DOES INTELLECTUAL CAPITAL ALLEVIATE BANK EARNINGS MANAGEMENT? NEW FINDINGS FROM VIETNAMESE CONTEXT

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ABSTRACT

Being "black boxes" in an economy, consequences resulting from manipulation of number reporting in banks has kept the spotlight of central banks worldwide for decades. Accordingly, many efforts that aim to enhance bank financial information transparency have been studied and proposed. In astonishment, despite the widely demonstrated influential role of intellectual capital in banking operations, the linkage between this factor and bank earnings management is largely unexplored. Motivated by this fact, the study makes the first endeavour to pinpoint how intellectual capital can assist banks in reducing earnings management. By employing the extended-VAIC model rather than the traditional measure, the panel data analysis based on the research sample of 26 Vietnamese banks from 2006 to 2020, with the support of different econometric methods shows that increasing intellectual capital will demotivate banks to be involved in earnings management. Also, three elements of intellectual capital: structural capital, relational capital and capital employed play a crucial role in alleviating bank earnings management. By contrast, the last element, human capital, does not yet help banks preclude financial misrepresentation, especially in small banks. These findings will be of special interest to bank regulators and managers in Vietnam and perhaps, other emerging economies.

INTRODUCTION

Earnings management (EM) occurs when managers intervene to distort financial information, making it difficult for stakeholders to accurately evaluate a company's true financial position and consequently raising unfavourable impacts on both economic outcomes and ethical values (Nuryaman et al., 2019). Understandably, the consequences of EM have arrested the special attention of both academicians and regulators worldwide, and the banking system, serving as the heart of economic activities, is not an exception, especially after the onset of the global financial crisis of 2007–2009. Being inherently seen as "black boxes" and less transparent entities, the manipulation of reported numbers can induce banks to greater opacity, which, in turn, may amplify the asymmetric information and exacerbate the probability of expropriation (Tran, 2020). In this case, compared to the firm industry, outside financing suppliers have to bear higher costs in entirely monitoring bank risk-taking behaviours (Tran et al., 2019). A tremendous number of extant studies have also underscored the detrimental impact of EM (or earnings opacity) on banking operations, from weakening stability, loan quality and market valuation to augmenting risk business activities (e.g., Beatty & Liao, 2014; Bushman & Williams, 2012; Tran et al., 2022; Zheng, 2020). Consequently, many radical reforms, particularly the Basel III standards, have been proposed to enhance the transparency and stability of the banking sector (Cao & Juelsrud, 2020; Fosu et al., 2017).

Notwithstanding, what is surprising here is that despite the radical role of intellectual capital (IC) in alleviating EM and enhancing earnings quality has been widely evidenced in the non-bank industry (e.g., Mohapatra & Pattanayak, 2024; Nuryaman et al., 2019; Sarea & Alansari, 2016), it seems to be scarce empirical studies on the IC-EM linkage in the banking literature. Considering the fact that the driving force of IC has broadly been manifested through a tremendous number of papers as a crucial source fostering multiple dimensions of banking businesses in the knowledge-driven era, such as income diversification, cost-effective management, financial intermediation, deposit growth and financial performance (e.g., Buallay et al., 2020; Lu, 2024; Lu & Nguyen, 2025; Neves & Proença, 2021; T. Nguyen & Lu, 2024; V. T. Nguyen & Lu, 2024), the virtual absence of empirically examining the impact of IC on EM in banks will leave a vital research gap in the banking literature. In an effort to plug this gap, this study

provides the first empirical evidence to unveil how IC can reduce the level of banks' EM. Also, by splitting IC into its elements, the study pinpoints how each IC element affects bank earnings manipulation.

The Vietnamese banking industry obtains various suitable characteristics that motivate us to conduct an empirical investigation and address the aforementioned research objectives. First, regardless of many regulatory countermeasures announced by the centre bank (the State Bank of Vietnam) in recent years, such as encouraging banks to adopt international accounting standards or being listed on the securities market, compared to other developing markets, the level of financial transparent information disclosed by Vietnamese banks is still lower and remains one of the major concerns (Batten & Vo, 2019; Dang & Huynh, 2023; Dang & Nguyen, 2024). Moreover, Vietnam's accession to the WTO in 2007 has heavily promoted looser management policies and broader participation of international financial institutions, forcing the banking market to change its business models, strategies, financial disclosure and increasingly fierce competition, which may stimulate domestic banks to engage further in financial information distortion (Dang & Huynh, 2023; Dang & Nguyen, 2024; Lu & Nguyen, 2025). In parallel with that, due to excessive reliance upon the efficiency and sustainability of the banking industry to spur most economic activities, any vagaries of banking operations may play significant havoc with the entire national economy of this Southeast Asian country (Lu & Nguyen, 2023; Nguyen & Lu, 2023). Such heavy dependence may amplify the mounting concern about the potential consequences of Vietnamese banks' EM practices for the whole economic growth. Against the backdrop above, it is appropriately expected that IC, which is generally considered a pivotal source of competitive advantage and sustainable development for banks in a less foreseeable world nowadays, will become an effective remedy for mitigating bank EM in Vietnam.

Theoretically, the combination of the three theories: resource-based, agency and stakeholder, will allow us to build a robust foundation to pinpoint how IC acts as an alleviating role in bank EM. Accordingly, the resource-based view is seen as a fundamental framework highlighting the important role of IC for the sustainable development of most institutions. This viewpoint underscores the vital driver of intangible assets, which are usually unique, non-substitutes, and difficult to imitate, hence an increase in these assets will reflect the better well-being of organisations (Barney, 1991; Keong

Choong, 2008; Wernerfelt, 1984). In this case, when long-term prospects of development become brighter, it is suitably anticipated that bank managers will be less involved in manipulating their earnings and fraudulent financial reporting (Lotfi et al., 2022; Salehi et al., 2023). Furthermore, the agency and the stakeholder views underline the IC management and disclosure will fulfil the requirements and expectations of multiple stakeholders, inducing to reduction of funding costs, elimination of asymmetric information, enhancement of bank responsibility and accountability (Moghadam et al., 2021; Mohapatra & Pattanayak, 2024; Paoloni et al., 2022). In short, each theory above will add a further layer to explain the way in which IC can alleviate banks' EM practices.

In this research, following the existing banking studies on EM (e.g., Dang & Huynh, 2023; Dang & Nguyen, 2024; Tran, 2020; Tran et al., 2022), the discretionary loan loss provisions model will be employed to estimate the level of banks' EM. As depicted by researchers, banks can distort earnings and address capital needs by turning loan loss provisions to their advantage. In this case, the opaqueness in this provisions model can help to capture the level of bank earnings manipulation. For IC's measurement, differentiating clearly from most of the prior empirical studies in Vietnam (e.g., Le & Nguyen, 2020; T. Nguyen & Lu, 2024; V. T. Nguyen & Lu, 2024), this article will use the extended value-added intellectual coefficient model instead of the conventional measure (VAIC model). Overall, the panel data analysis based on a bank-level database of Vietnamese banks over the 2006–2020 period denotes that an increase in IC is significantly associated with a reduction in bank EM. This finding does not change when a battery of robustness checks is conducted, such as alternative econometric measures and usage of research subsamples. In detail, according to the baseline result, when the standard deviation of IC increases by one unit, bank EM will reduce by around 1%. For IC's elements, it is observed that structural capital, relational capital, and capital employed efficiency assist the mitigation of bank earnings manipulation; by contrast, the adverse is seen in the case of human capital.

Through this empirical investigation, the study provides a further comprehensive understanding and contributes to the banking studies on both IC and EM fields in the following manners. Regarding the IC realm, the study can be considered as the first empirical examination to unveil the alleviating role of IC in bank EM. When glancing at the banking literature

on IC, it is true that most of the studies seem to restrict themselves to the linkage between IC and some accounting indicators such as ROA, ROE and cost to assets (e.g., Buallay et al., 2020; Lu, 2024; Neves & Proença, 2021; T. Nguyen & Lu, 2024). Beyond this stream of research, the paper makes a great endeavour to pinpoint how IC can help reduce earnings manipulation in an emerging banking market. Similarly, for the EM area, the article is also deemed as one of the scarce studies that explore how to reduce bank EM. Different from past studies emphasising some driving factors such as dividend payment, competition and business models (e.g., Jiang et al., 2016; Lartey et al., 2022; Tran, 2020; Tran et al., 2019), this research is deemed as a pioneering attempt to point out the way in which IC can mitigate EM in banks. Additionally, while most of the preceding literature on the IC role in banks, at least in the Vietnamese context, almost favours the traditional means (VAIC model) to measure IC (e.g., Le & Nguyen, 2020; Lu, 2024; Lu & Nguyen, 2023), which does not contain the relational capital element of IC (Asutay & Ubaidillah, 2023; Lu & Nguyen, 2025), approaching the extended VAIC model will help rectify this drawback and become a distinct facet of this article from others. Furthermore, testing the IC-EM linkage can be seen as a direct response to prior researchers, who indicate that future studies should pay further attention to the IC's role in different aspects of banking operations (e.g., Lu, 2024; V. T. Nguyen & Lu, 2024). Eventually, because the Vietnamese banking system has undergone radical reforms that aim to promote bank transparency, it is expected that the empirical findings in this study will be of interest to regulators in contending with the earnings opacity problem in banks.

In the next parts, the study will delineate the theoretical foundation and hypotheses development, the research methodology, the empirical findings, and discussion and conclusion.

LITERATURE REVIEW

Theoretical Foundation

To conceptualise the background for the IC-EM linkage in banks, the study will rely specially on the three underlying theoretical views: resource-based, agency and stakeholder. This approach is quite consistent with the extant literature on IC field (e.g., Asutay & Ubaidillah, 2024; Lu & Nguyen,

2025; Mohapatra & Pattanayak, 2024; Paoloni et al., 2022). Basically, the resource-based view can be generally considered as the fundamental foundation of IC, underscoring that to survive and succeed, especially in a turbulent environment, institutions have to leverage both their tangible and intangible resources effectively (V. T. Nguyen & Lu, 2024; Wernerfelt, 1984). Notwithstanding, when economic activities have gradually shifted from production-oriented towards knowledge-driven, this has highlighted the considerable significance of IC in the progress of value creation, optimisation of performance and retaining competitiveness (Lotfi et al., 2022; Ousama et al., 2020). Overall, IC is usually referred to non-physical assets such as human capital (e.g., employees' knowledge and experiences), structural capital (e.g., operational procedures, policies and strategies), relational capital (e.g., exterior connections with multi-stakeholders), which are widely acknowledged as invaluable and non-substitutable resources by which institutions can excel in gaining further competitive advantage and better performance (Barney, 1991; Keong Choong, 2008; Lu, 2024). As the outlook for prosperity becomes brighter, it is reasonable to expect that managers will have less incentive to engage in creative accounting or fraudulently report numbers (Lotfi et al., 2022; Salehi et al., 2022); thus, financial misrepresentation or earnings manipulation will be discouraged. This argument is also suitable for the banking industry. Indeed, banks with higher IC mean that they have workforces with higher financial knowledge, more effective risk management, better IT infrastructure, more well-tailored policies, and deeper intimacy with clientele and other stakeholders (Lu, 2024; T. Nguyen & Lu, 2024). Overall, from the resource-based viewpoint, IC will serve as a crucial strategic asset that, in turn, will fuel banks' products and services innovation, operational performance and risk mitigation. As a result, IC will underpin banks' capacities in sustaining competitive advantage, developing stakeholders' trust and complying with regulatory requirements, leading to discourage bank managers to be involved in earnings manipulation.

While the resource-based viewpoint helps point out how IC becomes a critical strategic resource, the agency theory will underline the supportive role of IC governance in minimising the information asymmetry and mitigating potential opportunism in the banking context where is usually considered greater opacity than the firm industry as noted earlier. Fundamentally, the agency view asserts that there are potential conflicts between the agent and the principal because of the asymmetric information that induces EM

practices (Jensen & Meckling, 1976). In this case, IC disclosure will provide a feasible tool for stakeholders, who are expected to leverage IC information for their well-making decision process (Paoloni et al., 2022). Indeed, IC can assist stakeholders in predicting organisations' future earnings and determining corporate value (Edvinsson & Malone, 1997). Moreover, IC information will bolster the confidence of financing suppliers based on a firm belief that IC significantly contributes to the enhancement of institutions' value creation process, and then decreases agency costs (Moghadam et al., 2021; Salehi et al., 2023). From this perspective, IC report and management will act as an underlying mechanism to reduce opportunism, eliminate asymmetries, realign managerial practices with organisational goals, and strengthen moral accountability. Hence, this theoretical lens underlines the vital driver of IC not only in fostering value creation but also in reducing risk and enhancing transparency.

On the other side, the stakeholder theory also highlights external pressures on bank accountability and legitimacy, and hence, explains the urgent demands of multi-stakeholders for IC information. Accordingly, the stakeholder view considers that businesses are held accountable to multi-stakeholders for their business activities (Freeman, 2010). Since IC information reported is increasingly required by stakeholders, IC disclosure also falls within the purview of this theory and thus optimises corporate value through a trade-off between benefits of stakeholders (Beattie & Smith, 2012; Mohapatra & Pattanayak, 2024). Within the banking industry context, beyond shareholders, banks' business operations are also scrutinised by a wide range of other stakeholders such as depositors, borrowers, regulators, financing suppliers, employees and communities at large. In this vein, when IC information is transparently reported, this will clearly signal the soundness of banks' governance as well as their social responsibility, leading to the satisfaction of pressing needs of stakeholders. Such outside pressures will reshape the way by which banks govern, manage and communicate their IC information. At the same time, achieving well-established relations with stakeholders will help not only avoid their resistance and counter-reaction but also gain consent from them by which institutions can survive and develop sustainably (Lu & Nguyen, 2025; Paoloni et al., 2022). Additionally, IC information can advance stronger corporate management, a greater degree of transparency and better earnings quality (Lotfi et al., 2022; Nuryaman et al., 2019; Sarea & Alansari, 2016), which will disincentivise bank managers from earnings management practices.

Taken together, the three theoretical views above will help provide a complementary triad – a holistic lens on the IC-EM linkage in the banking industry. First, the resource-based theory underscores the role of IC as the strategic resource – the internal value – that will enhance banks' business prospects, leading to the reduction in EM incentives. Meanwhile, the agency theory highlights that IC disclosure will narrow down asymmetric information and reduce the opportunism. Finally, the stakeholder view complements that IC disclosure springing from the external accountability pressures of multi-stakeholders will signal organisational integrity and institutionalise IC management in a way to meet social responsibility and bank accountability. In short, these theoretical triad will provide an integrated framework allowing to consider banks' IC as a crucial competitive resource that not only satisfies stakeholders' expectations but also forces banks to be more regulatory compliance and accountability.

Hypotheses Development

According to the extant literature (e.g., Dang & Huynh, 2023; Lartey et al., 2022; Tran et al., 2022), earnings management in banks has generally originated from the following sources. First, manipulating earnings smoothly will secure the position of bank managers. Second, through smoothing earnings, they can demonstrate their well-controlled risk management, leading to lower funding costs. Third, earnings manipulation also helps banks satisfy strict regulatory requirements. Fourth, when incomes become further smoothy, managers can signal a better performance prospect that fulfils stakeholders' demands. Finally, both listing status and type of auditors may also affect the bank EM degree. Based on the resource-based, agency and stakeholder theories as mooted in the previous subsection, it is appropriately assumed that banks with higher IC are expected to being better performance, exceling in risk control, consolidating confidence of both creditors and investors, and signaling a brighter vista for long-term prosperity. Also, IC-intensive banks may demand to find auditors with higher quality to the prevention of fraudulent financial reporting. Hence, these banks will have less motivation to be involved in creative accounting, overestimating profits or underestimating costs, and adopting accounting schemes unsuitably, inducing reduced earnings manipulation. These arguments are strongly evidenced by prior researchers. For instance, the recent studies by Lotfi et al. (2022) and Salehi et al. (2022) demonstrate

that IC can serve as an important factor in alleviating fraudulent activities connected with financial disclosure and money laundering of firms. The previous research by Nuryaman et al. (2019) asserts that IC can mitigate manipulating earnings in firms. Similarly, Moghadam et al. (2021) find that IC is significantly associated with enhancing the readability of financial reporting, while the study by Salehi et al. (2023) indicates that IC can help reduce audit fee stickiness since it assists companies in the improvement of operational costs and the diminishment of the information asymmetry. For the banking industry, a tremendous number of papers have also underscored the positive role of IC in furthering banks' operations, such as supporting the income diversification strategy, advancing financial intermediation and deposit activities, improving cost-effective management and financial performance (e.g., Buallay et al., 2020; Le & Nguyen, 2020; Lu, 2024; Lu & Nguyen, 2025; Neves & Proença, 2021; V. T. Nguyen & Lu, 2024). Given the aforementioned findings and arguments, the study renders the following hypothesis:

H1: Banks with higher IC tend to reduce EM.

For IC's elements, it is argued that IC-richer organisations will own knowledgeable employees and responsible managers (reflecting human capital element), who not only focus on searching for profitability but also pledge firmly to moral codes to sustain long-term prosperity and generate legal earnings for stakeholders (Lotfi et al., 2022). The previous study by Nuryaman et al. (2019) posits that EM practices can be mitigated by human capital since these activities do not bring benefits to companies. Nonetheless, it should be recognised that in the emerging banking markets like Vietnam, the existing findings do not always show a bright side of human capital element in banking operations. For instance, the recent studies by Lu and Nguyen (2024) and V. T. Nguyen and Lu (2024) suggest that this element does not yet support banks in developing their diversified incomes and financial intermediation activities. In the case of earnings management, we also consider that when the framework of ethical governance is insufficient, this may stimulate banks to engage further in earnings smoothing regardless of whether they possess experienced managers and employees.

Additionally, enterprises having high IC will tailor better internal control systems and effectively operational procedures (capturing structural capital element), leading to the preclusion of opportunistic managers (Salehi

et al., 2022). Such this enhancement has also contributed to the decrease in audit fee stickiness (Salehi et al., 2023). The recent study by Lu (2024) concludes that both human capital and structural capital support banks in operational cost-effective management. Moreover, the extant literature posits that well-built relationships with customers and other external parties (mirroring relational capital element) will restrict managers from being associated with fraudulent behaviors since they have to comply with ethical businesses to steer away from demolishing corporate image (Moghadam et al., 2021; Salehi et al., 2022; 2023). In another dimension, the existing argument has highlighted that evaluating IC should pay attention to capital employed element due to its contribution to value creation process (Asutay & Ubaidillah, 2024; Lu & Nguyen, 2025). In fact, many prior studies on IC have manifested the supporting role of this element in furthering banks' businesses (e.g., Asutay & Ubaidillah, 2024; Lu & Nguyen, 2025; V. T. Nguyen & Lu, 2024) and preventing fraud in financial disclosure of firms (e.g., Lotfi et al., 2022). Given these findings, it is suitably expected that increasing these four elements will induce to the reduction in bank EM. Thus, the study posits the next hypotheses as follows:

> H2: There is a negative association between human capital element and bank EM.

> H3: There is a negative association between structural capital element and bank EM.

> H4: There is a negative association between relational capital element and bank EM.

> H5: There is a negative association between capital employed element and bank EM.

METHODOLOGY

Research Sample and Variable Measurement

Research sample

Inheriting from the prior empirical investigations in Vietnam (e.g., Lu, 2024; Lu & Nguyen, 2025; V. T. Nguyen & Lu, 2024), in this research, a data set of commercial banks will be used to test the hypotheses stated in Section 2. The main reasons why the study pays attention to commercial banks are that this can help obtain a homogeneous research sample, besides, these banks are considered as large and dominant contributors to the banking system and the Vietnamese economy as a whole (Dang & Nguyen, 2024; T. Nguyen & Lu, 2024; Phan et al., 2022a). Accordingly, yearly bank-level data will be gathered directly from banks' financial reports, while macroeconomic one will be amassed from the World Bank through its website: https://data.worldbank.org/. In fact, all macro data used to analyse is fully published during the 2006-2020 period, hence we achieve the relatively complete macro data without missing. Along with that, to compute IC, a bank will be dropped out of the sample if its financial information is missed in four years consecutively (Le & Nguyen, 2020; Lu & Nguyen, 2025). After data collection and processing, the research sample finally contains roughly 26 banks covering the 2006–2020 period, denoting that about 380 observations are employed in analysis models.

It should be recognised that eliminating banks that do not publish the necessary financial information for four years consecutively may narrow our research sample and partly affect the robustness of our findings. In this case, we conduct an array of tests to ensure that our results are robust. First, the popular approach – the OLS estimation - will be employed to point out the impact of IC and its elements on bank EM. Then, other econometric measures such as the fixed-time effect and the system GMM estimators will be carried out to retest the findings and address the bias and endogeneity problems. At the same time, we recheck the results by examining the main independent variables (IC and its elements) lagged one year. In addition, the IC-EM linkage will be determined based on the subsamples: large and small banks. These approaches have been employed by many empirical

studies as either the primary or alternative measures in both IC and EM fields in the banking industry. The reasons why we perform the tests above will be elaborated in the next section before displaying the results. Besides, to mitigate the outlier influences, bank-specific variables are winsorised at 1st and 99th percentiles.

The number of observations above is likely acceptable when making comparisons with the preceding studies on the IC-EM field in the banking industry. Specifically, Le and Nguyen (2020) used approximately 377 observations, while there were only about 96 studied by Neves and Proença (2021). Other examples include studies by Dang and Huynh (2023) and Dang and Nguyen (2024), which employed around 350 observations. To some degree, utilising 380 observations in this research is also aligned with the recent papers (e.g., Lu & Nguyen, 2025; Nguyen & Lu, 2024). Additionally, some estimates posit that compared to the whole banking industry, the asset value of chosen banks makes up more or less 70%, suggesting that the research sample can be generally considered representative (e.g., Lu, 2024; T. Nguyen & Lu, 2024). It is noticeable that selecting a long period of 2006–2020 can help not only capture radical changes in the Vietnamese banking sector, such as the adoption of international criteria, digital-technology-driven policies and the advent of new financial competitors but also bring a comprehensive understanding about IC's role in banks' businesses (Lu & Nguyen, 2025; Phan et al., 2022a).

The key explanatory variable: Extended-VAIC measurement

As mooted earlier, differentiating from most previous researchers in the IC-banking field, especially in the Vietnamese context, this study will utilise the extended value-added intellectual coefficient model (Extended-VAIC) to measure banks' IC instead of the original method (VAIC). Using Extended-EVAIC is mainly because it can assist in measuring relational capital element, which is seemingly overlooked in the VAIC model (Lu, 2024; Ulum et al., 2014). Extended-VAIC totalises four elements: human capital (HC), structural capital (SC), relational capital (RC) and capital employed (CE). When the value of Extended-VAIC and its elements is higher, this means that banks leverage IC better. According to prior studies (e.g., Asutay & Ubaidillah, 2023; Lu & Nguyen, 2025; Ulum et al., 2014), the calculation of Extended-VAIC and its elements is as follows:

$$ExtendedVAIC_{it} = HC_{it} + RC_{it} + SC_{it} + CE_{it} \qquad (1)$$

$$VAL_{it} = OIN_{it} + PEE_{it} + ADE_{it} \qquad (2)$$

$$CE_{it} = VAL_{it} / BVE_{it}\, CE_{it} = VAL_{it} / BVE_{it} \qquad (3)$$

$$RC_{it} = MAR_{it} / VAL_{it} \qquad (4)$$

$$HC_{it} = VAL_{it} / SRC_{it} \qquad (5)$$

$$SC_{it} = (VAL_{it} - SRC_{it}) / VAL_{it} \qquad (6)$$

Where, VAL_{it} is the value added, and its formulation is the sum of operating incomes (OIN_{it}), personnel expenses (PEE_{it}), and the total cost of amortisation and depreciation (ADE_{it}). BVE_{it}, SRC_{it} and MAR_{it} are book value of bank equity, salary-related costs and marketing-associated expenses, respectively.

The dependent variable: Bank earnings management

Based on the prior studies (e.g., Merzki & Ben Rejeb, 2023; Tran et al., 2019; 2022), this empirical investigation will use the discretionary component of loan loss provisions as a tool to measure the level of bank EM. Accordingly, EM is the absolute value of residuals resulting from the following regression equation. An increase in this value suggests that the level of bank EM is higher.

$$\begin{aligned}
LLP_{i,t} = {} & \alpha_0 + \alpha_1 \times INC_{i,t} + \alpha_2 \times NPL_{i,t} + \alpha_3 \times CAP_{i,t} + \\
& \alpha_4 \times DLOAN_{i,t} + \alpha_5 \times SIZE_{i,t} + \alpha_6 \times DGDP_t + \\
& \alpha_7 \times DUNE_t + \varepsilon_{i,t}
\end{aligned} \qquad (7)$$

Where, LLP_{it} presents the percentage of loan-loss provisions over bank assets, $INC_{i,t}$ presents the percentage of total earnings before taxes and provisions over bank assets, $NPL_{i,t}$ presents nonperforming loans ratio, $CAP_{i,t}$ presents the average equity-to-asset ratio, $DLOAN_{i,t}$ presents the net loans growth rate, $SIZE_{i,t}$ presents (natural) log of bank assets. Meanwhile, $DGDP_t$ and $DUNE_t$ capture changes in GDP growth and unemployment rate per year, respectively.

Control variables

To explore the IC-EM linkage, various control variables are also added into analysis models. These variables include bank-level proxies such as bank size (Size), bank income (Income), bank loan (LoanR), and macroeconomy-level proxies such as GDP growth, Inflation rate and Governance indicator. These control variables are chosen because of the following reasons. First, it should be noted that the aforementioned control variables are being employed by many existing studies in both IC and EM fields (e.g., Asutay & Ubaidillah, 2024; Dang & Nguyen, 2024; Lu, 2024; Lu & Nguyen, 2025; Merzki & Ben Rejeb, 2023; Tran et al., 2022). Besides, some authors indicate that banks may be less involved in earnings management practices when the economic outlook becomes brighter (Merzki & Ben Rejeb, 2023; Zheng, 2020). Hence, GDP growth and Inflation rate are expected to affect negatively and positively bank EM, respectively. Meanwhile, the higher value of Governance indicator posits better governance in the banking system, inducing to the mitigation of bank EM (Abuzayed et al., 2018). Regarding bank-specific variables, the existing evidence suggests that both Size and Income variables have a negative impact on manipulating earnings practices (Lotfi et al., 2022; Merzki & Ben Rejeb, 2023), while there is an adverse correlation between EM and bank loan (Zheng, 2020).

Empirical Models

In this investigation, the linkage between IC, its elements, and EM will be explored through the following empirical models:

$$
\begin{aligned}
EM_{i,t} = \beta_0 + \beta_1 \times EM_{i,t-1} + \beta_2 \times ExtendedVAIC_{i,t} + \\
\beta_3 \times Bankcontrol_{i,t} + \beta_4 \times Macrocontrol_t + \theta_t + \varepsilon_{i,t}
\end{aligned}
\tag{8}
$$

$$
\begin{aligned}
EM_{i,t} = \beta_0 + \beta_1 \times EM_{i,t-1} + \beta_2 \times HC_{i,t} + \beta_3 \times SC_{i,t} + \\
\beta_4 \times RC_{i,t} + \beta_5 \times CE_{i,t} + \beta_6 \times Bankcontrol_{i,t} + \\
\beta_7 \times Macrocontrol_t + \theta_t + \varepsilon_{i,t}
\end{aligned}
\tag{9}
$$

Where, EM_{it} is earnings management of $bank_i$ in $year_t$ and serves as the dependent variable. $ExtendedVAIC_{i,t}$, $HC_{i,t}$, $SC_{i,t}$, $RC_{i,t}$ and $Ce_{i,t}$ are the key independent variables. $Bankcontrol_{i,t}$ and $Macrocontrol_t$ are the vectors of

bank-control variables (e.g., Size, Income, LoanR) and macro-control variables (e.g., GDP growth, Inflation and Governance), respectively. θ_t is added to both models to control time-fixed effects, and $\varepsilon_{i,t}$ presents the error term. Also, including $EM_{i,t-1}$ as a regressor will help capture the dynamic nature of bank earnings managements. The detailed definitions of used variables and descriptive statistics are depicted in Table 1.

Generally, it is observed that the extended-VAIC value fluctuates around 3.463, denoting that IC performance of Vietnamese banks can be considered good (Asutay & Ubaidillah, 2024; Ulum et al., 2014). Also, among the four elements of IC, the HC's value is the highest, which is quite aligned with prior studies (e.g., Asutay & Ubaidillah, 2024; Le & Nguyen, 2020; Lu, 2024). Meanwhile, the EM's value stands at around 0.02, which is remarkably higher than that in the previous studies based on advanced economies (e.g., Cao & Juelsrud, 2020; Tran et al., 2019; 2022). This affirms the existing argument that the Vietnamese banking industry remains less transparent.

TABLE 1
Definitions and descriptive statistics of variables

Variable	Definition	(1)	(2)	(3)	(4)	(5)
		N	Mean	SD	Min	Max
EM	Bank earnings management variable is calculated by the absolute value of residuals through regressing Equation (7)	336	0.0198	0.0337	0.000	0.246
Extended-VAIC	The extended-VAIC model is used to capture banks' IC. The calculation of this variable is presented in Equation (1)	378	3.463	1.002	0.809	6.678
CE	Capital employed variable is calculated through Equation (3)	380	0.391	0.226	0.047	0.946
RC	Structural capital variable is calculated through Equation (4)	380	0.0582	0.143	0.001	0.904

(Continued on next page)

TABLE 1 (*Continued*)

Variable	Definition	(1)	(2)	(3)	(4)	(5)
		N	Mean	SD	Min	Max
HC	Human capital variable is calculated through Equation (5)	378	2.463	0.785	1.001	5.467
SC	Structural capital variable is calculated through Equation (6)	380	0.554	0.148	0.001	0.831
Size	This variable reflects bank size and is calculated by the natural log of bank assets	380	24.94	1.448	20.840	27.910
LoanR	This variable presents bank loan aspect calculated by total loans over total assets	380	0.540	0.135	0.172	0.788
Income	This variable captures the bank's earnings and is calculated by the sum of the bank's pre-tax earnings and provisions on assets	380	0.018	0.010	0.000	0.060
GDP growth	Annual Gross Domestic Product growth is used to capture the Vietnamese economic growth	390	0.0623	0.0108	0.0294	0.0720
Governance	This variable is the average of governance indicators such as violence, efficiency of government, political stability, and quality of regulation	390	−0.128	0.116	−0.248	0.0632
Inflation	This variable is the annual inflation rate in Vietnam	390	0.0731	0.0595	0.0063	0.231

DOES INTELLECTUAL CAPITAL REDUCE BANK EARNINGS MANAGEMENT?

Baseline Findings

To explore the IC-EM linkage, initially, the panel data analysis starts with employing the OLS method, which is relatively a popular approach in the IC-EM banking field (e.g., Lu & Nguyen, 2025; Tran et al., 2022;

Zheng, 2020). The baseline regression results are displayed in Table 2, including five columns in which different groups of control variables are combined. Specifically, the regression model first begins by using only IC (measured by Extended-VAIC) as an explanatory variable. Afterwards, bank-control and macro-control variables are respectively added in the next two models. Next, both types of control variables are determined in the baseline model (regressing Equation [8]) before IC's elements are analysed in the last column (regressing Equation [9]).

Generally, it is observed that although the magnitude of IC' impact on bank EM is slightly different between models, all coefficients on the key independent variable (Extended-VAIC) are negative and statistically significant at the 1% level. This means that increasing IC can induce a reduction in bank EM. In other words, banks with higher IC tend to reduce their earnings manipulation, indicating that H1 is supported. In more detail, looking at the baseline model (Column [4]), the coefficient on IC stands around –0.01, suggesting that when the standard deviation of IC increases by 1 unit and holding others equally, bank EM will decrease by about 1% (coefficient × standard deviation: –0.01 × 1.002). This finding provides a meaningful tool for investors, regulators and risk monitoring groups in the following ways. First, investors can view IC improvement of banks as a credit signal of earnings manipulation reduction, suggesting that banks' financial statements also become more reliable. Consequently, this will help investors enhance their portfolio allocation decisions and valuation models in effective ways. Meanwhile, beyond the conventional indicators like capital adequacy ratio, regulators may integrate IC information into supervisory frameworks to assess the level of bank earnings management and transparency. Also, risk monitoring teams can harness IC indicator for evaluating the degree of financial disclosure quality of banks.

Turning to the link between IC's elements and bank EM, the results in the final model (Column [5]) show that the impact of HC is positive and statistically significant at the 1% level, which is completely contrary to that of other elements: SC, RC and CE. Quantitatively, a one-unit increase in the standard deviation of HC will be associated with an approximate 1.72% rise in bank EM, while that of SC, RC and CE will be related with a roughly 2.84%, 0.23%, and 0.65%, respectively, decrease in bank EM. These findings lend their support to H3–H5 but not in the case of H2.

TABLE 2
Baseline findings

Variable	(1) Abbreviated model	(2) Bank-level control	(3) Country-level control	(4) Baseline model	(5) IC's elements
Lagged-EM	0.447***	0.439***	0.447***	0.439***	0.316**
	(0.142)	(0.140)	(0.142)	(0.141)	(0.124)
Extended-VAIC	−0.00819***	−0.00995***	−0.00817***	−0.0100***	–
	(0.00256)	(0.00311)	(0.00253)	(0.00305)	
HC					0.0219***
					(0.00754)
SC					−0.192***
					(0.0552)
RC					−0.0163**
					(0.00771)
CE					−0.0286**
					(0.0118)
Size		0.00204*		0.00210	0.00479**
		(0.00118)		(0.00134)	(0.00202)

TABLE 2 (*Continued*)

Variable	(1) Abbreviated model	(2) Bank-level control	(3) Country-level control	(4) Baseline model	(5) IC's elements
LoanR		−0.0140 (0.0114)		−0.0134 (0.0115)	0.000381 (0.0108)
Income		0.121 (0.208)		0.122 (0.207)	0.320 (0.202)
GDP growth			−0.0144 (0.0835)	0.00793 (0.0826)	0.0445 (0.0796)
Inflation			−0.00246 (0.0207)	−0.000315 (0.0208)	−0.0188 (0.0236)
Governance			0.000846 (0.0149)	−0.00190 (0.0163)	0.000246 (0.0173)
Constant	0.0391*** (0.0104)	−0.000463 (0.0252)	0.0402*** (0.0112)	−0.00285 (0.0332)	−0.0494 (0.0493)
Observations	314	314	314	314	314
R-squared	0.297	0.303	0.297	0.303	0.401

Notes: Robust standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents the preliminary results emphasising the linkage between IC and EM in banks. The regression analysis starts with using only the key explanatory variable (Extended-VAIC) in Column (1). Then, bank-control variables and macro-control ones are added to Columns (1)–(2), respectively. In the baseline model (Column [4]), all these control variables are employed before each element of IC is determined in the final column.

Based on the aforementioned results, it can be concluded that the initial evidence demonstrates the negative association between IC and EM in banks, suggesting that banks possessing high IC tend to be less involved in earnings manipulation, leading to reduce EM. Therefore, this finding advocates H1. Besides, the preliminary results only support the alleviating role of three elements of IC: structural capital, relational capital, and capital employed in bank EM. Meanwhile, human capital element has a significant association with increasing earnings manipulation, which is quite contrary to the study's expectation. In order to validate these first findings, a variety of robustness tests will be employed in the subsequent subsection.

Robustness Checks

To ensure further the validity of the empirical findings in the previous subsection, the research will proceed with several robustness checks as follows. First, both Equations (8) and (9) will be regressed by using the fixed-time effect method. The application of this alternative estimator aims to minimise the impact of time-related biases on the empirical analysis results coming from employing the traditional econometric measure – OLS (Lu, 2024; Lu & Nguyen, 2025; Phan et al., 2022a). Second, all bank-level variables will be lagged one year before conducting regression Equations (8) and (9). This method is quite helpful because:

1. It may help minimise problems connected with reverse causality and endogeneity within empirical models (Dang & Nguyen, 2024; Nguyen & Lu, 2024).

2. An assumption here is that banks often need the time to adjust their management practices to new situations (Lu, 2024; Nguyen & Lu, 2023).

Third, the System GMM method will be applied for regressing Equations (8) and (9) since it aids in reducing issues induced by autocorrelation, correlation and heteroscedasticity among independent variables (Dang & Huynh, 2023; Le & Nguyen, 2020; T. Nguyen & Lu, 2024). It should be noted that these three approaches are widely used by many authors as either the primary method or the alternative measure in both IC and EM fields (Dang & Nguyen, 2024; Le & Nguyen, 2020; Lu, 2024; Zheng, 2020). The detailed findings through applying the three approaches above are displayed in Table 3.

TABLE 3
Robustness checks

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Fixed-time effect		Lagged all bank-level variables		System GMM	
	Baseline model	IC's elements	Baseline model	IC's elements	Baseline model	IC's elements
Lagged-EM	0.320*** (0.0550)	0.257*** (0.0539)	0.458*** (0.145)	0.329** (0.134)	0.391*** (0.0340)	0.286*** (0.0318)
Extended-VAIC	−0.00841** (0.00379)	−	−0.00831*** (0.00286)	−	−0.00984*** (0.00121)	−
HC	−	0.0211*** (0.00669)	−	0.0125* (0.00664)	−	0.0222*** (0.00235)
SC	−	−0.202*** (0.0365)	−	−0.134** (0.0523)	−	−0.186*** (0.0155)
RC	−	−0.0847* (0.0492)	−	−0.00959 (0.00958)	−	−0.0144*** (0.00557)
CE	−	−0.0101 (0.0198)	−	−0.0328*** (0.0107)	−	−0.0288*** (0.00523)
Size	−0.00113 (0.00373)	0.00128 (0.00426)	0.00117 (0.00117)	0.00466*** (0.00178)	0.00208*** (0.000474)	0.00449*** (0.000792)
LoanR	−0.0386* (0.0223)	−0.0313 (0.0224)	−0.0170* (0.00912)	−0.00685 (0.00879)	−0.0178** (0.00745)	−0.00634 (0.00547)
Income	0.0169 (0.321)	0.308 (0.314)	0.344*(0.194)	0.599*** (0.229)	0.107 (0.119)	0.228* (0.123)
GDP growth	−0.0758 (0.173)	−0.0368 (0.167)	−0.0124 (0.0674)	0.0543 (0.0677)	0.0103 (0.0374)	0.0597** (0.0269)
Inflation	−0.0261 (0.0415)	−0.0303 (0.0406)	0.0246 (0.0210)	0.000893 (0.0260)	0.00150 (0.00816)	−0.0101 (0.0107)

(Continued on next page)

TABLE 3 (*Continued*)

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Fixed-time effect		**Lagged all bank-level variables**		**System GMM**	
	Baseline model	**IC's elements**	**Baseline model**	**IC's elements**	**Baseline model**	**IC's elements**
Governance	0.0256 (0.0261)	0.0220 (0.0251)	0.00738 (0.0173)	0.00415 (0.0173)	0.00357 (0.00505)	0.00519 (0.00556)
Constant	0.101 (0.103)	0.0706 (0.114)	0.0133 (0.0322)	−0.0559 (0.0435)	0.000439 (0.0141)	−0.0410* (0.0230)
AR(1)					0.044	0.045
AR(2)					0.588	0.950
Wald chi2					18,191.30	8,631.19
Prob > chi2					0.000	0.000
Observations	314	314	312	312	314	314
R^2	0.176	0.253	0.279	0.336		
Number of bank	26	26	26	26	26	26

Notes: Standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table illustrates the regression results coming from robustness checks. Specifically, both Equations (8) and (9) will be regressed by applying different methods such as Fixed-time effect estimator (in Columns [1] and [2]), Lagged all bank-level variables (in Columns [3] and [4]), and System GMM estimator (in the final two columns).

Looking at Table 3, it is observed that although the magnitudes of all coefficients on IC in the baseline models (as shown in Columns [1], [3] and [5]) are slightly lower compared to that in the preliminary findings, these coefficients remain negative and statistically significant at either the 5% level or 1% level. This result is quite similar with the first finding, confirming that increasing IC has a remarkable association with reducing bank EM. Hence, H1 is again evidenced. Quantitatively, for one-unit increase in IC's standard deviation, bank EM decreases by roughly 0.83%–0.9%.

The test results for IC's elements (as illustrated in Columns [2], [4] and [6])) show that HC continues to positively affect bank EM, while the opposite influence is observed in the remainder of the elements: SC, RC and CE. Hence, these findings continuously support the prior evidence. More specifically, all coefficients on HC are positive and statistically significant at the 1% degree except for Column (4), which shows a statistical significance at 5% when all bank-level variables are lagged one year. Meanwhile, even though the magnitude of SC's impact relatively varies between columns, the negative relationship between this element and bank EM has a statistical significance at either 1% or 5% level. Turning to RC and CE, the regression analysis suggests that these elements both significantly contribute to reducing bank EM; however, only two of the three columns show these impacts are statistically significant. Accordingly, the impact of the former is statistically insignificant in the case of applying year-lagged financial variables (Column [2], while the similar for the latter is observed when employing the fixed-time effect (Column [1]). Because two of the three robustness tests demonstrate the preceding results, it can be concluded that the impacts of IC's four elements on bank EM remain unaltered.

In short, the evidence coming from the robustness tests tends to support the baseline results shown in the previous subsection. Particularly, an increase in IC has a substantial association with a reduction in bank EM, hence, H1 is continuously testified. In other words, banks with high IC will be demotivated to engage in earnings manipulation practices. Also, the testing results denote that reducing EM in banks is significantly associated with three of four elements, including SC, RC, and CE, reaffirming H3, H4 and H5. By contrast, the impact of HC does not meet the study's expectation because this element has a positive connection with accelerating bank EM. It should be noted that the preceding studies do not always find the bright side of HC for banking business operations, especially in

emerging countries. Particularly, Tran and Vo (2018) find that increasing HC can lead to reduction of banks' profitability in Thailand, while the study by Duho and Onumah (2019) indicates that HC can hinder diversified incomes of banks in Ghana. The recent studies by Lu and Nguyen (2024) and Nguyen and Lu (2024) also show that HC does not foster income diversification and financial intermediation of Vietnamese banks. Regarding the HC-EM linkage, as noted in Hypotheses Development, we suggest that in the landscape of emerging banking markets like Vietnam, where regulatory and ethical governance frameworks are usually insufficient, banks may engage further into manipulating their earnings even when they possess highly qualified employees. This is also partly supported by the fact that by the end of 2024, the Vietnamese banking system has witnessed one of the biggest illegal cases in its history when a prominent businesswoman has been accused of turning a big bank into her "piggy bank" with an estimated embezzlement of over 12 billion (around 3% of Vietnam's economy) during a long time.

To further validate the alleviating role of IC in bank EM, the testing process will end up with regressing both Equations (8) and (9) based on two research subsamples: large and small banks. Empirically, the existing literature shows that the influence of IC on bank operations remains a debatable issue depending on bank size. For instance, some posit that small banks seemingly leverage IC for their business operations more effectively than their counterparts (e.g., Lu & Nguyen, 2025; Nguyen & Lu, 2024), while large banks seemingly struggle with harnessing HC for their performance, but they tend to explore SC effactually to their cost-effective management (Le & Nguyen, 2020; Lu, 2024). Moreover, from the theoretical view, it is arguable that in contrast to large organisations that possess fewer incentives in promoting their creative innovation since they are embedded firmly into "a quiet life", small organisations have higher motivation to innovate their business activities and may deal with the asymmetric information problem more easily than their counterparts (Dietrich & Wanzenried, 2014; Phan et al., 2022a; 2022b; Scherer, 2001). In the recent study, Tran et al. (2022) argue that large banks may be highly involved in the volatility of earnings practices as their operations are more complex than those of small banks. These authors also affirm that the adverse impact of earnings smoothing is greater in large banks. Taken together, we anticipate that small banks will tend to leverage IC more effectively than large ones for mitigating

EM practices. In addition, we suppose that small banks, to certain extent, may rely specially on the relational capital to build trust and the structural capital to minimise the occurrence of financial misinformation, while they may lack skilled human resource. Meanwhile, large banks may rely more on structural capital and formal governance systems to improve their earnings management. Therefore, determining the IC driver based on these subsamples will not only help retest the aforementioned findings but also shed light on the question of whether the mitigating role of IC differs by bank size.

The regression results are displayed in Table 4, which includes four columns. The first two columns show the results based on the subsample: large banks, which possess assets with a value higher than the median. The evidence illustrated in the final two columns relies on small banks – the rest of the banks in the sample. Looking at Columns (1) to (3), both coefficients on IC continue to signal a negative association with bank EM at the 5% statistical significance level, however, the magnitude is relatively higher in small banks. Meanwhile, the impacts of the four elements are unchanged but different in significance between large and small banks. Specifically, the negative impacts of both SC and CE have the statistical significance of the 10% and 5% level, respectively, in large banks (see Column [2]). Turning to small banks (see Column [4]), except for CE, the remaining three elements: HC, SC and RC all have similar effects to the previous findings and stand at either 1% or 10%.

To sum up, when determining bank size, the study finds that IC serves as an alleviating role in earnings manipulation in both large and small banks, but the magnitude is relatively more profound in the latter group. Also, SC and RC have significant contributions to reducing EM for small banks, but this is not the case for HC. Moreover, an increase in SC and CE is associated with a decrease in EM for large banks. In the final section, the study will discuss and draw general conclusions about the empirical findings.

TABLE 4
Research subsample: Bank size

Variables	(1)	(2)	(3)	(4)
	Large banks		Small banks	
	Baseline model	IC's elements	Baseline model	IC's elements
Lagged-EM	0.434**	0.313*	0.427	0.263
	(0.170)	(0.167)	(0.279)	(0.213)
Extended-VAIC	−0.00985**	–	−0.0121**	–
	(0.00474)		(0.00503)	
HC	–	0.0218	–	0.0207***
		(0.0135)		(0.00758)
SC	–	−0.190*	–	−0.199***
		(0.101)		(0.0647)
RC	–	−0.00744	–	−0.0201*
		(0.00765)		(0.0121)
CE	–	−0.0345**	–	−0.0309
		(0.0148)		(0.0209)
Size	0.00361	0.00392	0.00380	0.00564*
	(0.00400)	(0.00356)	(0.00254)	(0.00287)
LoanR	−0.0164	0.00760	−0.0176	−0.00489
	(0.0163)	(0.0158)	(0.0272)	(0.0242)
Income	0.228	0.416	0.218	0.557
	(0.248)	(0.253)	(0.488)	(0.414)
GDP growth	−0.0483	−0.00561	0.318	0.265
	(0.0749)	(0.0720)	(0.298)	(0.367)
Inflation	0.0226	0.0443	−0.0169	−0.0614*
	(0.0393)	(0.0378)	(0.0265)	(0.0321)
Governance	−0.0125	−0.00182	0.0164	0.0202
	(0.0272)	(0.0277)	(0.0298)	(0.0291)
Constant	−0.0424	−0.0309	−0.0494	−0.0688
	(0.0878)	(0.0733)	(0.0758)	(0.0769)
Observations	192	192	122	122
R^2	0.311	0.367	0.320	0.473

Notes: Robust standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents the regression results based on the subsample: large and small banks. In the first two columns, Equations (8) and (9) are regressed through using the former group. Similarly, these regression equations are performed based on the latter group.

DISCUSSION

Although wide-ranging reforms in the banking sector have been adopted in recent years, the banks' transparency issue still comes under the national spotlight in Vietnam, especially when earnings manipulation has accelerated concerns about banks' financial health and taking advantage of manipulating reporting to gain illegal benefits that have been incurred in this country. This backdrop underscores the need to reduce EM in the Vietnamese banking industry. Given the true fact that IC is generally evidenced as a powerful instrument for banking operations in the knowledge-driven economy (e.g., Buallay et al., 2020; Lu, 2024; Lu & Nguyen, 2025; Neves & Proença, 2021), by empirically investigating the linkage between IC and bank EM, this research strongly testifies that when IC is strengthened, it will demotivate banks to engage in earnings manipulation practices. This finding is in line with the prior studies in the firm industry, which indicate that IC contributes to enhancement of financial statements readability, and prevention of fraudulent financial information and EM practices (e.g., Lotfi et al., 2022; Moghadam et al., 2021; Nuryaman et al., 2019). For IC's elements, the study finds that SC, RC and CE have significant contributions to the reduction in bank EM, meaning that constituting well-tailored internal control systems and operational procedures (SC), well-built relationships with multi-stakeholders (RC) and consolidation of capital employed (CE) will help banks prevent financial misrepresentation, inducing reduced EM practices. These findings support the preceding evidence (e.g., Moghadam et al., 2021; Salehi et al., 2022, 2023). In contrast, HC has an unintended impact, especially in the case of small banks, reflecting that domestic banks do not yet preclude the opportunistic behaviors of their managers.

As analysed in the previous section, the adverse impact of this element may come partly from a lack of ethical governance frameworks and the weakness of Vietnamese banks' internal risk monitoring. In fact, the HC-EM relationship in our research may explain the reason why some cases related to manipulated number reporting have occurred frequently in the Vietnamese banking sector in recent times. One of the typical cases is SCB bank – a domestic bank whose consequences of its EM practices have reverberated across the whole economy, highlighting the urgent demand for further refining the transparency level as well as effectively mitigating EM

practices of Vietnamese banks (see more: Lu & Nguyen, 2025). Compared to the extant empirical investigations, this finding may align with some studies in emerging banking markets, such as Duho and Onumah (2019); Nguyen and Lu (2024) and Tran and Vo (2018) that underline the dark side of human capital in banking operations.

CONCLUSION

Given the findings above, the study proposes some implications for Vietnamese regulators and bank managers. First, new regulations that aim to incentivise banks to disclose their IC performance as a part of financial information should be taken into account. This step is necessary because IC disclosure can help not only narrow down the asymmetric information and the agency conflicts but also render a reliable tool for stakeholders to make better decisions and investment chances. In the coming time, regulators should implement mandatory IC reporting guidelines and use IC indicator as a credit signal of financial information quality and bank transparency. This, in turn, will help not only to ameliorate market discipline within the Vietnamese banking system but also stabilise the trust of multi-stakeholders. Besides, local banks, particularly small ones, should re-scrutinise their human capital efficiency because the empirical evidence denotes a positive association between this factor and EM practices. The unexpected impact of this element underscores the pressing need for strengthening banks' internal audit systems to prevent EM. Furthermore, along with enhancing the ethical governance framework, banks should propose ethical training programmes to curb the misuse of human capital in the alleviation of manipulating earnings. Additionally, teams that are responsible for risk monitoring can incorporate IC into their existing risk dashboards to assess the level of financial misinformation of banks. At the same time, large banks should pay certain attention to building close relationships with their stakeholders and increasing capital employed should be taken into careful consideration by small banks because both elements are not yet leveraged effectively by these banks. Accordingly, bank managers should tailor suitable strategies to enhancement of their communication, such as organising regular stakeholder dialogues and investor briefings. Eventually, bank boards should prioritise reinforcement of their structural capital to minimise earnings manipulation by scaling automation of risk monitoring and compliance systems.

Besides certain contributions, this research contains some limitations by which future researchers can plug into. First, regardless of using the extended-VAIC model to capture the impact of RC that the original model neglects, the study does not yet measure the innovation capital element. Hence, future studies can further expand this model to figure out this ignored element and reinvestigate the research's findings. Furthermore, regardless of various robustness tests employed, it should be acknowledged that the size of our research sample is quite small that may affect the statistical power of the findings. In this case, academicians can enlarge the sample size to retest our empirical results. Also, this enlargement can help determine the role of IC in the prevention of EM in different kinds of banks, especially foreign-controlled banks. Additionally, expanding the research period to examine the impact of COVID-19 is also a crucial gap for scholars in the coming times. This, in turn, will not only accentuate the pivotal driver of IC but also uncover the dynamic change of IC during the pre- and post-COVID-19 periods. Lastly, together with an updated database, future works can use different measures of earnings manipulation such as bid-ask spread, forecast error in earnings, or other discretionary LLP measurements like the logarithm of the absolute value of residuals from Equation (7) (see more: Cao & Juelsrud, 2020; Tran et al., 2019) and approach other econometric methods like the quantile regression to provide a comprehensive picture on this topic.

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