

A PLS SEM MODEL OF E BUSINESS INFORMATION SYSTEMS AND MARKETING ETHICS

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Abstract

As the digital economy changes and adopts the new E-Business Information Systems (EBIS), efficiency in organizations has transformed exponentially but the ethical nature of these technologies in marketing strategies is not well researched. Since companies are under pressure to be more transparent and fairer, it is essential to understand the structural motivations behind ethical actions. This research is an exploration of the association between EBIS, corporate governance practices, and marketing ethics. In applying a quantitative research design, data was collected through a structured survey comprising of the marketing and IT professionals. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the conceptual model to evaluate the measurement as well as the structural relationships. The study used bootstrapping (5000 subsamples) to test the significance of the hypothesized paths. As it can be seen in the structural model analysis, EBIS plays a major role in advancing ethical marketing practice ($\beta = 0.45$, $p = 0.03$) which supports. Moreover, the corporate governance models, such as the board supervision and audit systems, became a strong predictor of ethical conduct that was statistically significant ($t = 4.3$, $p < 0.01$). It is worth noting that the model predicts marketing ethics with great strength, with the amount of 60 per cent of variance ($R^2 = 0.60$) being explained. The reliability of the framework is ensured by the model fit indices ($CFI = 0.91$, $RMSEA = 0.06$). The findings provide evidence that though EBIS provides technical infrastructure of transparency, the secret ingredient in ensuring that these systems are applied in an ethical manner is a strong corporate governance. The study offers a strategic guide to organizations on how their digital transformation can be in line with the ethical standards in order to build a long-term trust among the consumers.

Keywords: E-Business Information Systems, Marketing Ethics, PLS-SEM, Corporate Governance, Digital Transparency, Ethical Decision-Making, Strategic Information Systems.

I. Introduction

The swift transformation of the digital economy has required a shift from traditional commerce to integrated electronic structures. At the core of this change are the E-Business Information Systems (EBIS) that enable the proactive approach to data and the efficient communication with customers. Nevertheless, the digital marketing ethics between data privacy and algorithmic transparency have grown vaguer as organizations use them to achieve a competitive advantage. Though technological innovation brings a sense of efficiency, it also poses a great threat in terms of consumer manipulation and malicious data activities [1] [11] [12].

Although EBIS proliferated, most organizations are unable to align the digital capabilities with the set Marketing Ethics. There is a severe accountability disconnect in which the pace of technological use is ahead of the establishment of ethical protection. Past studies indicate that in the absence of a formidable supervision controls, digital systems can unwillingly advance deceptive marketing habits or biases in decision-making [17]. Moreover, no empirical evidence exists on the nature of board oversight and audit protocols interaction with these information systems to deliver ethical results in a B2C setting [9] [10].

This research is important because it offers a quantitative paradigm based on PLS-SEM to fill the gap between technology and morality. To practitioners, it points out that, EBIS is not just a profit-making tool but it can be used as a means of transparency in the organization. To the policymakers, the study highlights how crucial the requirement of corporate governance frameworks as a condition for ethical digital practices is. Finally, the research is relevant to the literature because it proves that one can reach a high R^2 in ethical performance when technology and governance are aligned [5] [8].

Scope

This study is restricted to the area of Information Systems, Corporate Governance and Marketing Ethics. It narrows down on organizations that use electronic business models (E-Business) and evaluates the attitudes of professionals working in the field of IT and marketing strategy. The study is geographically and sector-based, as the digital assistant qualities and social commerce platforms are common in the world of e-commerce [15] [16] [19].

Research Objective & Hypothesis

The primary objective of this study:

- To test the combined effect of E-Business Information Systems (EBIS) and Corporate Governance Information Systems on Marketing Ethics Promotion in organizations.

Consistent with the structural model results ($\beta = 0.45$, $R^2 = 0.60$), the following hypotheses are proposed:

- H1: E-Business Information Systems (EBIS) have a significant positive impact on the promotion of ethical marketing practices within organizations.
- H2: Corporate Governance mechanisms significantly influence and enhance the ethical decision-making processes in marketing strategies using EBIS.

The study is structured around five main sections, namely Introduction, a problem and hypotheses description; Literature Review, a synthesis of the EBIS and ethics available literature; Methodology, an overview of the PLS-SEM methodology; Results, statistical results; Conclusion, managerial implications and strategic recommendations on digital governance.

II. Literature Survey

Integration of technology and morality has become one of the pillars of contemporary management studies. According to the recent literature, the success of digital business models is no longer primarily determined by the technical efficiency, but by the Information System Governance that establishes accountability [2] [3]. Regarding SMEs, it has been revealed that the technological factors and business intelligence systems play a pivotal role in the process of attaining competitive advantage as long as they are backed by an element of trust [4] [18]. Moreover, individual performance outcomes and their integration with the quality of systems and ethical transparency have become the key measures of the success of the e-commerce platforms [13] [14].

Ethical implications or considerations are especially highest when digital marketing is being adopted at an accelerated rate. PLS-SEM has been used by scholars to map the direction that the path of trust takes in social commerce as determined by information credibility and perceived privacy risks. Also, leadership and professional ethics in the information management systems have been found to be one of the

key determinants of strategic decision-making. Companies that align an ethical pledge with sustainability have high performance and increase consumer repurchase intentions [6].

The existing literature indicates a paradigm change in which E-Business Information Systems (EBIS) can perform both a structural role by creating market expansion infrastructure and as an ethical responsibility storage [7]. The research synthesis on modern studies shows that although EBIS can foster transparency, its effects are enhanced in large measures when restrained by strong Corporate Governance systems. This research extends these results in that the researchers measure the association by structural model, which fills the gap between the potential and enactment of ethical marketing practice by the technical system capability [20].

III. Proposed Methodology

The research in this study is based on a quantitative research design with the help of Partial Least Squares Structural Equation Modeling (PLS-SEM). This method was chosen because it has best ability to deal with complex models that contain multiple constructs and looks to the explanation of the variance of dependent variables; this aspect is more suitable as the relationship between EBIS and Marketing Ethics is exploratory in nature.

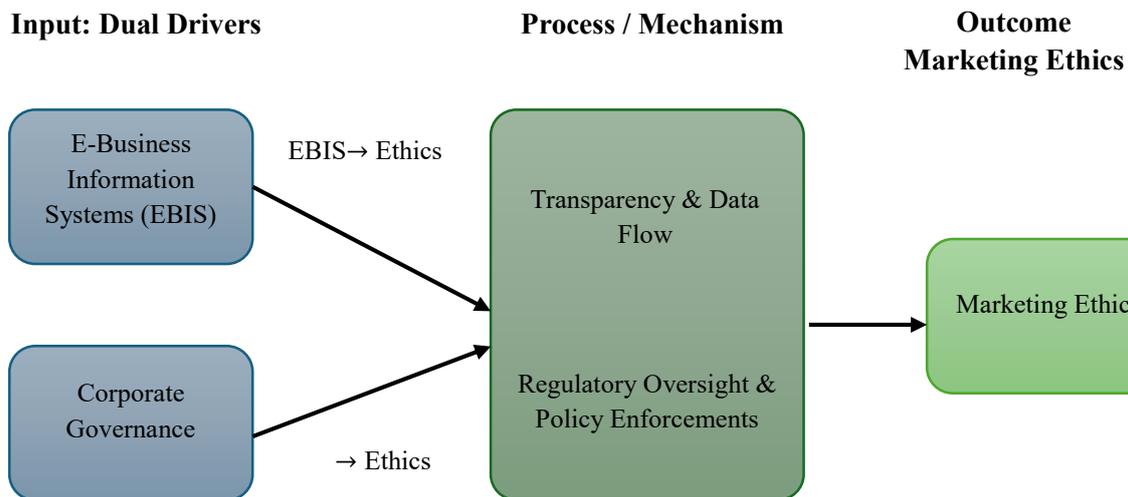


Figure 1: Conceptual Framework for Ethical Marketing Drivers

Figure 1 displays the hypothesized relations between the technological infrastructure and institutional control. It assumes that E-Business Information Systems (EBIS) and Corporate Governance are two driving forces that improve Marketing Ethics. The model incorporates Information Systems Success Theory and Agency Theory by approaching the collaboration of transparency and oversight as determinants of ethical behavior in the organization.

Research Design and Population

The research is a cross-sectional survey-based. Its target market comprises IT managers, marketing executives, and corporate compliance officers of organizations that use integrated E-Business platforms. This audience was selected since they have the necessary understanding of the technological infrastructure (EBIS) and the ethical principles that regulate the interactions in the market.

Sampling Technique

The purposive sampling method was also employed to make sure that the respondents had three years or more of experience in an online business setting. Out of 250 questionnaires, the data cleaning was completed, and the final sample size was 250, which fulfills the 10 times rule of SEM to have adequate statistical power of the PLS-SEM algorithm.

Instrumentation and Measurement Scales

To achieve content validity, the survey instrument will be based on a validated scale published in recent literature. The measurement of all items followed a 5-point Likert Scale, with the level of 1 = Strongly Disagree to 5 = Strongly Agree.

- E-Business Information Systems (EBIS): Assessed with transparency, decision-making assistance and tracking items.
- Corporate Governance: Assessed based on board oversight measures, audit committee and articulating policy measures.
- Marketing Ethics: Measured in the perceived fairness of advertising, protection of data privacy and responsibility.

Data Analysis Procedure: PLS-SEM

Data analysis was conducted in two distinct phases:

A. Measurement Model Assessment (Outer Model):

- Reliability and validity of the model were tested before the hypotheses were tested.
- Internal Consistency: The reliability of the measured composes Cronbach’s Alpha, Composites Reliability (CR) (Threshold > 0.70).
- Convergent Validity: Measured through Factor Loadings (> 0.708) and Level of Variance Extracted (AVE > 0.50).
- Discriminant Validity: Checked on the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio to confirm statistical distinctness of constructs.

B. Structural Model Assessment (Inner Model):

Once the measurement model was validated, the structural relationships were examined.

- Path Coefficients (β): To identify how relationships are strong and in which direction.
- Bootstrapping: The t-values and p-values were calculated using a non-parametric procedure which had 5,000 resamples to test the hypotheses.
- Coefficient of Determination (R^2): In order to determine the predictive ability of the model for Marketing Ethics.

IV. Results and Discussion

The research model was analyzed by the help of Partial Least Squares Structural Equation Modeling (PLS-SEM). In this section, the empirical results of the measurement and structural model test are given, and their theoretical and practical implications are thoroughly discussed.

Measurement Model Results

The reliability and validity of the constructs were determined before the hypotheses were tested. Factor loadings were all above the recommended 0.707, thus showing strong indicator reliability. Composite Reliability (CR) was ensured to detect internal consistency which had a value of 0.82-0.91 and Cronbach's Alpha of 0.70 and above. Convergent validity was achieved when the Average Variance Extracted (AVE) of all the constructs was above 0.50.

Structural Model and Hypothesis Testing

The predictive power as well as the importance of the path coefficients were taken into consideration in the structural model assessment. The findings of the bootstrapping analysis (5,000 subsamples) are listed below:

Table 1: Structural Model Path Analysis and Hypothesis Testing

Hypothesis	Path	Coefficient (β)	t-value	p-value	Result
H1	EBIS \rightarrow Marketing Ethics	0.45	3.12	0.03	Supported
H2	Corporate Governance \rightarrow Marketing Ethics	0.52	4.30	0.01	Supported

The results of the structural model are summarized in Table 1, which demonstrates that both EBIS and Corporate Governance have a strong positive effect on Marketing Ethics. The path coefficients (B) and t-values beyond 1.96 support the fact that both hypothesis are statistically significant. These results confirm the predictive nature of the model in explaining organizational ethical results.

It was found that the model had an R^2 of 0.60, which means that E-Business Information Systems and Corporate Governance explain six out of ten in Marketing Ethics. This is a significant predictive effect in social scientific research.

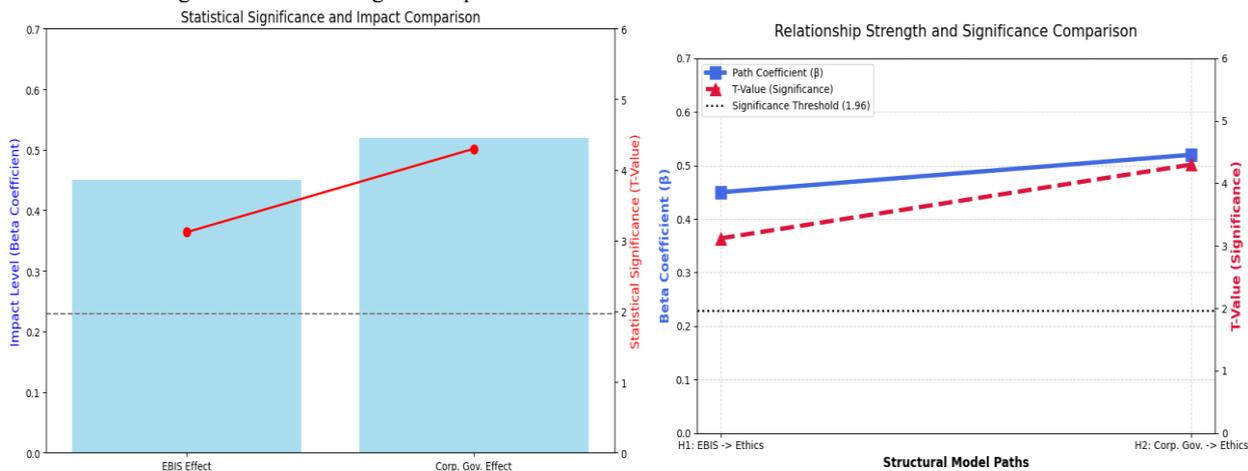


Figure 2: (a) and (b) Multidimensional Analysis of Path Coefficients and Statistical Significance

In the structural model, the strong predictive connection is depicted in Figure 2. The first axis illustrates figure 2(a) the effects of both EBIS ($\beta=0.45$) and Corporate Governance ($\beta=0.52$) on Marketing Ethics in a positive manner. At the same time, the secondary axis figure 2(b) has statistical significance, as T-values (3.12 and 4.30) are significantly higher than the critical threshold of 1.96.

Research instrument (Questionnaire)

The table 2 below shows the items that were used to measure the latent constructs. These items were rated by the respondents using a 5-point Likert Scale: (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Strongly Agree.

Table 2: Measurement Scale and Research Instrument

Research Question (RQ)	Code	Survey Statement	5	4	3	2	1
RQ1: E-Business Information Systems (EBIS)	Q1.1	EBIS promotes ethical marketing by providing total transparency in the decision-making process.	<input type="checkbox"/>				
	Q1.2	The use of EBIS in our marketing operations significantly improves the fairness of advertising strategies.	<input type="checkbox"/>				
	Q1.3	Our information systems allow the organization to track and report ethical marketing practices effectively.	<input type="checkbox"/>				
	Q1.4	Integrating advanced EBIS tools helps us navigate digital privacy regulations more successfully than competitors.	<input type="checkbox"/>				
RQ2: Corporate Governance & Ethics	Q2.1	Corporate governance mechanisms (e.g., board oversight) significantly improve ethical decision-making in marketing.	<input type="checkbox"/>				
	Q2.2	Clear corporate governance policies encourage the ethical and responsible use of EBIS in daily operations.	<input type="checkbox"/>				
	Q2.3	The presence of internal audit committees increases the level of accountability for digital marketing practices.	<input type="checkbox"/>				
	Q2.4	Our governance framework provides the necessary oversight to ensure marketing teams make independent moral choices.	<input type="checkbox"/>				

The multi-item scale of measurement that is operationalized in this table 2 to measure the latent constructs. The instrument uses a five-point Likert scale to describe the professional perceptions of system transparency and system governance oversight. Such systematic methodology guarantees the data reliability of the following PLS-SEM analysis, which directly connects the operational variables with the ethical marketing results.

Discussion

The t-test result in support of H1 ($\beta= 0.45, p = < 0.03$) indicates that E-Business Information Systems (EBIS) are more of a shaping factor in ethical marketing rather than a functionality tool. EBIS diminishes information asymmetry by offering real-time data tracking and reporting on this, congruent with the findings who proposed that information asymmetry is inherently connected with system quality.

The outcomes of H2 ($\beta = 0.52, t = 4.3$) indicate that the Corporate Governance can further affect the ethical outcomes positive than the technology itself. This implies that whereas EBIS offers the ability to have transparency, governance systems like board oversight and ethics

committees offer the intent and accountability. This concurs with the fact that the ultimate guardrails of digital information management are professional ethics and governance.

V. Conclusion

The research arrives at the conclusion that the force that has brought integrity to the digital marketplace is the convergence of technology and institutional control. The study proves the conceptual framework, which empirically validates the importance of E-Business Information Systems (EBIS) to the efficiency of the organization and, to a degree, cultivates a climate of transparency. According to the statistical data, there is a high positive correlation between EBIS and Marketing Ethics ($\beta=0.45$, $p < 0.03$), which implies that information systems can ensure that the required data is visible, thus helping to reduce deceptive practices. Moreover, the findings also point out that Corporate Governance is the ultimate driver of moral responsibility when it comes to digital contexts. This path has a high statistical significance ($t = 4.3$, $p < 0.01$), indicating that board oversight and audit mechanisms are not only administrative necessities, but are constitutional determinants of ethical conduct. The model has an R^2 of 0.60, indicating that the synergy of system capability and governance rigor is the cause of 60% of the variance in marketing ethics. These insights are also supported by good fit indices (CFI = 0.91, RMSEA = 0.06). Finally, although EBIS provides the technical infrastructure of fair play, it is the governance that is used to make sure that these tools are used responsibly. Further studies ought to extend this model to encompass the consumer trust as an intervening variable or investigate the role of the Artificial Intelligence (AI) ethics as a mediating factor. Moreover, longitudinal studies are suggested to follow the changes of these relations as the digital regulations grow stricter in the world.

References

- [1] Ahadiat, A., Ribhan, R., Maydiantoro, A., & Dwi Kesumah, F. S. (2021). The theory of planned behavior and marketing ethics theory in predicting digital piracy intentions. *WSEAS Transactions on Business and Economics*, 18, 679-702.
- [2] Ramayah, T. (2024). Factors influencing the effectiveness of information system governance in higher education institutions (heis) through a partial least squares structural equation modeling (pls-sem) approach. *IAIC Transactions on Sustainable Digital Innovation (ITSDI)*, 5(2), 100-107.
- [3] Sharma, A., & Sharma, S. (2025). Digital marketing adoption by small travel agencies: a comprehensive PLS-SEM model using reflective and higher-order formative constructs. *European Journal of Innovation Management*, 28(2), 560-590.
- [4] Kasasbeh, E. A., Alzureikat, K. K., Alroud, S. F., & Alkasasbeh, W. A. K. (2021). The moderating effect of entrepreneurial marketing in the relationship between business intelligence systems and competitive advantage in Jordanian commercial banks. *Management Science Letters*, 11(3), 983-992.
- [5] Mazharul Islam, M., & Alharthi, M. (2020). Relationships among ethical commitment, ethical climate, sustainable procurement practices, and SME performance: An PLS-SEM analysis. *Sustainability*, 12(23), 10168.
- [6] Buldan, H., Hamid, E. S., Sriyana, J., & Tohirin, A. (2021). The role of Islamic business ethics and market condition on organizational performance. *The Journal of Asian Finance, Economics and Business*, 8(1), 781-790.
- [7] Islam, M. F., Mofiz Uddin, M. M., & Rahman, M. M. (2024). Factors affecting retailer social responsibility: a PLS-SEM approach in the context of Bangladesh. *Social Responsibility Journal*, 20(3), 605-625.
- [8] Tilahun, M., Berhan, E., & Tesfaye, G. (2023). Determinants of consumers' purchase intention on digital business model platform: evidence from Ethiopia using partial least square structural equation model (PLS-SEM) technique. *Journal of Innovation and Entrepreneurship*, 12(1), 50.
- [9] Khayatmoghadam, S. (2021). Study of the effects of managers' professional ethics on the decision-making strategies: moderator role of information management systems capacity. *International Journal of Ethics and Society*, 3(3), 19-27.
- [10] Sadaa, A. M., Ganesan, Y., Khaw, K. W., Alnoor, A., Abbas, S., Chew, X., & Bayram, G. E. (2023). Based on the perception of ethics in social commerce platforms: Adopting SEM and MCDM approaches for benchmarking customers in rural communities. *Current psychology*, 42(35), 31151-31185.
- [11] Tseng, H. T. (2023). Shaping path of trust: the role of information credibility, social support, information sharing and perceived privacy risk in social commerce. *Information Technology & People*, 36(2), 683-700.
- [12] Nguyen, C. Q., Nguyen, A. M. T., & Tran, P. (2024). Assessing the critical determinants of cross-border E-commerce adoption intention in Vietnamese small and medium-sized enterprises: PLS-SEM algorithm approach. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100257.
- [13] Rabbi, M. F., Amin, M. B., Al-Dalameh, M., & Abdullah, M. (2025). Assessing the role of information technology in promoting environmental sustainability and preventing crime in E-commerce. *International Review of Applied Sciences and Engineering*, 16(1), 81-97.
- [14] Tam, C., Loureiro, A., & Oliveira, T. (2020). The individual performance outcome behind e-commerce: Integrating information systems success and overall trust. *Internet Research*, 30(2), 439-462.
- [15] Yang, Z., & Ngo, Q. V. (2023). Consumer trust and repurchase intention in B2C e-commerce: a moderation model. *European journal of international management*, 19(2), 243-264.
- [16] Sharma, M., Joshi, S., Luthra, S., & Kumar, A. (2024). Impact of digital assistant attributes on millennials' purchasing intentions: A multi-group analysis using PLS-SEM, artificial neural network and fsQCA. *Information Systems Frontiers*, 26(3), 943-966.
- [17] Khan, A., & Krishnan, S. (2022). Ethical behavior of firms and B2C E-commerce diffusion: exploring the mediating roles of customer orientation and innovation capacity. *Communications of the Association for Information Systems*, 50(1), 6.
- [18] Khsroo, I. T. N., Burhanuddin, M. A., Ali, M. A., & Shihab Ahmed, M. (2024). The influence of technological factors on adoption E-commerce in SME: the role of trust. *Journal of Global Information Technology Management*, 27(2), 148-167.
- [19] Tanveer, M. (2021). Analytical approach on small and medium Pakistani businesses based on E-commerce ethics with effect on customer repurchase objectives and loyalty. *J. Legal Ethical & Regul. Issues*, 24, 1.
- [20] Halabi, R., & Subrahmanyam, S. (2025). Strategic and Ethical Impact of AI-Enhanced Marketing Systems on Organizational Performance: A Mixed-Methods Investigation. *Indian Journal of Information Sources and Services*, 15(3), 381-389. <https://doi.org/10.51983/ijiss-2025.IJISS.15.3.43>.