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Examining the drivers of marketing innovation in SMEs

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ABSTRACT

Marketing innovation represents a pathway for achieving legitimacy, viability, and growth for SMEs that typically operate with resource constraints in uncertain and competitive environments. However, our understanding of the organizational determinants of marketing innovation by SMEs is limited. We advance the literature by drawing on a longitudinal (5-year) data set obtained through an Australian Bureau of Statistics (ABS) national-level panel and offering a comprehensive picture of the organizational determinants that affect the likelihood of marketing innovation by SMEs. Logistic regression analysis conducted on 4378 firm-year observations generally supports our theoretical framework and reveals how marketing innovation by SMEs is driven by institutional, resource, innovation, and performance measurement factors. Our findings offer SME managers a clear line of sight between organization-wide practices and innovative marketing practices.

1. Introduction

The importance of marketing innovation cannot be underestimated. Innovation in marketing represents a source of competitive differentiation and growth for most firms, particularly for small and medium-sized enterprises (SMEs). Unlike larger organizations that have established business models, SMEs are typically constrained by liabilities of smallness and newness, and a struggle for legitimacy (Eggers, 2020; Kraus et al., 2007). Moreover, SMEs typically operate in highly competitive and resource constrained environments (Clauss et al., 2022). Under such circumstances, marketing innovation at SMEs represents a crucial mechanism for survival and gaining a competitive advantage (Carrasco-Carvajal et al., 2022; Hock-Doepgen et al., 2021; Naidoo, 2010; O'Dwyer et al., 2009).

Despite the importance of marketing innovation, practitioners generally lack an understanding of the antecedents and consequences of marketing innovation (Purchase & Volery, 2020). We address this knowledge gap by focusing on the organizational determinants of SME marketing innovation. Based on the unique characteristics of SMEs, we advance a theoretical framework that draws across the institutional theory, resource dependence theory, product/service innovation and, strategic performance measurement literatures. We test our framework on longitudinal (5-year) data obtained through the Australian Bureau of Statistics' (ABS) national-level panel of SMEs (comprising 4378 firm-year observations). Using logistic regression analysis, we find support for our position that SME marketing innovation is driven by institutional pressures, resource dependencies, product/service innovation, and performance measurement requirements.

The present study offers significant contributions to the SME marketing innovation literature given our holistic perspective on SME marketing innovation. Although the literature outlines specific determinants of marketing innovation, relatively few studies simultaneously examine a comprehensive set of organization-wide drivers of marketing innovation. We demonstrate that the triggers of marketing innovation can arise from numerous organizational factors. Theoretically, we broaden the scope of the antecedents of SME marketing innovation. From a practical standpoint, our results enable SME managers to clearly visualize the catalysts of marketing innovation, permitting clarity and focus for future planning and goal setting.

Our framework has multisector applicability, thereby aiding generalizability (Bodlaj et al., 2020). Equivalent prior research is mainly based on either quantitative single-industry studies (Gupta et al., 2016; Naidoo, 2010; Nguyen et al., 2021) or qualitative (small-sample) investigations (Ajayi & Morton, 2015; O'Dwyer et al., 2009; Royo-Vela & Velasquez Serrano, 2021), though notable exceptions are emerging internationally (Bodlaj et al., 2020; Medrano & Olarte-Pascual, 2016; Quaye & Mensah, 2018).

We also advance research on Australian SMEs. The literature on SME marketing innovation has emanated from the UK (Battisti & Stoneman, 2010), Spain (Cornejo-Cañamares et al., 2021; Medrano & Olarte-

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Pascual, 2016), Turkey (Aksoy, 2017), Poland (Lewandowska et al., 2016), along with emergent investigations from India (Gupta et al., 2016), Mexico (Sánchez-Gutiérrez et al., 2019), and Africa (Adam et al., 2017; Quaye & Mensah, 2018). In comparison, there is scant comparable multi-industry research emanating from Australia. Australia has over 2.3 million SMEs that represent approximately 99 % of total businesses (ICSTD, 2022). SMEs contributed over 54 % of Australian GDP in 2018–2019 (Australian Small Business and Family Enterprise Ombudsman, 2020).

2. Marketing innovation in SMEs and its determinants: A literature review

The Organization for Economic Co-operation and Development (OECD) defines marketing innovation as "the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing" (OECD/Eurostat, 2005; para 169, p. 49). This definition has been influential through the SME literature. Accordingly, we define marketing innovation as the implementation of new tools and techniques relating to the design or packaging of goods and services, media or techniques for promotion, methods of product placement or sales channels, new methods of pricing, and other forms of marketing innovation (e.g., branding).

SME marketing innovation can be either radical or incremental (O'Dwyer et al., 2009). A radical marketing innovation represents a fundamental departure from the status quo, such as a new-to-the-world product or practice. Incremental marketing innovation involves adjusting and improving existing products and practices, such as packaging changes. Our conceptualization does not distinguish between incremental and radical marketing innovation; instead, it subsumes both modes.

The limited literature on SME marketing innovation offers multiple determinants of marketing innovation. Marketing knowledge and skills are offered as enablers of marketing innovation. Muddaha et al. (2018) in the context of Nigerian SMEs, observe that the acquisition and application of marketing knowledge directly relates to marketing innovation. Quaye and Mensah (2019) highlight marketing competence as a determinant of marketing innovation in Ghanaian SMEs. Exploratory (qualitative) research on Nigerian SME behavior explicates that customer relationship management, customer partnering, and referral marketing may also enable SME marketing innovation (Ajayi & Morton, 2015).

Product innovation may facilitate marketing innovation. Douglas et al. (2015) survey a sample of European SMEs and observe that an established capacity for product innovation is significantly associated with marketing innovation, consistent with the necessity of marketing new products. Based on a survey of Spanish SMEs, Medrano and Olarte-Pascual (2016) observe that product, process, and organizational innovations are associated with a propensity to introduce marketing innovations. More recently, Bodlaj et al. (2020) explicate a direct positive effect of product innovation on marketing innovation in Italian SMEs. Notably, a bi-directional relationship between product innovation and marketing innovation may also exist. On the one hand, product innovation may explain marketing innovation as per the need-to-market logic. Conversely, marketing innovation may influence product innovation (Aksoy, 2017; Soltani et al., 2015). For instance, in the context of international marketing, Lewandowska et al. (2016) highlight that marketing innovation may enhance a firm's market knowledge, which spurs product innovation.

Marketing innovation can also be shaped by organizational culture (Aksoy, 2017). This idea is echoed in research on the implications of the organizational logics of market orientation (MO) and entrepreneurial orientation (EO) on marketing innovation. In the context of Chinese SMEs, Naidoo (2010) observes that two dimensions of MO—competitor orientation and inter-functional coordination—exert a positive influence on marketing innovation. Customer orientation, the third dimension of MO, exerts an unexpected negative influence on marketing innovation. However, Wang (2015) finds that customer orientation positively explains marketing innovation. Additional research is required to clarify the nature of this relationship. Regarding EO and marketing innovation, Adam et al. (2017) report that EO explained certain innovations in the marketing-mix for Egyptian SMEs. For instance, the innovativeness dimension of EO impacted placement and promotional marketing-mix innovation, whereas the proactiveness dimension of EO influenced product, pricing, and placement innovations. Similarly, Covin et al. (2016) find that proactive organizational behaviors are crucial for achieving radical innovativeness in SMEs.

Organizational innovations including new internal processes, administrative systems, and knowledge management approaches can positively influence SME marketing innovation (Bodlaj et al., 2020; Pino et al., 2016). Organizational innovation acts as a support system that creates an environment that supports other innovations (Pino et al., 2016).

Emerging research indicates how organizational strategic aspects may shape marketing innovation. Examining Spanish SMEs, Cornejo-Cañamares et al. (2021) observe that the higher the importance of compliance with environmental, health and safety standards for an SME, the more likely it is to engage in marketing innovation. This logic complements institutional theory, which suggests that firms operate within a framework of norms and assumptions concerning what constitutes acceptable organizational behavior (Oliver, 1997). Thus, organizational decisions are based not only on technical and economic criteria, but also by what is considered legitimate within an industry (Hessels & Terjesen, 2010). Further, Wang (2015) reports that marketing innovation is explained by an SME's strategic focus on marketing, which reflects an emphasis on maintaining and intensifying marketing practices as well as introducing new or significantly improved marketing methods. Similarly, based on a survey of Indian SME resellers of international brands, Gupta et al. (2016) observe that marketing innovation can be a function of brand strategy.

Nguyen et al. (2021) examine internal and external factors that shape marketing innovation among Australian tourism industry SMEs. Investments in staff training, collaboration with stakeholders, and information and communication technology investment, as well as a focus on innovating emerge as significant internal determinants, whereas market competition and demand uncertainty are highlighted as external drivers. Likewise, SMEs in the Australian restaurant sector innovate mainly through relying on external factors, such as mimicking top competitors and customer feedback, and the most common type of innovation is marketing innovation, which mainly relies on the internet (Lee et al., 2019).

3. Conceptual framework and hypotheses

Our conceptual framework considers the unique characteristics of SMEs. SMEs face a liability of smallness (Eggers, 2020). Compared to larger organizations, SMEs are typically constrained in terms of access to resources, such as finance and management capacity (Fernhaber & McDougall-Covin, 2014; Hollenstein, 2005). Moreover, a liability of smallness may be associated with a liability of newness (Eggers, 2020). New SMEs do not have the benefit of established business models and have low levels of legitimacy (Eggers, 2020), which creates a lack of institutional support (Singh et al., 1986). This liability then poses a threat to an SME's survival.

We outline seven determinants of marketing innovation at SMEs: degree of competition, adoption of marketing skills, finance seeking, information and communication technology (ICT) integration, inter-organizational collaboration, product or service innovation, and strategic performance measurement/monitoring. Essentially, we theorize marketing innovation by SMEs as an organizational response to

institutional pressures, resourcing requirements, product/service innovation as well as strategic performance management/monitoring requirements. Fig. 1 depicts our conceptual framework. Specific hypotheses are developed next.

3.1. Institutional pressures and marketing innovation

Institutional theory (DiMaggio & Powell, 1983) may help explain how *degree of competition*, and the *use of marketing skills* enhance the likelihood of marketing innovation at SMEs. As per institutional theory, organizations that face the same set of environmental conditions normally experience pressures that propel them towards adopting established practices (DiMaggio & Powell, 1983). Organizations face *coercive*, *normative,* and *mimetic* pressures that act as isomorphic forces. Coercive pressures are those pressures exerted on organizations by other organizations upon which they are dependent. Normative pressures propel organizations or members of a profession to adhere to commonly established values and codes of conduct. Lastly, mimetic pressures are those forces that induce imitation. In conditions of environmental uncertainty, organizations may model themselves on other organizations, thereby gaining legitimacy through imitative practices (DiMaggio & Powell, 1983).

We expect that the degree of competition faced by an SME will influence marketing innovation. We define the degree of competition as a SME's assessment of its competitive intensity/number of competitors (Nguyen et al., 2021). Competition acts as a source of institutional pressure that induces SMEs to mimic established marketing practices in an industry. According to Bengtsson and Kock (2020), increasing competition pressurizes firms to introduce product innovations. Normally, firms can observe competitor moves and rapidly imitate each other's products. Thus, SMEs are highly aware of the competitive environment (Upson & Green, 2020), typically scan the external environment for threats, opportunities, and trends, and adapt strategies accordingly (Analoui & Karami, 2002). We expect similar behavior in SMEs' adoption of new marketing methods, specifically that the degree of competition faced by an SME will likely compel it to adopt marketing innovation. That is, to attain and maintain institutional legitimacy, SMEs must adhere to the 'rules of the game', that is, comply with the established industry standards (Laïfi & Josserand, 2016). Consider, for instance, how SMEs are increasingly compelled to adopt social media marketing as these practices have become a norm or 'best practice'. Any SME not adopting social media marketing will likely fear falling behind its competitors. Hence, to gain legitimacy, SMEs must adopt social media marketing. Empirical research supports our expectations. Ahmad et al. (2019) survey a sample of SMEs in the UAE on their adoption of social media for marketing purposes, and report that the main environmental factor influencing SMEs' use of social media is "bandwagon pressure" (p. 98). McCann and Barlow (2015) survey Scottish SMEs and report that almost one-third of the sampled SMEs adopt social media because "their competitors were using social media" (p. 279). Hence, we hypothesize:

H1: The degree of competition is positively associated with the likelihood of marketing innovation.

The *adoption of marketing skills* is likely to promote marketing innovation at SMEs. SMEs normally face business uncertainty, and the use of marketing skills becomes crucial for survival (Parry et al., 2012). For instance, the adoption of marketing skills such as interpersonal selling and social media marketing is critical for many SMEs that market to end users. Similarly, network-based marketing skills are critical for SMEs dealing with organizational buyers (Jones et al., 2013). We argue that SMEs likely face pressures to conform to established norms relating to the use of marketing skills. Commenting on the nature of SME marketing, Gilmore et al. (2001) state that SME marketing tends to be informal, unstructured, and reactive, relying on conforming to industry norms.

Further, SMEs face coercive pressures from regulatory institutions to adopt a marketing strategy, without which they may not get access to critical funding. Financial institutions, such as banks tend to pressurize SMEs to produce a formal business plan before granting access to funds. Research suggests that institutional pressures tend to be effective in inducing SMEs to develop written business plans (Honig & Karlsson, 2013). In Australia, small businesses can access finance from banks and financial institutions only after producing a formal business plan, including a comprehensive marketing strategy. In addition, end-consumers comprise part of the (informal) normative institutions in an industry (Williams & Spielmann, 2019). SMEs also experience normative pressures through customers' product/service expectations, which may drive the use of marketing skills for marketing innovation. For instance, marketing innovation by SMEs in the wine industry relies on the use of marketing skills such as using social media marketing (Alonso et al., 2017; Calderón et al., 2019). Therefore, we hypothesize:

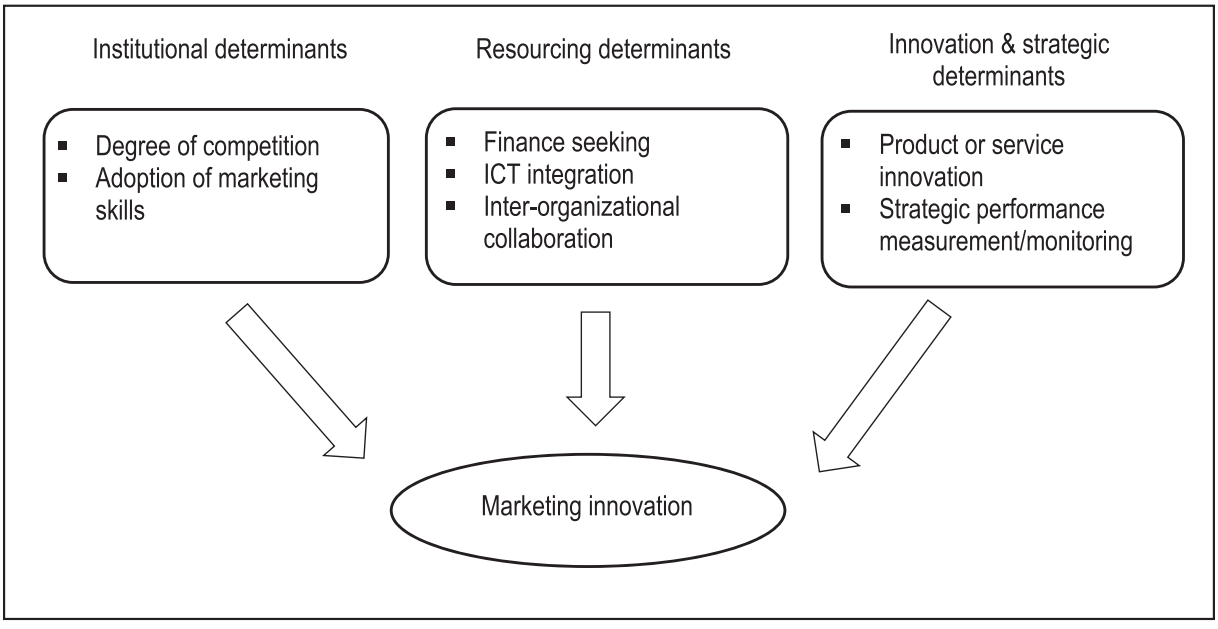

Fig. 1. Conceptual outline of the drivers of SME marketing innovation.

H2: The adoption of marketing skills is positively associated with the likelihood of marketing innovation.

3.2. Resource dependence and marketing innovation

As per the resource dependence (RD) theory (Barringer & Harrison, 2000; Hessels & Terjesen, 2010), organizations engage in exchanges with other actors in the immediate environment to obtain needed resources. Relevant actors may include a firm's suppliers, competitors, government agencies, or any relevant entities in a firm's environment (Barringer & Harrison, 2000). SMEs typically operate with resource constraints and are thus reliant on externally available resources for legitimacy and survival. Accordingly, we outline *finance seeking*, *information and communication technology* (ICT) integration, and *inter-organizational collaboration* as drivers of SME marketing innovation.

Financial resources are crucial to the development of SMEs (Covin et al., 2016; Rao et al., 2017). SMEs, by definition, are limited in their financial capacity (cash reserves) and hence tend to rely on external financing to fund business operations. Firms on a growth trajectory are particularly reliant on external financing (Krasniqi, 2007). We propose that *finance seeking* behavior of SMEs is associated with marketing innovation. We conceptualize SME finance seeking in terms of debt seeking and equity finance seeking behavior (Xiang & Worthington, 2015). Marketing innovation generally requires resources (Navarro et al., 2012). Although SMEs are generally creative in their marketing and tend to avoid using conventional marketing techniques that may be expensive, marketing practices nevertheless represent a significant expense for SMEs (Bahri et al., 2017). Marketing activities such as networking, database marketing, content marketing, new distribution arrangements, and consumer/customer incentivization require funds. We expect that finance seeking behavior will likely drive the adoption of marketing innovation. Therefore, we hypothesize:

H3a: Debt seeking behavior is positively associated with the likelihood of marketing innovation.

H3b: Equity seeking behavior is positively associated with the likelihood of marketing innovation.

The *degree of ICT integration* is a likely determinant of marketing innovation also. Technology represents an external resource that firms depend on to meet organizational objectives (Javalgi et al., 2009). Leveraging internet technologies is a viable mechanism for resource constrained SMEs to enhance their customer reach (Lucchetti & Sterlacchini, 2004; Williamson et al., 2002). ICT integration supports managerial decision-making by allowing SMEs to access market, customer, competitor and business opportunity insights (Cavusgil & Knight, 2015; Giotopoulos et al., 2017). We define ICT integration as the degree of a SME's internet use for the purpose of having a web presence and placing and receiving orders (e.g., Azeem & Kotey, 2021); this conceptualization is guided by available data. ICT integration acts as a fertile ground for implementing new marketing methods, allowing SMEs to increase their marketing reach beyond what is possible under conventional channels (Malesev & Cherry, 2021). ICT facilitates the development of new marketing campaigns through approaches such as website marketing, social media marketing, and search engine optimization.

Madill and Neilson (2010) report that many Canadian wine SMEs utilize websites to build customer relationships and enhance sales. Mort et al.'s (2012) research on born-global SMEs offers notable insights from a gaming SME: "We used internet marketing and had a website. But we made a lot of use of search engine optimization from very early in the life of the business. This enabled this small firm to 'punch above its weight'." (p. 553). Malesev and Cherry (2021) examine Australian construction sector SMEs and found that digital and social media marketing strategies represent an effective and cost-efficient means to enhance brand awareness and customer engagement. Furthermore, advanced ICT applications, such as augmented and virtual reality, allow many business-to-business (B2B) SMEs to introduce marketing innovations (Royo-Vela & Velasquez Serrano, 2021). Therefore, we hypothesize:

H4: The degree of ICT integration is positively associated with the likelihood of marketing innovation.

Inter-organizational collaboration may also explain marketing innovations. Fundamentally, inter-organizational collaboration enables firms to create value through actions such as joint research and development, and knowledge sharing (Barringer & Harrison, 2000). Collaboration helps SMEs to overcome resource scarcities (O'Dwyer et al., 2011; Okamuro, 2007), compete with larger firms, and expand their skill base and geographic reach (O'Dwyer et al., 2011). Similarly, SMEs may collaborate to pool resources and capabilities, thereby seizing market opportunities (Grandinetti, 2016). Adomako et al. (2021) argue that inter-organizational collaboration can allow SMEs to overcome a lack of institutional support, develop their absorptive capacity, and develop competitive advantages (Adomako et al., 2021).

We define inter-organizational collaboration as the extent to which a SME has collaborative arrangements with other organizations, that is, joint projects with other organizations. The extent of collaboration encompasses joint research and development, an integrated supply chain, joint buying and production, joint marketing and distribution, as well as other partnerships. The scope of collaboration includes informal arrangements but excludes straight-for-fee and franchise arrangements. Radas and Božić (2009) observe that inter-firm collaboration in SMEs positively impacts incremental product and process innovation. Research also indicates that SME collaborations positively influence marketing innovation (King & Forbes, 2013; Zahoor & Al-Tabbaa, 2020). For example, King and Forbes (2013) report that wine SMEs in New Zealand share expertise and undertake joint marketing (innovation) activities. Accordingly, we hypothesize:

H5: Inter-organizational collaboration is positively associated with the likelihood of marketing innovation.

3.3. Product or service innovation

To thrive in a competitive landscape, SMEs introduce new products and services (Raymond & St-Pierre, 2010). SMEs in the food sector, for instance, may introduce new food items. Equivalently, tourism SMEs may introduce new tour packages. We define *product or service innovation* as the introduction of new or significantly improved products or services (OECD/Eurostat, 2005). We offer that product innovation is a driver of SME marketing innovation mainly because of a SME's need to effectively market its new products and services to meet business goals. The marketing practices of firms are fundamentally geared towards promoting a firm's products and services to its current and potential customers. Accordingly, new products and services will likely require innovative marketing practices (Lee et al., 2015).

Product/service innovation and innovative marketing may go hand-in-hand (e.g., Lewandowska et al., 2016). Co-creation strategies involving customers in the new product development process may form the basis of an innovative marketing strategy. Tardivo et al. (2017) reveal that some food sector SMEs engage in value co-creation whereby consumers are involved in product innovation. Co-creation-based strategies are value-adding customer relationship marketing strategies that allow SMEs to transcend resource constraints and develop competitive advantages (Tardivo et al., 2017). Essentially, the SME's customers become vehicles for new product brand promotion through social media and word-of-mouth. Such cases exemplify how a SME's product innovation strategy can drive and complement marketing innovation.

Ramirez et al. (2018) suggest that "a firm's development of new products generates the need to create new marketing methods for these products, so the development of new product innovations positively influences the development of marketing innovations" (p. 696). Ramirez et al. (2018) observe a positive effect of product innovation on a firm's marketing innovation. Accordingly, we hypothesize:

H6: Product or service innovation is positively associated with the likelihood of marketing innovation.

3.4. Strategic performance measurement/monitoring

We propose that the extent to which an SME monitors its strategic performance will be associated with the likelihood of engaging in marketing innovation. Performance measurement systems comprise the financial and non-financial metrics that support decision-making (Gimbert et al., 2010). We argue that functional strategy, such as marketing strategy, in SMEs cannot occur independently of their overall strategy. A firm's overall strategy will likely shape decisions concerning marketing innovations.

We conceptualize strategic performance measurement as the degree to which an SME focuses on measuring and monitoring *financial performance* and *strategic performance*. Traditional performance measurement systems are financially orientated (Brem et al., 2008; Burgess et al., 2007). Strategic performance measurement systems including the balanced scorecard approach, in contrast, integrate non-financial metrics such as quality, customer satisfaction, and production effectiveness into performance measurement (Burgess et al., 2007). In the present study, financial performance denotes the extent to which a firm focuses on measuring performance across factors such as financial metrics (e.g., sales and profit), cost measures (e.g., cost per unit of output, and inventory cost), and operational measures (e.g., asset utilization and on-time delivery). Strategic performance denotes the extent to which a firm focuses on measuring overall business performance in terms of quality (e.g., customer satisfaction and defect rates), innovation (e.g., new value-added products and new processes), and human resources (e.g., employee job satisfaction).

Financial and strategic performance measurement aspects shape firm strategy. The balanced scorecard approach (Kaplan & Norton, 1992) offers managers a bird's eye view of the business and advocates a multi-dimensional approach to performance measurement. Additionally, the balanced scorecard approach calls for incorporating a customer perspective in strategic performance measurement. Malagueño et al. (2018) suggest that SMEs adopting a holistic strategic performance measurement system benefit from financial and innovation outcomes.

Strategic performance measurement systems support firms to control their performance and optimize their resource allocation and course correction decisions (Noble, 1999; Godener & Söderquist, 2004). Given a resource constrained environment for SMEs, staying on course to meet longer-term goals is crucial to survival. Marketing innovation decisions at SMEs are likely shaped by strategic performance measurement since these decisions must be informed and constrained by broader strategic parameters. For instance, financial performance measurement may guide budget allocation to marketing innovation. Similarly, strategic performance aspects such as quality and customer satisfaction-based metrics may determine the nature of marketing innovation. Essentially, strategic performance measurement enables an alignment between marketing activities and business goals. Hence, we hypothesize as follows:

H7a: The use of financial performance measures is positively associated with the likelihood of marketing innovation.

H7b: The use of strategic performance measures is positively associated with the likelihood of marketing innovation.

4. Empirical design

4.1. Data collection and sample

We test our hypotheses by drawing on longitudinal data obtained through the Australian Bureau of Statistics' (ABS) Business Longitudinal Analysis Data Environment (BLADE). The BLADE combines economic and ABS survey data relating to active Australian businesses and supports the development of government policies and the assessment of the factors that impact business performance (ABS, n.d.). Through this system, we had access to a BLADE Confidentialized Unit Record File (CURF) panel pertaining to an annual Business Characteristics Survey (BSC) completed by Australian SMEs with<200 employees.

Each BLADE CURF panel includes data across five years that is drawn from a wider sample stratified by industry and size (ABS, 2019). Our analysis draws from panel seven (released in 2019) that includes BSC responses by 1,967 businesses between 2012 and 2016. The number of firms included in each sample year varied because of incomplete records and business cessation. This inclusive sampling approach ensures that our sample is consistent with the broader population with only approximately 65 % of Australian SMEs surviving over the 2015–19 period (Australian Small Business and Family Enterprise Ombudsman, 2020). The BSC captures business descriptive and performance statistics and covers a broad range of topics including the degree of innovation, barriers to business performance, ICT usage, and skills utilization (ABS, 2019). As presented in Table 1, following the omission of incomplete records, our final sample includes a large sample of 4,378 firm-year observations. This unique data set enables a finer grain analysis of SME marketing innovation through time (ABS, 2019) and allows sufficient time for any changes in firm practices to reveal themselves (Battisti et al., 2019). Using a longitudinal dataset has the added advantage of controlling for common method bias (Jordan & Troth, 2020).

4.2. Variable measurement

Consistent with the OECD/Eurostat (2005) definition of marketing innovation, the BSC includes a range of questions that capture whether SMEs have introduced various new or significantly improved marketing methods in the current year. These include whether SMEs had introduced changes to the design or packaging of a good or service; new media or techniques for production promotion; new methods of product placement or sales channels; new methods of pricing goods or services; and any other new marketing methods. We develop a dichotomous dependent variable whereby marketing innovators are those SMEs that adopt at least one of these innovative marketing methods in the current period.

The degree of competition is based on a 4-point Likert scale ranging from zero (0) when the SME has a captive market or no effective competition to three (3) if the SME had five or more competitors. The adoption of marketing skills is a dichotomous variable with a value of 1 (0 otherwise) if the SME has utilized marketing skills in undertaking core business activities in the current period. Similarly, the potential influence of debt and equity financiers in coercing SMEs to undertake marketing innovations is measured by two dichotomous items, which captures if the firms had either sought debt or equity finance during the current year.

The degree of ICT integration ranges from zero (0) to three (3) based on whether the SME has: 1. a web presence, 2. placed internet orders, and/or 3. received internet orders in the current year. Relatedly, the degree of collaboration is scored out of six based on the extent to which the SMEs had engaged in six forms of collaborative arrangement in the current year. These collaborative arrangements relate to: 1. joint research and development; 2. joint buying; 3. joint production of goods/services; 4. an integrated supply chain; 5. joint marketing or distribution; and/or 6. other partnerships. The degree of new product or service innovation and the use of marketing skills is operationalized as a dichotomous variable with a value of 1 (0 otherwise) if the SME had

Table 1
Sample by year.

Year	Observations
2012	1,024
2013	968
2014	856
2015	784
2016	746
Total	4,378

introduced a new or significantly improved product or service in the current period.

We conceptualize performance measurement in terms of financial performance and strategic performance. Confirmatory factor analysis was performed on three(four) Likert scale items that capture the extent to which the SMEs focus on financial(strategic) performance measures when assessing overall business performance. The resulting financial and strategic factors have eigen values of above one and each factor extracted more than 60 % of the associated variance (refer to Table 2). These measures, together with their respective Cronbach Alphas (0.840 and 0.824), are acceptable (Hair et al., 2019; Vowles et al., 2011).

4.3. Control variables

We specify several control variables to account for other factors that may constrain or promote marketing innovation by SMEs. These include firm size, industry, and age. Given that the sales level of SMEs is significantly skewed, firm size is measured using the natural logarithm of sales revenue. Dummy variables are created for each key industry division (i.e., agriculture, forestry, and fishing; mining; manufacturing; construction; wholesale; retail; services) in accordance with the Standard Institutional Sector Classification of Australia (SISCA) and firm age groups (one to five years; six to 10 years; 11 to 15 years; 16 to 19 years; 20 years or more). Dummy variables are also included to account for the effect of firm profitability with firms categorized as either having experienced no change in their profit, increased profits, or decreased profits since the previous year. The survey year (i.e., 2012, 2013, 2014, 2015, 2016) is included to control for any temporal differences in SME marketing innovation propensity because of general economic and other macro factors. Table 3 provides a summary of all variables used in the study.

4.4. Regression models and robustness

A logistic regression approach is adopted given the binary nature of our dependent variable and desire to predict the probability that SMEs will undertake some form of marketing innovation. Our large overall sample size and sample size for each group per estimated parameter enhances the power of this statistical approach (Hair et al., 2019). As summarized below, our statistical analysis is conducted across two models. Model 1 is a 'controls only' model. Model 2 extends this model with the addition of all explanatory variables. All statistical analysis is performed using STATA 16.1.

Model 1:

$$\text{MKT-INNOV} = \beta_0 + \beta_1\, YEAR + \beta_2\, IND + \beta_3\, AGE + \beta_4\, SIZE + \beta_5\, PROF + \varepsilon.$$

Model 2:

$$\text{MKT-INNOV} = \beta_0 + \beta_1\, YEAR + \beta_2\, IND + \beta_3\, AGE + \beta_4\, SIZE + \beta_5\, PROF + \beta_6\, COMP + \beta_7\, MKT\text{-}SKILL + \beta_8\, DEBT + \beta_9\, EQUITY + \beta_{10}\, ICT + \beta_{11}\, COLLAB + \beta_{12}\, NEW\text{-}PROD + \beta_{13}\, FPMS + \beta_{14}\, SPMS + \varepsilon.$$

To diagnose potential multicollinearity problems within our empirical models, a correlation matrix that included all independent variables is prepared and examined. As presented in Table 4, the maximum Pearson correlation is 0.69 and below the threshold of 0.70 recommended by Hair et al. (2019). This correlation estimate relates to FPMS and SPMS, which is not unexpected given that firms that monitor financial performance are also more likely to review their strategic performance. Further, multicollinearity does not seem to be problematic since the variance inflation factors (VIFs) for all independent variables range from 1.03 to 2.16, well below the threshold of 10 (Hair et al., 2019).

5. Analysis and results

5.1. Descriptive statistics

Descriptive statistics pertaining to all key variables considered in this study are presented in Table 5. Across all firm-year observations, approximately-one-quarter of firms (23.76 %) engage in some form of marketing innovation. The services industry division is the most populous, accounting for 59.78 % of all observations. The sample is reasonably balanced in terms of firm age, with 60.09 % of observations relating to firms having been in business for no more than 15 years and 39.90 % of these observations relating to firms with an age of 16 years or more. The financial performance of firms is mixed with 29.19 %(40.06 %) of observations relating to firms that had experienced an increase(decline) in their profits in the current period.

The sample is active from a new product or service development perspective, with approximately-one-quarter (24.35 %) of observations relating to firms that had introduced a new product or service in the current period. Firms appear reluctant to make use of marketing skills, with few (5 %) firm-year observations relating to instances in which firms had utilized these skills. Firms also appeared reluctant to take on new equity investors with<5 % of observations pertaining to firms that had sought new equity finance in the period. Debt finance, however, appears to be more popular with 18 % of observations relating to firms that had sought debt in the period.

5.2. Logistic regression results

Table 6 presents the logistic regression results for Model 1 (controls only) and Model 2 (full model). While the Chi-square values for both models are significant at the 0.000 level, Model 2 has a better overall goodness of fit given its higher pseudo R^2 (0.188) and predictive accuracy (79.88 % correct). The Akaike Information Criterion (AIC) is also computed for both models. The AIC is a goodness-of-fit measure that accounts for the number of variables included in a model and allows us to consider the trade-off between model complexity and fit (Urbano et al., 2021). Again, Model 2 is preferable given its lower AIC result. Collectively, these results confirm the appropriateness of our full, empirically informed, model of marketing innovation.

As Hypothesis 1 predicts, the degree of competition is positively

Table 2
Development of FPMS and SPMS factors.

Factor	Survey items During the year ended 201X, to what extent did the business focus on the following when assessing overall business performance?	N	Eigen value	Cronbach Alpha	KMO	Percentage of variance extracted
FPMS	1. Financial measures (e.g., profits, sales, growth, return on investments) Cost measures (e.g., budget, cost per unit of output, inventory cost) Operational measures (e.g., asset utilization, on-time delivery)	4,378	2.284	0.840	0.693	76.13 %
SPMS	1. Quality measures (e.g., customer satisfaction, defect rates) Innovation measures (e.g., new processes, new value-added products) Human resources (e.g., job satisfaction, skills development) Environmental measures (e.g., recycling program, adherence to environmental regulations, sustainability considerations, carbon footprint analysis)	4,378	2.619	0.824	0.803	65.48 %
Scale: 0 - not at all, 1 - a small extent, 2 - a moderate extent, 3 - a major extent						

Table 3
Summary of variables.

Variable	Acronym	Hypothesis	Description	Similar variables used in prior studies:
Dependent Variable:				
Degree of Marketing Innovation	MKT-INNOV		Dummy variable where the value is 1 when the SME has introduced at least one of five forms of marketing innovation (i.e., 1. changes to the design or packaging of a good or service; 2. new media or techniques for production promotion; 3. new methods of product placement or sales channels; 4. new methods of pricing goods or services; and/or 5. any other new marketing methods in the current year), 0 otherwise.	Nguyen et al. (2021)
Explanatory Variables:				
Degree of Competition	*COMP*	H1	Scored 0–3 where: 0 = SME has captive market/no effective competition; 1 = one or two competitors; 2 = three or four competitors; 3 = five or more competitors.	Azeem and Kotey (2021)
Adoption of Marketing Skills	*MKT-SKILL*	H2	Dummy variable where the value is 1 when the SME has utilized marketing skills in undertaking core business activities, 0 otherwise.	Kotey and Sharma (2016)
Debt Seeking Behavior	*DEBT*	H3a	Dummy variable where the value is 1 when the SME has sought debt finance in the current period, 0 otherwise.	Xiang and Worthington (2015)
Equity Seeking Behavior	*EQUITY*	H3b	Dummy variable where the value is 1 when the SME has sought equity finance in the current period, 0 otherwise.	Xiang and Worthington (2015)
Degree of ICT Integration	*ICT*	H4	Scored 0–3 based on whether the SME: 1. has a web presence; 2. places orders via the internet; and/or 3. receives orders via the internet.	Azeem and Kotey (2021)
Inter-organizational Collaboration	*COLLAB*	H5	Scored 0–6 based on whether the SME has collaborative arrangements relating to: 1. joint research and development; 2. joint buying; 3. joint production of goods/services; 4. an integrated supply chain; 5. joint marketing or distribution; and/or 6. other partnerships.	Hendrickson et al. (2018)
New Product or Service	*NEW-PROD*	H6	Dummy variable where the value is 1 when the SME has introduced a new or significantly improved good or service in the current period, 0 otherwise.	Huang and Lewis (2012)
Use of Financial Performance Measures	*FPMS*	H7a	Factor derived from three items which measured the extent to which SMEs focus on financial measures when assessing overall business performance.	Xiang and Worthington (2017)
Use of Strategic Performance Measures	*SPMS*	H7b	Factor derived from four items which measured the extent to which SMEs focus on strategic measures when assessing overall business performance.	Xiang and Worthington (2017)
Control Variables:				
Financial Year	*YEAR*		Scored based on year of survey completion (i.e., 2012, 2013, 2014, 2015 or 2016).	Azeem and Kotey (2021)
Industry Division	*IND*		Dummy variables for seven industry divisions (agriculture, forestry and fishing; mining; manufacturing; construction; wholesale; retail; services) based on the SISCA. The base category is services.	Xiang and Worthington (2017)
Firm Age	*AGE*		Dummy variables for five age groupings including one to five years; six to 10 years; 11 to 15 years; 16 to 19 years; 20 years or more. The base category is one to five years.	Xiang and Worthington (2015)
Firm Size	*SIZE*		Natural logarithm of sales revenue.	Xiang and Worthington (2017)
Profitability	*PROF*		Dummy variables for three SME profitability categories: profitability has stayed the same since last year, profitability has increased since last year, or profitability has decreased. The base category is profitability had stayed the same since last year.	Xiang and Worthington (2017)

associated with marketing innovation ($\beta = 0.093$, $p < 0.01$). SMEs are also significantly more likely to introduce marketing innovations when they use marketing skills ($\beta = 0.284$, $p < 0.10$), thereby supporting Hypothesis 2. Consistent with H3a and H3b, debt and equity seeking behavior in the current period are positively associated with marketing innovation ($\beta_{\text{debt seeking}} = 0.310$, $p < 0.01$; $\beta_{\text{equity seeking}} = 0.311$, $p < 0.10$). Notably, equity seeking behavior is significant at the 10 % level.

Marketing innovation is positively influenced by ICT ($\beta = 0.482$, $p < 0.001$). This finding supports Hypothesis 4. However, regarding Hypothesis 5, the degree of inter-organizational collaboration does not significantly influence marketing innovation ($\beta = 0.063$, p greater than 0.10). A significant positive relationship between new product or service innovation and marketing innovation is observed ($\beta = 1.34$, $p < 0.001$), thereby supporting H6. Hypotheses 7a and 7b are also supported since the likelihood of marketing innovation is significantly predicted by financial performance measurement ($\beta = 0.163$, $p < 0.01$) and strategic performance measurement ($\beta = 0.217$, $p < 0.001$). Thus, all but one hypothesis was supported (refer to Table 7).

Regarding the control variables, across both Model 1 and Model 2, the effect of firm size is significant. Marketing innovators tend to be larger in terms of their overall sales volume ($\beta_{\text{Model 1}} = 0.550$, $p < 0.001$; $\beta_{\text{Model 2}} = 0.115$, $p < 0.10$). Firm age is significant with older SMEs tending to be less likely to engage in marketing innovation than their younger counterparts. This is illustrated, for instance, by the confirmation across both models that firms with an age of 20 years or more (i.e., Age Group 5) are significantly less likely to engage in marketing innovation than firms with an age of five years or less (i.e., Age Group 1) ($\beta = -0.417$, $p < 0.001$; $\beta = -0.441$, $p < 0.001$). Firm industry is significant across both models given that firms from the Agricultural, forestry and fishing ($\beta = -0.983$, $p < 0.001$; $\beta = -0.666$, $p < 0.01$); Mining ($\beta = -0.771$, $p < 0.001$; $\beta = -0.648$, $p < 0.01$); Construction ($\beta = -0.987$, $p < 0.001$; $\beta = -0.776$, $p < 0.001$); and Wholesale ($\beta = -0.349$, $p < 0.05$; $\beta = -0.509$, $p < 0.01$) industry sectors are significantly less likely to engage in marketing innovation than firms from the Services industry sector.

The degree of marketing innovation is also significantly related to firm profitability and financial year. In this regard, across both models, SMEs that have experienced a decline in profit are significantly less likely to engage in marketing innovation than those that have experienced no change in their profitability ($\beta = 0.425$, $p < 0.001$; $\beta = 0.252$, $p < 0.05$). Furthermore, a significant negative relationship between YEAR and marketing innovation is reported in Model 2 ($\beta = -0.083$, $p < 0.01$). This apparent reduced willingness for SMEs to invest in marketing innovations in later years coincides with reduced Australian business confidence (see IBIS World, 2021) and economic growth (see World Bank Group, 2022) between 2012 and 2016.

To ensure the robustness of our results, we performed supplementary logistic regression analysis in which a dummy variable that captured firm survival was added to our full model (i.e., Model 2). This variable was scored 1 for firms that had ceased operation or did not provide complete data for all five years, 0 otherwise. This variable was not

significant (β = -0.004, p greater than 0.1) and our overall findings remained consistent.

6. Discussion and implications

Management guru Peter Drucker believes that the raison d'être of any business is to create a customer and thus *the* two fundamental functions of any business are *marketing* and *innovation* (Webster, 2009). We focus on the intersection of marketing and innovation; a domain that is growing (Henseler et al., 2021). The current study is an exploratory attempt to understand the determinants of marketing innovation by Australian SMEs (examining the outcomes of marketing innovation is beyond the scope of the present investigation).

The degree of competition significantly predicts marketing innovation in the present study, though this effect seemed small. Nonetheless, this result implies that competitive (mimetic) pressures seem to enhance the likelihood of adopting marketing innovations. This result is consistent with the 'fear of missing out' logic whereby SMEs fear falling behind their competitors' marketing efforts. A theoretical implication of this finding is that SME marketing innovation can have a reactionary orientation, which complements O'Dwyer et al.'s (2009) view that SME marketing can be either proactive or reactive.

Debt and equity seeking behaviors influence marketing innovation. The analysis confirms the important role of banks and equity investors in coercing SME finance seekers to implement marketing innovations in accordance with industry norms. Private equity providers typically follow a rigorous screening approach when it comes to funding SMEs (Dwyer & Kotey, 2015). Banking institutions likewise follow a diligent process in which SME loan applicants are assessed based on their financials, security, and personal character (Boulanouar et al., 2020). Accordingly, SMEs are coerced to consider their marketing strategies and formalize them in their business plans. Indeed, the business plan templates of large Australian banks include a dedicated focus on an applicant's marketing strategy. Doing so supports the ability of SME managers to provide evidence of the capacity of their business to generate sufficient profits to meet their loan obligations given their commitment to implement appropriate marketing innovations. While external financiers could act as a strong lever to enhance the uptake of marketing innovations, it is important to acknowledge how the influence of these parties is tempered by the general tendency for SMEs to prefer internal finance sources (Dwyer & Kotey, 2015). This is confirmed in the present investigation with<5 % and<20 % of firm-year observations related to instances in which an SME had sought either equity or debt finance, respectively.

As expected, the degree of ICT integration is significantly associated with marketing innovation. We observe a strong effect that supports the use of ICT, particularly web-based technology as a driver of SME marketing innovation. Our finding is consistent with studies that observe the enabling role of e-commerce and internet technologies on marketing benefits for SMEs (Alford & Page, 2015; Mustaffa & Beaumont, 2004). Therefore, SMEs should consider either maintaining or enhancing their level of ICT infrastructure.

Product or service innovation significantly influences the likelihood of marketing innovation, suggesting a necessity for marketing new products and services. This finding is consistent with the idea that SME marketing can have a proactive stance (Gilmore & Carson, 2018; O'Dwyer et al., 2009). Interestingly, the positive effect of product or service innovation can be juxtaposed with the positive effect of the degree of competition. These two findings jointly imply that marketing innovation at SMEs can be simultaneously proactive and reactionary. It seems that SMEs will need to not only counter their competitors' marketing actions but also be proactive with their marketing. Hence, SMEs can consider using both approaches harmoniously to meet organizational objectives.

We observe direct positive effects of performance measurement and monitoring aspects on SME marketing innovation. This is a novel finding. Financial performance monitoring significantly explains marketing innovation. This finding suggests that SME marketing innovations are shaped by the firm's financial position. Similarly, strategic performance monitoring significantly explains marketing innovation, suggesting that marketing innovation strategy is informed by strategic parameters such as quality and customer satisfaction related considerations. This finding is consistent with the logic that marketing strategy is geared towards fulfilling overall business objectives. A practical implication for SMEs is that the established organizational goals must guide marketing innovation efforts, that is, marketing innovations must be 'managed' within the scope of established objectives. Interestingly, the constant term in our logistic regression equation is positive and statistically significant, indicating that SMEs in our sample have a *general likelihood* of marketing innovation, all other things being equal. A practical implication is that marketing is necessary for competing, and thus basic marketing expenditures must be budgeted for during strategic planning.

Contrary to our expectations, the utilization of marketing skills did not explain SME marketing innovation. A potential reason for the non-significant effect is a lack of specialized marketing that is available and accessible to SMEs (Kraus et al., 2007). Additionally, SME collaboration does not predict marketing innovation. We identify-two possible explanations. First, inter-organizational collaborations in our sample may be unproductive for the parties involved; for example, collaborating partners may not have met mutual expectations (Barringer & Harrison, 2000). Second, inter-organizational collaborations can be resource-intensive, and resource constrained SMEs simply cannot nurture deep relationships with other organizations (Aliasghar et al., 2020).

Our study has broader theoretical implications. In our sample, marketing innovation is enabled through practices beyond the 'marketing department'. We observe that certain non-marketing-related aspects such as ICT integration, external debt seeking, and organizational performance monitoring significantly influence marketing innovation. Thus, our findings indicate that SME marketing innovation cannot be entirely explained from the perspective of the marketing function. Instead, an organizational-wide 'management' perspective offers a comprehensive explanation. A managerial implication of our study is that we offer a clear line of sight to Australian SMEs to envision the interlinkages between practices occurring across different departments (e.g., IT and finance departments) and marketing innovation so that organization focus can be devoted appropriately.

Although we explicate a wide array of drivers of marketing innovation while achieving an acceptable level of explanation and predictive accuracy, we accept that there could be other potential influences on marketing innovation. Future research may specify additional factors that enhance the level of explanation in marketing innovation. Another research avenue would be to examine various combinations of drivers or 'antecedent conditions' that lead to marketing innovation using Fuzzy-Set Qualitative Comparative Analysis (e.g., Covin et al., 2016).

The findings of the current study are applicable to the sampled SMEs. Nonetheless, our current study may help explain marketing innovation behavior across organizations that are comparable to SMEs in terms of their operating environment. Organizations such as social purpose organizations (e.g., non-profits), born-global firms and start-ups typically face institutional pressures and operate with resource constraints. Hence, our study may inform future research into marketing innovation across these contexts.

CRediT authorship contribution statement

Abhishek Dwivedi: Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization. **Nicholas Pawsey:** Writing – review & editing, Methodology, Formal analysis.

Table 4
Pearson Correlations.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) MKT-INNOV	1.00											
(2) YEAR	−0.02	1.00										
(3) IND (Ag, forestry and fishing)	−0.10	0.01	1.00									
(4) IND (Mining)	−0.03	−0.03	−0.06	1.00								
(5) IND (Manufacturing)	0.02	0.00	−0.08	−0.06	1.00							
(6) IND (Construction)	−0.06	0.01	−0.07	−0.05	−0.07	1.00						
(7) IND (Wholesale)	0.02	0.01	−0.09	−0.06	−0.09	−0.08	1.00					
(8) IND (Retail)	0.04	0.01	−0.08	−0.05	−0.07	−0.07	−0.08	1.00				
(9) AGE (Group 2)	0.02	0.00	−0.06	−0.05	−0.05	0.02	0.03	−0.01	1.00			
(10) AGE (Group 3)	0.00	0.00	0.01	0.03	−0.03	−0.05	−0.02	0.00	−0.26	1.00		
(11) AGE (Group 4)	0.00	−0.01	0.00	−0.03	0.04	0.06	0.01	−0.03	−0.16	−0.12	1.00	
(12) Age (Group 5)	−0.04	0.02	0.09	−0.01	0.07	0.00	0.02	−0.01	−0.40	−0.32	−0.19	1.00
(13) PROF (Increased)	0.07	−0.04	−0.03	0.02	0.03	−0.06	−0.01	0.02	−0.04	−0.01	−0.01	0.00
(14) PROF (Decreased)	0.03	−0.05	−0.01	−0.03	0.01	0.05	0.04	0.01	−0.01	0.03	0.02	0.01
(15) DEBT	0.11	−0.03	0.03	0.04	−0.02	0.03	0.01	−0.03	0.00	−0.04	0.00	0.05
(16) EQUITY	0.08	0.00	−0.03	0.06	−0.01	0.03	0.03	−0.03	0.02	0.00	0.00	−0.04
(17) COMP	0.11	0.02	−0.05	−0.08	0.02	0.02	0.05	0.02	0.00	0.04	−0.01	−0.03
(18) NEW-PROD	0.36	0.00	−0.09	−0.02	0.03	−0.06	0.06	0.08	0.03	−0.02	0.00	−0.04
(19) MKT-SKILL	0.07	0.00	−0.01	−0.02	0.00	−0.05	0.02	0.01	0.05	−0.03	−0.01	−0.01
(20) ICT	0.27	0.09	−0.23	−0.04	0.12	−0.04	0.14	0.04	0.01	−0.01	0.07	0.05
(21) SIZE	0.17	0.03	−0.16	0.04	0.07	0.05	0.22	0.11	−0.05	−0.01	−0.01	0.16
(22) FPMS	0.22	0.01	−0.05	0.05	0.04	0.03	0.08	0.07	−0.03	−0.01	−0.01	0.04
(23) SPMS	0.24	0.01	−0.09	0.05	0.03	0.03	0.03	0.09	0.00	−0.02	0.00	0.02
(24) COLLAB	0.13	−0.06	−0.02	0.00	0.01	−0.04	0.01	0.01	0.03	−0.02	−0.03	0.02
Variable	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
(13) PROF (Increased)	1.00											
(14) PROF (Decreased)	−0.52	1.00										
(15) DEBT	0.03	0.04	1.00									
(16) EQUITY	0.02	−0.02	0.33	1.00								
(17) COMP	0.03	0.07	0.08	0.05	1.00							
(18) NEW-PROD	0.13	−0.02	0.09	0.06	0.08	1.00						
(19) MKT-SKILL	−0.03	0.05	0.03	−0.01	0.06	0.10	1.00					
(20) ICT	0.14	−0.01	0.06	0.06	0.22	0.24	0.07	1.00				
(21) SIZE	0.21	−0.07	0.15	0.08	0.10	0.17	0.00	0.38	1.00			
(22) FPMS	0.20	−0.01	0.14	0.07	0.18	0.22	0.02	0.31	0.43	1.00		
(23) SPMS	0.17	−0.07	0.10	0.06	0.15	0.29	0.02	0.30	0.36	0.69	1.00	
(24) COLLAB	0.09	−0.04	0.05	0.04	0.02	0.15	0.07	0.18	0.12	0.13	0.13	1.00

Table 5
Descriptive statistics.

Variable	n	Median	Std Dev	
COMP	4,378	3	1.030	
ICT	4,378	2	1.098	
SIZE	4,378	6.013	0.799	
FPMS	4,378	0.147	1	
SPMS	4,378	0.067	1	
			Count	Percentage
MKT-INNOV	4,378	0	3,338	76.24 %
		1	1,040	23.76 %
IND	4,378	Ag, forestry and fishing	346	7.90 %
		Mining	183	4.18 %
		Manufacturing	334	7.63 %
		Construction	267	6.10 %
		Wholesale	355	8.11 %
		Retail	276	6.30 %
		Services	2,617	59.78 %
AGE	4,378	Up to 5 years	807	18.43 %
		6–10 years	1,070	24.44 %
		11–15 years	754	17.22 %
		16–19 years	303	6.92 %
		20 years or more	1,444	32.98 %
PROFIT	4,378	Stayed the same	1,346	30.74 %
		Increased	1,278	29.19 %
		Decreased	1,754	40.06 %
Debt	4,378	0	3,590	82.00 %
		1	788	18.00 %
Equity	4,378	0	4,170	95.25 %
		1	208	4.75 %
NEW-PROD	4,378	0	3,312	75.65 %
		1	1,066	24.35 %
MKT-SKILL	4,378	0	4159	95.00 %
		1	219	5.00 %

Table 6
Logistic Regression Results.

Variable	Marketing Innovators (1) versus Non-marking Innovators (0)	
	Model 1	Model 2
YEAR	−0.039 (0.026)	−0.083** (0.029)
IND (Ag, forestry and fishing)	−0.983*** (0.192)	−0.666** (0.211)
IND (Mining)	−0.771*** (0.21)	−0.648** (0.226)
IND (Manufacturing)	−0.130 (0.136)	−0.275† (0.149)
IND (Construction)	−0.987*** (0.189)	−0.776*** (0.201)
IND (Wholesale)	−0.349* (0.136)	−0.509** (0.149)
IND (Retail)	−0.022 (0.143)	−0.138 (0.156)
AGE (Group 2)	−0.074 (0.110)	−0.190 (0.122)
AGE (Group 3)	−0.258* (0.122)	−0.263† (0.135)
AGE (Group 4)	−0.138 (0.162)	−0.298† (0.178)
Age (Group 5)	−0.417*** (0.109)	−0.441*** (0.121)
PROF (Increased)	0.389*** (0.099)	0.024 (0.109)
PROF (Decreased)	0.425*** (0.093)	0.252* (0.102)
SIZE	0.550*** (0.053)	0.115† (0.063)
COMP		0.093* (0.046)
MKT-SKILL		0.284† (0.164)
DEBT		0.310** (0.105)
EQUITY		0.311† (0.178)
ICT		0.482*** (0.047)
COLLAB		0.063 (0.056)
NEW-PROD		1.34*** (0.085)
FPMS		0.163** (0.062)
SPMS		0.217*** (0.057)
Constant	74.465 (52.539)	164.469** (58.087)
Pseudo R-square	0.052	0.188
LR Chi-square	247.76***	900.04***
Log likelihood	2,276.319	1,950.179
Observations	4,378	4,378
AIC	4,582.639	3,948.357
Percentage correct	76.20 %	79.88 %

Note: Coefficients and standard errors (in parentheses) are reported. Statistical significance: † $p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. The base category for *IND* is services. The base category for *AGE* is up to five years. The base category for *PROF* is stayed the same.

Table 7
Hypothesis testing results.

Hypothesis	Hypothesis support
H1: The degree of competition is positively associated with the likelihood of marketing innovation.	Supported
H2: The adoption of marketing skills is positively associated with the likelihood of marketing innovation.	Supported
H3a: Debt seeking behavior is positively associated with the likelihood of marketing innovation.	Supported
H3b: Equity seeking behavior is positively associated with the likelihood of marketing innovation.	Supported
H4: The degree of ICT integration is positively associated with the likelihood of marketing innovation.	Supported
H5: Inter-organizational collaboration is positively associated with the likelihood of marketing innovation.	Not supported
H6: Product or service innovation is positively associated with the likelihood of marketing innovation.	Supported
H7a: The use of financial performance measures is positively associated with the likelihood of marketing innovation.	Supported
H7b: The use of strategic performance measures is positively associated with the likelihood of marketing innovation.	Supported

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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