control combinations that emerge in practice. In addition, it provides insight into the intensity levels of control combinations that improve marketing performance by exploring their relationship to non-financial results.

This paper looks at the relationship between perceptions of control combinations and non-financial and financial results. From the perspective of managers combining capability and professional control and based on the outline presented above, we also analyze the relationships among the variables attributed to marketing managers, including their marketing experience, work satisfaction and motivation about marketing control combinations.

To that end, the first section contains the theoretical framework and hypotheses to provide a theoretical basis. Next, the methodology of the metric distance procedure adapted from Jaworski *et al.* (1993) is used to classify previous and new control combinations, and the analysis of variance is implemented to explain the relationships among the variables. The third section highlights the coexistence of diverse control configurations and the role informal control plays in marketing control systems to influence non-financial and financial results. The paper closes with a discussion and the conclusions of the study.

2. Literature review

The way marketing decisions add value to organizations continues to be a matter of interest in academia and business alike. Proper planning of business decisions includes the implementation of control mechanisms to align the activities of professionals and increase productivity. Marketing control constitutes the axis by which management influences employees to achieve the expected results (Jaworski *et al.*, 1993). Administrative, psychological and organizational theories support the relevance of formal and informal controls (Flamholtz *et al.*, 1985; Henri, 2006). Formal controls are written down and designed to ensure that people's behavior is aligned with organizational objectives (Malek *et al.*, 2018), while informal controls focus on the personal criteria of marketers, the way their achievements are monitored and the adjustments they make to their behavior (Jaworski, 1988). Both formal and informal forms of control include various typologies. Formal control includes input, process (activity and capability) and results (Challagalla and Shervani, 1997; Jaworski, 1988). Informal control includes self-control, professional – social – clan and cultural control (Abernethy and Stoelwinder, 1995; Malmi and Brown, 2008). Controls are not used separately, but function as a system that involves different levels of formal and informal control (Malek *et al.*, 2018), even the presence of informal control could be considered an environmental factor (Merchant, 1988). Jaworski *et al.* (1993) verified that, although formal controls are necessary, informal control mechanisms must be used simultaneously to ensure the cohesion of working groups. In line with that, it has been argued that organizations also need to implement informal controls to address people's dysfunctional behavior (Schwepker and Good, 2004; Ramaswami, 1996), which refers to the intention of professionals to follow a control system that rewards them in the short-term and that neglects the impact of the company's long-term results. Moreover, people can selectively present information or false information, to smooth things over and appear to be more consistent over time (Jaworski and MacInnis, 1989), which affects the outcome of their performance in a way that benefits their personal objectives rather than those of the organization. Based on existing publications, the indicated control combinations are high, bureaucratic, clan and low (Jaworski *et al.*, 1993; Cravens *et al.*, 2004).

High levels of control are associated with work teams whose first responsibility is to comply with organizational results and requires a work environment where group work predominates, framed by the organization's standards and values (high formal and informal control) (see Figure 1). Bureaucratic control is dominated by management and focuses on results, undermining the achievement of long-term objectives. For this reason, this control system inserts low levels of informal control to maintain a minimum criterion for evaluating the professionals' behavior (high formal, low informal). Clan control is associated with groups

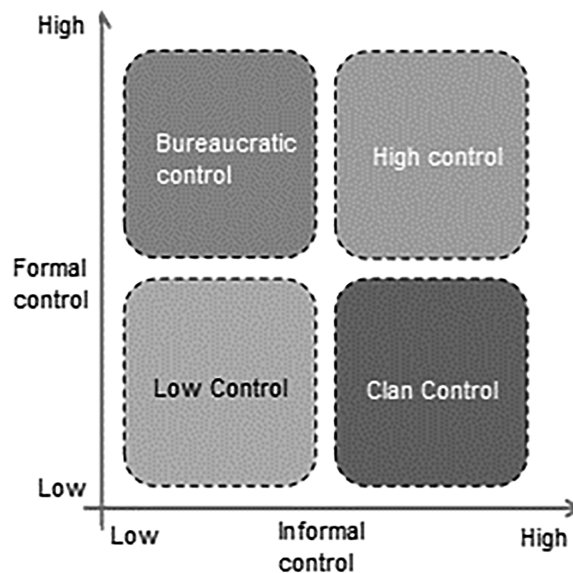


Figure 1.
Control combinations

Source(s): Jaworski *et al.* (1993)

of professionals who are familiar with the productivity of others and have significant levels of cooperation and commitment. These teams are responsible for the most demanding innovation processes, so the evaluation of results passes to a secondary level (low formal control, high informal control). Finally, low control is a potentially transitory system. As such, it is not seen as an alternative that adds value to a company.

From this conceptual perspective and following Jaworski *et al.* (1993), high control is associated with lower levels of ambiguity in the marketing manager's role. Compared to high control, bureaucratic control has been associated with higher levels of conflict between management and marketing professionals. In turn, the clan control system is characterized by lower levels of conflict between management and marketing professionals, similar to those found in high control. Finally, low control is associated with the poorest levels of job satisfaction and the highest levels of ambiguity in the marketing manager's role.

3. Hypothesis and conceptual model

It is assumed that certain factors associated with the manager in question affect and precede their decisions involving formal and informal control balance, as a fundamental part of their managerial activities. For example, their levels of job satisfaction and motivation to stay in the position affect the use of control systems that integrate more variables to monitor and achieve results. Satisfaction is defined as the degree to which expectations concerning salary, work environment, recognition, autonomy and communication are met (Sánchez *et al.*, 2007).

In turn, motivation is a factor that determines work performance and human productivity, since it brings together a set of forces that shape employee behavior to determine their direction, intensity and permanence at work (Pinder, 2008, p. 11). According to these factors, it is expected that higher levels of manager satisfaction and motivation foster a conducive work environment and thus achieve the desired results, all of which suggest implementing informal control. Similarly, satisfied and motivated marketing managers will ensure that

marketing management is connected to organizational results and add greater value to their decisions, generating higher levels of recognition. This involves the use of capability control as a way to improve the skills perceived by professionals and strengthen the relationship with managers, and it is expected that the levels of motivation and focus on the task will increase by fostering a favorable organizational climate where professionals enjoy greater autonomy (Bergestuen *et al.*, 2022), identify with their professional group, are committed to developing and maintaining the value of their profession and are supported by other professionals, which fosters professional control (Evans *et al.*, 2007; Thompson *et al.*, 2022). Maintaining a balance between capability and professional control, leading to a high-level category control, will allow the manager to eliminate the incompatibilities created among marketers concerning the expected goals. As such, the following hypotheses can be proposed:

- H1. The marketing managers' high level of job satisfaction is related to more high control than any other marketing control combination.
- H2. The marketing managers' high level of work motivation is related to more high control than any other marketing control combination.

The marketing managers' experience can be explained by their current role and the accumulation of their practices. Their existing role is related to the years in their current, job which provides social resources like knowledge and contact with professionals who they currently manage and control (Homburg *et al.*, 2014). In addition, their experience is focused on action, routine and operational skills. The accumulated marketing and management practice is related to the total years of experience, defined as the level of work practice in marketing-management-related tasks (Homburg *et al.*, 2014). It is expected that the manager accumulates knowledge from different roles that allows him to interpret and differentiate the most relevant information in the decision-making process. In general, having years of experience increases the probability of being trained to make effective decisions that lead to better organizational results (Matemilola *et al.*, 2018). As such, it is expected that the more knowledge and expertise the marketing manager has acquired through training, leads to the permanent focus of the work team on identifying capability gaps, making it possible to adapt to the changing environment (e.g. consumers and competitors), as well as fostering a culture where marketing professionals recognize the importance of self-reinforcing their experience (Bande *et al.*, 2021; Malek *et al.*, 2018). As such, the more likely it is that the control systems being implemented integrate more formal and informal mechanisms in the management of work teams, allowing them to achieve the goals and at the same time expanding their expertise, leading to the following hypotheses:

- H3. More years of experience of the marketing manager in the current role is related to higher control than any other marketing control combination.
- H4. More years of experience of the marketing manager in marketing is related to higher control than any other marketing control combination.

To design marketing control systems, organizations must establish the metrics that best measure the marketing plan's objectives (Morgan *et al.*, 2021). By linking control mechanisms to non-financial metrics, managers will have a greater ability to make short-term and long-term diagnoses, and thus analyze cause and effect relationships that support better decision-making (Edeling and Fischer, 2016). From another perspective, market metrics are process-oriented and collect results from the organization's external environment. These metrics are more difficult to calculate since they are not derived from financial data, which means that marketing management must evaluate them more frequently, and implementing formal control mechanisms allows management to reach the desired non-financial results more easily. On the other hand, it has been shown that commercial teams who feel part of the

organization (which is related to informal cultural control) tend to achieve high levels of market orientation and general performance (Wieseke *et al.*, 2012). In addition, organizations with a high level of flexibility promote relationships between their employees and offer a greater flow of information in the organization (Malek *et al.*, 2021). This leads to using informal controls and integrating organizational performance indicators into their control systems. As such, it is to be expected that informal control mechanisms will have a positive influence on the organization's financial results. Therefore, knowing that the high control system corresponds to a combination of high levels of formal and informal control, it can be deduced that high control systems promote the achievement of organizational goals, so the following hypothesis is proposed:

H5. High control systems lead to better organizational results than any other marketing control combination.

Figure 2 shows the conceptual model supported by the theoretical framework.

4. Methodology

4.1 Sample and data collection

We used an online cross-sectional survey among 2,935 companies operating in Colombia. Our data come from marketing and budget decision-makers from SBUs in various economic sectors at the end of 2019. To ensure the validity of the content of the questionnaire, eight expert academic marketing and strategy researchers evaluated the instrument in terms of the supporting conceptual model to validate it from a theoretical and scientific perspective. Then, pilot tests were carried out among 20 marketing managers of companies from various economic sectors and of different sizes. These tests allowed us to validate the understanding of the questionnaire. The questionnaire was improved each time it was applied to a marketing manager, until the final version was obtained where there were No suggestions for changes. As a result of this sequential procedure, it was necessary to adjust questions that contained words perceived as ambiguous. The questionnaire was applied in person to test the duration, understanding and relevance of the questions according to the study's objective and led to adjustments to improve our understanding of the scale.

Potential participants were contacted via e-mail. Once they agreed to answer the questionnaire, a link was sent to the questionnaire. In addition, respondents were asked to fill in the questionnaire evaluating only the SBU they managed. It was explained that this SBU corresponds to a category of products or services with its own independent budget and clients, consumers and competitors. After following up with managers who expressed their interest in responding and sending out three rounds of reminder e-mails, 301 questionnaires were completed.

The non-response bias test (Armstrong and Overton, 1977) was used to compare early and late responses, and did not show any significant differences between the two groups (150/151)

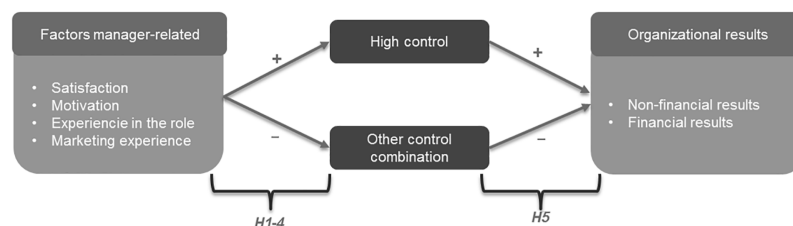


Figure 2.
Conceptual model

Source(s): Figure by authors

of formal control (p -value = 0.4), informal control (p -value = 0.53), non-financial results (p -values > 0.06), financial results (p -value = 0.29), which suggests that the non-response bias had no influence on the results.

According to the American Industry Classification System (NAICS), the following sectors stand out in the sample: manufacturing (36%), wholesale trade (10.6%), professional, scientific and technical services (9.6%), construction (8.3%) and health care and social assistance (6.6%). 43.8% of the business units have been in the market for more than 18 years, and that, in general, more than 70% of the business units have existed longer than seven years, which means that, within the business units in the sample, there is an appropriate balance when it comes to analyzing marketing decisions. With regard to the level of training of the participants, about 90% are professionals and 60% even have graduate degrees. On the other hand, more than 70% are marketing professionals with more than 6 years' experience.

4.2 Measurement of variables

- *Control mechanisms*

Perceptions of formal control mechanisms were measured by adapting the scale proposed by Miao and Evans (2014), particularly with a focus on assessing the capabilities of marketing professionals. Under this control typology, marketers are under less pressure to focus on immediate results, and encouraged to adopt a long-term problem-solving approach and focus on marketing objectives (Guenzi *et al.*, 2014) by identifying needs of skills to improve the attitude and organizational performance. Table S1 shows that Cronbach's alpha was 0.86 and the four items were evaluated on the Likert scale from *Totally disagree* (1) to *Totally agree* (7). Perceptions of the informal control construct were adapted based on the scale proposed by Jaworski *et al.* (1993), particularly the professional control, because that is the one with the greatest influence from management, given that a certain level of professionalism of the work team is determined by the requirements of the profiles, as well as being designed to improve the capabilities achieved through work experience and training. This indicator is recognized for its significant influence in studies involving organizational control (Malek *et al.*, 2018). The six items present a Cronbach's alpha of 0.92 and were assessed on the scale from *Totally disagree* (1) to *Totally agree* (7).

- *Antecedent's variables*

The variables regarding the total years of experience in marketing, the years active in the current marketing job were quantitative variables expressed with a decimal number, while both the manager's general satisfaction at their current job and motivation to stay in that position in the next year were rated on a scale from very dissatisfied/unmotivated (1) to very satisfied/motivated (7).

- *Non-financial results*

Marketing indicators most frequently used by marketing managers to measure performance were selected (Ambler *et al.*, 2004; Sampaio *et al.*, 2011). Subsequently, perceptions of non-financial metrics with significant impact on organizational value results were analyzed (Edeling and Fischer, 2016; Katsikeas *et al.*, 2016). Table S2 shows that customer loyalty (two items) and brand equity (two items) were chosen as market asset metrics. In relation to the marketing programs metrics, the following items were selected: the competitor's relative price (two items), product quality (two items), the conversion rate of digital marketing (two items), and market coverage (four items). Cronbach's Alpha for each non-financial result were 0.85,

0.89, 0.88, 0.86, 0.88 and 0.86, respectively. The items were rated on the Likert scale from very low (1) to very high (7).

- *Financial results*

The proposed metrics for the perceptions of financial results construct also include indicators associated with the measurement of organizational value, including return on assets, EBITDA and the organization's general performance (Morgan *et al.*, 2021). Return on assets was also included as a variable to measure performance (O'Sullivan and Abela, 2007). Table S3 shows that the following metrics were selected: metrics related to the profitability level (2), cash flow (1) and the perception of the overall performance achieved by the company (2). Cronbach's Alpha was 0.91. The items were evaluated on a scale from very low (1) to very high (7).

All the items in the questionnaire have a factor load greater than 0.7, which means they have a high influence on each construct and guarantee the psychometric properties of the scales. In addition, for each construct, the average variance extracted (AVE) is higher than the recommended minimum level of 0.5 (Hair *et al.*, 2014, p. 100), and each item's communalities are higher than 0.5. These statistics indicate an optimal consistency and validity of the scales used in this study. To evaluate the previously specified measurement model, a confirmatory factor analysis (CFA) is carried out with the support of SmartPLS 4. The Fornell and Larcker test (1981) indicates that there is discriminant validity because the AVE for each construct is greater than the square of the existing correlation between each pair of constructs (Table 1). The unidimensionality of the scale was verified given that the SRMR = 0.045 (<0.06) and the NFI = 0.91 (>0.9) (Table 2).

5. Results

To identify the marketing control combinations, the classification procedure based on metric distance implemented by Jaworski *et al.* (1993) was adapted. Since the control measurement scales for our study are seven-point Likert scales, the vectors for each pure control combination were adjusted, meaning that the pure high control vector is composed of values of 7 for the formal and informal typologies, the clan control has 1 for the formal typology and 7 for the informal; the bureaucratic control has 7 for the formal typology and 1 for the informal typology, and the low control has 1 for the formal and informal typologies. This classification reported 202 business units with a high control, 41 with a clan control, 32 without classification, 19 with a low control and seven with a bureaucratic control. This classification order coincides with the one presented by Jaworski *et al.* (1993), which was applied to marketing managers. The same procedure was applied by Cravens *et al.* (2004) to validate the four control combinations in managing sales forces.

Under this procedure the ties between pairs of control combinations remain uncategorized. In addition, a control combination is classified with the minimum distance criterion, even though the value of this distance is very small. Taking these considerations into account, the distances for each case were reviewed individually (301), while the relative percentage of the distance was calculated for each control combination. When performing this calculation, the percentages and the lowest distances were reviewed. We analyzed whether, for the same SBU, there is another close percentage with a difference of No more than 5%. The ties were also grouped according to the lowest distances. To illustrate the procedure, Table S4 shows an example where a marketing manager rated each formal and informal control item. This value was subtracted from the pure control vectors and four distances were obtained; one for each control combination. As a result, the shortest distance equals 22 and is very close to the distance 26, with a difference of only 3% (<5%) when

	1	2	3	4	5	6	7	8	9	10	11	12
1. Formal-control	0.78 ^{***}											
2. Informal-control	0.66 ^{***}	0.82										
3. Market-coverage	0.23 ^{***}	0.21 ^{***}	0.78 ^{***}									
4. Brand-equity	0.22 ^{***}	0.16 ^{***}	0.50 ^{***}	0.89 ^{***}								
5. Relative-price	0.15 [*]	0.04	0.40 ^{***}	0.36 ^{***}	0.89 ^{***}							
6. Digital-marketing	0.19 ^{***}	0.10	0.22 ^{***}	0.30 ^{***}	0.16 [*]	0.88 ^{***}						
7. Product-quality	0.23 ^{***}	0.27 ^{***}	0.24 ^{***}	0.32 ^{***}	0.23 ^{***}	0.29 ^{***}	0.87 ^{***}					
8. Customer-loyalty	0.23 ^{***}	0.19 ^{***}	0.40 ^{***}	0.35 ^{***}	0.32 ^{***}	0.33 ^{***}	0.36 ^{***}	0.86 ^{***}				
9. Finance	0.28 ^{***}	0.30 ^{***}	0.45 ^{***}	0.25 ^{***}	0.27 ^{***}	0.30 ^{***}	0.27 ^{***}	0.39 ^{***}	0.81			
10. Experience-role	-0.07	-0.08	0.03	0.02	0.05	-0.10	0.00	0.04	-0.01	0.37 ^{***}		
11. Experience-marketing	0.09	0.02	0.04	0.01	-0.01	-0.16	-0.04	-0.02	-0.05	0.08	0.19 ^{***}	
12. Satisfaction	0.37 ^{***}	0.32 ^{***}	0.13 [*]	0.10	0.03	0.10	0.19 ^{***}	0.14 [*]	0.24 ^{***}	0.08	0.14 [*]	0.68 ^{***}
13. Motivation	0.35 ^{***}	0.29 ^{***}	0.21 ^{***}	0.08	0.03	0.15 [*]	0.15 ^{***}	0.19 ^{***}	0.28 ^{***}	0.08	0.14 [*]	
Note(s): **Significant: level 0.01 (bilateral)												
*Significant: level 0.05 (bilateral)												
AVE in diagonal												
Source(s): Table by authors												

Informal role of
marketing
control

Table 1.
Discriminant validity

comparing the percentage of the total distance. This case is classified in the high-bureaucratic category.

The rankings based on the groupings discussed above are shown in Figure 3. High control continues to be in first position. However, the second combination integrates some cases of high control and clan control into a single category. From the initial ranking, this new category takes 23 combinations of high control, 23 of clan control and 20 unranked. It should be noted that bureaucratic control loses ground as an independent category (3 cases) and merges with other types of control, such as high control (6 cases) and low control (5 cases).

To validate the new control combination classifications, a hierarchical cluster analysis was carried out with the formal and informal control results using the Ward's Grouping method (Hair *et al.*, 2014), and from the agglomeration coefficients, significant increases were identified in conglomerates two to three (53%). With these findings, the non-hierarchical cluster analysis was conducted for two and three conglomerates. The data distribution for two conglomerates is not heterogeneous for cluster 1, since the same number of high-clan control cases and unclassified cases are grouped. The data distribution for three conglomerates turns out to be more heterogeneous in nature. For cluster 1, 73% (82) of the

Table 2.
Model fit indices

	Estimated-model
SRMR	0.05
d_ULS	0.86
d_G	0.91
Chi-squared	1251.41
NFI	0.91

Source(s): Table by authors

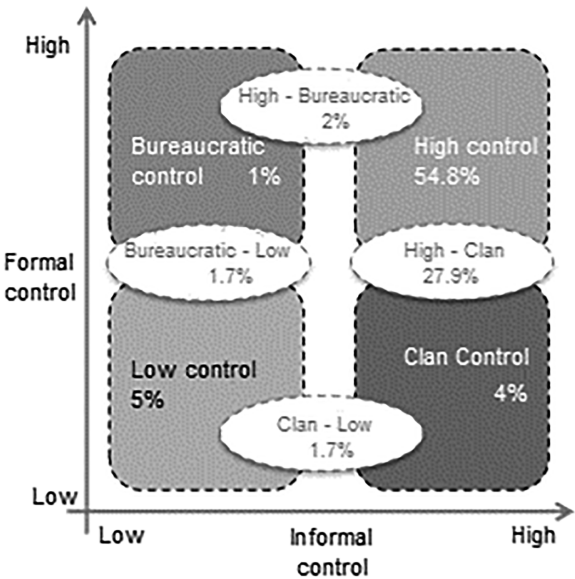


Figure 3.
New control combinations

Source(s): Figure by authors

cases correspond to high-clan control, for cluster 2, 97% (165) to high control, and for cluster 3, 100% (19) correspond to No classification.

From clan control, the sample sizes are statistically small and are assigned to the unclassified category, the concentration in the control combinations in Figure 3 can be confirmed. As shown in Table 3, for these three clusters, there is a significant difference in the formal control average (F -value = 535.78), and the informal control (F -value = 289.24) according to the Sheffe's test (P -value < 0.05). Given that cluster 3 has a very small sample size ($n = 19$), high-clan control and high control will be used to validate the hypothesis.

The data analysis was carried out with the IBM SPSS Statistics 24 software. For this, the following were used: both, the control combinations, based on Jaworski *et al.* (1993) (model 1) metric distance procedure, and the combinations obtained when making adjustments in the distance classification and ties (model 2). Table 1 presents the correlations among variables. This highlights the fact that the experience in the role has No significant correlation with the other variables and that the experience in marketing only has a significant and positive correlation with experience in the role. Similarly, neither the relative price nor the digital marketing metric shows a significant correlation with informal control.

To explore the relationship between satisfaction, motivation, experience in marketing and the role on the control combinations, a discriminant analysis and ANOVA test were carried out. As shown in Table 4, in model 1, the manager's satisfaction and motivation are higher for high control compared to low control and clan control, as well as in the new combined control classification. Therefore, it can be confirmed that hypotheses 1 and 2 are not rejected. Since experience in the role does not lead to differences in the control systems, there is not enough evidence not to reject hypothesis 3. Furthermore, in model 1, the manager's experience in marketing has No relationship on control systems. However, in Model 2, there is a significant difference between the high control and the high-clan control. It is evident that the number of years of experience is related to the implementation of more high control than with any other marketing control combination, which means that hypothesis 4 is not rejected. Thus, the results of the discriminant analysis and Sheffe's test support the finding of differences between independent variables and control combinations.

To determine the relationship between the control combinations and non-financial and financial results, an ANOVA was performed. Table 5 shows that, in Jaworski's model, there are significant differences only in product quality and financial results. However, in the distance adjustment model, there are significant differences in all organizational results. Regarding the relative price result, this difference is only significant for a p -value < 0.1. In addition, for high control, all organizational results tend to be greater, so hypothesis 5 is not rejected. It can also be noted that the best valued results are product quality, brand equity and customer loyalty, respectively (which correspond to market assets). The lowest valuation corresponded to digital marketing results.

	Cluster 1: High-clan	Cluster 2: High Average (SD)	Cluster 3: No classification	F -value	Sheffe's test ($p < 0,05$)
Formal-control	3.93 (0.80)	6.23 (0.63)	2.09 (0.85)	535.78	High > High-Clan > No classification
Informal-control	5.33 (0.95)	6.42 (0.58)	2.12 (1.08)	289.24	High > High-Clan > No classification

Source(s): Table by authors

Table 3.
Difference between
formal and informal
control for each cluster

Table 4.
Discriminant analysis

Mean (SD) Independent- variables	Model 1: Metric distance classification					Model 2: Metric distance classification with tie adjustment				
	High	Clan	Low	Discriminant load- function I	Sheffe's test ($p < 0.05$) <i>F</i> -value	High	High- clan	Discriminant load- function I	<i>F</i> -value	Differences
Experience-role	3.90 (4.23)	4.78 (5.10)	5.16 (6.86)	-0.38	1.13 None	4.06 (4.50)	4.05 (4.41)	-0.17	0.00	None
Marketing- experience	11.23 (7.07)	10.36 (6.59)	8.58 (6.57)	0.24	1.40 None	11.47 (6.86)	9.73 (7.03)	0.28	3.94	High $\neq$ High-Clan
Satisfaction	6.28 (0.87)	5.34 (1.53)	5.26 (1.69)	0.48	18.84 High $\neq$ Low and Clan	6.37 (0.83)	5.73 (1.18)	0.41	24.78	High $\neq$ High-Clan
Motivation	6.25 (1.13)	5.09 (1.85)	4.84 (2.14)	0.57	19.41 High $\neq$ Low and Clan	6.39 (0.99)	5.49 (1.47)	0.65	30.70	High $\neq$ High-Clan
	Wilk's lambda	Multivariate-summary			Canonical- correlation	Wilk's lambda	Chi- squared	% variance	Multivariate-summary	
Function-1	0.82 **	50.77 **	98.0	0.42	Function 1	0.88 **	30.21 **	100.0	0.37	
Function-2	0.99	1.14	2.0	0.07					** $p < 0.05$	

Mean (SD) Results	Model-1: Metric distance classification					Model-2: Metric distance classification with tie adjustment				
	High	Clan	Low	F-value	P-value	Sheffe's test ($p < 0.05$)	High	High-clan	F-value	P-value
Market-coverage	4.94 (1.15)	4.43 (1.20)	4.32 (0.77)	3.95	0.02	No	5.04 (1.13)	4.36 (1.15)	8.28	0.00
Brand-equity	5.41 (1.21)	5.06 (1.54)	4.88 (1.62)	2.14	0.12	No	5.53 (1.16)	4.85 (1.38)	15.11	0.00
Relative-price	4.58 (1.11)	4.25 (1.22)	4.47 (0.98)	2.22	0.11	No	4.71 (1.06)	4.43 (1.14)	3.51	0.06
Digital-marketing	4.33 (1.57)	3.76 (1.71)	4.07 (1.14)	1.85	0.16	No	4.46 (1.54)	3.79 (1.55)	7.78	0.00
Product-quality	5.52 (1.11)	5.14 (1.10)	4.72 (0.98)	5.60	0.00	High $\neq$ Low	5.63 (1.04)	5.17 (1.13)	9.44	0.00
Customer-loyalty	5.05 (1.15)	4.92 (1.23)	4.47 (0.69)	2.08	0.13	No	5.15 (1.13)	4.70 (1.24)	8.05	0.00
Financial	4.99 (1.04)	4.43 (1.22)	3.92 (0.82)	12.53	0.00	High $\neq$ Low and clan	5.05 (1.05)	4.65 (1.04)	8.52	0.00

Source(s): Table by authors

Table 5.
Relationship between
control combinations
and organizational
results

6. Discussion and conclusions

On the basis of these findings, it can be concluded that, by combining the control mechanisms performed in this research, new control configurations emerge. One of them is called high-clan, which as yet has not been explained in existing literature, although it is to some extent supported when the scope of each typology is presented separately (Cravens *et al.*, 2004). High and clan control lead to better non-financial outcomes (Jaworski *et al.*, 1993), suggesting that marketing departments play an important role in organizational innovation processes, having to translate the ever-changing needs of customers into new products, services or business models (Verhoef and Leeflang, 2009). Similarly, the marketing department has been associated with the high level of creativity required to design programs that differ significantly from traditional marketing practices (Verhoef and Leeflang, 2009). These characteristics require organizational conditions in which professionals enjoy greater autonomy, identify with their professional group, are committed to developing and maintaining the value of their profession and are supported by other professionals, resulting in recognized levels of informal control. As such, it is likely that ensuring the presence of a high level of informal control is necessary in functional areas that are provided with changing information about an organization's internal and external environment, which are usually not characterized by achieving only short-term results, but tend to promote a culture of autonomous work environments and self-employment regulations, and have a clear impact on a company's long-term results.

The influence of the marketing managers' satisfaction and motivation levels on the marketing control systems is consistent with Wieseke *et al.* (2012). Marketing leaders have the ability to stimulate organizational connections between employees and the organization through charismatic interactions, and can create a work environment that fosters a commitment to objectives. This can be achieved if the marketing managers are committed and motivated. Regarding the marketing managers' experience, previous studies show that experience in their role is negatively related to the use of financial metrics and is not related to the use of non-financial metrics (Mintz and Currim, 2013), which also confirms that there is a weak relationship between the experience in a managerial role and the implementation of control mechanisms. It has been shown that marketing experience increases a manager's education levels (Moorman and Day, 2016) and with it the ability to control marketing resources. Marketing experience improve the ability to make decisions involving control systems because experienced managers tend to focus on identifying the skills and abilities professionals need to face the challenges of the market and avoid dysfunctional behavior altering information from customers and competitors. It has also been shown that decisions concerning resource allocation in such a critical area as advertising are not always resolved with the managers' earlier experience (Hutchinson *et al.*, 2010). On the other hand, Jaworski's model highlights that the weakest averages of the variables are generally attributed to low control, which is consistent with Cravens *et al.* (2004), who suggest that low control is not a strategic decision and has a greater probability of temporarily occurring in companies when there are changes in the structure and, in general, in managerial roles.

When identifying the perceptions of the relationship between control systems and organizational results, several aspects can be highlighted. In Jaworski's model, there are significant differences between two types of organizational results, where the high control system has the best evaluation levels: the effects on product quality and financial results. However, the differences and ties adjustment model show that, for all the results, there are significant differences between the high control and the high-clan control systems. These results to some extent contradict those presented by Jaworski *et al.* (1993), since, in this study, the effective and efficient completion of a manager's tasks is not associated with high levels of organizational performance.

These findings extend existing knowledge by justifying the inclusion of a greater presence of informal control in marketing control systems in order to achieve the desired results, and by indicating that the existence of formal and informal marketing control does not result from the purely combinatorial choices that have been traditionally studied, but that a wider range of combinations should be considered when, for example, informal control emerges in different intensities from control that does not depend directly on management decisions, but rather on the conditions of the organizational culture and the experience of the professional teams. These mechanisms are associated with the promotion of flexible values, as well as with open communication channels and a spontaneous flow of information (Henri, 2006), which is fundamental in any company's activities. Furthermore, analyzing the variables related to control systems, either as antecedents or as response variables, allows for a better understanding of control decisions and strengthens the theory involving the appropriate levels of control that facilitate marketing productivity. On the other hand, as occurred in the two proposed models, and as suggested by Malmi and Brown (2008) and Moorman and Day (2016), some control systems can be substituted (such as bureaucratic control and the clan) and other systems can be complemented, as has happened with the high-clan control. Consequently, it is found that pure behavior cannot be assumed in marketing control decisions. Instead, the analysis of control typology combinations with different levels of intensity should be considered. These give rise to other unexplored systems and a greater extent explains the business reality in terms of marketing decisions and their value within the organization under examination.

7. Management implications

Each organization needs to analyze the configuration of control combinations and their particularities to achieve the desired objectives, while marketing managers need to consider the coexistence of capability and professional control. There are several reasons to include informal controls in marketing control systems. Firstly, although the configuration of control systems may follow organizational guidelines, marketing departments have a high degree of responsibility for innovative and non-standardized processes, which in turn improve the organization's results. Second, marketing professionals perform tasks that require constant creativity and innovation, so it is necessary to cultivate autonomy and self-regulation through professional control. Finally, organizations need to encourage their employees to work together by socializing corporate values in events or rituals, which implies the appropriate use of informal control mechanisms.

Marketing managers also play an important role in control decisions, which means that companies need to ensure higher levels of satisfaction and motivation of managers are higher, to ensure adequate control resources management. This implies the configuration of a control system that adjusts to the interrelationship dynamics of marketing professionals, as well as to the expected objectives and organizational culture. Furthermore, if organizations have a better understanding of the most effective control combinations and determine the relationship to internal variables like organizational values and external variables like manager experience, they can save time and money in managing marketing budgets. Consequently, productivity levels will increase and greater value will be placed on control decisions in organizations.

8. Limitations and future research

Internal factors, such as the decision to hire highly results-oriented marketing professionals, can also affect the intensity of formal and informal controls. It may also be associated with a strategy in which professionals need to demonstrate high levels of independence and promote the generation of new market opportunities. As such, the level of professional orientation can

be included as a variable in future empirical studies on control systems, along with the control systems implemented in organizations can fluctuate and change over time. Furthermore, it is interesting to analyze how the intensity of the formal and informal controls implemented at different times changes, as well as identify the internal and external variables that influence these changes. These variables can be associated with the stages of product life cycles, where different levels of economic investment are required and control decisions are made to achieve the objectives at each stage. Since the determination of the types of control was carried out using the metric distance methodology, future research could design a measurement scale where each combination of control is a construct. Finally, during the COVID-19 pandemic, remote working and customer relationships mediated by technology have increased, which means that control systems have to incorporate new external variables associated with changes in *ex ante* and *ex post* information flows to support control decisions.

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Formal-control	Factor-loads
1. The skills that the marketing professionals use to run their tasks are evaluated quarterly	0.74
2. The marketing professionals quarterly receive guidance on how to improve their skills	0.75
3. The marketing professionals are motivated to learn about how to use tools that make their job more effective	0.82
4. The marketing professionals receive public recognition if they improve their skills	0.81
AVE	0.61
Cronbach's-Alpha	0.86
Composite reliability	0.86
<i>Informal-control</i>	
1. In this business unit, we promote cooperation among the marketing professionals	0.81
2. The marketing professionals are familiar with the productivity of others	0.82
3. In this business unit, we foster an environment where the marketing professionals respect the marketing staff's work in which they operate	0.79
4. In this business unit, we promote work-related discussions among the marketing professionals	0.83
5. The marketing professionals can provide accurate evaluations of the marketing staff's work in which they operate	0.79
6. The work environment encourages the marketing professionals to take pride in this business unit	0.87
AVE	0.67
Cronbach's-Alpha	0.92
Composite reliability	0.92
Source(s): Table by authors	

Table S1.
Reliability and validity
analysis of the
marketing control
scale items

Customer-loyalty	Factor-loads
1. Customer loyalty in the last year	0.85
2. Customer loyalty in the last three years	0.87
AVE	0.74
Cronbach's-Alpha	0.85
Composite reliability	0.85
<i>Brand-equity</i>	
1. Brand equity in the last year	0.84
2. Brand equity in the last three years	0.94
AVE	0.80
Cronbach's-Alpha	0.89
Composite reliability	0.89
<i>Competitor's relative price</i>	
1. Competitor's relative price in the last year	0.88
2. Competitor's relative price in the last three years	0.90
AVE	0.79
Cronbach's Alpha	0.88
Composite reliability	0.88
<i>Product-quality</i>	
1. Product quality in the last year	0.85
2. Product quality in the last three years	0.89
AVE	0.76
Cronbach's-Alpha	0.86
Composite reliability	0.86
<i>Digital-marketing</i>	
1. Digital marketing conversion rate in the last year	0.87
2. Digital marketing conversion rate in the last three years	0.89
AVE	0.78
Cronbach's-Alpha	0.88
Composite reliability	0.88
<i>Market-coverage</i>	
1. Market coverage in the last year	0.79
2. Market coverage in the last three years	0.80
3. Distribution channels' coverage in the last year	0.70
4. Distribution channels' coverage in the last three years	0.82
AVE	0.60
Cronbach's-Alpha	0.86
Composite reliability	0.86
Source(s): Table by authors	

Table S2.
Reliability and validity
analysis of the non-
financial results
scale items

Financial results	Factor-loads
1. General return on the investment	0.78
2. General finance performance	0.86
3. Return on assets	0.79
4. EBITDA	0.79
5. Organization's overall performance (accomplishment of organizational objectives)	0.91
AVE	0.66
Cronbach's-Alpha	0.91
Composite reliability	0.91
Source(s): Table by authors	

Table S3.
Reliability and validity
analysis of the
financial results scale

Pure-vectors	Control typologies										Distance in absolute value	% of the total distance						
	Formal (four items)		Informal (seven items)		Formal (four items)		Informal (seven items)		Case example									
	Formal (four items)	Informal (seven items)	Formal (four items)	Informal (seven items)	Formal (four items)	Informal (seven items)												
High	7	7	7	7	7	7	7	7	5	4	3	4	4	3	Equal to	22	17%	
Bureaucratic	7	7	7	1	1	1	1	1	7	5	6	7	7	4	4	3	26	20%
Clan	1	1	1	7	7	7	7	7	7	5	4	3	4	4	3	40	30%	
Low	1	1	1	1	1	1	1	1	7	5	6	7	7	5	4	3	44	33%
Source(s): Table by authors															132	100%		

Table S4.
Example of
classification
procedure

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Assessing the drivers to share the content on social media in tourism: the empirical evidence on a world heritage city

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Abstract

Purpose – This study seeks to provide a greater understanding of the variables that influence travellers' intention to participate in social media, paying special attention to (1) the direct impact of perceived usefulness (PU) of social media and (2) the moderating impact of tourists' altruism and self-interest.

Design/methodology/approach – The proposed conceptual model was empirically tested using an online questionnaire distributed to a sample of 394 tourists visiting a World Heritage city.

Findings – The findings show that perceived social media usefulness has a significant effect on users' intention to share experiences. Additionally, self-interest appears to moderate the relationship between perceived social media usefulness and users' sharing intention, but the results do not support the moderating effect of altruism.

Originality/value – Despite scholars' growing interest in social networks as sources of tourist information, little is known about the aspects that encourage users' participation in these platforms. This paper offers key contributions to the relevant literature in this field and offers compelling recommendations for tour operators' management of social networks.

Keywords Social media, Sharing intent, Perceived usefulness, Altruism, Self-interest

Paper type Research paper

1. Introduction

Social media has gained enormous significance for tourism destinations becoming an indispensable means of both information and communication, especially after COVID-19 pandemic (Pachucki *et al.*, 2022). Consequently, such platforms are now the main method for travellers to share their tourism experiences (Lin and Rasoolimanesh, 2022). Before taking their trip, users look for travel information and recommendations in order to plan, organise and learn about tourism products and services. Consumers thus frequently encounter a multitude of messages from various sources offering differing, and often inconsistent, opinions regarding the same product or service (Bigne *et al.*, 2020). Importantly, after the trip,



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users can use social networking platforms to share their experiences and evaluations about previously experienced destinations, tourism offers and services (Oliveira *et al.*, 2020).

Thanks to this trend, people increasingly rely on other consumers' opinions when deciding to visit a tourist destination, which has resulted in a vast amount of user-generated content that is centrally important for travel planning (Oliveira *et al.*, 2020) and tourism marketing (Kim *et al.*, 2018). As a result, reviews and opinions can have a considerable impact on the demand for tourism services (Dedeoğlu *et al.*, 2020). Furthermore, the visual content they enjoy through social networks may also impact their decisions (Bigne *et al.*, 2020). Despite the importance that tourists attribute to information sharing on social networks, academia lacks certain knowledge in this area (Dedeoğlu *et al.*, 2020). For instance, little attention has been paid to the factors that encourage user participation in social networks to share tourist experiences (Lin and Rasoolimanesh, 2022); knowledge in this area remains inconsistent and fragmented (Wang *et al.*, 2022). Indeed, according to Oliveira *et al.* (2020), few studies have analysed the determinants that directly or indirectly affect users' intention to participate online on social media platforms.

Moreover, there is still no conceptual model that integrates the factors influencing the intention to share tourism experiences on social networks (Lin and Rasoolimanesh, 2022). Thus, there is a need to uncover not only the determinants of users' intention to participate in social networks (Lin, 2006), but also there is the need to better identify "what" influences the acceptance of social networks as a useful tool for travel planning (Park *et al.*, 2013). To this end, we rely on the technology acceptance model (TAM) (Davis, 1989), which the tourism sector has widely adopted to understand the importance of information and communication technologies (hereafter, ICT) in people's decision-making process and intention to visit a destination (Kaplanidou and Vogt, 2006).

Although TAM underscores that a user's behavioural intention to use an information system is explained through two critical elements: perceived usefulness (PU) and ease of use (EU) (Davis, 1989), PU is especially critical: people generally have to consider behaviour useful before they can develop intentions towards it (Ayeh *et al.*, 2013). Indeed, inasmuch as travellers search for tourism information to better build their decision on where to travel (cf., Vogt and Fesenmaier, 1998), travellers appear to be more willing to share their travel experiences if they consider that the information provided by social networks has been useful in planning their trip (Casaló *et al.*, 2010). Thus, if users find a review useful and credible, they will be more confident in making a purchase decision (Bigne *et al.*, 2020). Moreover, if this review is endorsed by many users, it becomes even more persuasive and trustworthy for users to base their decisions on (Bigne *et al.*, 2021). As such, it is expected that the greater the PU of social media for trip planning, the greater the willingness of users to share information on this platform.

As a support of this, PU has been previously found to have a positive impact on not only customers' purchasing decisions, but also on the generation of positive electronic word-of-mouth (hereafter, eWOM) within travel communities (Agag and El-Masry, 2016) or on the participation in an online travel community (Casaló *et al.*, 2010) and on knowledge-sharing (Hung and Cheng, 2013). Furthermore, we know that virtual communities are used as knowledge repositories where people can absorb or share information (Hung and Cheng, 2013), so individuals are believed to be more likely to share knowledge in these online media only and only if they perceive it as valuable. The notion that social media is an instrument for facilitating knowledge-sharing has evolved gradually over time (Ahmed *et al.*, 2019).

Previous research has analysed the relationship between different variables and sharing intention in the online context, such as source credibility (Hur *et al.*, 2017); interaction between tourists and bloggers (Zhao *et al.*, 2022) or even the use of eye-tracking measures (Bigne *et al.*, 2020) and neurophysiological tools (Bigne *et al.*, 2021). However, the models proposed to date have neglected the PU of social media as a potential antecedent of people's online sharing intention, especially in the tourism sector. Indeed, most studies have focussed on two main aspects: (1) examining the impact of the PU of a website or app on users' intention to search

for information and/or book (tourism) products and services online (Agag and El-Masry, 2016) and (2) analysing the relationship between the PU of social media and people's intention to visit a tourist destination (Chung *et al.*, 2015).

Thus, as Oliveira *et al.* (2020) state, previous research has yet to explore several aspects of tourists' behaviours, whilst Hur *et al.* (2017) note that there is a shortage of theoretical and practical studies on the factors that influence people's choice to use social networks for tourism decisions. Similarly, Park *et al.* (2013) highlight the paucity of research on how knowledge is shared via online social networks. Finally, and more generally, Wang and Li (2019) underline the need for more research on the relationship between PU and consumer behaviour. As important to advance this research field, we note that, yet little attention has been paid to background of users' intentions to participate in online communities (Tsai and Pai, 2014), which we believe can be valuable.

Investigating this aspect could help understand why PU has been observed in previous research not to affect users' intention to share videos on YouTube (Yang *et al.*, 2016) or content in entertainment environments such as social networks (Hsu and Lin, 2008). In this regard, several authors have highlighted the need to identify possible moderators in the direct relationship between PU and consumer behaviour (Hussein *et al.*, 2016). As Oliveira *et al.* (2020) asserts, there are certain factors that facilitate the practice of sharing travel experiences. Consumers do not always share opinions about products, services or travel experiences just to "inform others". They can also be motivated, for instance, by the desire to receive social recognition or "likes" (Dedeoğlu *et al.*, 2020). In fact, the existing literature recognises a lack of knowledge about the relationship between the sharing platform used and the potential motive(s) behind consumer-generated content (Dedeoğlu *et al.*, 2020).

Investigations into the moderating effect of motivations on user behaviour are relatively new (Gutierrez-Garcia *et al.*, 2019), so there is not yet a great body of work on this topic, especially in tourism (Xu and Chan, 2016). Nonetheless, motivations may have a significant moderating effect on the relationship, as they influence a tourist's decision-making processes and the selection of a destination (Moreno-Gil *et al.*, 2012). Moreover, motivations are known to be a critical antecedent of consumer behaviour (Mansfeld, 1992), but little is known about how these factors compel users to share their travel experiences on social networks (Oliveira *et al.*, 2020). Amongst the different types of motivations commonly analysed, the largest debate in the literature revolves around altruism (or goodwill) versus self-interest (Heaton *et al.*, 2019), especially in the tourism sector (Paraskevaidis and Andriotis, 2017).

However, most studies to date have analysed these two motivations only in the context of voluntary tourism (Benson and Seibert, 2009). Although studies have looked at the relationship between PU of social media and consumer behaviour, to our knowledge, none has attempted to examine the role of altruism and self-interest in this relationship. This study adopts a broader perspective. First, it proposes a conceptual model that includes one of the most influential determinants of user behaviour: PU of social media or social networks. Second, the study contributes to a better understanding of the motivational factors that influence the intention to share tourism experiences on social networks, determining the moderating effect of altruism and self-interest in the proposed relationship.

The findings of this research will provide important implications for the strategies tourism professionals should develop in their social network profiles. Thus, this research aims to answer the following questions: How does the PU of social media influence travellers' intention to share their tourism experiences? And what is the moderating role of altruism and self-interest in this relationship? The paper is organised as follows. First, we present the theoretical framework and hypotheses. Second, we describe the research design and the method used to test the model. Finally, we discuss the study's conclusions and limitations and illuminate how they can inform future studies.

2. Literature review

2.1 Perceived usefulness (PU) of social media and tourists' sharing intent

Today, user-generated content is the basis of innovative knowledge-sharing networks (Öz, 2015), and its importance is such that it allows and helps tourists to directly obtain knowledge from other tourists' experiences. As the number of social networks grows, the concept of PU becomes increasingly integral to users' intention to share information and give pieces of advice to others (Hajli, 2014). Indeed, PU is considered a fundamental determinant of users' acceptance or rejection of a technology (Davis, 1989).

In social networks, PU -defined as the extent to which users believe that a particular social network will help them achieve their goal(s) (Kusyanti *et al.*, 2018)- reflects the trust that users place in the characteristics and capabilities of these platforms to capture and/or generate the information that meets their requirements and improves their decision-making (Hua *et al.*, 2017). So, if users perceive social networks as a space or tool for acquiring travel information, they are more likely to adopt this information media or platform to plan their trip (Chung *et al.*, 2015). In fact, websites are known to improve their ability to encourage more visits, engagement and sales (Liu and Park, 2015) when consumers perceive the website's images, comments and reviews as useful to some extent (Kumar and Benbasat, 2006).

To better understand PU, scholars have developed different approaches to explain users' decision to accept, reject or adapt to a technology (Izuagbe *et al.*, 2019). However, the Technology Acceptance Model (TAM) is the most used for analysing the impact of information systems on users' behaviour (Davis, 1989), which considers PU as a key determinant of user behaviour (Agag and El-Masry, 2016). The direct relationship between PU and behavioural intent arises from the notion that people develop their intentions towards behaviours that they consider useful (Ayeh *et al.*, 2013). Consequently, as users' perception of a system's usefulness improves, so does their attitude towards sharing knowledge through said system (Hung *et al.*, 2015).

A positive experience will stimulate their interest in participation, whilst a negative experience may generate frustration that reduces the motivation to participate again (Deci and Ryan, 2002). Therefore, users' behaviour towards sharing information flows from their judgement about its usefulness (Yan *et al.*, 2016). In the tourism domain, and particularly in online travel communities, one of the main challenges is simply consumer participation in social networks (Agag and El-Masry, 2016). If tourists receive useful information from other travellers, they are more likely to contribute their own knowledge in the same way (Park *et al.*, 2013). Consequently, people are more likely to share their travel experiences on the social networks that served as a source of trip information to them (Kang and Schuett, 2013), and therefore, if they perceived such information as useful. Based on the above, we hypothesise that:

- H1. The PU of social media has a positive and significant effect on tourists' intent of sharing their travel experiences in this media or platform.

2.2 Moderating effect of tourist's altruism and self-interest

A growing body of literature highlights the importance of motivation in the creation of online content (Wang and Li, 2014) and the exchange of experiences through social networks (Oliveira *et al.*, 2020). This debate about motivations has centred on two, in particular: altruism and self-interest. It is important to note, however, that altruism and self-interest do not occur in a "pure" sense; instead, the two concepts are intertwined. Human beings are complex beings who do not necessarily operate according to the two extremes (Diacon, 2014), as a person may find personal benefits in most altruistic actions (Batson, 1990). Recent research has mainly analysed altruism or self-interest (Paraskevaidis and Andriotis, 2017)

with regards to the motives and behaviours of volunteer tourists and has concluded that both types of motives underlie the actions of this type of tourists (Wearing and McGehee, 2013).

In addition, there is evidence that intrinsic motivation (which includes self-interest and altruism) may serve to moderate the consumers' reactions to different situations (Chen and Chen, 2011). Thus, in a context of sharing the tourism experience on social networks, PU of social networks could influence more positively on such sharing intent in as much as these motives (i.e. altruism, self-interest) are present amongst the tourists or social media users. In other words, the relationship between social networks' PU and the intent to share the tourism experience could be boosted based on what drives (altruism, self-interest) tourists to participate in this online media or platform.

2.2.1 Moderating effect of altruism. Altruism is about renouncing opportunistic behaviour—not for the sake of sanctions or rewards, but because it is seen as the “right” thing to do (Hardy *et al.*, 1998), which applied to consumerism, principally means sharing positive and negative experiences in order to help other consumers make better decisions (Oliveira *et al.*, 2020). In fact, altruism is considered one of the main motivations for sharing information, especially with regard to sharing travel experiences. Indeed, advising other users and prevent them from choosing bad products or tourist destinations (Oliveira *et al.*, 2020) or contributing to websites that are considered useful and valuable (Munar and Jacobsen, 2014) is generally one principal motivation amongst travellers. Accordingly, we then propose:

H2. The effect of PU of social media on tourists' sharing intent is positively moderated by tourists' level of altruism

2.2.2 Moderating effect of self-interest. Self-interest also drives tourists to do volunteering tourism—tourists who undertake holidays that might involve aiding or alleviating the material poverty of some groups in society- (Wearing and McGehee, 2013), so it is of no surprise that this motivating factor can play a role in explaining why tourists share content online. However, unlike altruism, self-interest drives consumers to share content online for the personal gains it entails (cf., Paraskevaidis and Andriotis, 2017). These gains may involve tangible, economic benefits, such as discounts, prizes or rewards, or they may be intangible and non-economic, such as the possibility of gaining respect, status and recognition, increasing social ties, improving one's image, attracting attention, increasing self-esteem and deriving enjoyment and fun from the activity and/or achieving greater cooperation in return, amongst others (Lin and Rasoolimanesh, 2022; Oliveira *et al.*, 2020; Yoo and Gretzel, 2008). Accordingly, then:

H3. The effect of PU of social media on tourists' sharing intent is positively moderated by tourists' level of self-interest.

3. Methodology

3.1 Sample and procedure

To test the proposed hypotheses, we administered an online questionnaire to tourists and travellers, for at least 18 years of age, who use social networks to seek tourist information about the city of Cuenca (Spain), a small city that United Nations Educational, Scientific and Cultural Organisation (UNESCO) declared a World Heritage City in 1996. We launched this questionnaire in the following platforms: Official Cuenca City Council webpage and its main profiles on social networks, with prior contact and authorisation from the City Council Press Officer; official webpage and social networks profile of the Faculty of Social Sciences of Cuenca, with the prior authorisation from the Dean of the Faculty; social networks' profile of CuencaOn, the main newsletter of the Cuenca University Campus; the tourism blog “Esto es

Cuenca” which currently has about 10.000 monthly visits of which 80% of visitors are people from other different cities to Cuenca; personal platforms such as social networks (Facebook, Instagram, Twitter and WhatsApp) and emails to friends and acquaintances, requesting them to share it to more users.

After five weeks, we obtained 394 surveys; however, some were incomplete with missing data for some of the items used to measure our core study variables. After removing these surveys, a final sample of 247 valid questionnaires was used for our study (see Table 1). The study sample included 123 respondents (49.8% of the sample) from diverse locations of the large province of Cuenca, which covers an area of 17,141 km² and has more than 238 population centres. However, the inclusion of this sample of respondents in our study did not alter the results obtained, as they were not from the World Heritage Site of Cuenca but from different, multiple locations within the province. A *t*-test analysis to compare the mean values of all the variables used in this study across two independent groups (tourists from the province of Cuenca versus tourists from other locations) revealed no significant differences (for social media usefulness, *F* = 1.935, *p*-value = 0.165; for altruism, *F* = 0.005, *p*-value = 0.941; for self-interest, *F* = 2.468, *p*-value = 0.117; for sharing intent, *F* = 0.914,

		Frequency	Percentage (%)
Age	≤24 years old	44	17.8
	25–44 years old	154	62.3
	45–64 years old	49	19.8
Gender	Male	86	34.8
	Female	161	65.2
Level of studies	Primary studies	7	2.8
	Secondary studies	53	21.5
	University education	128	51.8
	Postgraduate (master's degree and doctoral degree)	59	23.9
Occupation	Self-employed	38	15.4
	Employed full time	114	46.2
	Employed part time	20	8.1
	Student	40	16.2
	Student and self-employed	3	1.2
	Student and employed	15	6.1
	Housework	3	1.2
	Unemployed	12	4.9
	Retired	2	0.8
	Other	1	0.4
Family life cycle	Young people	63	25.5
	Young couple	62	25.1
	Couple with children	73	29.6
	Mature couple	26	10.5
	Grandparents	1	0.4
	Group of friends	21	8.5
	Other	1	0.4
Gross family income	From 0 to 15,000€	81	32.8
	From 15,001 to 25,000€	82	33.2
	From 25,001 to 40,000€	55	22.3
	From 40,001 to 60,000€	21	8.5
	More than 60,000€	8	3.2
Residence	Province of Cuenca	123	49.8
	Out of Spain	1	0.4
	Another province of Castilla-La Mancha	53	21.5
	Another province of Spain	70	28.3

Source(s): Table by authors

Table 1.
Respondent
profiles (*n* = 247)

p -value = 0.340), which suggests that the inclusion of respondents from Cuenca province in our study is likely not to have biased our findings.

The study was designed in a cross-sectional manner and used self-report measures, so common method variance (CMV) and social desirability were potential concerns. To limit the incidence of such problems in our data, we designed the questionnaire in accordance with Podsakoff *et al.*'s (2003) recommendations. Finally, by assuming that late respondents are more similar to non-respondents than to early ones (e.g. Armstrong and Overton, 1977), we compared the first and last quartiles of received submissions by conducting independent sample t -tests for all the study variables. Because no significant differences were found, non-response bias is not a major problem in this study. Following previous recommendations about how to treat latent variables in partial least squares (PLS) (Hair *et al.*, 2017), our study included formative and reflective first-order constructs. Table 2 shows the items for each variable that were measured on a five-point Likert format response basis.

	Loadings	Cronbach's Alpha	Construct reliability Dijkstra- Henseler's ρA	Composite reability	AVE
<i>Social Networks usefulness</i>		0.895	0.897	0.915	0.520
SNUTI2. Recommendations shown by other users on social networks are reliable	0.622				
SNUTI4. The information on tourism pages on social networks is convincing	0.673				
SNUTI5. The information on tourism pages on social networks is very useful for consumers	0.621				
SNUTI6. The information on tourism pages on social networks is reliable	0.669				
SNUTI7. In general, I trust the comments and materials published by other travellers	0.661				
SNUTI8. Through social networks, I can find more information about a destination and decide where to go during my visit	0.811				
SNUTI9. Through social networks, I am able to evaluate what I can do during my visit to the destination	0.818				
SNUTI10. Through social networks, I can get more involved in planning my trip	0.816				
SNUTI11. Through social networks, I can imagine what the destination is like	0.772				
SNUTI12. Through social networks, I can save time planning my trip	0.706				
<i>Altruism</i>		0.795	0.810	0.907	0.514
ALTRU1. I participate in social networks ... to advise other users	0.756				
ALTRU2. I participate in social networks ... to help other people	0.668				
<i>Sharing intent</i>					
I would be willing to share my tourism experience on social networks					

Table 2.
Reflective constructs,
their corresponding
items and reliability
and validity criteria

Source(s): Table by authors

3.1.1 Social media usefulness (reflective). In order to measure PU of social networks in tourism, we adapted Yoo and Gretzel (2016) 12-item scale. The items captured participants' opinions on the usefulness of social media when they look for tourism information about a destination. The items were related to aspects such as usefulness of information obtained; trustworthiness and reliability of social networks and planning of the trip (see Table 2).

3.1.2 Altruism (reflective) and self-interest (formative). To measure altruism and self-interest, we adapted items used by Yoo and Gretzel (2011). Altruism was a two-item reflective construct that assessed whether people use social networks "to advise" and "to help" other users (see Table 2), whilst self-interest was a formative construct that assessed whether people use social networks "to store information important to me" and "to get rewards" (see Table 4). The items used to measure altruism meet all the criteria that indicate these items are reflective, as outlined by Mackenzie *et al.* (2005) and Martínez-Cañas *et al.* (2023). These criteria include that the items should covary, be manifestations of the construct, are interchangeable and have same antecedents and consequences.

Thus, the items used to measure altruism are supposed to be highly correlated, are clear and direct manifestations of altruism, are interchangeable (advising, helping) and are supposed to have the same antecedent (i.e. when an individual is an altruist, he/she is expected to help others with useful advice, Oliveira *et al.*, 2020). For self-interest, in contrast, the two indicators (to store information important to me, to get rewards) refer to aspects that define and capture unique, distinctive concepts of the construct (e.g. the reasons why an individual is self-interested when he/she shares information through social networks can be many and varied). The indicators are not expected to be strongly correlated (people can share for the rewards they gain or because by doing so they store this information for themselves) and may have distinct antecedents or consequences (they may get rewards by sharing information on social networks or by doing other things). This suggests that these indicators are likely to be formative rather than reflective, according to MacKenzie *et al.*'s (2005) guidelines.

3.1.3 Sharing intent of tourism experience. To measure the willingness to share travel experiences on social networks, we only used one item adapted from Kohler *et al.* (2011) and used by Füller *et al.* (2011) (Table 1).

3.2 Data analysis

We used Smart PLS 3.2.8 (Ringle *et al.*, 2005) to test the hypotheses. Following Hair *et al.* (2017), we applied bootstrapping (5,000 resamples) to generate standard errors and t-statistics for the hypothesis testing.

4. Results

4.1 Measurement model

Tables 2 and 3 collectively show the reliability and validity for all the constructs used. Specifically, Table 2 reports the reliability of individual constructs and the convergent validity for reflective constructs. Table 3 reports the results for discriminant validity and provides the correlations across all incorporated variables.

Table 2 reveals that the majority of items are reliable, with most loadings exceeding the desired threshold of 0.707 (Hair *et al.*, 2017). Two items showed poor values of around 0.50 (SNUTI1 and SNUTI3) and were deleted. Although five items related to social networks usefulness (SNUTI2, SNUTI4, SNUTI5, SNUTI6 and SNUTI7) reflected values lower than 0.707, they were still higher than 0.60 and thus were retained (Hair *et al.*, 2017). In terms of construct reliability, Cronbach's alphas and Dijkstra–Henseler's composite reliabilities (ρ_A) were above 0.70, as recommended (Hair *et al.*, 2017). The criteria for convergent validity was

also met, as the average variance extracted (AVE) for each variable was greater than 0.50 (Table 3), as recommended (Hair *et al.*, 2017).

Table 3 also shows that the heterotrait-monotrait (HTMT) values are below the most restrictive threshold of 0.85 and significantly different from 1, thus confirming discriminant validity between each pair of variables of our study (Hair *et al.*, 2017). The Fornell–Larcker criterion provided another confirmation of discriminant validity: The square roots of AVE for each variable are greater than the correlation of each variable with the others, as also required (Hair *et al.*, 2017) (see Table 3).

Table 4 reports the co-linearity values (FIV), weights, t-student, *p*-values and confidence intervals for the self-interest variable, as it is the only formative construct in our study. Table 4 illustrates that all items of this construct have significant weights. In addition, all FIV values are less than 3.3, which affirm that the construct does not suffer from multicollinearity problems. Thus, we have confidence in our measurement model for the variable of self-interest.

4.2 Hypothesis testing

Figure 1 contains the findings related to our hypotheses. In support of H1, the results reveal that the PU of social media for tourism has a positive and significant effect on tourists' sharing intent (Beta = 0.151, *p* < 0.01). With regards to H2, the results fail to confirm that users' altruism strengthens this relationship (Beta = 0.021, *p* > 0.05); Figure 2a shows that when this interaction term is plotted, the low and high altruism regression lines are parallel, meaning that the relationship between perceived social media usefulness and users' or

Table 3.
Descriptive statistics,
correlation matrix and
square roots of the
reflective
constructs' AVE

	Mean	SD	1	2	3	4
1. Social network usefulness	3.37	0.90	0.721	0.392 [0.277;0.508]	—	0.328 [0.224;0.430]
2. Altruism	3.28	1.15	0.339**	0.910	—	0.460 [0.356;0.563]
3. Self-interest	2.72	1.17	0.334**	0.351**	—	—
4. Sharing intent	3.97	0.95	0.313**	0.412**	0.308**	—

Note(s): Italic values on the diagonal are square roots of AVE (variance shared between the constructs and their measures). Off-diagonal elements below the diagonal are correlations amongst the constructs; ***p* < 0.01, **p* < 0.05 (two-tailed test). Off-diagonal elements above the diagonal are the heterotrait-monotrait ratios of correlations (HTMT), and their corresponding 95% confidence intervals. SD = standard deviation

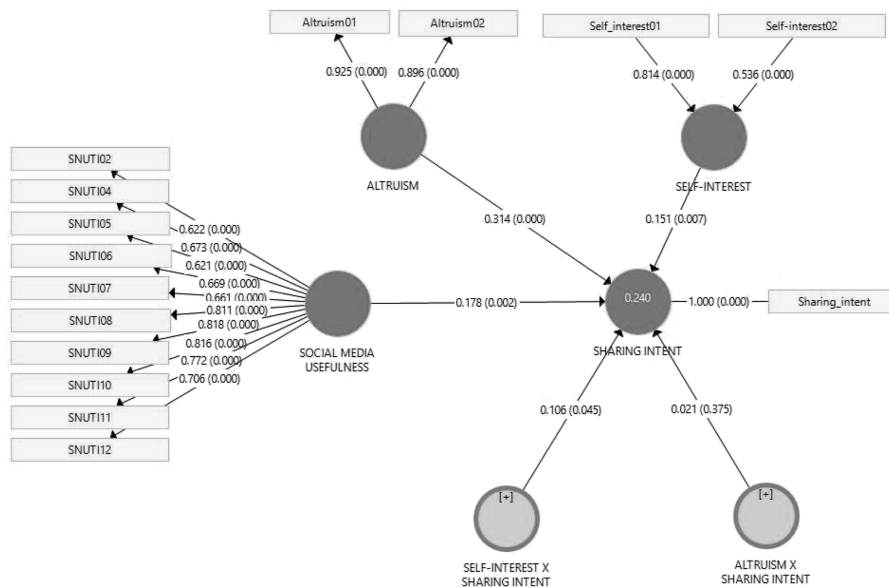
Source(s): Table by authors

Table 4.
Formative construct
and their
respective items

	VIF	Weights and significance	<i>t</i> -value	<i>p</i> -value	95% confidence interval
Self-interest					
<i>SELF1.</i> I participate in social networks to ... to store information important to me	1.003	0.814**	7.019	0.000	0.574–0.953
<i>SELF2.</i> I participate in social networks to ... to get rewards	1.003	0.536**	3.407	0.000	0.263–0.780

Note(s): ***p* < 0.01: (*t*_(4,999) = 2.33). Thus, each one of the items that help to build up the formative construct of self-interest adds to the building up of the construct. Notes. VIF = Variance inflation factor. VIFs lower than the strictest threshold of 3.3 indicate that multicollinearity is not a problem, so each item provide information to build up the construct

Source(s): Table by authors



Note(s): In parentheses p -values are included to show significance at $p < 0.001$, 0.01 and 0.05

Source(s): Figure by authors

Figure 1.
Measurement and
structural model:
hypothesis testing

tourists' sharing intent is the same for high and low altruism conditions. Thus, H2 cannot be supported.

In contrast, the results show a positive and significant effect of self-interest on the relationship between PU of social media and users' sharing intent (Beta = 0.106, $p < 0.05$), which means that the relationship between social network usefulness and tourists' experience-sharing intention is stronger for higher levels of self-interest. When the interaction term is plotted (see Figure 2), the slope is clearly more pronounced for higher than for lower self-interest conditions (see Figure 2b). Thus, H3 is fully supported.

In terms of the model's explanatory power, the R^2 and Q^2 (predictive relevance of the endogenous variable) yielded satisfactory values. First, the model explains the R^2 adjusted value of 0.224 for tourists' sharing intent. In addition, the Stone–Geisser blindfolding sample reuse technique reveals a Q^2 value for our dependent variable –tourists' sharing intent – ($Q^2 = 0.179$) larger than zero, thus indicating that our predicted model has good predictive power to explain such a variable (Hair *et al.*, 2017).

5. Conclusions and implications

Due to the importance of social networks as a channel for travellers to share their travel experiences today, the topic of social media has attracted great interest lately. However, most studies have focussed on analysing the consequences of consumers' participation in online communities, whether in terms of satisfaction, purchase decisions, or intention to visit a destination; few are the studies focussed on identifying the background variables that drive travellers to share tourism information on social networks. Against that background, the present paper pursued two main objectives that advance literature. Firstly, we sought to

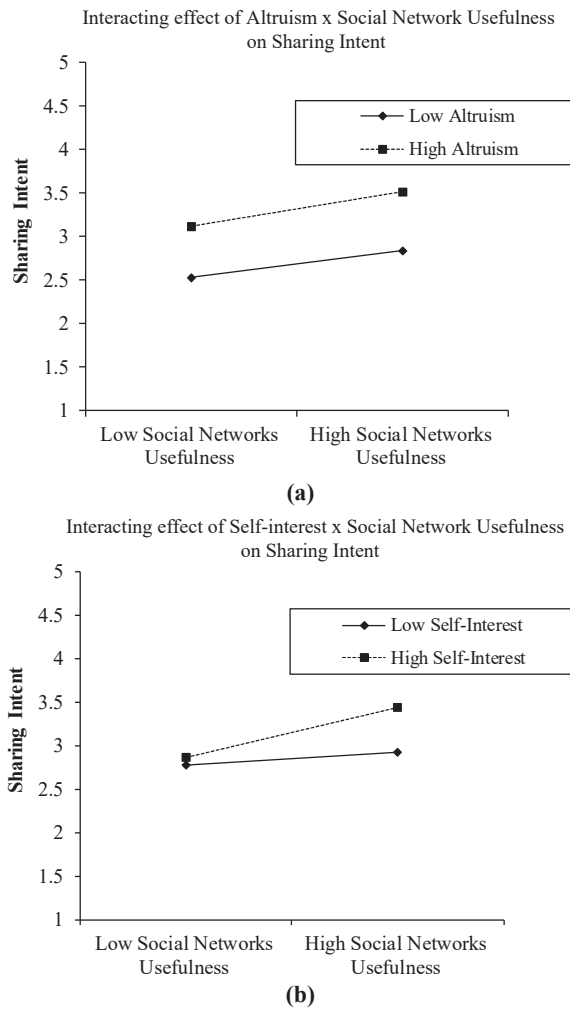


Figure 2.
Interacting effect
between PU in social
media and sharing
intent

Source(s): Figure by authors

examine perceived social media usefulness and its relationship with users' intention to share their travel experiences on these platforms. Secondly, we sought to analyse the moderating role of users' altruism and self-interest in this relationship.

Regarding the first objective, the results confirmed the existence of a positive, significant relationship between perceived social media usefulness and the user's intent to share his/her tourist experience. Specifically, our data reveals that if users perceive the information in social networks as useful for organising and planning their trip, their intention to share tourism experiences with other users will be greater. Concerning our second objective, the results fail to support that altruism strengthens the positive impact of perceived social media usefulness on sharing intent. This is an unexpected finding as altruism is said to be an important motive for people to share travelling experiences on social networks (Oliveira *et al.*,

2020). Although our findings align with previous research, such as that shown in Figure 1, where altruism is a positive factor that directly influences users' sharing intent, the study findings do not allow us to support our prediction that the PU of social media should have a stronger positive effect on the sharing intent of the most altruistic social media users.

However, our findings are consistent with a substantial body of previous research that suggests that self-interest incentives have a strong and positive influence on content sharing intention amongst users (Fu *et al.*, 2017), as well as a significant moderating effect on customers' intention decision formation (Gremler *et al.*, 2001). Specifically, our results reveal that it is self-interest that reinforces the positive effect of the PU of social media on users' sharing intention; therefore, it is users' self-interest that has the most significant contribution in strengthening the positive effect of PU on users' sharing intent. Indeed, the results reveal a significant effect of self-interest on user's decision to exchange travel experiences and that if users are guided by self-interest motives, PU of social media has a stronger positive effect on their sharing intent.

Thus, our findings reveal that social network users are more motivated to share their tourism experience if they receive rewards for their contribution (gifts, discounts, offers) or if storing information about the trip is of great importance to them. These findings contrast with previous research suggesting that users who create and share online content are primarily motivated by altruistic and hedonic motives (Munar and Jacobsen, 2014; Oliveira *et al.*, 2020). However, our results may reflect the dynamics of the tourism sector, which is characterised by the continuous enjoyment of services and experiences and in which tourism organisations are increasingly noting the benefits of social networks for enhancing their reputation and attractiveness (Pop *et al.*, 2022). After all, tourism products and services cannot be consumed or experienced before the trip, so the opinion of other consumers is an important factor in inspiring and motivating other users to demand these products and services.

That's why tourism companies are increasing trying to motivate consumers to share their experiences through prize draws, promotions or discounts for future travel, which is likely to have motivated that consumers become inclined to share their travelling experiences in exchange for some type of external rewards (e.g. discounts, coupons, recognition, reputation) or simply to store important information such as the destination, the accommodation where they stayed or the activities they did -all of them strongly rooted in self-interest motivations.

Thus, although altruism could be a positive influence on the intention of people to share on social networks, our findings reveal that when an individual perceives that the information shared on social networks is highly useful to achieve their own goals (e.g. acquiring good travel information to plan their trip), they may be more interested in sharing information on social networks for self-interested motives, not altruistic ones. In other words, to the extent that consumers (who are also social media user) view social networks as a space within which they and third parties can obtain useful information to achieve their goals, self-interest will likely be a more powerful motive (vs. altruism) for driving them to share content on social networks.

Despite these important contributions to the literature, our study has several limitations that could inspire future compelling lines of research. First, our work focusses on examining the usefulness perceived by the user on a specific type of social media, social networks, so generalisations of our findings to other social media platforms should not be assumed. Therefore, it would be interesting to examine the PU of other social media platforms, beyond social networks, such as tourism blogs, intermediary websites or booking portals. The results obtained in this study and the theoretical model tested could be an important starting point for future research. Second, whilst this study examines the usefulness of social networks for sharing tourist experiences, it does not take into account different strategies that companies

can use on these platforms to engage users, such as those directed at increasing value co-creation.

In this sense, we encourage future researchers to investigate the potential moderating effect of value co-creation on the relationship between PU and sharing intention. We think that the strength of the relationship may vary depending on whether there is a co-creation activity. Thus, the perceived utility of the social network will be greater if the user also participates in an entertaining and fun activity with the company in question, such that they are likely to be more willing to share their tourist experience. Third, the current study considered the moderating effect of altruism and self-interest motivations, but the literature suggests that other types of motivational factors – such as entertainment or enjoyment of the activity – may affect consumer behaviour. Thus, we propose to incorporate into the theoretical model new motivations that may influence the user's decision-making. For example, it is possible that the entertainment motive has a more positive influence than the self-interest motive on the relationship between PU and sharing intention.

Likewise, future research could consider different groups of users and other moderating effects, such as age, gender or the frequency of social network usage and then demonstrate the robustness of the model fit in different contexts. It should be noted that, contrary to expectations, altruism did not positively moderate the relationship between perceived social media usefulness and sharing intention. Thus, it would be valuable to uncover which other variables are less relevant than they appear. As a final limitation, the questionnaire was only completed by tourists from a single destination. Therefore, future works should strive to replicate the results in other cities or locations.

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