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Exploring the Relationship Between Tax Planning and Firm Performance: A Meta-Analysis Approach

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Abstract

The paper aims to analyse the relationship between tax planning and firm performance using meta-analysis. A total of 13 papers from the Scopus and Google Scholar databases, comprising a sample of 3254, have been collected and analysed. The analysis has been done with the help of Jamovi software. We found that tax planning has an impact on firms' financial performance, but such an effect is low. So, in addition to tax planning, firms should focus on other aspects to improve their performance. We have also applied meta-regression, which shows that firm age is a significant moderator of the relationship between tax planning and firm performance. At the same time, leverage is significant at 10% with a high R square. However, Firm size is found to be an insignificant moderator. This finding suggests that new firms should give more effort to tax planning, as the efficiency of tax planning in improving the performance of a firm increases with age and leverage should be given more importance while making tax planning for all firms. This study is the first of its kind to investigate such a relationship using meta-analysis, and it will be helpful for academicians and companies in making important decisions.

Keywords: tax planning, firm performance, meta-analysis
JEL Classifications: H25, H26, H32

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1. Introduction

Tax planning is an important area for every business, as it reduces tax liability both legally and ethically. It has various positive impacts on the performance of a firm. There are a lot of studies regarding the impact of tax planning on various aspects of business, like firm value, financial performance, etc. (Ado et al., 2021; Olarewaju & Olayiwola, 2019; Chukwudi et al., 2020). The performance of a firm is very important to sustain itself in the market. There are various factors that affect the firm's performance. Studies have explored the impact of corporate governance, corporate social responsibility, and other factors on firm performance (Lin et al., 2019; Olayiwola & Okoro, 2021). Though the number of studies exploring the impact of tax planning on firm value is smaller, it is important to study this relationship as it has significant implications for firms. It also becomes important to study this link, as past studies have given mixed results. Some studies have found significant relationships (Gatsi et al., 2013; Olayiwola & Okoro, 2021; Tackie et al., 2022), while others have found insignificant and very low correlations (Akintoye et al., 2020; Olurankinse & Mamidu, 2021).

Most empirical arguments supporting the relevance of tax planning for the performance of a business are favourable, which suggests that businesses that benefit the most from tax planning always outperform those that do not (Lestari & Wardhani, 2015; Ogundajo & Onakoya, 2016). Reducing the overall company tax burden with proper planning is one of the most important responsibilities of the managers who are in charge of paying taxes on behalf of the company. Theoretically, a corporation's tax liability and profitability are inversely correlated; therefore, maximising shareholder wealth through various methods of enhancing profitability makes it more difficult for the company to reduce its tax burden (Ado et al., 2021). At the same time, tax planning is a crucial component of corporate strategy, which means that certain capital structure decisions give the business and tax manager a chance to reduce the company's tax liability and boost financial performance (Ogundajo & Onakoya, 2016).

Financial performance is the degree to which financial goals have been or are achieved. Return on assets, growth, liquidity, leverage, and profitability are the proxies that are mostly used for assessing financial performance (Yahaya & Lamidi, 2015). Similarly, the effective tax rate has been used as the most suitable proxy to measure tax planning. According to Hoffman (1961), there is a positive correlation between a company's tax planning activities and its performance to the extent that the tax benefits derived from such operations outweigh the cost of tax. The motivation for studying the impact of tax planning on firm performance stems from its critical significance in the realm of corporate finance and management, as mentioned above. Effective tax planning strategies can substantially influence a company's financial health, profitability, and overall competitiveness. By optimising tax liabilities and enhancing cash flow management, firms can allocate resources more efficiently, invest in growth initiatives, and increase shareholder value. Understanding how tax planning practices affect firm performance is imperative for both practitioners and policymakers, as it can inform decision-making processes, foster economic growth, and aid in the development of more effective tax policies. This study seeks to shed light on the intricate relationship between tax planning and firm performance, providing valuable insights for businesses, investors, and policymakers alike. Despite the relevance and growing significance of corporate tax planning for businesses, only a small number of studies have examined how it affects financial performance. Also, as stated earlier, the studies have given different outcomes. So, there is a need for extensive and conclusive results. This motivates us to go for a

meta-analysis, which enables a researcher to analyse empirical research papers from different countries and sectors to give an extensive and conclusive view of the relationship between tax planning and firm performance. First, we explore the direct relationship between tax planning and firm performance. Second, we explore the moderation effect of variables like Firm size, Firm age, and Leverage. This will help future researchers navigate their research in the right direction. The study will also be beneficial for firms when making their tax planning decisions. The remaining of the paper is organised as follows: Section 2 Review of Literature; Section 3 Methodology; Section 4 Results and Discussions; and Section 5 Conclusion.

2. Review of Literature

The number of studies analysing the relationship between tax planning and financial performance is smaller, but there is variation in the findings. Tackie et al. (2022) found that there is evidence of a non-linear relationship between tax planning, as determined by the effective tax rate (ETR), and insurance company performance, as determined by return on equity (ROE) and return on asset (ROA). A further finding of the study was that corporate governance moderated the association between TP and insurance company performance. Fagbemi et al. (2019) observed that financial performance is negatively and significantly impacted by the effective tax rate. While capital intensity and the lease option have shown a negligible impact on systemically important banks' (SIBs) financial performance in Nigeria, thin capitalization has a significant positive impact on that performance. Similarly, Gatsi et al. (2013) found that corporate income tax has a considerable inverse relationship with financial performance. On the other hand, there is a strong positive correlation between a firm's size, age, and growth and its financial performance. According to Oeta et al. (2019), tax planning does not have an impact on the financial performance of manufacturing companies listed on the Nairobi Securities Exchange.

Kayode & Folajinmi (2020) observed that corporate tax planning, measured by capital intensity, effective tax rate, and thin capitalization, significantly improves the performance of listed food and beverage companies in Nigeria. Mark (2021) concluded that firm size, leverage, and tangibility have a negative impact on a company's value, whereas effective tax rate (ETR), dividend (DIV), and firm age (FAG) have a positive and significant association with firm value. The results from Ado et al.'s study (2021) suggested that a large increase in capital intensity would result in lower financial performance. Leverage is, however, favourably, and significantly associated with ROA. Vržina (2018) also found that the profitability of a company is significantly impacted by tax planning. When ETR decreases, profitability rises.

According to the findings of Akintoye et al. (2020), tax preparation techniques can affect quoted manufacturing companies' profitability both negatively and favourably. Thanjunpong & Awirothananon (2019) also made similar observations. According to the study, tax planning influences financial performance in both ways. When the impact is assessed using ETR, it is positive; however, when assessed using tax-to-assets ratio, it is negative. Olurankinse & Mamidu (2021) observed that while tax savings had a positive and insignificant impact on return on equity, the effective tax rate had a negative and negligible impact. However, it was shown that business size and capital intensity had a favourable and significant impact on return on equity. Kawor & Kportorgbi (2014) observed that when a low corporate tax rate is maintained, the tendency of firms to engage in intense tax planning reduces. The study further found a neutral effect of tax planning on firm performance.

Here, we can observe that there is a variation in the findings of the previous literature regarding the relation between tax planning and firm performance. Therefore, it is required to conduct an analysis that will give a clearer idea regarding such a relationship.

3. Methodology

We collected articles from Scopus and Google Scholar. We used the Scopus database as it is a high-quality database for academic research in quantitative studies (Baas et al., 2020), and Google Scholar was used to include some other relevant articles that were not indexed in Scopus. We did not used other databases as the articles in those databases overlap with Scopus and Google Scholar. We used the keywords "tax planning" AND "financial performance" OR "firm performance." By using these criteria, we got 12 articles from Scopus and 15 documents from Google Scholar. Then we screened the papers on the basis of title language and type, which left 24 articles. We removed the 4 duplicate papers that were available in both databases. Then we applied the inclusion and exclusion criteria. We included only empirical papers, as meta-analysis can be performed with quantitative research only. Also, sample size is a requirement for this analysis, for which we included only those articles that clearly mention the sample size. The use of reliable statistics is a must for drawing reliable conclusions, so we included only those articles that have reliable statistics. We excluded all those documents that did not meet these criteria or had incomplete data or text. By applying all these criteria, we got 13 papers for final review. All these criteria are shown in the chart (Figure 1).

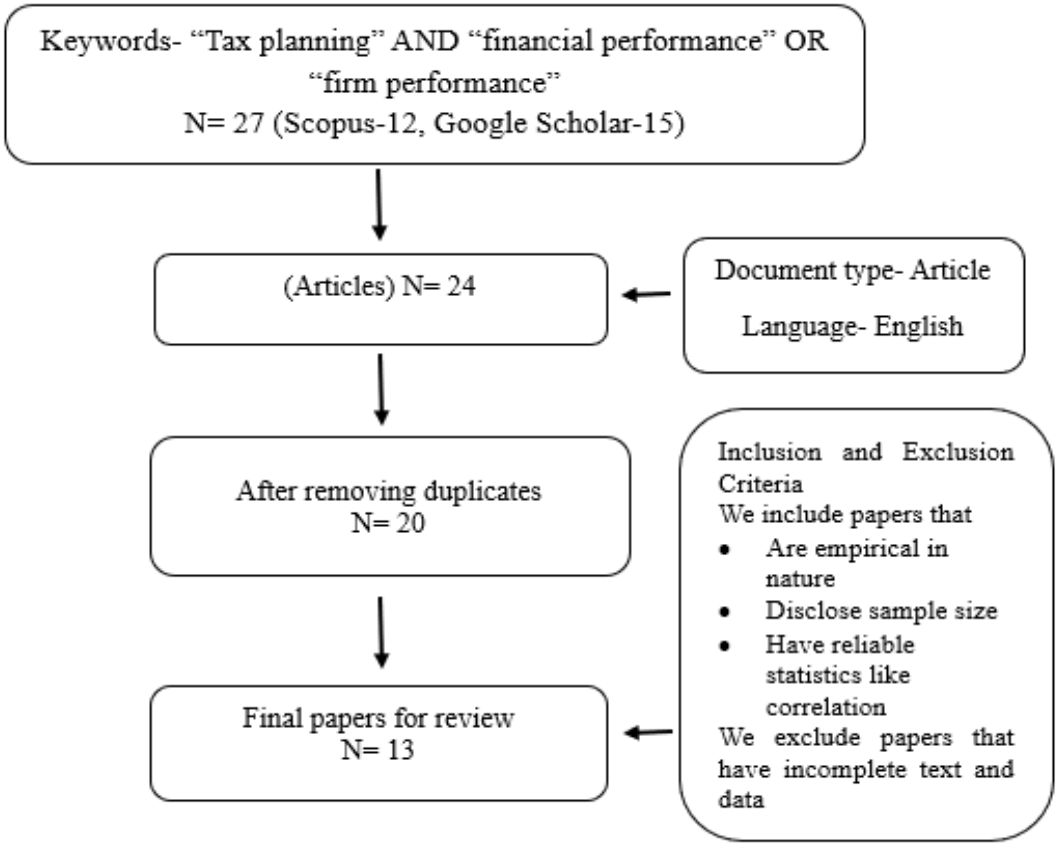
We applied meta-analysis using correlation and sample size, with a sample size of 3254. The sample size here is the sum of firm-years used in the 13 papers considered for this study. The analysis was done with the help of Jamovi software. Here, the dependent variable Firm performance is measured by Return on Assets (ROA) in most of the studies under consideration (Gatsi et al., 2013; Olayiwola & Okoro, 2021; Tackie et al., 2022). Similarly, the independent variable, Tax Planning, is measured by Effective Tax Rate (ETR) (Fagbemi et al., 2019; Tackie et al., 2022; Vržina 2018).

In a simple meta-analysis, we can study the relationship between two variables only. But in practice, when we made a model for analysis, we added some other variables like a control variable or a moderating variable, to make the model justified. The effect of such variables can be studied through meta-regression. So, we applied meta-regression with firm size, firm age, and leverage as the moderators.

Large companies can afford to be flexible. They can therefore control their cash flow to benefit from investment opportunities. They have equal access to resources, fewer monetary hardships, and the potential to grow in the future (Lee, 2009). But at the same time, organisational costs rise with the size of the company; eventually, these costs will surpass the advantages of economies of scale, resulting in a decline in profitability (Mark, 2021). Therefore, it is important to study the moderating impact of Firm size. Similarly, businesses get better as they get older because they are known to have larger earnings, lower debt ratios, higher equity ratios, and continually rising levels of productivity, but at the same time, older businesses are anticipated to grow at slower rates (Coad et al., 2013). So, analysing the moderating impact of Firm age has also become important. Leverage levels in business organisations have a negative correlation with income tax expenses. This negative correlation may be caused by interest on long-term debts, which can be deducted from taxes in certain business transactions. Consequently, this will have an impact on the firm's performance (Mark, 2021). Moreover, studies under consideration

(Fagbemi et al., 2019; Kawor & Kportorgbi, 2014; Mark, 2021; Tackie et al., 2022) used these variables, which makes it necessary to analyse their moderating effect.

Figure 1: Search and Screening Process



Source: Self-compiled by authors

4. Results and Discussion

Table1: Meta Analysis Statistics

	Estimate	se	Z	p	CI Lower Bound	CI Upper Bound
Intercept	0.159	0.0727	2.19	0.028	0.017	0.302

Source: Compiled by authors.

Table 2: Heterogeneity Statistics

Tau	Tau²	I²	H²	R²	df	Q	p
0.235	0.0552 (SE= 0.0273)	92.47%	13.274	.	12	136.804	< .001

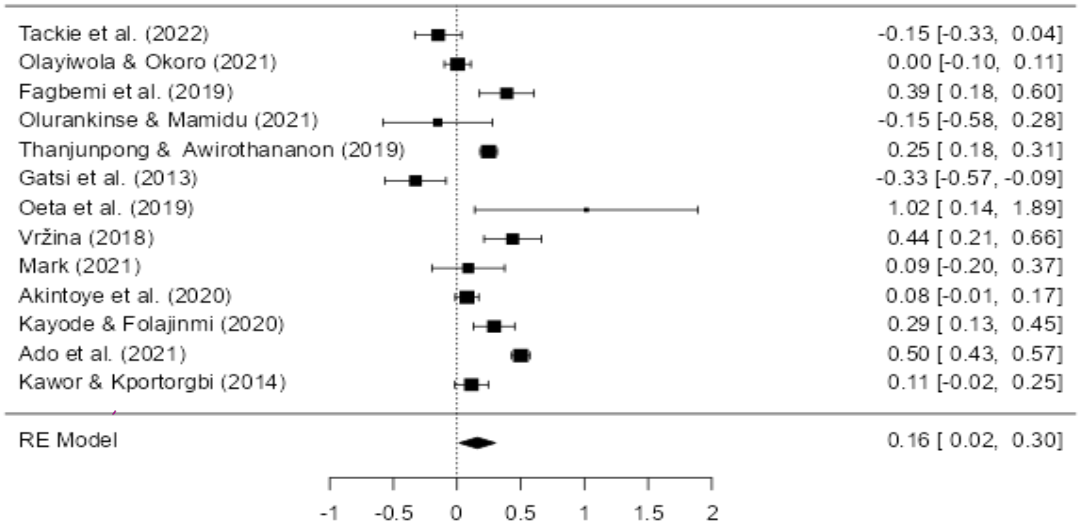
Source: Compiled by authors.

The Fisher r-to-z transformed correlation coefficient was used as the outcome measure for the analysis. The data were fitted to a random-effects model. The restricted maximum-likelihood estimator was used to calculate the level of heterogeneity (i.e., tau^2) (Viechtbauer, 2005). The analysis also reports the Q-test for heterogeneity (Cochran, 1954) and the I^2 statistics. In case any amount of heterogeneity is detected (i.e., $tau^2 > 0$, regardless of the results of the Q-test), a prediction interval for the true outcomes is also

provided. To determine if studies may be outliers and/or influential in the context of the model, studentized residuals and Cook's distances are used. Studies with a studentized residual larger than the 100*(1 - 0.05/(2*k))th percentile of a standard normal distribution are considered potential outliers (i.e., using a Bonferroni correction with two-sided alpha = 0.05 for k studies included in the meta-analysis). Studies are deemed influential if the Cook's distance is more than the median plus six times the Cook's distance interquartile range. To check for funnel plot asymmetry, the rank correlation test and the regression test are utilised, both of which use the standard error of the observed outcomes as a predictor.

A total of k=13 studies were included in the analysis. The observed Fisher r-to-z transformed correlation coefficients ranged from -0.3261 to 1.0154, with the majority of estimates being positive (77%). The estimated average Fisher r-to-z transformed correlation coefficient based on the random-effects model was \hat{\mu} = 0.1595 (95% CI: 0.0169 to 0.3020). Therefore, the average outcome differed significantly from zero (z = 2.1922, p = 0.0284). According to the Q-test, the true outcomes appear to be heterogeneous (Q(12) = 136.8039, p < 0.0001, tau² = 0.0552, I² = 92.4665%). A 95% prediction interval for the true outcomes is given by -0.3227 to 0.6416. Hence, although the average outcome is estimated to be positive, in some studies, the true outcome may in fact be negative. An examination of the studentized residuals revealed that none of the studies had a value larger than ± 2.8905 and hence there was no indication of outliers in the context of this model. According to Cook's distances, none of the studies could be considered to be overly influential (Cook & Weisberg, 1982). Neither the rank correlation nor the regression test indicated any funnel plot asymmetry (p = 0.8577 and p = 0.6128, respectively).

Figure 2: Forest Plot of Samples



Source: Compiled by authors.

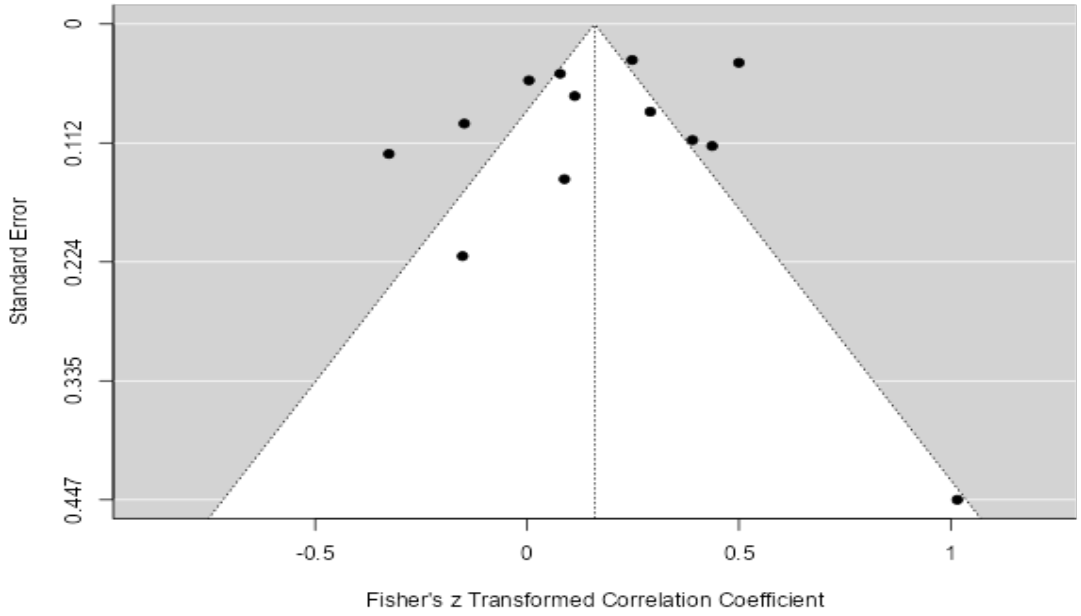
Table 3: Publication Bias Assessment

Test Name	**value**	**p**
Fail-Safe N	397	< .001
Begg and Mazumdar Rank Correlation	0.051	0.858
Egger's Regression	0.506	0.613
Trim and Fill Number of Studies	0	.

Source: Compiled by authors.

Table 3 shows the publication bias assessment through various tests. We can see that all tests show that there is no publication bias. Both Begg and Mazumdar Rank Correlation and Egger's Regression shows p values greater than 0.05, which evidences no publication bias. For a detailed discussion, Viechtbauer (2010) can be referred to.

Figure 3: Funnel Plot



Source: Compiled by authors.

4.1 Meta regression (Moderator- Firm age)

Table 4: Meta Regression Statistics

	Estimate	se	Z	p	CI Lower Bound	CI Upper Bound
Intercept	-0.0101	0.2511	-0.0404	0.968	-0.502	0.482
Moderator	0.0213	0.0186	.	0.251	-0.015	0.058

Source: Compiled by authors.

Table 5: Regression and Heterogeneity Statistics

Tau	Tau²	I²	H²	R²	df	Q	p
0.363	0.1318 (SE= 0.0758)	94.77%	19.125	13.17%	9	151.222	< .001

Source: Compiled by authors.

We considered 10 papers for meta regression based on the availability of firm size data, which we considered here as the moderator. All the model fit criteria suggest that the model is a good fit. The R square here is found to be 13.17 percent. It indicates that though firm size moderates the relationship between tax planning and firm performance, the effect is small and insignificant.

4.2 Meta regression (Moderator - Firm age)

Table 6: Meta Regression Statistics

	Estimate	se	Z	p	CI Lower Bound	CI Upper Bound
Intercept	-0.24	0.09047	-2.65	0.008	-0.417	-0.063
Moderator	0.0334	0.00575	.	< .001	0.022	0.045

Source: Compiled by authors.

Table 7: Regression and Heterogeneity Statistics

Tau	Tau²	I²	H²	R²	df	Q	p
0.073	0.0053 (SE= 0.0193)	27.21%	1.374	95.82%	3	3.105	0.212

Source: Compiled by authors.

For meta-regression with firm age as the moderator, we have selected 4 papers out of the 13 sample papers based on the availability of firm age data. From the analysis, we found that Firm age is a significant moderator of the relationship between tax planning and firm performance. Also, the R square is very high. Though the Q statistics are not significant, they should still be considered an important factor in moderation.

Table 8: Meta Regression Statistics

	Estimate	se	Z	p	CI Lower Bound	CI Upper Bound
Intercept	0.62	0.208	2.98	0.003	0.213	1.028
Moderator	-0.405	0.237	.	0.088	-0.869	0.06

Source: Compiled by authors.

Table 9: Regression and Heterogeneity Statistics

Tau	Tau²	I²	H²	R²	df	Q	p
0.314	0.0987 (SE= 0.0878)	0.9677	30.913	0.3456	4	116.001	< .001

Source: Compiled by authors.

For meta-regression with Leverage as the moderator, we have selected 5 papers based on the availability of Leverage data. From Table 8 and Table 9, we can infer that Q statistics are significant, but the moderator is insignificant. The R square is also not very high. So, we can conclude that Leverage does not moderate the relationship between tax planning and firm performance in a significant way.

5. Conclusions and Policy Implications

Different studies have attempted to study the relationship between tax planning and firm performance, and they have found different results. This paper has reached the conclusion that tax planning does have some impact on firm performance, and this is in line with the findings of Vržina (2018), Mark (2021), Ado et al. (2021), and others. This is also supporting the Tax planning theory and Agency theory, which propose that tax planning increases firm performance. But at the same time, as per the study, the impact

of tax planning is not very high, as the effect size is found to be low. So, firms should focus on other factors in addition to tax planning to increase their performance.

Regarding the regression analysis, we found only firm age to be a significant moderator of the relationship. The R square is also very high. So, it can be concluded that the more experience a firm has, the more it has the ability to increase its performance through tax planning. This finding is consistent with the findings of Mark (2021) and Gatsi et al. (2013). However, firm size is found to be insignificant, and the R square is quite low. Though studies like Oeta et al. (2019) and Mark (2021) made similar observations, other studies like Tackie et al. (2022) and Olurankinse & Mamidu (2021) found significant impact of Firm size. This can be due to differences in the type and number of sample firms under study. Regarding the leverage, it is not significant at 5%, but it is significant at 10%. Also, the R square is satisfactory, which indicates that tax planning can improve firm performance through leverage. This finding is in line with the studies of Thanjunpong & Awirothananon (2019) and Ado et al. (2021). So, importance should be given to firm age and leverage while making the tax plan.

At the same time, we get insight from the study that there have been fewer studies in the concerned area. Also, the studies have explored very few aspects of the relationship between tax planning and firm performance. So, more studies are expected in this area in the future. Future studies can incorporate more variables with a larger sample size. Also, studies in a cross-country context will be more insightful.

As the findings suggest, the impact of tax planning is not very high, as the effect size is found to be low. So, firms should focus on other factors in addition to tax planning to increase their performance. Similarly, Firm age and Leverage are found to be significant moderators of the relationship, while firm size is insignificant. So, it can be inferred that tax planning becomes increasingly effective in enhancing a firm's performance as it gets older. So, new firms should dedicate more time to tax planning. Additionally, leverage should be prioritised when creating tax plans for all firms.

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