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Tax Planning Practices of Manufacturing Firms in Nepal: An Empirical Study

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ABSTRACT

This study investigates the tax planning practices of manufacturing companies in Nepal by examining the influence of various factors such as tax administration efficiency, taxpayer behavior, legal provisions, tax implications, manufacturing and operational factors, digital tax awareness, and policy stability. Using a quantitative research approach, data were collected from 384 respondents comprising manufacturing taxpayers, tax administrators, auditors, tax consultants, and academicians through a structured questionnaire. The study employed factor analysis, descriptive statistics, correlation analysis, and multiple linear regressions to analyze the relationships between these factors and tax planning behavior.

The results indicate that tax administration efficiency and tax implication factors significantly and positively affect tax planning practices, explaining approximately 57.6 percent of the variance in tax planning behavior (Adjusted $R^2 = 0.568$). Other factors such as taxpayer behavior, legal provisions, manufacturing operations, digital tax awareness, and policy stability showed no statistically significant direct influence but remain important as supportive elements. Descriptive statistics revealed generally positive perceptions towards digital tax awareness and policy stability, whereas gaps were identified in taxpayer behavior and legal communication.

This study highlights the critical role of efficient tax administration and clear tax implications in fostering effective tax planning among Nepalese manufacturing firms. It recommends strengthening administrative processes, improving taxpayer education, clarifying legal frameworks, and enhancing digital tax systems to promote sustainable tax planning strategies.

Keywords

Tax Planning, Manufacturing Sector, Tax Administration, Taxpayer Behavior, Legal Provisions, Tax Implications, Digital Tax Awareness, Policy Stability, Nepal.

Background of the Study

Taxation constitutes a fundamental financial obligation imposed by governments to mobilize resources essential for national development and public welfare. Tax revenues play a pivotal role in financing critical public services such as infrastructure, healthcare, education, social security, and maintaining socio-economic stability. Compared to alternative financial sources such as grants or loans, tax revenue provides a more sustainable and reliable fiscal foundation. Additionally, taxation promotes social equity by redistributing wealth and preventing excessive resource concentration within limited societal segments. Thus, compliance with tax laws transcends mere legal obligation, embodying a broader civic responsibility.

In Nepal, the tax system is primarily divided into direct taxes such as income tax, property tax, and wealth tax and indirect taxes, including value-added tax (VAT), customs duties, and excise taxes. The evolution of Nepal's tax framework has been relatively recent but marked by significant legislative reforms since the mid-20th century. The current Income Tax Act of 2002 (2058 BS) represents a modern and comprehensive tax system, incorporating various incentives aimed at stimulating key economic sectors, notably manufacturing. Despite tax incentives such as tax holidays, accelerated depreciation, and rebates designed to promote industrial growth, there remains a substantial gap between policy provisions and their practical utilization by manufacturing firms. This gap is attributed to issues related to awareness, administrative challenges, and regulatory complexities.

Tax planning the strategic and lawful organization of financial activities to optimize tax liabilities and cash flow is thus a critical practice for manufacturing firms striving for sustainability and competitive advantage. It involves not only minimizing tax outflows but also the timing of income and expenses, managing working capital, and aligning investment decisions with tax regulations. Given the manufacturing sector's pivotal role in Nepal's industrialization and economic diversification, effective tax planning is essential to enhance profitability, reinvestment capacity, and operational resilience. This study seeks to empirically investigate the tax planning practices of manufacturing firms in Nepal by exploring the determinants influencing these practices and their subsequent impact on firm performance.

Statement of the Problem

Despite government efforts to facilitate tax compliance through incentives and administrative reforms, Nepal's tax environment continues to face significant challenges. Certain taxpayers with political connections or administrative influence often labeled "strategic delayers" disproportionately benefit from exemptions and concessions, undermining the fairness and integrity of the tax system. Non-compliance trends, including delayed tax filings and growing arrears, are exacerbated by inconsistent judicial rulings and lack of uniformity in tax dispute resolutions. These issues reflect systemic problems involving

administrative inefficiencies, ambiguous legal provisions, and inadequate taxpayer knowledge.

Previous research has inadequately addressed the complex interactions affecting tax planning, especially within the manufacturing sector. Critical questions remain concerning taxpayer behavior patterns, the adequacy of legal frameworks, the role of digital tax infrastructure, and operational challenges faced by firms. This study aims to fill these gaps by applying quantitative analytical methods to examine the determinants of tax planning and their effects on the financial outcomes of manufacturing firms.

Research Questions and Hypotheses

This study addresses the following core research questions:

- How does tax administration efficiency influence tax planning among manufacturing firms?
- What is the role of taxpayer behavior in shaping compliance and strategic tax planning?
- How do legal provisions and tax implication systems impact tax management decisions?
- To what extent do digital tax systems and policy stability predict tax planning outcomes?
- How do operational and industrial factors affect firms' tax planning behavior?

Accordingly, the study hypothesizes that tax administration, taxpayer behavior, legal clarity, digital readiness, policy stability, and operational dynamics exert statistically significant effects on tax planning practices. These hypotheses will be rigorously tested using regression analyses to determine the strength and nature of these relationships.

Objectives of the Study

The principal objective of this research is to empirically evaluate tax planning practices within Nepal's manufacturing sector with a focus on influential determinants. Specifically, the study aims to:

- To assess the impact of tax administration efficiency on tax planning behaviors.
- To examine the role of taxpayer behavior in promoting compliance and strategic tax management.
- To analyze how legal frameworks and tax implications influence tax planning decisions.
- To evaluate the significance of digital tax systems and policy stability in shaping tax practices.
- To explore the relationship between operational and managerial decisions and tax planning.
- To examine practical challenges faced by firms in effectively utilizing tax incentives.

Significance of the Study

This study makes a valuable contribution to both academic literature and practical understanding of tax planning in Nepal, particularly within the manufacturing sector, an area that has been relatively underexplored. By integrating perspectives from taxpayers and tax authorities, the research offers a comprehensive view of the facilitators and barriers affecting effective

tax planning. The findings are expected to assist policymakers in refining incentive structures, improving tax administration, and fostering the integration of digital tax systems. Furthermore, by highlighting judicial inconsistencies and administrative inefficiencies, the study underscores the necessity of legal and institutional reforms to promote transparency, fairness, and voluntary compliance. Ultimately, the research aims to support Nepal's industrial development by enabling firms to engage in informed, strategic tax planning.

Limitations of the Study

While the study provides meaningful insights, certain limitations must be acknowledged. The focus on manufacturing firms within selected industries in the Kathmandu Valley limits the generalizability of findings to other sectors or geographic regions. The reliance on self-reported data introduces potential biases, and the cross-sectional design restricts analysis of temporal changes and causal relationships. Additionally, external factors such as political influence and informal institutional practices which may significantly impact tax planning are beyond the scope of this research due to methodological constraints.

Structure of the Study

This research is organized into five chapters for clarity and systematic presentation. Chapter One introduces the study's background, problem statement, research questions, hypotheses, objectives, significance, and limitations. Chapter Two reviews pertinent theoretical and empirical literature, identifying gaps that justify the current investigation. Chapter Three details the research methodology, including design, sampling, data collection, and analytical techniques. Chapter Four presents and discusses the research findings in relation to the objectives and existing studies. Finally, Chapter Five summarizes the conclusions and offers practical recommendations, along with suggestions for future research.

Theoretical and Conceptual Underpinnings of Tax Planning

Taxation serves as a vital tool for governments to mobilize financial resources needed to deliver public services, promote economic growth, and uphold governance functions (Goode, 1986). Taxes are generally classified into direct taxes such as income tax, property tax, and capital gains tax that directly target individuals and organizations, and indirect taxes like value-added tax (VAT) and customs duties, which are typically embedded in the prices of goods and services and passed on to consumers (Khadka, 2005). Besides its fiscal purpose, taxation also supports social equity by redistributing income and encouraging economic behaviors aligned with national development priorities such as infrastructure investment and environmental sustainability (Kandel, 2006).

Within this fiscal framework, tax planning refers to the deliberate, lawful structuring of financial affairs to reduce tax burdens and optimize liquidity through the effective use of incentives, exemptions, deductions, and rebates offered by tax laws (Kandel, 2006; Poudyal, 2008). Unlike tax evasion or avoidance which involve illegal concealment or ethically dubious exploitation of legal loopholes tax planning is an ethical and legal

strategy that strengthens business viability and facilitates reinvestment.

Nepal's income tax system has progressively evolved since the mid-20th century, beginning with initial policy proposals in the 1950s and formal legislation such as the Finance Act of 1959 and the Business Profit and Remuneration Tax Act of 1960. The current Income Tax Act, enacted in 2002, reflects comprehensive reforms introducing uniform tax rates, capital gains taxation, transfer pricing provisions, and liberalized loss carry-forward policies, aligning Nepal's taxation system with global norms (Adhikari, 2015; Amatya & Dhakal, 2004).

Concepts, Mechanisms, and Characteristics of Tax Planning

Tax planning involves an evaluative and forward-looking approach to financial decision-making that maximizes tax efficiency by legally minimizing tax liabilities. This involves strategically exploiting all available tax reliefs, including exemptions, deductions, rebates, and concessions, while strictly adhering to statutory compliance (Kandel, 2006). Typical tax planning tactics include situating manufacturing operations within tax-incentive zones, making deductible contributions to approved retirement funds, and transferring asset ownership within family structures to optimize tax outcomes (Mishra, as cited in Kandel, 2006).

Effective tax planning ranges from straightforward deduction claims to sophisticated financial arrangements aimed at reducing taxable income, timing tax payments advantageously, and maximizing available credits. This requires precise income forecasting and a comprehensive understanding of the tax code to tailor compliant and beneficial tax strategies.

The essential features of tax planning include its proactive, future-oriented nature and full legal sanction, which collectively promote a culture of compliance and reduce exposure to legal disputes. Additionally, tax planning conserves capital and encourages productive investment, fostering sustainable growth for manufacturing enterprises.

The efficacy and adoption of tax planning practices depend on multiple influencing factors:

Tax Administration: The degree of transparency, efficiency, and procedural clarity demonstrated by tax authorities directly affects taxpayers' ability and willingness to engage in lawful tax planning.

Taxpayer Behavior: Factors such as financial literacy, ethical attitudes toward taxation, and willingness to comply shape how organizations approach tax planning.

Legal and Policy Environment: The consistency, clarity, and stability of tax laws bolster taxpayers' confidence and facilitate more strategic tax management.

Financial Implications: The perceived cost or benefit associated with taxation influences the motivation for proactive planning.

Operational Considerations: Industry-specific characteristics, including operational scale, access to location-based incentives, and input-output tax structures, substantially impact the scope and methods of tax planning, especially within manufacturing.

Digital Competency: Familiarity and access to digital tax systems enhance compliance ease and improve the efficiency of tax planning.

Policy Stability: Predictable and stable fiscal policies reduce uncertainty, enabling firms to develop robust long-term tax strategies.

Thus, tax planning represents a multidimensional process situated at the nexus of fiscal policy, administrative practices, and business strategy.

Distinguishing Tax Planning from Tax Avoidance and Tax Evasion

Clear differentiation between tax planning, tax avoidance and tax evasion is essential for understanding the legality and ethicality of tax-related behaviors. Tax planning is a lawful, economically rational, and ethically sound practice that involves arranging financial affairs to minimize taxes by fully utilizing existing legal provisions without misrepresentation (Singh, 2015).

Conversely, tax evasion is an illegal act involving deliberate concealment or misreporting of income or financial information to evade tax liabilities, subject to criminal penalties (OECD, 2017). Tax avoidance occupies a gray area, where taxpayers exploit ambiguities or gaps in tax legislation to reduce taxes without overt illegality, often attracting ethical scrutiny (Sharma & Adhikari, 2020). As highlighted by Kay (1980), "the difference between tax avoidance and tax evasion is the thickness of a prison wall," underscoring the narrow boundary separating legal compliance from criminal behavior.

Conceptual Framework of Determinants Affecting Tax Planning

This study conceptualizes tax planning as a series of deliberate, compliant financial activities designed to optimize tax liabilities through strategic expense scheduling, investment timing, and effective utilization of tax benefits. Common practices include depreciation management, the application of loss carry-forward provisions, and leveraging investment incentives. Engaging tax professionals often enhances compliance and liquidity outcomes.

The principal factors influencing tax planning include:

Tax Administration: Transparent, responsive, and efficient tax authorities encourage active and lawful tax management.

Taxpayer Behavior: Higher levels of tax knowledge, ethical awareness, and long-term orientation among firms correlate with more sophisticated planning.

Legal and Policy Clarity: A stable, straightforward tax regime facilitates strategic planning and reduces compliance burdens.

Financial Burden Perception: The magnitude of tax obligations or reliefs influences the intensity of planning efforts.

Operational Factors: Manufacturing firms' capital-intensive nature and access to incentives provide broader opportunities for tax optimization.

Digital Tax Adoption: Utilization of e-filing systems and digital tax tools significantly improves planning efficiency.

Policy Stability: Consistent fiscal policies foster confidence in long-term tax strategies and minimize risks.

International research affirms tax planning as a critical component of corporate financial management that enhances profitability and competitive advantage (Gupta, 2020; Lee & Kim, 2019). Globally, tax incentives such as accelerated depreciation and investment credits have successfully spurred industrial growth and innovation (Johnson & Smith, 2017).

Within Nepal, tax planning remains constrained by administrative inefficiencies, limited taxpayer education, and frequent legal changes (Aryal, 2023; Pokharel, 2021). Tax officials' discretionary practices strongly influence firms' access to incentives, either encouraging compliance or incentivizing avoidance (Shrestha & Bhandari, 2022). Furthermore, larger, more complex manufacturing firms tend to engage in more advanced tax planning compared to smaller or service-sector entities (Das & Mahapatra, 2018).

Despite its importance, empirical studies examining tax planning specifically in Nepal's manufacturing sector are scarce, with most existing research focusing broadly on tax compliance or revenue issues. This gap underscores the need for focused inquiry into firm-level tax planning behaviors and their determinants within Nepalese industry contexts.

This conceptual framework has been developed to understand the tax planning practices adopted by manufacturing companies in Nepal. It helps identify the major influencing factors that affect how these companies plan and manage their tax obligations. Based on the literature, questionnaires, and field understanding, the framework connects the dependent variable tax planning practices with various independent variables such as tax administration, taxpayer behavior, legal-policy factors, tax implications, operational characteristics, digital awareness, and policy stability. This framework provides a clear direction for the study and supports hypothesis development and data analysis.

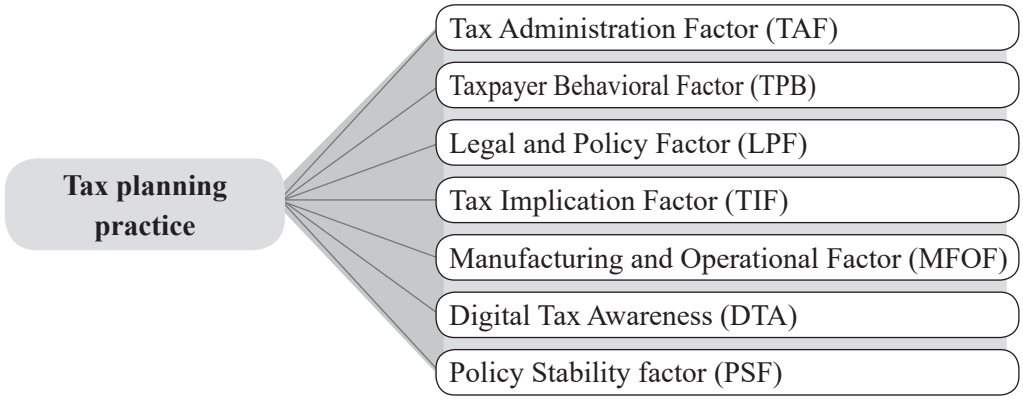

Figure 1: Conceptual Framework of the Study

Note. Tax planning practices are influenced by seven key factors: TAF, TPB, LPF, TIF, MFOF, DTA, and PSF. Figure prepared by the researcher.

Tax planning practices in manufacturing companies of Nepal encompass a wide range of strategic approaches aimed at minimizing tax liabilities while ensuring compliance with legal provisions. These include advance tax payments, management of depreciation schedules, strategic timing of deductible expenses, and utilizing loss carry-forward provisions. Firms also engage in long-term tax planning to enhance working capital and liquidity, exploit available tax holidays, and consider tax consequences in investment decisions. Reliance on expert consultations further strengthens effective tax management. These practices are measured using a structured 5-point Likert scale through 10 carefully designed statements to capture the depth and effectiveness of tax planning behavior.

The study examines seven independent factors that may influence tax planning practices. The Tax Administration Factor (TAF) assesses efficiency and clarity in guidelines, refund processing, and audit practices. The Taxpayer Behavioral Factor (TPB) focuses on awareness, initiative, and capacity of taxpayers to plan taxes. The Legal and Policy Factor (LPF) evaluates the clarity, accessibility, and consistency of tax laws. The Tax Implication Factor (TIF) reflects how tax provisions impact financial planning and operational cash flows. The Manufacturing and Operational Factor (MFOF) explores how cost management, capital investment, and resource availability affect tax strategies. The Digital Tax Awareness (DTA) assesses the extent of digital system use and staff capability for tax compliance. Lastly, the Policy Stability Factor (PSF) captures perceptions regarding the predictability and consistency of tax policies. Each factor is measured through four Likert-scale items, including both positive and reverse-coded statements.

Research Design

A quantitative, cross-sectional research design was adopted to capture respondents' perceptions at a single point in time. This design facilitates the examination of potential causal relationships between tax planning practices (dependent variable) and its influencing factors (independent variables) without manipulation of variables.

Population and Sampling

The study population comprises stakeholders involved in tax planning within Nepal's manufacturing sector, including taxpayers, tax administrators, chartered accountants, registered auditors, tax consultants, and academicians from major manufacturing clusters in Kathmandu Valley. A purposive sampling technique was employed to select respondents with relevant expertise and experience.

Using Cochran's formula for unknown populations, a sample size of 384 was calculated to ensure 95% confidence level and 5% margin of error. Accordingly, 400 questionnaires were distributed, with 384 valid responses received, resulting in a 96% response rate. The sample was proportionally

allocated across stakeholder groups to ensure comprehensive representation.

Data Collection Instrument

Primary data were gathered through a structured questionnaire comprising 22 validated items measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The instrument covered dimensions related to tax administration, taxpayer behavior, legal and policy factors, tax implications, manufacturing operations, digital tax awareness, and policy stability.

Reliability and Validity

The reliability of the questionnaire was confirmed with a Cronbach's Alpha coefficient of 0.742 after refinement to ensure internal consistency. Construct validity was established through Exploratory Factor Analysis (EFA), with a Kaiser-Meyer-Olkin (KMO) measure of 0.700 and a statistically significant Bartlett's Test of Sphericity ($p < 0.001$). Extracted factors explained 77.29 percent of the variance, confirming the multidimensional nature of the constructs.

Data Analysis

Data analysis was conducted using SPSS software, employing the following statistical techniques. Descriptive Statistics to summarize central tendencies and dispersion of responses; Exploratory Factor Analysis to validate the factor structure; Correlation Analysis to assess the strength and direction of relationships between tax planning practices and independent variables; Multiple Regression Analysis to determine the magnitude and significance of each factor's influence on tax planning.

The regression model is expressed as:

$$\text{Tax Planning} = \beta 0 + \beta 1(\text{TAF}) + \beta 2(\text{TPB}) + \beta 3(\text{LPF}) + \beta 4(\text{TIF}) + \beta 5(\text{MFOF}) + \beta 6(\text{DTA}) + \beta 7(\text{PSF}) + \epsilon t$$

Where, $\beta 0$ = intercept,

$\beta 1$ to $\beta 7$ are regression coefficients representing the effect of each independent variable,

ϵt = error term.

TP = Tax Planning practices
TAF = Tax Administration Factor
TPB = Taxpayer Behavioral Factor
LPF = Legal and Policy Factor
TIF = Tax Implication Factor
FOF = Manufacturing and Operational Factor
DTA= Digital Tax Awareness
PSF= Policy Stability factor

Reliability Analysis and Item Refinement

The internal consistency of the measurement instrument was assessed using Cronbach's Alpha. Initial testing of 38 scale items yielded a Cronbach's Alpha of 0.507, indicating low reliability. To improve this, 16 items demonstrating poor item-total correlations and negative mean values were removed. The refined scale, consisting of 22 items, achieved an acceptable Cronbach's Alpha of 0.742, confirming the enhanced reliability and consistency of the instrument. Item deletions were distributed across variables, with the highest number of removals from Digital Tax Awareness, Policy Stability Factor, and Tax Planning constructs. This refinement ensures robust measurement of the study variables for subsequent analyses.

Sampling Adequacy and Factorability

Preliminary tests confirmed the suitability of the dataset for factor analysis. The Kaiser-

Meyer-Olkin (KMO) measure of sampling adequacy was 0.700, exceeding the minimum threshold of 0.60, indicating good sampling adequacy. Bartlett's Test of Sphericity was significant ($\chi 2=1495.821$, $p<0.001$), confirming sufficient correlations among variables to justify factor extraction.

Exploratory Factor Analysis and Component Extraction

Principal Component Analysis (PCA) with Varimax rotation was conducted to identify the underlying factor structure of the measured constructs. Based on Kaiser's criterion (eigenvalues > 1), three components were retained, cumulatively explaining 77.29 percent of the total variance. This indicates a strong factor solution, capturing the majority of information from the original variables.

The first component, labeled Tax Management and Regulatory Factors, comprised Tax Planning, Tax Administration, Taxpayer Behavior, Legal Provisions, and Tax Implication variables, reflecting governance and procedural aspects influencing tax planning. The second component, named Technological and Policy Environment Factors, included Digital Tax Awareness and Policy Stability, representing the impact of digital readiness and policy consistency on tax practices. The third component, Manufacturing Process Factors, was solely represented by the Manufacturing and Operational variable, emphasizing the sector-specific operational dynamics.

The rotated component matrix demonstrated strong factor loadings (>0.77) for all variables within their respective components, confirming clear and interpretable grouping consistent with the theoretical framework.

Correlation Analysis

order to examine the relationships between tax planning and its key influencing factors, a Pearson correlation analysis was conducted. This statistical method was chosen to assess the strength and direction of linear associations between the dependent variable (Tax Planning) and various explanatory variables, including administrative, behavioral, legal, and contextual factors relevant to Nepal's manufacturing sector. The correlation coefficients (r values) and significance levels (p-values) presented below provide initial insights into which factors are most strongly associated with tax planning behavior among the sampled firms.

Table 1

Correlation Matrix between Tax Planning and Key Factors (n = 384)

Variables	r (Correlation Coefficient)	p-value	Interpretation
Tax Planning & Tax Administration	0.690	0.000	Strong positive (p < .01)
Tax Planning & Taxpayer Behavior	0.455	0.000	Moderate positive (p < .01)
Tax Planning & Legal Provision	0.507	0.000	Moderate positive (p < .01)
Tax Planning & Tax Implication	0.667	0.000	Strong positive (p < .01)
Tax Planning & Manufacturing Process	0.019	0.707	No significant relationship
Tax Planning &Digital Tax Awareness	–0.031	0.539	No significant relationship
Tax Planning & Policy Stability	–0.034	0.505	No significant relationship

Note: Correlation is significant at the 0.01 level (2-tailed). N = 384 respondents. Variables include:

TP = Tax Planning; TAF = Tax Administration Factor; TPB = Taxpayer Behavior; LPF = Legal Provision Factor; TIF = Tax Implication Factor; MFOF = Manufacturing & Operational Factor; DTA = Digital Tax Awareness; PSF = Policy Stability Factor.

A Pearson correlation analysis was conducted to examine the association between tax planning and various explanatory factors among 384 respondents from Nepal's manufacturing sector. The results indicated a strong, statistically significant positive correlation between Tax Planning and Tax Administration ($r = 0.690$, $p < 0.001$), suggesting that enhanced administrative systems are closely linked with improved tax planning behavior. Similarly, Tax Implication ($r = 0.667$, $p < 0.001$) and Legal Provision ($r = 0.507$, $p < 0.001$) exhibited moderate to strong positive relationships, implying that clear legal frameworks and appropriate tax incentives significantly support strategic tax planning practices.

Taxpayer Behavior ($r = 0.455$, $p < 0.001$) was also found to be moderately and positively associated with tax planning, indicating that cooperative and responsible conduct by taxpayers contributes meaningfully to formal planning efforts. These findings highlight that transparent administration, proactive legal mechanisms, and taxpayer awareness play pivotal roles in encouraging structured and compliant tax strategies within manufacturing firms.

On the other hand, the correlations of Tax Planning with Manufacturing Process ($r = 0.019$, $p = 0.707$), Digital Tax Awareness ($r = –0.031$, $p = 0.539$), and Policy Stability ($r = –0.034$, $p = 0.505$) were weak and statistically insignificant. This suggests that although these factors exist in the operating environment, they do not have a strong direct influence on tax planning behavior among the sampled firms. However, their indirect relevance should not be dismissed, as they may still contribute to the background structure that supports planning in the long term.

Regression Analysis

This section presents the results of multiple linear regression analysis conducted to examine the influence of seven explanatory variables—Tax Administration Factor (TAF), Taxpayer Behavior (TPB), Legal Provision Factor (LPF), Tax Implication Factor (TIF), Manufacturing & Operational Factor (MFOF), Digital Tax Awareness (DTA), and Policy Stability Factor (PSF)—on the dependent variable, Tax Planning (TP), in Nepal's manufacturing sector. The objective was to determine the strength and significance of each factor in explaining variations in tax planning practices. The analysis is structured into three parts: model summary, ANOVA results, and regression coefficients, followed by hypothesis testing and interpretation.

Model Summary

Table 2

Model Summary for Regression Predicting Tax Planning (N = 384)

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	F Change	df_1	df_2	Sig. F Change	Durbin-Watson
1	0.759	0.576	0.568	0.34156	0.576	72.871	7	376	0.000	1.784

Note. Predictors: (Constant), Policy Stability Factor (PSF), Tax Implication Factor (TIF), Manufacturing Process (MFOF), Legal Provision Factor (LPF), Taxpayer Behavior (TPB), Digital Tax Awareness (DTA), Tax Administration Factor (TAF). Dependent Variable: Tax Planning (TP).

As shown in Table 16, the multiple regression models produced an R value of 0.759, indicating a strong linear association between the predicted and actual values of tax planning. The R^2 value of 0.576 implies that approximately 57.6% of the variance in tax planning can be attributed to the collective effect of the seven independent variables. The Adjusted R^2 (0.568), which accounts for the number of predictors in the model, confirms the model's consistency and generalizability. The Standard Error of the Estimate (0.34156) suggests a relatively low average deviation of predicted values from actual values, pointing to a good model fit. The F-statistic (F=72.871, p< 0.001) further confirms that the regression model is statistically significant, indicating that the explained variance is unlikely to have occurred by chance. The Durbin-Watson statistic of 1.784 falls within the acceptable threshold (1.5 to 2.5), suggesting that there is no significant autocorrelation in the residuals. This supports the reliability of the model in meeting key assumptions of linear regression analysis.

Analysis of Variance (ANOVA)

To assess the overall fit of the multiple regression models predicting tax planning, an Analysis of Variance (ANOVA) was conducted. The ANOVA results, presented in Table 17, show that the regression model significantly explains variation in tax planning behavior among manufacturing firms.

Table 3

ANOVA for Multiple Regression Model Predicting Tax Planning (N = 384)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	59.508	7	8.501	72.871	0.000
Residual	43.864	376	0.117		
Total	103.372	383			

Note. Dependent Variable: Tax Planning (TP). Predictors: (Constant), Policy Stability Factor (PSF), Tax Implication Factor (TIF), Manufacturing & Operational Factor (MFOF), Legal Provision Factor (LPF), Taxpayer Behavior (TPB), Digital Tax Awareness (DTA), Tax Administration Factor (TAF)

The F-statistic of 72.871 with a significance level of $p < .001$ indicates that the model, which includes seven predictors, reliably predicts tax planning better than a model without any independent variables. This confirms that the set of explanatory variables collectively have a significant impact on tax planning in the studied sector.

Regression Coefficients and Hypothesis Testing

The regression coefficients obtained from the model. Based on the p-values and standardized

coefficients, hypothesis testing was conducted for each proposed null hypothesis. The goal was to assess the relative contribution of each factor in explaining variations in tax planning behavior.

Discussion

The findings reinforce the notion that tax planning in Nepal's manufacturing sector is primarily driven by institutional efficiency and taxpayer competence. The strong influence of Tax Administration corroborates earlier studies highlighting administrative transparency and taxpayer services as key enablers of compliance and planning (Shrestha, 2019; Awryal, 2023). Taxpayer Behavior's positive effect aligns with the understanding that ethical attitudes and knowledge promote proactive engagement with tax laws.

The significant impact of Digital Tax Awareness reflects the growing importance of technology in modern tax systems, supporting international evidence that e-filing and digital platforms enhance compliance and reduce administrative burdens (OECD, 2020). The moderate role of Legal Provisions and Tax Implications underscores the necessity of clear, consistent, and accessible legal frameworks.

The less pronounced effect of operational and policy stability factors may reflect sectoral heterogeneity and recent fiscal policy fluctuations in Nepal, suggesting the need for further research into how these factors interact with firm-specific contexts.

Conclusion

This study examined the determinants influencing tax planning practices of manufacturing firms in Nepal, focusing on the interplay between tax administration, taxpayer behavior, legal provisions, tax implications, digital tax awareness, manufacturing operations, and policy stability. The research demonstrated that tax administration efficiency, understanding of tax implications, taxpayer compliance behavior, and digital readiness significantly impact the degree and effectiveness of tax planning. These factors collectively explain a substantial portion of the variation in tax planning practices of manufacturing firms in Nepal.

The findings reveal that despite the availability of tax incentives and digital systems, challenges such as inconsistent policy application, administrative delays, and variable taxpayer knowledge hinder optimal utilization of tax benefits. The study emphasizes the critical importance of transparent and efficient tax administration, coupled with taxpayer education and technological integration, in fostering a robust tax planning environment.

Implications

The study's results have several theoretical and practical implications:

For Policymakers: Enhancing administrative efficiency and transparency is essential to reduce compliance costs and encourage voluntary tax planning. Simplifying tax

procedures and expediting dispute resolution will foster trust and compliance.

For Tax Authorities: Increasing taxpayer education and awareness about legal provisions and available incentives will improve tax planning quality. Adoption and promotion of digital tax tools can streamline processes and reduce errors.

For Manufacturing Firms: Firms should invest in building internal capacities for tax knowledge and digital competencies. Proactive engagement with tax authorities and professional advisors will optimize tax liabilities and operational cash flows.

For Researchers: The findings highlight the need for further sector-specific and longitudinal studies examining evolving tax planning behaviors amid changing fiscal policies and digital transformations.

Recommendations

Based on the research findings, the following recommendations are proposed to enhance tax planning practices in Nepal's manufacturing sector:

Strengthen Tax Administration: Improve administrative infrastructure, reduce bureaucratic delays, and ensure consistent application of tax laws across regions and sectors.

Enhance Taxpayer Education: Develop comprehensive training programs targeting manufacturing firms to raise awareness of tax laws, incentives, and digital filing systems.

Promote Digital Tax Systems: Expand the coverage and user-friendliness of electronic tax platforms, ensuring robust technical support and data security.

Ensure Policy Stability: Maintain consistent tax policies and transparent communication to reduce uncertainty and enable long-term tax planning.

Facilitate Access to Professional Services: Encourage collaboration between firms and tax professionals, including accountants and auditors, to improve compliance and optimize tax benefits.

Address Legal Ambiguities: Clarify contentious legal provisions and streamline dispute resolution mechanisms to minimize litigation and enhance predictability.

Monitor and Regulate Strategic Delayers: Implement mechanisms to identify and deter taxpayers exploiting political or administrative influence for preferential tax treatment.

Suggestions for Future Research

Future studies may explore:

The longitudinal effects of evolving digital tax infrastructures on compliance and planning.

Sector-wise comparative analyses to identify unique tax planning challenges.

The impact of informal institutional practices and political factors on tax compliance.

Qualitative investigations into taxpayer motivations and perceptions.

Integration of behavioral economics perspectives to understand tax planning decisions.

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