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**Article**

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## MANAGEMENT | RESEARCH ARTICLE

# Managers' trait affectivity and cognitive ability as drivers of business practices

Huong Trang Kim<sup>1\*</sup>

**Abstract:** An under-researched question is to what extent managers' trait affectivity and cognitive ability play a role in driving business practices. As such, we carry out a survey with 623 textile and garment firms in Vietnam. We find that one standard deviation decrease in the managers' negative affectivity is associated with a 2.28% increase in business practices. Additionally, increasing managers' positive affectivity and cognitive ability levels by one point would lead to 1.836% and 2.16% higher business practices, respectively. Notably, these effects on marketing practices are strongest. We also found evidence that decision-making on business practices in large firms largely depends on managers' trait affectivity. At the same time, the cognitive ability of managers in SMEs has a strong effect on business practices.

**Subjects:** General Psychology; Cognitive Psychology; Business, Management and Accounting

**Keywords:** Trait affectivity; cognitive ability; business practices; survey; managers

**Subjects:** G41; D22; D91

## 1. Introduction

Identifying the drivers of business practices has always been an important question in business and management research (Ketokivi & Schroeder, 2004). An established finding in the literature is

## ABOUT THE AUTHOR

Huong Trang Kim is a Senior Lecturer of International Finance at Foreign Trade University, Vietnam and she was awarded PhD degree at Middlesex University Business School, the United Kingdom. She won the first prize at "The scientific research contests for students 2004" of Vietnam, and won the first prize of "VIFOTEC prize 2004" of Vietnam. She has published her paper in the top-ranked journals such as *Journal of International Business Studies*, *Journal of Operations Management*. Her research interests include economic behaviors, economic psychology, financial performances and financial management of Multinational Enterprises (MNEs), risk management, financial derivatives use, and institutional theory.

## PUBLIC INTEREST STATEMENT

A natural question arises: whether there exists a connection between managers' personality traits and business practices? To address this question, we explore the link between trait affectivity and the cognitive ability of managers and business practices for a sample of 623 textile and garment firms in Vietnam. We provide strong evidence that managers' trait affectivity and cognitive ability matter to a firm's business practices. A decrease of one standard deviation in managers' negative affectivity contributes to a 2.28 percent increase in overall business practices adoption. In contrast, a one-point increase in managers' positive affectivity and cognitive ability level lead to a 1.836 percent and 2.16 percent increase in business practices, respectively. From a managerial standpoint, understanding how managers' trait affectivity and cognitive ability levels link to business practices has meaningful practical implications for firms in general and managers in particular.

the positive role of business practices in firm outcomes (e.g., Cai et al., 2019; McKenzie & Woodruff, 2017; Nguyen & Kim, 2019). The current literature has also stressed the importance of managers' personality traits and competencies and found that the characteristics of managers contribute to variations in the performance and behavior of firms (e.g., Bouzguenda, 2018; Kim, 2020; Soussi & Jarboui, 2018). A natural question arises: whether there exists a connection between managers' personality traits and business practices?

To address this question, we explore the link between trait affectivity and the cognitive ability of managers and business practices for a sample of 623 textile and garment firms in Vietnam. To do so, we conducted a firm-level survey in 2018 building on the methodology proposed by McKenzie and Woodruff (2017) to measure business practices used in the daily operations of small and medium firms. In addition, we incorporated into the survey the International Positive Affectivity—Negative Affectivity Schedule—Short form (I-PANAS-SF) to measure managers' positive affectivity (PA) and negative affectivity (NA). Finally, following previous studies (e.g., Ackert et al., 2020; Branas-Garza et al., 2019; Frederick, 2005; Gong & Zhu, 2019), we used the cognitive reflection test (CRT) to construct the cognitive ability level of managers.

It is worth noting that we focused on one industry as we wanted to measure a common set of business practices across firms and evaluate managers' trait affectivity and cognitive ability when working in the same industry, in the same country, and facing the same country, business, and economic environments. We chose the textile and garment industry because it is the leading manufacturing industry of Vietnam with about 1.2 million labor, and earned export revenue of USD39 billion in 2019. However, the productivity of almost all firms in this industry is low, which might be ascribed to poor business practices (Nguyen & Kim, 2019). Thus, it is a matter of natural interest to examine how managers' trait affectivity and cognitive ability drive business practices among these firms.

As such, this paper makes two major contributions to the existing business and psychology literature. First, scholars in the field of managerial psychology and economic behaviors have found a link between managers' personality traits and cognitive ability and firm performance (e.g., Kim & Nguyen, 2020; Tai et al., 2018); research in the field of business and management has also long examined the association between management or business practices and firm outcomes (e.g., McKenzie & Woodruff, 2017; Nguyen & Kim, 2019). Yet, the current literature has been silent about the relationship between trait affectivity and cognitive ability levels of managers and business practices. To the best of our knowledge, our paper appears to be the first to explore that link, thereby contributing to both the business and psychology literature.

Second, researchers have measured, investigated, and provided important insights into the nature and effect of business practices on firm outcomes (e.g., Bloom et al., 2017; McKenzie & Woodruff, 2015; Nguyen & Kim, 2019). However, some critical questions remain: (a). whether the effect of a manager's trait affectivity and cognitive ability on each type of business practice is different? (b). In what kind of business practices is the effect stronger (or weaker)? In this study, we shed new light on this gap by investigating how such effects may vary across the types of business practices, namely marketing practices, record-keeping practices, and financial planning practices. In addition, we provide new insights into the drivers of business practice by examining whether and how the effect of managers' trait affectivity and cognitive ability levels differ in firm types.

We summarize the main findings of our study as follows. We provide strong evidence that managers' trait affectivity and cognitive ability matter to a firm's business practices. A decrease of one standard deviation in managers' negative affectivity contributes to a 2.28 percent increase in overall business practices adoption. In contrast, a one-point increase in managers' positive affectivity and cognitive ability level leads to a 1.836 percent and 2.16 percent increase in business practices, respectively. Notably, trait affectivity and cognitive ability levels of managers have a different impact on the adoption of each business practice. Their effects on marketing practices are strongest. The adoption

of marketing practices increases by 14.4 percent and 5.07 percent per one-point increase in managers' positive affectivity and cognitive ability levels, respectively. On the other hand, trait affectivity levels of managers have a modest effect on financial planning practices. Managers' cognitive ability level is not effective in enhancing the adoption of financial planning practices. Further, we also document that the impacts of managers' trait affectivity and cognitive ability on business practices in small and medium-sized enterprises (SMEs) and large firms are strikingly different. Decision-making on the adoption of business practices in large firms largely depends on the managers' trait affectivity. At the same time, the cognitive ability of managers in SMEs has a more substantial effect on adoption.

## 2. Literature review and hypothesis development

To our knowledge, the link between the trait affectivity and cognitive ability levels of managers and business practices remains an under-researched question, yet our study relates to several strands of literature. First, the paper links to the long-explored theoretical literature of trait affectivity and cognitive ability. Before the 1990s, the psychology and intelligence literature was focused on cognitive ability and its importance in areas such as problem-solving capabilities (Carmeli, 2003). To this point, due to the many different categorizations of cognitive abilities, there are various types of tests to measure IQ (Dohmen, 2018), starting with the first IQ test in the early 20<sup>th</sup> century, which was proposed by Alfred Binet (Wade & Tavis, 2017), through to the more recent intelligence tests such as Wechsler Adult Intelligence Scale (WAIS) (e.g., Tai et al., 2018; Wechsler, 1997), and cognition reflection test (CRT) (e.g., Ackert et al., 2020; Branas-Garza et al., 2019; Frederick, 2005; Gong & Zhu, 2019).

In terms of affectivity, despite debates abound over the exact definition of affectivity in previous studies, according to Barsade and Gibson (2007, p. 38), affectivity can be defined as “affective lens on the world” of an individual. Besides, in terms of the structure of affectivity, two dominant dimensions have consistently emerged in recent studies, namely trait affectivity, which is stable for a long time and across different situations, and state affectivity, which is likely to be unstable over time and varies under different social contexts (Cheung & Tang, 2009). In this study, we used the trait affectivity to examine long-lasting affectivity disposition. Positive affectivity relates to individuals' positive emotions such as joy, cheerfulness, enthusiasm, and pride; negative affectivity refers to individuals' negative emotions such as sadness, distress, fear, and lethargy (Ackert et al., 2020; Charupat et al., 2013).

Second, there is a growing body of empirical literature on the importance of managers' trait affectivity and/or cognitive ability levels. Regarding cognitive ability, various studies in the finance literature indicate that a manager with cognitive ability increases the quality of decision-making under risk, which in turn leads to better financial planning and more incredible wealth for firms (Dohmen et al., 2018). Along this line, investigating the education levels of Fortune 500 CEOs in the 19 years from 1996 to 2014, Wai and Rindermann (2015) evidenced that a CEO with higher education and cognitive ability contributes to higher gross revenue of the firm.

In terms of trait affectivity, an emerging strand of empirical literature has shown that personality traits have a significant role in the effective performance of firms (e.g., ; Soussi & Jarboui, 2018; Tai et al., 2018). An individual with high NA has been found to react to adverse events strongly (Gosserand & Diefendorff, 2005), while trait PA positively relates to enhancing (Nelis et al., 2016). In particular, Cheung and Tang (2009) document that NA significantly correlates with surface acting, not deep acting. Contrary to NA, researchers have found that individuals with high PA tend to use more deep acting and less surface acting (Cheung & Tang, 2009; Gosserand and Diefendorff, 2005). Additionally, leaders with high PA are found to have a positive impact on their followers through the emotion contagion process (Eberly & Fong, 2013), while leaders who are high on NA are found to negatively active their followers (Connelly & Ruark, 2010; Johnson, 2008).

On the other hand, positive affectivity contributes to more positive behaviors and outcomes (Carmeli, 2003; Damasio, 1994) and might be attributed to higher-quality of decision-making (Bechara et al., 1997). Much previous support for the notion that an emotionally intelligent

manager has the ability to motivate ideas generation, to make proper decisions and strategy (Bouzguenda, 2018), which may help him to develop relationships with employees, shareholders, and customers, to minimize agency and transaction costs (Ezzi et al., 2016; Trehan & Shrivastav, 2012), to be conscious of firms' financial situation (Tai et al., 2018), and to explore the productive capacity of the firm in a positive way (Cote & Miners, 2006). Given this evidence, this study examines whether managers' negative and positive affectivity have an effect on business practice.

Third, our study builds on the emerging literature of business practices in firms. An emerging strand of studies has attempted to measure business practices in SMEs (e.g., McKenzie & Woodruff, 2015) and in large firms (e.g., Bloom et al., 2017). There is also a growing body of literature focusing on the role of business practices in firm productivity (e.g., Bloom et al., 2013; Nguyen & Kim, 2019) and finding that business practices do matter for firms. Bruhn et al. (2018) documented that developing business practices lead to an improvement in firm performance and growth.

Building upon the above evidence and arguments, we hypothesize as follows:

Hypothesis 1a: Managers' negative affectivity (NA) has a negative effect on business practices.

Hypothesis 1b: Managers' positive affectivity (PA) has a positive effect on business practices.

Hypothesis 2: There is a positive link between the cognitive ability level of managers and business practices.

### 3. Method

#### 3.1. Participants and procedure

In this study, we conducted a survey in 2018 to measure business practices used in the day-to-day operations of firms, and managers' cognitive ability, trait affectivity, and demographic profiles. We collaborated with the General Statistics Office of Vietnam (GSO) to select random firms from all state- and privately-owned textile and garment firms in Thai Binh, Hai Duong, and Binh Duong provinces, which are the three largest hubs of textile and garment firms in Vietnam. We restricted observation to firms with between 10 to 1000 employees and excluded multinational enterprises (MNEs). We wanted to work with both SMEs and large firms to get a complete picture of business practice adoption and compare the different effects of managers' trait affectivity and cognitive ability on business practice adoption in different firm sizes. This yielded a sample of 623 potential firms. Our sample has 229 SMEs (36.76%) and 394 large firms (63.24%). To ensure the creditability of the data set, we hired officials from the GSO to do our survey. Details of the survey are contained in Appendix 1.

Our participants were firm managers, mostly chief executive officers (CEOs) and chief financial officers (CFOs). As the demographic profiles show in Table 2, the participants' average age was 49.59 years, with 51.77% managers younger than 50 years old and 48.23% of managers between 50 to 76 years old. Of this group of managers, 65.17% were male, and 34.83% were female. About 57% of managers in the sample held at least a Bachelor's degree.

#### 3.2. Model specification and measures

##### 3.2.1. Model specification

To investigate the above hypotheses, we commenced by running cross-sectional regressions of business practice score by estimating managers' trait affectivity and cognitive ability for firm  $i$  in the year 2018, which is shown in our baseline model in equation (1) as follows:

$$BizScore_i = \alpha_i + \beta_{EQ}NA_i + \lambda_{IQ}IQ_i + \theta_{PA}PA_i + \mu_X X_i + \varepsilon_i | i = 1 - 623 \quad (1)$$

Where:

BizScore<sub>*i*</sub>: Business practice score of firm *i*

NA<sub>*i*</sub>: Negative affectivity of manager of firm *i*

PA<sub>*i*</sub>: Positive affectivity of manager of firm *i*

IQ<sub>*i*</sub>: Cognitive ability of manager of firm *i*

X<sub>*i*</sub>: A vector of control variables of firm *i*, including firm-specific variables and managers' demographic characteristics

ε<sub>*i*</sub>: Error terms

We then examined cross-sectional associations with each type of business practice. Finally, we implemented an estimation of equation (1) for the subsamples of SMEs and large firms.

### 3.3. Measures

#### 3.3.1. Dependent variable: business practices measurement

To measure business practices, we followed the survey methodology developed by McKenzie and Woodruff (2017). The survey consists of 23 questions, which define and measure key business practices that are considered best practices, and thereby all firms are likely to espouse them (McKenzie & Woodruff, 2017). These practices are grouped into three areas: marketing (seven practices), costing and record-keeping (eight practices), and financial planning (eight practices).

In order to assure the reliability of responses, we carried out a traditional closed-end question, tick-box survey design. All questions could be asked regardless of location, as the survey was based on survey enumerators supplied by the GSO. For each business practice, we asked if the firm had undertaken a practice or not. If the firm had adopted that business practice, the participant would tick Box 1 or tick Box 0 if not. For example, under financial planning practices, we asked if the firm reviewed its financial performance monthly and analyzed where there were areas for improvement. This practice would be coded 1 if firms were doing it and 0 if firms were not. We detail the business practices and the questions in the same order as they were in the survey in [Appendix 1](#).

In terms of measurement, scores of marketing, record-keeping, and financial planning practices are generally defined as the average scores of each type of business practice used by firms, namely seven marketing practices, eight record-keeping practices, and eight financial planning practices, respectively. Thus, we constructed a business practice score by calculating the average value of the marketing, record-keeping score, and financial planning scores. In a natural manner, these scores ranged from 0 (adopting none of the business practices) to 1 (adopting all of the business practices).

#### 3.3.2. Measurement of trait affectivity

We generated a group of 10 questions based on the International Positive Affectivity—Negative affectivity Schedule—Short form (I-PANAS-SF), which derives from the PANAS instrument proposed by Watson et al. (1988). By asking participants how normally they feel in the direction of the state under investigation, the idea of our survey was to draw out a reaction to a collection of negative affectivity from five questions, such as “nervous” or “hostile”, and positive affectivity from five other questions, such as “active” or “determined”. Each question was evaluated on 5-point scales ranging from 1 (never) to 5 (always), and the total scores were divided by the number of questions. As such, negative affectivity (NA) is the average score of the five questions corresponding to negative emotions. Low negative affectivity is likely to be a characteristic of a person who displays calm, gracefulness under stress (Charupat, 2013). In the same vein, PA is the average score on five



questions correlated with positive emotions. The higher the PA means the higher the probability of experiencing positive emotions.

### 3.3.3. Cognitive ability measurement

Among many options for researchers to measure cognitive ability, the cognitive reflection test (CRT), which was developed by Frederick (2005), has been widely used by scholars in the experimental economic community (e.g., Ackert et al., 2020; Corngnet et al., 2015; Noussair et al., 2016). CRT assesses the individuals' ability to cogitate on a logical issue, thereby being interpreted as an index of cognitive ability with the number of correct answers as a measure (Noussair et al., 2016).

In this study, following Ackert et al. (2020), Branas-Garza et al. (2019), and Noussair et al. (2016), among others, we used the CRT to measure cognitive ability. In particular, the CRT includes three simple questions. There is a wrong but instinctive answer in each question, and in order to answer correctly, a participant needs to think and respond cognitively (Ackert et al., 2020). Additionally, Frederick (2005) indicated that the CRT is not only associated with major intelligence tests but also with the behaviors that these tests are linked to.

For example, consider the below question:

In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

An intuitive participant is likely to respond that it would take 24 days for the patch to cover half of the lake. However, the correct answer is 47 days as "every day, the patch doubles in size". This characteristic of the CRT allows it to successfully evaluate the trend towards miserly information processing (Toplak et al., 2011). The two other questions are similar. The details of the CRT are provided in [Appendix 1](#).

The total scores obtained from answering all three CRT questions are the cognitive ability of a participant. The cognitive ability score ranges from 0 (answer all three questions incorrectly) to 3 (answer all three questions correctly). Thus, a higher score implies a higher cognitive ability.

## 4. Results analysis

### 4.1. Summary statistics

Table 2 provides summary statistics for the full sample and all variables. Table 2 shows that, on average, the sample firms have adopted 72.81% of the 23 business practices measured, and the initial adoption rates varied from a low of 52.44% to a high of 100%. Among the business practices, the most often used adopted were financial planning practices ( $M = .8388$ ), such as the preparation of an annual balance sheet (100%), profit and loss statement (99.86%), and annual statement of cash flow (99.83%). The least frequently used practices were marketing practices ( $M = .5206$ ), for example, have the firms run any advertisements in any form within the period of the last six months (52.44%), attempted to attract customers with a special offer (65.79%), or talked with at least one former customer to find out why the former customer has stopped buying the firms' products (79.43%).

As shown in Table 2, the NA's mean value of 2.519 was revealed, which was somewhat higher than the mean of 2.42 found by Charupat et al. (2013). This finding ( $M = 2.519$ ) suggests that managers in the sample are characterized by average negative emotions. The mean score ( $M = 3.49$ ) of PA points out that, on average, the sample managers have a high likelihood of experiencing positive emotions. Regarding cognitive ability, the average score ( $M = 1.5842$ ) was similar to the mean of 1.60 found by Ackert et al. (2020). The result reflects that the managers under consideration have an average cognitive ability level.



#### 4.2. Correlation matrix

In Table 3, the Pearson correlation matrix among all independent variables and the main dependent variable, the business practices score, is implemented and displayed. It is worth noting that supporting the findings of Watson et al. (1988) that NA and PA were uncorrelated, we could not find any correlation between NA and PA at any level ( $r = .012, p > .1$ ), which is also consistent with many recent studies such as Charupat et al. (2013) and Ackert et al. (2020). In terms of key explanatory variables, NA and cognitive ability were by and large uncorrelated at any significance level ( $r = .052, p > .1$ ), which provides an initial perception that they are different constructs.

The correlation between the business practice score and main independent variables reveals some apparent propensity for the adoption of business practices and managers' personality traits. NA showed a negatively strong correlation with business practices, while PA was positively correlated with business practices ( $r = -.103, p < .01$ ;  $r = .084, p < .05$ , respectively), which to some extent supports the hypotheses 1a and 1b. However, we could not find any correlation between managers' cognitive ability and business practice score at any level.

#### 4.3. The association between managers' trait affectivity, cognitive ability, and business practices

Table 4 scrutinizes whether a manager with higher cognitive ability and/or trait affectivity can improve the adoption of business practices through cross-sectional regression analysis. We investigated managers' negative affectivity (NA) and positive affectivity (PA) individually in Models 1 and 2; we then investigated the effect of both variables together in Model 3. Starting with NA, as in Hypothesis 1a, it is asserted that a manager that has a lower probability of experiencing negative emotions is likely to enhance the adoption of business practices. The coefficients on NA were significant in all models ( $\beta = -.0240, p < .05$ ;  $\beta = -.0228, p < .05$ ), which provided support for Hypothesis 1a. The  $-.0228$  estimated coefficient on NA suggests that one standard deviation decrease in the NA of managers would lead to an increase in the adoption of business practices by 2.28%. The reason for this effect might be that an emotionally intelligent manager is self-conscious and mindful of their business and life environment (Bouzguenda, 2018) and is devoted to the concerns of employees and the firm (Muller & Turner, 2010).

In Hypothesis 1b, the coefficient of PA is anticipated to be positive, implying that a manager experiencing positive emotions is likely to improve business practices. In Models 2 and 3, we observed a positive and significant relationship between the PA of managers and business practices ( $\beta = .0203, p < .05$ ;  $\beta = .0183, p < .1$ ). The coefficient of  $.0183$  suggests that increasing the PA of managers by one point would be associated with a 1.836% increase in business practices. This result supports the notion that positive emotions may guide managers to make more beneficial decisions within firms (Bouzguenda, 2018; Damasio, 1994).

Turning to cognitive ability, the estimated coefficient on cognitive ability level was positively and significantly related to business practice score at 10% level ( $\beta = .0221, p < .1$ ;  $\beta = .0194, p < .1$ ;  $\beta = .0216, p < .1$ ), which supported Hypothesis 2 and reflected the fact that a manager with higher cognitive ability level is likely to increase the adoption of business practices. In Model 3, we found a significant point estimate of  $.0216$ , implying that a 1-point increase in a manager's cognitive ability level is associated with a 2.16% increase in business practices.

In terms of the control variables, we failed to find any statistically significant association between the demographic profiles of managers and business practices at any level. Only charter capital was negatively related to business practices at 10% level in all models ( $\beta = -.0875, p < .1$ ;  $\beta = -.0817, p < .1$ ;  $\beta = -.0830, p < .1$ ).

#### **4.4. The effect of managers' trait affectivity and cognitive ability on each type of business practices**

Table 5 separates the overall business practices measure to investigate the effect of managers' trait affectivity and cognitive ability levels on the three subcomponent scores, namely the marketing score (model 1), the record-keeping score (model 2), and the financial planning score (model 3). It was found that the estimated coefficients on NA level were negatively and statistically different from zero ( $\beta = -.212, p < .01$ ;  $\beta = -.0478, p < .01$ ;  $\beta = -.0172, p < .1$ ), suggesting that the NA level of managers will impact business practices regardless of business type. In particular, it had the most substantial impact on marketing practice but had the most negligible impact on financial planning practices. The  $-.212$  coefficient suggests that decreasing the NA level of managers by 1-point would lead to a 21.2% improvement in the adoption of marketing practices. The coefficient of  $-.0478$  implies that one standard deviation of a manager's NA level is associated with a 4.78% reduction in the record-keeping score. Under financial planning practices, a 1-point decrease in the NA level of a manager is related to a 1.72% increase in the adoption of that practice.

As far as the PA of managers is concerned, we observed that the coefficients on PA were significant in all models ( $\beta = .144, p < .01$ ;  $\beta = .0304, p < .05$ ;  $\beta = .0161, p < .1$ ), which supported the notion that when managers have positive emotions, they overcome obstacles and sort out problems more easily (Bouzuenda, 2018). Similar to NA, the effect of a manager's PA on marketing practices was the strongest, while its effect on financial planning practices was modest. Increasing the managers' PA level by 1-point would lead to a 14.4% increase in the marketing practices. In comparison, a 1-point increase in the standard deviation of a manager's PA level was associated with a 3.04% increase in record-keeping practices and a 1.61% increase in financial planning practices.

In terms of cognitive ability, the estimation shows some clear tendencies. We found a positive association between a manager's cognitive ability and marketing practices ( $\beta = 0.0507, p < .05$ ). Record-keeping practices were also positively predicted by the cognitive ability level of managers ( $\beta = .0418, p < .01$ ). These results suggest that one standard deviation increase in a manager's cognitive ability level results in a 5.07% higher adoption of marketing practices and a 4.18% higher adoption of record-keeping practices. However, there was no statistically significant relation between the cognitive ability level of managers and these practices concerning financial planning practices ( $\beta = .0353, p > .1$ ). Although this is not different from zero at any level, the  $.0353$  coefficient implies that increasing the managers' cognitive ability level by one point would lead to a 3.53% increase in the adoption of financial planning practices. The reason for this may be that in Vietnam, many financial planning practices such as preparing an annual balance sheet, cash flow statement, and statement of profit and loss are compulsory, so most firms already have financial planning practices in place regardless of the managers' cognitive ability level.

#### **5. The link between a manager's trait affectivity, cognitive ability, and business practices in SMEs and large firms**

Table 6 uses the cross-sectional data to examine the extent to which a manager's trait affectivity and cognitive ability help to explain different adoption rates of the specified business practices in SMEs and large firms. We classified firms as large firms if they had more than 200 employees and SMEs otherwise defined by Vietnamese law.<sup>1</sup> We examined NA and PA separately in Models 2 and 3, and their joint effect was examined in Model 1.

Beginning with managers' NA level, we observed considerable differences in its effect on SMEs and large firms. While in all models the estimated coefficients on the NA level of managers were negatively and significantly associated with business practices in large firms ( $\beta = -.0199, p < .1$ ;  $\beta = -.0214, p < 0.05$ ), we could find no statistically significant relationship between that variable and SMEs' business practices. The coefficient of  $-.0199$  suggests that one standard deviation of a manager's NA level is associated with about a 2% higher adoption of business practice in large

firms. In the same vein, the PA level of managers do not appear to have any impact on the adoption of business practices of SMEs, but it is significant in the case of large firms ( $\beta = .0232$ ,  $p < .05$ ;  $\beta = .0248$ ,  $p < .05$ ), reflecting the fact that a manager's PA level substantially increases the adoption of business practices in large firms.

Turning to cognitive ability, while a manager's cognitive ability level played a significant role in enhancing business practices in SMEs ( $\beta = .1060$ ,  $p < .05$ ;  $\beta = .103$ ,  $p < .05$ ), in the case of large firms, it was not statistically different from zero at any level. The .1060 coefficient indicates that in SMEs, one standard deviation of a manager's cognitive ability level is associated with a 10.60% higher adoption of business practices.

## 6. Conclusion

### 6.1. Empirical contributions

The foremost empirical contribution of this work is that we found that managers' trait affectivity and cognitive ability are significant in relation to the business practices in firms. A one standard deviation decrease in the NA level of managers is associated with a 2.28% increase in business practice adoption. In contrast, an increase in a manager's cognitive ability level by one point would lead to a 2.16% higher adoption rate of business practices. Additionally, the adoption of business practices to some extent is ascribed to a manager's positive affectivity, as we observe that the adoption of business practice increases by 1.836% per 1-point increase in the PA of managers. These findings underline the importance of managers' personality traits and competencies in improving business practices.

Second, we shed new light on the current literature and provide new insights into firms' business practices by examining each type of business practice. We observed that the trait affectivity levels of managers have the strongest effect on marketing practices. The adoption of marketing practices increases by 21.2% per 1-point reduction in the NA levels of managers, while increasing managers' PA level by 1-point is associated with a 14.4% higher business practice adoption. The effect of managers' trait affectivity on financial planning practices is modest, however. Similarly, the cognitive ability of managers had a strong impact enhancing marketing and record-keeping practice adoption but had little if any relationship with financial planning practices.

Moreover, the other distinction of this study is that it compared the impact of managers' trait affectivity and cognitive ability on business practices in relation to firm size. Interestingly, our evidence suggests that the trait affectivity levels of managers in large firms have a substantial impact on the adoption of business practices. In contrast, SMEs' implementation of business practices largely depends on a managers' cognitive ability level.

### 6.2. Practical implications

From a managerial standpoint, understanding how managers' trait affectivity and cognitive ability levels link to business practices has meaningful practical implications for firms in general and managers in particular. First, in the recruitment and management development area, trait affectivity and cognitive ability should be considered vital criteria for the recruitment and promotion of managers. Those with higher emotional intelligence and cognitive ability can be expected to have greater intelligence, grace, and more positive work attitudes to solve problems and deal with organizational concerns. Second, it is of great relevance to consider trait affectivity and cognitive ability as drivers for the evaluation of managerial job performance. Our findings clearly suggest that managers with a combination of good trait affectivity and high cognitive ability are the most likely to support and enhance the adoption of business practices. Third, in relation to human resource development, emphasis should be given to foster trait affectivity in managers through training programs. Developing the trait affectivity levels of managers will have flow on benefits and encourage business practice adoption, subsequently helping to improve productivity-enhancing activities and have implications for the aggregate wealth of firms.

### 6.3. Limitations and future directions

This study paves some potential avenues for future research. Though it was carried out in only one country, its findings can be generalized and applied in other countries with some similar socio-economic environments to Vietnam. Future research may also explore managers' job performance under the influence of managers' trait affectivity and cognitive ability in connection with their personality traits and competencies. Such intersection may reflect the multidisciplinary nature of this research field. On the other hand, we also realize that findings in the textile and garment industry may not be the same in other sectors. Thus, we expect to conduct future studies across different industries to have a better comparative view. Further, the data set of this study is collected in one year, 2018. Although it is still relevant to investigate the causal relationship between dependent variables and explanatory variables, it may be a potential avenue to implement panel data studies in order to enrich insights and implications in this area.

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#### Note

1. According to the Decree 39/2018/ND-CP of the Vietnamese government, SMEs are firms having less than or equal to 200 employees.

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#### Disclosure statement

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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#### Ethical statement

All procedures performed in studies involving human participants were in accordance with the code of conduct of research with human materials in our institution and in Vietnam.

#### Informed consent

All participants gave written informed consent

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Appendix1 Survey on business practices, trait affectivity, and cognitive ability  
Part 1. General information

Full name:		1		Male		Year of birth:		2		Female	
Gender:											
Educational levels (tick X on 1 box showing your highest academic level)											
1	Untrained	4		High school degree	7	Master degree					
2	Short-term courses	5		College degree	8	Doctoral degree					
3	Secondary school degree	6		Bachelor degree	9	Higher than PhD					

## Part 2. Questions on business practices

1. Marketing		0	1
In the last 3 months, has your company done the following activities? - Tick 0 on questions 1 and 4 if your company has no competitors - Tick 0 on question 4 if your company has no former customers			
1	Visited at least one of your competitors to see what prices your competitors are charging		
2	Visited at least one of your competitors to see what products your competitors have available for sale		
3	Asked your existing customers whether there are any other products they would like your firm to sell or produce		
4	Talked with at least one former customer to find out why former customers have stopped buying from your firm		
5	Asked a supplier about which products are selling well in your business' industry		
6	Attracted customers with a special offer		
7	Advertised in any form (last 6 months)		
Total score (1+...+7)			
2. Costing and Record-Keeping practices			
Code as 1 for each of the following that your firm is currently doing:			
1	Keeps written business records	0	1
2	Records every purchase and sale made by your firm		
3	Able to use records to see how much cash your firm has on hand at any point in time		
4	Uses records regularly to know whether sales of a particular product are increasing or decreasing from one month to another		
5	Works out the cost to your firm of each main product		
6	Knows which goods your firm make the most profit per item selling		
7	Has a written budget, which states how much is owed each month for rent, electricity, equipment maintenance, transport, advertising, and other indirect costs to your firm		
8	Has records documenting that there exists enough money each month after paying business expenses to repay a loan in the hypothetical situation that your firm wants a bank loan		
Total score (1+...+8)			
3. Financial planning practices			

(Continued)



(Continued)			
1. Marketing			
Code as 1 for each of the following that your firm is currently doing			
1	Review the financial performance of your firm and analyze where there are areas for improvement at least monthly	0	1
2	Has a target set for sales over the next year		
3	Compares your sales achieved to your target at least monthly		
4	Has a budget of the likely costs your firm will have to face over the next year		
5	Has an annual profit and loss statement		
6	Has an annual statement of cash flow		
7	Has an annual balance sheet		
8	Has an annual income/expenditure sheet		
Total score (1+...+8)			

### Part 3. Questions on trait affectivity and cognitive ability

Sect.	No.	Question	Answer	Answer unit
A	1	Thinking about yourself and how you normally feel, to what extent do you generally feel UPSET?		1–5 scale 1 = NEVER 5 = ALWAYS
	2	Thinking about yourself and how you normally feel, to what extent do you generally feel HOSTILE?		As above
	3	Thinking about yourself and how you normally feel, to what extent do you generally feel ALERT?		As above
	4	Thinking about yourself and how you normally feel, to what extent do you generally feel ASHAMED?		As above
	5	Thinking about yourself and how you normally feel, to what extent do you generally feel INSPIRED?		As above
	6	Thinking about yourself and how you normally feel, to what extent do you generally feel NERVOUS?		As above
	7	Thinking about yourself and how you normally feel, to what extent do you generally feel DETERMINED?		As above
	8	Thinking about yourself and how you normally feel, to what extent do you generally feel ATTENTIVE?		As above
	9	Thinking about yourself and how you normally feel, to what extent do you generally feel AFRAID?		As above

(Continued)

(Continued)				
Sect.	No.	Question	Answer	Answer unit
	10	Thinking about yourself and how you normally feel, to what extent do you generally feel ACTIVE?		As above
B	1	A bat and ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost?		Cents
	2	If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?		Minutes
	3	In a lake there is a patch of lily pads. Every day the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?		Days



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