

# Providing a Model for Explaining Fraudulent Financial Reporting Based on Managers' Characteristics

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## ABSTRACT

Fraudulent financial reporting, as one of the primary challenges of capital markets, undermines investor trust and threatens economic sustainability. Accordingly, the main objective of this study was to present a comprehensive model explaining the factors influencing fraudulent financial reporting based on managers' characteristics in companies listed on the Tehran Stock Exchange. This study is applied in terms of purpose and employs a mixed (qualitative-quantitative) exploratory design. In the qualitative phase, conducted between January 2024 and July 2024, thematic analysis was applied to semi-structured interviews with experts to identify the dimensions and components of the model. In the quantitative phase, conducted from August 2024 to February 2025, the extracted model was validated through a researcher-made questionnaire administered to the statistical population, using structural equation modeling (PLS). Furthermore, relationships among dimensions were analyzed using the interpretive-structural DEMATEL (ISM-DEMATEL) technique. Results from the qualitative phase led to the identification of five main dimensions, twenty components (secondary themes), and 160 primary themes. The main dimensions of the model included managers' knowledge and expertise, organizational and environmental pressures, opportunities for committing fraud, managers' individual motivations, and managers' personality and psychological traits. The findings indicate that fraudulent financial reporting is influenced by five key dimensions: managers' knowledge and expertise, organizational and environmental pressures, opportunities for committing fraud, individual motivations, and personality and psychological characteristics. This conceptual model can enhance understanding of the factors shaping fraudulent behavior and support the development of preventive policies and control systems.

**Keywords:** Fraudulent financial reporting, managers' characteristics, Tehran Stock Exchange.

## Introduction

Fraudulent financial reporting has long been recognized as one of the most serious threats to the transparency, efficiency, and sustainability of contemporary financial markets. The cascading consequences of fraudulent reporting extend beyond the boundaries of individual firms, influencing investor confidence, resource allocation, capital market stability, and even national economic development. Recent global financial disruptions, coupled with rapid technological transitions and increasingly complex corporate structures, have amplified concerns about the drivers of financial deception. Studies examining fraud in the context of accounting, auditing, corporate governance, and digital transformation emphasize that fraudulent reporting is rarely the result of a single factor; rather, it emerges through the interaction of organizational conditions, managerial incentives, cognitive vulnerabilities, and systemic



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2 weaknesses, all of which create an environment conducive to manipulation and misrepresentation (1, 2). These concerns have contributed to growing scholarly interest in identifying the determinants of fraudulent behavior, with special attention to the role of managerial characteristics, psychological attributes, and the pressures that shape executives' decision-making landscapes.

The growing body of literature confirms that the complexity of financial structures, the increasing use of digital financial tools, and the rapid expansion of new technologies have introduced novel forms of fraud in addition to traditional manipulation strategies. Research on the nature of white-collar crime highlights that the convenience, rationalization, and opportunity available to individuals in positions of authority fundamentally shape their likelihood of engaging in misconduct (2). Similarly, studies focusing on fraud within organizational environments have shown that technologically advanced systems may either reduce opportunities for manipulation through enhanced transparency or, conversely, create sophisticated avenues for concealment when internal controls are weak or inconsistently implemented (3). These findings indicate that fraud-related decision-making is heavily shaped by contextual pressures—economic, managerial, regulatory, and technological—that interact with personal motivations and psychological tendencies.

The advancement of digital ecosystems has further affected the dynamics of fraud detection and reporting. Big data analytics, machine learning algorithms, and automated monitoring systems have dramatically enhanced the ability of organizations to detect anomalies and irregularities in financial statements (3). At the same time, researchers have emphasized that the adoption of digital audit tools, including Computer-Assisted Audit Techniques (CAATs), depends heavily on the support of top management and the degree of trust between auditors and organizational leadership, thereby linking managerial attitudes to the effectiveness of fraud detection systems (4). This reinforces the notion that even in technologically enhanced environments, human factors—particularly those associated with managerial characteristics—remain central to understanding the roots of fraudulent financial reporting.

Parallel to the technological developments, emerging research has also explored the human behavioral aspects associated with fraud in managerial contexts. Psychological conditions such as stress, personal challenges, and role-induced tension may shape managers' judgments and ethical perceptions, contributing to biased decisions and unethical conduct (5). Other studies have emphasized emotional intelligence and its relationship with job satisfaction and organizational commitment, suggesting that managers with higher emotional intelligence demonstrate greater ethical consistency and a lower likelihood of engaging in misconduct under pressure (5). Extending this line of inquiry, investigations into financial exploitation, particularly among vulnerable populations such as older adults, emphasize that opportunism, authority imbalance, and cognitive vulnerabilities can significantly influence deceptive financial behaviors (1). These insights shed important light on how personal attributes, psychological states, and interpersonal dynamics contribute to fraud risk.

In addition to behavioral determinants, researchers have highlighted the importance of managerial competence, accounting expertise, and professional skepticism as vital protective barriers against fraudulent reporting. The capacity to identify inconsistencies, question financial anomalies, and adhere to ethical standards in situations involving cybersecurity, digital threats, and complex reporting environments is strongly influenced by the educational background and cognitive preparedness of accounting professionals and managers (6). Studies on fraud risk judgment similarly reveal that the use of audit technology, task structure, and competence levels significantly enhance the accuracy of fraud assessments and reduce the likelihood of oversight or manipulation (7).

These findings underscore the centrality of managerial knowledge, expertise, and technical competence in preventing fraudulent practices.

In the broader literature, the macro-level landscape of fraud detection research itself has become a topic of study. Comprehensive bibliometric analyses indicate that global interest in fraud research has grown across accounting, psychology, criminology, information systems, and corporate governance, reflecting its multidisciplinary relevance (8). Insights from these reviews reveal that fraud is increasingly understood not only through procedural and regulatory frameworks but also through managerial behavior, governance structures, and digital innovation. Complementary research has documented how blockchain technology, as a decentralized and tamper-resistant platform, can significantly enhance transparency, real-time verification, and the prevention of unauthorized modifications in financial reporting (9). Similar findings in the context of financial reporting from managers' perspectives highlight blockchain's ability to strengthen reporting integrity, though successful implementation relies heavily on managerial support and readiness for digital transformation (10).

At the organizational level, structural, environmental, and governance-related determinants have also been identified as central contributors to fraudulent behavior. Weaknesses in internal control systems, ineffective oversight by boards of directors, and unclear or inconsistent regulatory requirements create opportunities for manipulation and misreporting (11). Furthermore, the entrenchment of management—where executives possess significant power and influence over organizational processes—has been shown to increase fraud risk by reducing transparency and limiting independent oversight (11). Such evidence aligns with studies emphasizing that real-time financial reporting and enhanced corporate governance mechanisms can heighten managerial accountability and reduce the likelihood of fraud (12).

Beyond organizational factors, personal motivations and social contexts also play meaningful roles. Research exploring corrupt practices in managerial elections of sports federations indicates that competition, power dynamics, and personal gain may fuel unethical behaviors when oversight mechanisms are weak or when accountability is limited (13). Similar dynamics have been reported in broader financial environments, where pressures to meet market expectations, secure bonuses, or maintain power influence managers to manipulate financial results. These insights reinforce the significance of examining personal motivations, social pressures, and contextual factors when evaluating fraudulent financial reporting.

Fraud research has also expanded beyond traditional empirical and archival methods to utilize new qualitative and computational techniques. For example, investigations using Twitter data analytics have uncovered emerging themes in fraud-forensic accounting, demonstrating the value of social media analytics in detecting fraud-related discourse and behavioral signals (14). Such innovations highlight the evolving nature of fraud research and underscore the need for continuous adaptation of methodologies to capture the complexity of modern financial deception. Likewise, studies on professional ethics and related behaviors—such as academic vitality, mental health, and digital engagement—emphasize how internal psychological factors and cognitive patterns can shape risk tolerance and ethical decision-making (15). These insights can be extended to managerial contexts, where cognitive overload, stress, and role ambiguity may heighten susceptibility to unethical actions.

The literature further suggests that fraudulent reporting cannot be separated from the ethical climate of organizations and the moral decision-making abilities of managers. Evidence from forensic accounting research reveals that fraud detection and prevention are deeply tied to ethical awareness, professional values, and the development of organizational cultures that discourage misconduct (16). This perspective is mirrored in audit

research, which demonstrates that early warning audit tests and robust monitoring mechanisms can predict declines in reporting quality and reduce fraud risks when implemented effectively (17). Strong audit mechanisms, clear reporting frameworks, and comprehensive oversight structures therefore serve as critical components in supporting ethical reporting and preventing fraud.

In synthesizing these insights, it becomes evident that fraudulent financial reporting is a multidimensional phenomenon shaped by managerial characteristics, organizational conditions, psychological factors, technological environments, and governance structures. While previous research has examined many of these determinants independently, there remains a clear need for an integrated conceptual model that captures the full spectrum of factors influencing fraudulent reporting, especially within emerging markets where governance challenges and managerial pressures may be more pronounced. This gap is particularly evident in contexts such as the Tehran Stock Exchange, where structural complexities, evolving regulatory frameworks, and socio-economic pressures create conditions warranting comprehensive investigation.

Therefore, the aim of this study is to develop a comprehensive model explaining the factors influencing fraudulent financial reporting based on managers' characteristics.

## Methods and Materials

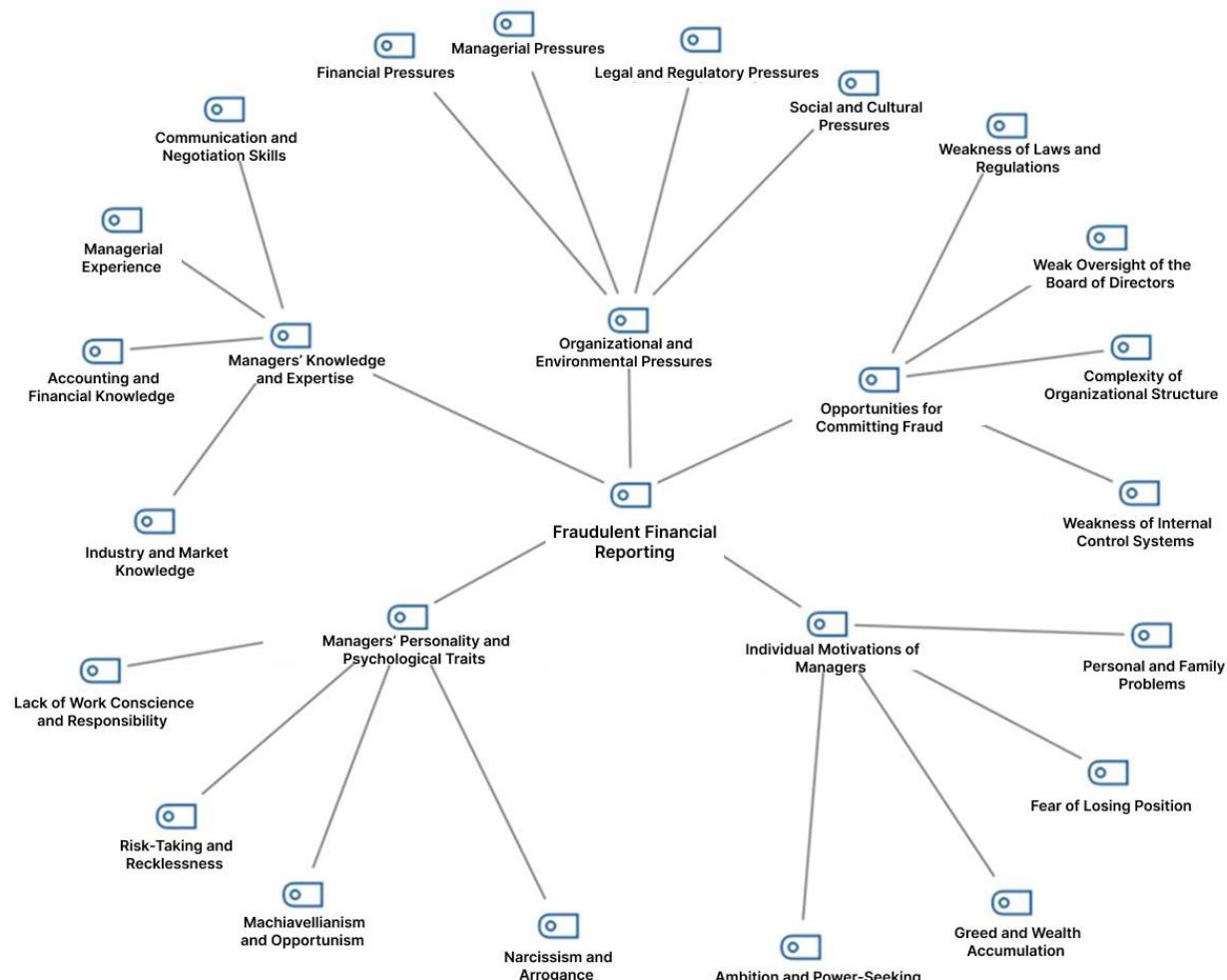
This research is a mixed-method (qualitative–quantitative) study. Furthermore, since the study aims to design a model, it is exploratory in nature. The statistical population in the qualitative section consisted of experts interviewed for the study; therefore, the target population comprised experts familiar with the research topic (university faculty members in the field of finance and managers of listed companies). In this section, theoretical sampling was applied. In theoretical sampling, events are sampled rather than individuals. Even when individuals are approached, the primary objective is to explore events. Although no strict rule exists for sample size in qualitative strategies, a range of 6 to 8 units is suggested for homogeneous groups and 12 to 20 units for heterogeneous groups. The interviews continued until theoretical saturation was reached. In this study, theoretical saturation was achieved with 12 experts (university faculty in finance and managers of listed companies). It is noteworthy that all participating academics and experts had prior experience working in listed companies as managers or consultants. Sampling in the qualitative phase was conducted purposefully and in accordance with qualitative methodological logic. Two sampling strategies were employed: purposive sampling and snowball sampling.

The statistical population in the quantitative section comprised all managers and professional experts in companies listed on the Tehran Stock Exchange who are directly involved in financial reporting processes and oversight. This group included financial managers, chief executive officers, board members (particularly audit committee members), internal audit managers, and senior accountants. Due to the lack of access to a complete and centralized list of all individuals in the population (absence of a comprehensive sampling frame), non-probability convenience and purposive sampling methods were used. According to reputable empirical rules in this field, the minimum sample size should be at least 10 times the maximum number of structural paths leading to a latent variable in the model. Considering that the conceptual model of this research includes 5 main variables and 20 components, a larger sample was required to ensure statistical power and reliability of results. Based on methodological sources, a sample size of approximately 150 individuals was deemed desirable. In this study, 181 completed and analyzable questionnaires were ultimately collected, which provided sufficient statistical adequacy for advanced analyses. In the qualitative section, data were collected through interviews, and in the quantitative

section, a closed-ended Likert-scale questionnaire was used. For the ISM-DEMATEL method, a specialized questionnaire related to this technique was administered. In the quantitative phase, after data collection through the questionnaire, analysis and interpretation were conducted using SPSS and SmartPLS software.

## Findings and Results

According to the research findings, fraudulent reporting consists of 160 primary themes, 20 secondary themes, and 5 final categories, which are presented in Figure 1.



**Figure 1. Final Identified Model of Fraudulent Financial Reporting Based on Managers' Characteristics**

First, the research instrument, which had been developed based on the 20 research components, was examined and evaluated using confirmatory factor analysis. As shown in Table 1, which presents the data significance indicators, the value of the KMO index for the instruments is close to one. Moreover, considering the value of Bartlett's test statistic (which approximates the chi-square statistic) and the significance level being less than 5%, it is evident that factor analysis is appropriate for identifying the questionnaire structure and that the selected sample size is adequate.

**Table 1. Results of the KMO and Bartlett Tests**

KMO Measure	Bartlett Chi-Square	Significance Level
0.911	0.961	0.0001

Based on the results in Table 2, all indicators of the studied constructs, due to having t-statistics greater than 1.96 and factor loadings greater than 0.40, possess the required importance for measuring their respective constructs and have been correctly identified.

**Table 2. Results of Confirmatory Factor Analysis for Instrument Validation**

Row	Factor Loading	t-Statistic	Result
1	0.85	4.71	Confirmed
2	0.48	3.20	Confirmed
3	0.59	4.28	Confirmed
4	0.63	4.40	Confirmed
5	0.51	4.12	Confirmed
6	0.51	4.50	Confirmed
7	0.57	4.31	Confirmed
8	0.47	3.65	Confirmed
9	0.51	3.43	Confirmed
10	0.47	2.39	Confirmed
11	0.51	4.84	Confirmed
12	0.73	3.67	Confirmed
13	0.71	4.84	Confirmed
14	0.43	4.27	Confirmed
15	0.61	4.47	Confirmed
16	0.52	4.26	Confirmed
17	0.67	4.89	Confirmed
18	0.74	4.87	Confirmed
19	0.62	3.82	Confirmed
20	0.43	4.27	Confirmed

Table 3 shows that the acceptable thresholds for Cronbach's alpha (0.70), composite reliability (0.70), and AVE (0.50) have been met. Since all criteria in the factor loading assessment section have appropriate values, the reliability and convergent validity of the study are confirmed.

**Table 3. Reliability and Convergent Validity Assessment**

Variable Name	Cronbach's Alpha	Composite Reliability	AVE
Managers' Individual Motivations	0.821	0.912	0.764
Managers' Personality and Psychological Traits	0.816	0.913	0.720
Managers' Knowledge and Expertise	0.810	0.888	0.714
Organizational and Environmental Pressures	0.799	0.813	0.721
Opportunities for Committing Fraud	0.841	0.900	0.756

As shown in Table 4, the values on the main diagonal are greater than the values in their corresponding rows below. Therefore, the discriminant validity of the study is confirmed using the Fornell–Larcker criterion.

**Table 4. Examination of Discriminant Validity of the Main Components Using the Fornell–Larcker**

**Method**

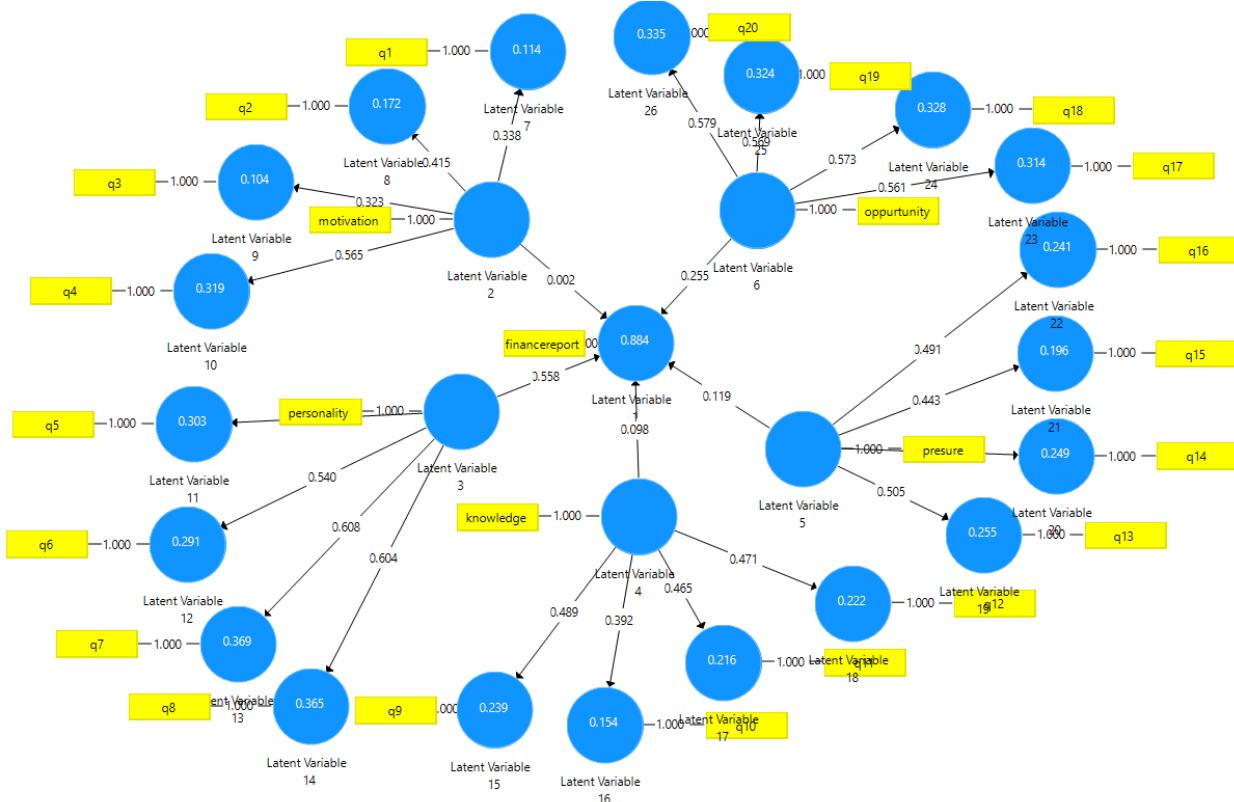
Variable Name	1	2	3	4	5
Managers' Individual Motivations	0.836				
Managers' Personality and Psychological Traits	0.782	0.852			
Managers' Knowledge and Expertise	0.755	0.751	0.836		
Organizational and Environmental Pressures	0.722	0.773	0.718	0.852	
Opportunities for Committing Fraud	0.664	0.647	0.752	0.722	0.812

The results in Table 5 indicate that the independent variables possess strong predictive power. Therefore, the model has strong predictive capability.

**Table 5. Coefficient of Determination and Predictive Relevance Index**

Variable	R <sup>2</sup>	Q <sup>2</sup>
Managers' Individual Motivations	0.402	0.216
Managers' Personality and Psychological Traits	0.416	0.230
Managers' Knowledge and Expertise	0.451	0.220
Organizational and Environmental Pressures	0.410	0.204
Opportunities for Committing Fraud	0.395	0.134

Figure 2 presents the research model, illustrating the effective relationships among the variables and depicting the overall model.

**Figure 2. Model in the Significance State**

In this study, the value of the model fit index (GOF) is:

$$GOF = \sqrt{\text{average}(AVE) \times \text{average}(R^2)} = 0.416$$

The GOF index obtained in this research is 0.416, indicating strong structural model fit.

## Discussion and Conclusion

The purpose of the present study was to identify and model the determinants of fraudulent financial reporting based on managers' characteristics, using a mixed-methods exploratory design. The findings of the qualitative phase revealed five major dimensions—managers' knowledge and expertise, organizational and environmental pressures, opportunities for committing fraud, individual motivations of managers, and personality and psychological characteristics—and the quantitative phase confirmed the reliability, validity, and predictive strength of the proposed structural model. Overall, the results highlight that fraudulent financial reporting is not driven by a single factor, but rather emerges through the interaction of managerial vulnerabilities, psychological tendencies,

8 systemic weaknesses, and contextual pressures. The discussion below interprets these findings in light of prior research and demonstrates how they align with, extend, and contribute to the existing body of knowledge.

One of the central findings of the study is the critical influence of managers' knowledge, expertise, and professional competence in shaping the likelihood of fraudulent financial reporting. The results show that low accounting knowledge, weak understanding of financial standards, and insufficient familiarity with market mechanisms create opportunities for manipulation and misreporting. This finding is strongly supported by prior research, which emphasizes that individuals with higher financial literacy, professional skepticism, technological competency, and technical judgment capacity are better able to detect irregularities and less likely to engage in fraudulent behavior. For example, studies demonstrate that professional skepticism and cybersecurity awareness significantly improve the capacity of accounting students and future auditors to identify deception and questionable reporting practices (6). Likewise, the effectiveness of audit warning tests and early detection systems has been shown to depend largely on the level of competence and professional training of managers and financial experts, reinforcing the importance of the knowledge dimension identified in this study (17). Furthermore, the global bibliometric review of fraud detection research highlights that managerial expertise is a recurring determinant of reporting integrity across diverse contexts (8). Together, these studies align with the current findings and confirm that knowledge and expertise serve as foundational defenses against fraudulent reporting.

The results also underscore the importance of organizational and environmental pressures, including financial stress, legal and regulatory constraints, supervisory pressures, and market expectations. Consistent with previous research, the study found that such pressures significantly increase the risk of fraudulent reporting when managers experience intense expectations to meet financial targets, satisfy shareholders, or preserve firm image. Similar dynamics were reported in studies examining corruption within managerial elections of sports federations, where competitive pressure, power struggles, and political incentives created conditions that encouraged unethical behavior (13). These findings mirror the theory of convenience and empirical evidence on white-collar crime, which argue that external pressures interact with managerial motivations to create fertile ground for fraudulent actions (2). Additionally, research on emotional intelligence and job commitment among organizational leaders shows that environmental pressures such as workload, stress, and administrative expectations can impair managerial decision-making, making unethical shortcuts more appealing (5). In the context of strategic information planning in SMEs, it has been shown that inadequate planning and unstable economic environments can distort managerial judgments and provide incentives for misreporting (18). These preceding studies support the present findings, confirming that environmental and organizational pressures play an essential role in influencing fraudulent financial reporting.

A third major finding relates to opportunities for fraudulent behavior, which include weaknesses in internal control systems, ineffective board oversight, regulatory gaps, and organizational complexity. The importance of opportunity as a determinant of fraud has been widely documented in prior literature. Studies exploring the relationship between management entrenchment and financial statement fraud demonstrate that when managers have disproportionate power and limited accountability, the opportunity for manipulation greatly increases (11). Similarly, weak internal audit systems, insufficient monitoring mechanisms, and inadequate technological oversight have been identified as structural vulnerabilities that facilitate fraudulent behavior. Research examining auditors' use of Computer-Assisted Audit Techniques (CAATs) highlights that when internal support systems are weak or when management withholds cooperation, opportunities for fraud escalate because detection mechanisms become less effective (4). In addition, blockchain-oriented studies show that decentralized and tamper-resistant systems reduce opportunities for fraud

by removing manipulation points within traditional centralized reporting structures (9, 10). The current study's findings are therefore strongly aligned with global evidence showing that opportunities—created through structural weaknesses—are central to explaining fraudulent reporting.

The findings also confirm that individual motivations of managers, including personal financial pressure, fear of job loss, desire for reputation, and ambition, significantly influence the probability of fraudulent reporting. Several earlier studies support this observation. For instance, investigations into financial exploitation among older adults reveal that motivations such as greed, power-seeking, and desire for personal gain are key determinants of financial misconduct (1). Similarly, research emphasizing the role of personal gain and competitive advantage in determining fraudulent behavior reinforces that personal incentives often override organizational ethics when monitoring systems are weak (16). Moreover, research using social media data in fraud-forensic accounting studies has shown that motivational factors frequently appear in digital discourse surrounding financial fraud cases, suggesting that individual ambition and financial desire remain prominent triggers of fraudulent activities (14). Taken together, these findings substantiate the current results and highlight that internal motivations are essential components of a comprehensive fraud model.

Another key dimension identified in this study is managers' personality and psychological characteristics, including traits such as narcissism, risk-taking, Machiavellianism, emotional instability, and lack of moral conscience. These traits were shown to directly influence ethical decision-making and increase susceptibility to fraudulent behavior. This is consistent with research emphasizing that personality vulnerabilities and psychological pressures—such as stress, emotional exhaustion, or low emotional intelligence—can distort moral reasoning and pave the way for unethical decisions (5). Similar patterns are documented in studies on corruption and unethical conduct in competitive environments, which show that individuals with high ambition and low regard for ethical norms are more likely to engage in manipulation and misconduct (13). Additionally, research exploring fraud detection through advanced technologies reveals that psychological tendencies such as impulsivity and opportunism play a significant role in shaping the way individuals attempt to bypass monitoring systems (7). These findings corroborate the results of this study and demonstrate that personality and psychological traits are crucial predictors of fraudulent reporting.

Interestingly, the study's findings also highlight the increasing relevance of technological ecosystems—including blockchain, real-time reporting, and big data analytics—in moderating fraudulent behavior. Studies indicate that organizations that effectively integrate digital technologies into reporting processes experience improvements in transparency and managerial accountability (12). Big data and digital monitoring tools have been shown to strengthen fraud detection capabilities by enabling real-time anomaly identification and predictive analytics (3). At the same time, research on auditors' use of technology emphasizes that the effectiveness of digital systems depends on managerial support and organizational readiness (4). These insights indicate that technological capabilities both shape fraud opportunities and mitigate fraud risk—an idea consistent with the findings of the present study, which revealed that weaknesses in internal technological controls increase opportunities for fraud, whereas strong technological oversight reduces them.

Collectively, the results of this study support a multidimensional interpretation of fraudulent financial reporting. By demonstrating that fraud emerges at the intersection of psychological, motivational, structural, environmental, and technological factors, the findings contribute to a more holistic understanding of deceptive financial behavior. This aligns with the broader body of fraud literature, which recognizes fraud as a complex socio-technical

phenomenon rather than an isolated ethical failure. The integration of managerial behavioral characteristics into fraud modeling represents a significant theoretical advancement, expanding upon traditional frameworks that have historically emphasized only structural or financial determinants. The evidence gathered across previous studies reinforces the relevance of the five identified dimensions and underscores the validity and importance of a comprehensive fraud model for contemporary financial environments.

This study, like all empirical research, is subject to limitations. First, the qualitative phase relied on expert interviews from a specific national context, which may limit generalizability to other cultural or regulatory environments. Second, the quantitative sample was obtained through non-probability purposive sampling due to the absence of a centralized list of qualified participants, which may introduce sampling bias. Third, fraud is inherently a sensitive topic, and respondents may have underreported or misrepresented their perceptions due to social desirability concerns. Fourth, the model focuses on managerial characteristics and does not incorporate certain external macroeconomic variables that may also influence fraud. Finally, the cross-sectional nature of the quantitative phase limits causal inference, and longitudinal studies may yield deeper insights into temporal dynamics of fraudulent behavior.

Future studies could adopt cross-national comparative designs to examine whether cultural, regulatory, and governance differences influence the determinants of fraudulent reporting. Longitudinal designs could help capture how fraud risk evolves over time in response to organizational change, digital transformation, or leadership turnover. Additionally, research could integrate macroeconomic indicators such as inflation, market volatility, or political instability to assess their moderating role. Future scholars may also examine emerging technological environments—including artificial intelligence, blockchain auditing, and predictive anomaly detection—to explore how these tools reshape fraud opportunities. Finally, incorporating experimental or neuroscientific approaches may offer deeper insights into the cognitive and psychological mechanisms underlying managerial misconduct.

Organizations should strengthen internal control systems, promote ethical leadership development, and invest in continuous training for managers in areas such as accounting, market analysis, and digital reporting tools. Boards of directors should enhance oversight mechanisms and ensure that audit committees operate independently and effectively. Firms should incorporate technological tools such as real-time monitoring, blockchain-based verification, and predictive analytics into reporting processes to reduce fraud opportunities. Finally, organizations should cultivate a culture of transparency, psychological safety, and accountability, ensuring that ethical behavior is rewarded and misconduct is consistently addressed.

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## Authors' Contributions

All authors equally contributed to this study.

## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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