

EXPLORING ON DETERMINANTS OF COMPETITIVENESS IN MEDIUM AND LARGE FAMILY MANUFACTURING COMPANIES

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Abstract

This study aims to explore and test the factors that affect competitiveness in medium and large family-owned manufacturing companies. This study used SEM Partial Least Squares (PLS) as a data processing tool in the equation model with the help of WarpPLS software. The findings demonstrate; a positive and significant relationship between family business characteristics and competitiveness, no direct effect of business strategy on competitiveness, company size has a negative effect on competitiveness, family business characteristics and a well-designed and implemented business strategy have a positive influence on internal audit effectiveness, company size has no influence on internal audit effectiveness, internal audit effectiveness has a positive and significant influence on company competitiveness, family firm characteristics have a positive effect on competitiveness through internal control effectiveness, direct effect of business strategy on competitiveness was insignificant, internal control effectiveness served as a mediator, increasing the effect of business strategy on competitiveness, company size does not affect competitiveness through the effectiveness of internal supervision. This study aims to develop a model of competitiveness in medium and large-scale companies, identifying potential factors to be considered in their strategic planning and future business transformation.

Keywords: Competitiveness, Determinants, Family Companies

JEL Classification Codes: M0; M4; L1; L6.

1. Introduction

Regional competitiveness is driven by the competitiveness of companies in each region. Corporate competitiveness has been considered an important basis for building industrial and national competitiveness (Porter, 1990). A company's competitiveness lies in its adaptability and ability to realize long-term profits (Bhawsar & Chattopadhyay, 2015; Kalaitzi & Tsolakis, 2022). This is key for policy makers who need to understand the level of competition and the development of their competitive position over time (Fagerberg & Srholec, 2017; Falciola et al. 2020).

Based on previous research that has been conducted, there are various variables and internal company resources that have the potential to contribute to building and maintaining the company's competitiveness. These variables include (a) Business Strategy (Agyapong & Boamah, 2013; Tambade et al., 2019), (b) Intellectual Capital (Sanchez-Gutierrez et al., 2016; Akhuand & Abbas, 2023), (c) Innovation (Kabak et al., 2014; Soosay et al., 2016; Valdez-de la Rosa et al., 2019), (d) Company Size (Dvouletý & Blažková, 2020; Lafuente et al., 2020), (e) Technology (Cinicioglu et al., 2012; Kabak et al., 2014; Emon & Khan,

2025), (f) Quality (Joshi et al., 2013), (g) Characteristics of Family Firms (Gallucci et al., 2015; Wieszt, 2019; Koentjoro & Gunawan, 2020), (h) Leverage (Akben-Selcuk, 2016; Csapi & Balogh, 2020; Sahoo et al., 2022), but what most influences competitiveness is thought to be Characteristics of Family Companies, Business Strategy and Company Size.

Family participation and ownership concentration affect capacity development and investment decisions, which in turn affect the attainment of business competitiveness (Hoopes & Miller, 2006). The performance of the business is positively correlated with family ownership. When family engagement exceeds 60 to 70 percent, family-owned businesses operate at their best (Beuren et al., 2016). The ability of family businesses to acquire human resources, safeguard and improve their reputation, and forge solid bonds is supported by the presence of a long-term focus and close ties between family members. In order to boost a company's competitiveness, this capability helps industries with a high degree of uncertainty about product quality, value, and demand succeed (Le Breton-Miller & Miller, 2015).

The findings obtained are in accordance with previous research conducted in various industries, showing that larger companies have better access to resources and, as a result, the companies have a stronger competitive position in the market. Chaddad & Mondelli (2013) and Hirsch et al. (2014) found that large companies in the food industry were more profitable, while in research conducted by Nanda & Panda (2018) and Voulgaris et al. (2013), they were more profitable in the food industry. manufacture.

Internal monitoring is needed more by companies to reduce inappropriate decision making, so as to increase competitiveness and sustainable growth (Wang & Wang, 2019). Moreover, effective internal control can reduce corporate risks and protect investors' interests through a series of procedures and activities, and thereby lower the company's cost of capital (Beneish et al., 2008; Dhaliwal et al., 2011; Agbejule & Jokipii, 2009; Cheng et al., 2013). However, internal control is intrinsically linked to internal capital allocation and is not simply directly connected to the effectiveness of a company's operations and investments (D'Mello et al., 2017; Cheng et al., 2018). When combined, these factors promote sustainable growth. More sustainable growth can result from improved operational and investment efficiency brought about by effective internal controls. By enhancing management skills, raising operational and investment efficiency, and lowering capital costs, internal control may play a governance role in the long-term growth of SMEs (Wang et al., 2019). Thus, formulated research questions are as follows: "Do the characteristics of family firms, business strategy, and company size directly influence competitiveness and the effectiveness of internal control, whether the effectiveness of internal control directly affects competitiveness, and whether it mediates the relationship between those factors and competitiveness?"

2. Literature Review

2.1 Family Company Characteristics, Business Strategy, Company Size, and Competitiveness

Company competitiveness is the company's ability to maintain or improve its competitive position and advantages (Camisón & Forés, 2015) in the long-term. The concept of competitiveness shows that companies need to be able to meet consumer demand and be able to do so in a sustainable manner, and always be connected to the latest relevant market information (Falciola et al., 2020; Ali Abbasi et al., 2022). It has been studied through various approaches, such as one-dimensional or multidimensional measurements (Fischer & Schornberg, 2007; Pushpangadan & Shanta, 2008; Cetindamar & Kilitcioglu, 2013; Sardana et al., 2016; Gómez & Lafuente, 2019; Emon & Khan, 2025).

Research conducted by Buckley et al. (1988; 1990); Voulgaris & Lemonakis (2014); Lalinsky (2015); Akben-Selcuk (2016); Soosay et al. (2016); Wilson (2020) measures competitiveness using productivity,

profitability, and market share growth as well as low-cost production principles (Viviani, 2009; Kárpáti et al., 2024). Several studies also focus on cost for measuring competitiveness (Feng et al., 2010; Vij, 2016; Srivastava et al., 2017; Hermundsdottir & Aspelund, 2021; Oduro et al., 2025), which focus on competition through industry cost-prices and observe that low-level industry cost-prices become more competitive. This may prevent family members from accepting non-family employees and other stakeholders as partners in collaboration. This condition can hinder the emergence of personal relational qualities that can function as a source of competitiveness for family companies. Thus, the proposed hypothesis is:

H1: Family Company characteristics have a negative effect on Competitiveness

The right business strategy can significantly increase the competitiveness of a company (Dvorský et al., 2020). Business strategy is a determinant of the competitiveness of manufacturing companies (Serhan et al., 2015). In research conducted by Hyginus & Maria (2018), cost leadership strategy influences a company's competitiveness, which implies that the more a company leads costs in an industry, the higher the level of competitive leverage over competitors.

The strategic implementation of cost leadership is essential when it comes to making decisions to increase profitability effectively. In the era of a competitive business environment, it is important to implement cost leadership strategies as a means to gain a competitive advantage and increase profitability levels effectively. Cost and quality leadership is very important in accelerating business growth effectively (Roy, 2019). Research conducted by Islami et al. (2020) shows that Porter's generic strategies, namely cost leadership, differentiation, and focus, have a positive effect on company performance. Thus, the hypothesis in this research is:

H2: Business strategy has a positive effect on Competitiveness

Company size can significantly influence the company's financial aspects, which will influence competitive advantage (Liargovas & Skandalis, 2010; Dvouletý & Blažková, 2020; Lafuente et al., 2020). Size can have both destructive and beneficial effects on a company's competitive advantage (Dvouletý & Blažková, 2020). Moreover, company size has a positive and significant effect on company competitiveness. The analysis results reveal that company size has a certain impact on company competitiveness, namely that larger size is associated with higher competitiveness (Le Thanh et al., 2021; Park & Yoo, 2017). Thus, the hypothesis in this research is:

H3: Company size has a positive effect on Competitiveness.

2.2 Family Company Characteristics, Business Strategy, Size of Company, and Effectiveness of Internal Control

Maintaining effective internal controls is a basic requirement of a company's ongoing operations in a complex business environment. The effectiveness of successful internal controls is likely to enhance a company's growth, survival, and sustainability in a volatile competitive environment (Phornlaphatrachakorn & Kalasindhu, 2020; Shleifer & Vishny, 1997; Qaderi et al., 2024). Higher effectiveness of internal monitoring positively leads to better performance and success and longer survival in an organization (COSO, 2013; Wang et al., 2021; Kolsi & Al-Hiyari, 2024).

Li et al. (2019) examined the effect of internal control on company competitiveness, showing the negative effect of internal control on innovation. Firms with strong internal control are negatively associated with

innovative activity, especially in relation to exploratory innovation. Better internal monitoring plays a more prominent role in reducing innovative exploration activities in high-tech firms. Family companies have higher internal control material weaknesses than non-family companies (Bardhan et al., 2015; Galdeano & Olaverri, 2020; Oradi et al., 2020; Maqsood et al., 2024).

H4: Family Company Characteristics have a negative effect on the effectiveness of Internal Control.

Innovative business strategies create challenges for managers to design and implement effective internal controls, greater flexibility than differentiation business strategies in internal controls, and frequent modifications to controls (Chenhall, 2003; Koutoupis & Malisiovas, 2023). Overall, the complexity and level of company change in companies that choose a differentiation strategy relative to cost leadership (Henri, 2006). This suggests that developing adequate monitoring is more challenging for companies with a differentiation strategy than a cost leadership strategy.

Business strategy is a set of commitments and coordinated actions that a company uses to gain a competitive advantage by utilizing core competencies in certain product markets (Phongpetra & Johri, 2011; Dhar et al., 2022). Business Strategy creates value and designs plans to be different from other businesses. Business Strategy relates to strategic decisions such as product choice and market segments (Thompson et al., 2020).

H5: Business strategy has a positive effect on the effectiveness of internal control.

Smaller companies have more limited resources, including resources devoted to designing and implementing effective internal controls (Bryan et al., 2005). Internal control components, such as segregation of duties, are relatively more difficult to implement in small companies. Consequently, smaller companies have a higher risk of internal control weaknesses. Larger companies have more resources to design and implement effective internal controls. Managers of larger companies also have the responsibility to manage more resources than smaller companies.

Large companies have more resources, making it possible to allocate funds to internal auditors or consultants who can help strengthen internal control (Doyle et al., 2007; Cao et al., 2022). Thus, the hypothesis in this research is:

H6: Company size has a positive effect on the effectiveness of internal control.

2.3 Relationship of Effectiveness Internal Control and Competitiveness

Effective internal control must exist in all organizations to help achieve mission, performance, and profitability (Salehi & Bahrami, 2017; Jokipii, 2010). Ineffective internal control can affect operational efficiency through misstatement of operational costs (Cheng et al., 2018; Phornlaphatrachakorn & Kalasindhu, 2020). The company's actual performance is largely determined by the implementation of internal control policies, processes, and procedures (Krishnan, 2005). The internal control system is a vital action used by companies to improve the achievement of organizational goals and objectives, increase operational efficiency, strengthen the company's presence, and increase competitiveness (Aladejebi, 2018). Companies also realize the importance of internal control systems, which have been seen as a useful tool in maintaining the achievement of overall company goals and in increasing shareholder value (Aziz, 2013). In line with this, research by Tetteh et al. (2022) confirms that internal control has a significant and beneficial influence on business performance. Thus, the hypothesis in this research is:

H7: The effectiveness of internal control has a positive effect on competitiveness

2.4 Family Company Characteristics, Business Strategy, Size of Company, Competitiveness, and Effectiveness of Internal Control

A significant problem with family firms is that they pay less attention to performance and focus more on survival challenges (Kachaner et al., 2012), which results in overall declining firm performance. In such cases, any decline in performance requires the design of internal controls that can guide the company towards improvement (Suárez, 2017; Bennedsen et al., 2015; Amit et al., 2015). Neglect of the need for

a good governance structure by heads of family companies may be caused by overlapping ownership and control, thereby reducing differences in interests and information asymmetry (James et al., 2017; Zhang & Dong, 2023). Research has shown that family firms also require sophisticated governance structures to serve the interests of owners (Schulze et al., 2003; Fama, 1980; Villalonga et al., 2015; Leng & Zhang, 2024).

An effective internal control system is critical to family business results. In addition, managers, who are generally responsible for maintaining internal controls, not only need to understand the importance and influence of the system on performance as an indicator of the company's competitiveness, but also need to implement it effectively. Thus, the hypothesis in this research is:

H8: Family Company Characteristics have a positive effect on competitiveness through the Effectiveness of Internal Control.

Improving the company's internal control system is an overall dominant managerial function that integrates planning, corporate, motivation, analysis, and accounting functions. Internal monitoring can help link the company's tactics and strategic parameters flexibly with the goals for innovative development, which is seen as driving the company's competitiveness (Akhmetshin, 2017; Harasheh & Provasi, 2023). Strategy has a significant influence on the design of surveillance systems in various ways, depending on the class of strategy used (Otley, 2016; Bisbe & Otley, 2004; Yin et al., 2023).

A company's business strategy plays a special role in increasing a company's competitiveness (Krupskiy & Kuzmyska, 2020; Zhao et al., 2023). The research results obtained by Roy (2019) found that there is an influence of business strategy on company competitiveness. The implementation of a cost leadership strategy produces more benefits from the use of advantages related to increasing managerial efficiency so as to achieve a stronger competitive position. Through research conducted by Yuliansyah et al. (2017) shows that superior performance and competitive advantage can be achieved when an organization decides to pursue a differentiation strategy rather than a low-cost strategy. Thus, the hypothesis in this research is:

H9: Business strategy has a positive effect on Competitiveness through the Effectiveness of Internal Control.

Company size has both positive and negative influences on overall competitiveness. Larger-sized companies generally benefit from economies of scale, specialization, and diversification. Large companies access better quality capital and human resources and have higher negotiating power with investors stakeholders (Damoah, 2013; Hirsch et al., 2014). Other research shows that smaller company sizes can implement greater innovation, flexibility, and creativity (Nieto & Santamaría, 2010). The larger the company size, the better the business performance (Li & Zhu, 2015; Greve, 2010; Loderer & Waelchli, 2011).

Based on previous research that has been conducted, there are various factors that influence a company's competitiveness, including (a) Productivity (Stenborg et al., 2021; Rambe & Khaola, 2022) (b) Business strategy (Correia et al., 2020; Kankam-Kwarteng et al., 2019) (c) Corporate Social Responsibility (Madueño et al., 2016; Marin et al., 2017; Padilla-Lozano & Collazzo, 2022) (d) Innovation (Srivastava et al., 2017; Ivanová & Čepel, 2018; Sukumar et al., 2020; Hermundsdottir & Aspelund, 2021) (e) Internal Monitoring (Seifzadeh & Rowe, 2019; Tetteh et al., 2022) (f) Company Size (Aguilar-Fernández & Otegi-Olaso, 2018; Le Thanh et al., 2021; Santos & Castanho, 2022) (g) Leadership Competencies (Cong & Thu, 2021); (h) Characteristics of Family Companies (Razzak & Jassem, 2019; Azizi et al., 2021; Buchanan et al., 2022). Thus, the hypothesis in this research is:

H10: Company size has a positive effect on Competitiveness through the Effectiveness of Internal Control.

Based on the explanation above, the framework for this research can be structured as follows:

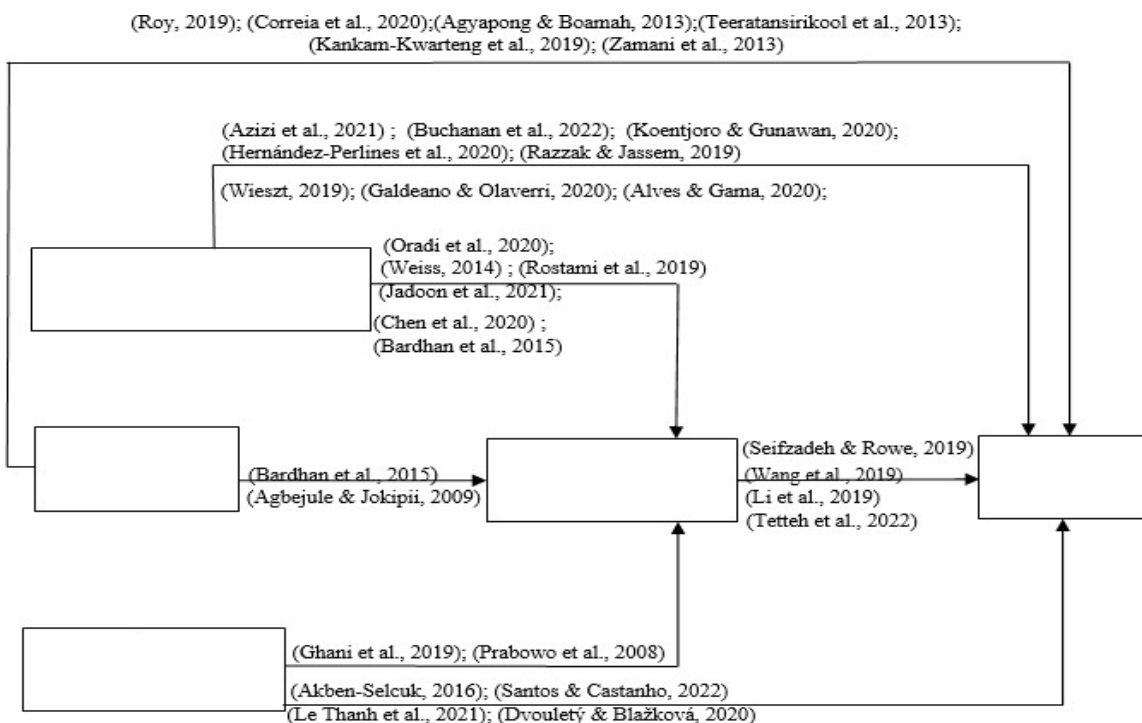


Figure 2.1. Research Framework

3. Research Method

A research design is a plan for collecting, measuring, and analyzing data created to answer research questions (Sekaran & Bougie, 2016). This research is causal. The data analysis in this study used the Structural Equation Model (SEM). This study used Partial Least Squares (PLS) as a data processing tool in the equation model with the help of WarpPLS software. The hypothetical deductive approach is adopted to come out with a hypothesis. There are 10 formulated hypotheses, which could be tested empirically.

The population used in this study (based on the Industry Directory of Central Statistics Agency in 2023) were all medium and large manufacturing companies in the form of Limited Liability Companies (PT) operating in North Sumatra Province. The sample used in this study was the entire population or saturated sample, which amounted to 692 companies. While, the family ownership is seen from the family and individuals as large shareholders or ultimate owners of the company who hold more than 10% of the voting rights (Sacristán-Navarro et al., 2011). This study sets a 10% ownership threshold to ensure that the family group owns a substantial proportion of the company's equity (Gomez-Mejia et al., 2010). This study uses a likert scale type in 5 scales. This study used a PLS to analyze the data (Hair et al., 2011).

The operational definition of each variable with its references is as follows:

1. Competitiveness (Y): Buckley et al. (1988); Buckley et al. (1990); Li (2000); Man et al. (2002); Ho (2005); Martinez et al. (2020).
2. Characteristics of Family Companies (X1): Berrone et al. (2012); Naldi et al. (2013); Hauck et al. (2016).
3. Business strategy (X2): Porter (1980); Luo & Zhao (2004); Zott & Amit (2008); Parnell (2010); Phongpetra & Johri (2011); Parnell et al. (2012).
4. Size of Company (X3): BPS (Central Statistics Agency).
5. Effectiveness of Internal Control (Z): COSO (2013)

4. Findings

The population of this study was all medium and large-scale manufacturing companies in the form of Limited Liability Companies (PT) operating in North Sumatra Province, totaling 692 companies.

Table 4.1. Total of Questionnaire

Particular	Total	%
Distributed Questionnaire	692	100
Unreturn Questionnaire	455	65.75
Return Questionnaire	237	34.25
Questionnaires that do not meet the criteria of family businesses	73	30.80
Processable questionnaire	164	69.20

Table 4.2 Profile of Respondents

	Total	%
Education		
Diploma	12	7,32
Bachelor Degree	131	79,88
Master Degree	21	12,80
<i>Total</i>	164	100
Length of Work		
1 year to 5 years	79	48,17
> 5 years	85	51,83
	164	100
Gender		
Male	77	47
Female	87	53
	164	100

4.1. Evaluation of Measurement Model (Outer Model)

4.1.1 Reliability Test

The measure used to measure the reliability of the indicator is by looking at the factor loading value of each construct indicator, which must be greater than 0.7.

Table 4.3 Loading Factor of Variables

No	Indicator	Loading Factor					<i>P Value</i>
		Family Business Characteristics	Business Strategy	Company Size	Effectiveness of Internal Supervision	Competitiveness	
1	KPK1.1	-0.703	-0.076	0.16	-0,112	0.135	<0.001
2	KPK1.2	-0.731	-0.057	0.135	0.01	0.028	<0.001
3	KPK1.3	-0.726	-0.052	0.019	0.062	-0.013	<0.001

No	Indicator	Loading Factor					P Value
		Family Business Characteristics	Business Strategy	Company Size	Effectiveness of Internal Supervision	Competitiveness	
4	KPK1.4	-0.741	0.075	0.123	0.042	-0.068	<0.001
5	KPK2.1	-0.708	-0.083	0.054	0.07	0.023	<0.001
6	KPK2.2	-0.729	0.11	-0.024	-0.026	-0.045	<0.001
7	KPK3.1	-0.714	0.1	-0.02	-0.055	-0.072	<0.001
8	KPK3.2	-0.739	0.041	-0.125	-0.037	0.003	<0.001
9	KPK3.3	-0.721	-0.149	0.063	0.06	0.151	<0.001
10	KPK4.1	-0.714	0.11	-0.02	0.019	-0.051	<0.001
11	KPK4.2	-0.706	-0.009	-0.096	0.098	-0.03	<0.001
12	KPK4.3	-0.731	-0.112	0.099	-0.05	-0.004	<0.001
13	KPK4.4	-0.723	0.084	-0.117	0.009	-0.094	<0.001
14	KPK4.5	-0.73	0.105	-0.085	-0.054	0.043	<0.001
15	KPK5.1	-0.75	0.015	-0.12	-0.165	0.057	<0.001
16	KPK5.2	-0.742	-0.106	-0.038	0.133	-0.059	<0.001
17	SB1.1	-0.016	-0.731	0.043	-0.061	0.032	<0.001
18	SB1.2	0.08	-0.713	0.132	0.034	-0.135	<0.001
19	SB1.3	-0.025	-0.764	0.152	-0.023	0.024	<0.001
20	SB1.4	0.002	-0.812	0.049	-0.145	0.134	<0.001
21	SB2.1	0.125	-0.747	-0.023	0.063	-0.118	<0.001
22	SB2.2	0.06	-0.832	-0.054	0.105	0.126	<0.001
23	SB2.3	-0.062	-0.767	-0.17	0.09	0.04	<0.001
24	SB2.4	-0.094	-0.73	0.064	-0.101	-0.003	<0.001
25	SB2.6	-0.149	-0.724	0.005	0.139	-0.044	<0.001
26	SB3.1	0.028	-0.759	-0.038	0.006	-0.147	<0.001
27	SB3.2	0.013	-0.786	-0.093	-0.043	0.002	<0.001
28	SB3.3	0.029	-0.726	-0.052	-0.064	0.057	<0.001
29	UP	0	0	-1	0	0	<0.001
30	EPI1.1	0.014	0.127	-0.014	-0.769	-0.104	<0.001
31	EPI1.2	0.054	0.154	-0.014	-0.755	-0.138	<0.001
32	EPI1.3	-0.026	0.073	-0.033	-0.785	-0.049	<0.001
33	EPI1.4	-0.064	-0.099	-0.026	-0.775	-0.01	<0.001
34	EPI1.5	-0.106	-0.069	0.142	-0.775	0.138	<0.001
35	EPI1.6	-0.038	-0.056	-0.043	-0.786	0.078	<0.001
36	EPI2.1	0.084	-0.012	-0.058	-0.814	0.026	<0.001
37	EPI2.2	-0.062	0.063	0.031	-0.812	0.07	<0.001
38	EPI2.3	-0.025	-0.044	0.006	-0.843	0.169	<0.001
39	EPI2.5	0.074	-0.072	-0.02	-0.784	-0.04	<0.001

No	Indicator	Loading Factor					P Value
		Family Business Characteristics	Business Strategy	Company Size	Effectiveness of Internal Supervision	Competitiveness	
40	EPI3.1	0.091	0.073	-0.109	-0.714	-0.08	<0.001
41	EPI4.1	0.025	0.057	-0.069	-0.714	-0.108	<0.001
42	EPI4.2	0.087	0.018	0.037	-0.749	-0.156	<0.001
43	EPI5.1	-0.044	-0.142	0.1	-0.743	0.067	<0.001
44	EPI5.2	-0.056	-0.064	0.07	-0.722	0.103	<0.001
45	DS1.1	0.306	-0.01	0.033	-0.065	-0.719	<0.001
46	DS1.2	0.422	-0.032	0.006	-0.103	-0.748	<0.001
47	DS1.3	0.255	0.017	-0.078	-0.006	-0.703	<0.001
48	DS2.1	0.271	-0.103	-0.02	-0.071	-0.774	<0.001
49	DS2.2	0.232	-0.033	0.024	-0.032	-0.801	<0.001
50	DS2.3	0.328	-0.006	-0.026	-0.139	-0.726	<0.001
51	DS2.4	-0.067	-0.048	-0.026	0.052	-0.749	<0.001
52	DS2.5	-0.018	0.052	0.014	-0.042	-0.749	<0.001
53	DS2.7	-0.21	0.034	0.047	0.042	-0.783	<0.001
54	DS2.8	-0.234	0.14	-0.002	-0.017	-0.765	<0.001
55	DS3.1	-0.202	0.057	0.121	-0.014	-0.764	<0.001
56	DS3.2	-0.13	-0.065	0.042	-0.074	-0.828	<0.001
57	DS3.3	-0.188	0.042	0.052	-0.043	-0.768	<0.001
58	DS3.4	-0.293	0.073	-0.031	0.081	-0.735	<0.001
59	DS3.5	-0.191	0.028	-0.025	0.092	-0.709	<0.001
60	DS3.6	-0.196	-0.083	-0.076	0.185	-0.733	<0.001
61	DS3.7	-0.054	-0.057	-0.074	0.17	-0.751	<0.001

Table 4.4 Composite Reliability

Variable	Composite Reliability
Family Business Characteristics (X1)	0.947
Business Strategy (X2)	0.942
Company Size	1
Effectiveness of Internal Supervision (Y1)	0.956
Competitiveness (Y2)	0.957

4.1.2. Validity Test

Validity testing can be done by looking at convergent validity through the recommended AVE value, which must be greater than 0.50, which means that 50% or more of the indicator's variance can be explained. Table below shows that the AVE value of each variable is greater than 0.50.

Table 4.5 Average Variance Extracted

Variable	AVE
Family Business Characteristics (X1)	0.527
Business Strategy (X2)	0.575
Company Size	1
Effectiveness of Internal Supervision (Y1)	0.593
Competitiveness (Y2)	0.568

While discriminant validity can be determined by comparing the square root of AVE with the correlation between constructs in the model. A good value is indicated by the square root of AVE for each construct being greater than the correlation between constructs in the model (Barclay et al, 1995).

Table 4.6 Comparison of the square root of AVE with the correlation between constructs

	FBC	BS	CS	EIS	C
FBC	-0.726	0.3	0.077	0.418	0.623
BS	0.3	-0.759	0.122	0.411	0.378
CS	0.077	0.122	1	0.045	-0.055
EIS	0.418	0.411	0.045	-0.77	0.512
C	0.623	0.378	-0.055	0.512	-0.754

4.2. Evaluation of Measurement Model (Inner Model)

Table 4.7 Model Fit and Quality Indices WarpPLS

No	Model Fit and Quality Indices	Fit Criteria	Result	Remarks
1	Average path coefficient (APC)	$p < 0.05$	0.240 ($P < 0.001$)	Accepted
2	Average R-squared (ARS)	$p < 0.05$	0.404 ($P < 0.001$)	Accepted
3	Average adjusted R-squared (AARS)	$p < 0.05$	0.392 ($P < 0.001$)	Accepted
4	Average block VIF (AVIF)	Accepted is ≤ 5 , Ideal is ≤ 3.3	1.200	Accepted
5	Average full collinearity VIF (AFVIF)	Accepted is ≤ 5 , Ideal is ≤ 3.3	1.499	Accepted
6	Tenenhaus GoF (GoF)	Small ≥ 0.1 , Middle ≥ 0.25 , Large ≥ 0.36	0.514	Large

No	Model Fit and Quality Indices	Fit Criteria	Result	Remarks
7	Simpson's paradox ratio (SPR)	Accepted if ≥ 0.7 , Ideal is ≤ 1	0.857	Accepted
8	R-squared contribution ratio (RSCR)	Accepted if ≥ 0.9 , Ideal is ≤ 1	0.999	Accepted
9	Statistical suppression ratio (SSR)	Accepted if ≥ 0.7 , Ideal is ≤ 1	0.857	Accepted
10	Nonlinear bivariate causality direction ratio (NLBCDR)	Accepted if ≥ 0.7 , Ideal is ≤ 1	1.000	Accepted

4.3 Path Coefficient Test

The path coefficient test is used to show the influence of independent variables on dependent variables. This test can be seen from the R-square and Q-square values in the table below:

Table 4.8 R-square dan Q-square values

Variable	R-square	Q-square
Family Business Characteristics (X1)	-	-
Business Strategy (X2)	-	-
Company Size (X3)	-	-
Effectiveness of Internal Supervision (Y1)	0.274	0.273
Competitiveness (Y2)	0.535	0.530

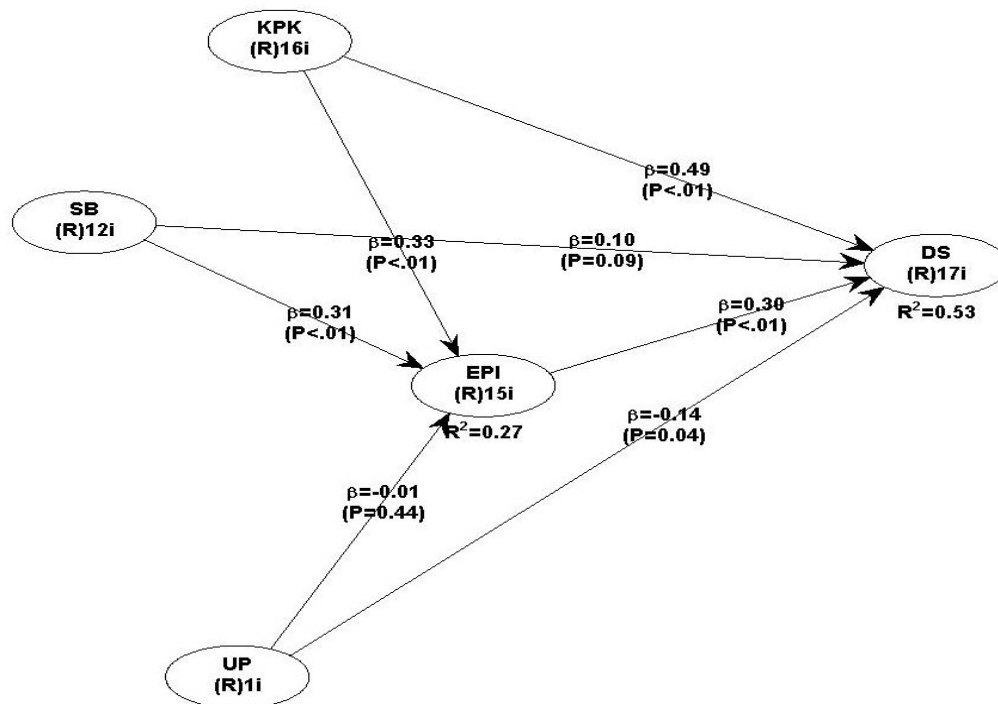
4.4 Hypotheses Test

Table 4.9 Results of Direct Influence Testing Between Variables

No	Relationship between variables	Coefficient	p-value	Remarks
1	Family Business Characteristics (X1) → Competitiveness (Y2)	0.494	<0.001	Positive effect
2	Business Strategy (X2) → Competitiveness (Y2)	0.105	0.086	No effect
3	Company Size (X3) → Competitiveness (Y2)	-0.136	0.038	Negative effect
4	Characteristics of Family Business (X1) → Effectiveness of Internal Supervision (Y1)	0.328	<0.001	Positive effect
5	Characteristics of Family Business (X1) → Effectiveness of Internal Supervision (Y1)	0.313	<0.001	Positive effect
6	Company Size (X3) → Internal Control Effectiveness (Y1)	-0.011	0.441	No effect
7	Internal Control Effectiveness (Y1) → Competitiveness (Y2)	0.296	<0.001	Positive effect

Table 4.10 Results of Indirect Influence Tests Between Variables

No	Indirect Relationship between Variables	Coefficient t	p-value	Remarks
1	Family Business Characteristics (X1) → Internal Supervision Effectiveness (Y1) → Competitiveness (Y2)	0.097	0.038	Mediated and significant
2	Business Strategy (X2) → Internal Control Effectiveness (Y1) → Competitiveness (Y2)	0.093	0.045	Mediated and significant
3	Company Size (X3) → Internal Control Effectiveness (Y1) → Competitiveness (Y2)	-0.003	0.475	Not mediated and not significant



In detail, the results of this study are as follows:

1. These findings demonstrate a positive and significant relationship between Family Business Characteristics and Competitiveness. These results support the first hypothesis (H1), which states that Family Business Characteristics have a positive effect on Competitiveness. The stronger the Family Business Characteristics, the higher the competitiveness that can be achieved. This influence is influenced by the concept of socio-emotional Wealth, which encompasses family values, traditions, and emotional attachments that enhance stability and collaboration.
2. The results indicate that there is no direct effect of Business Strategy on Competitiveness. These results do not support the second hypothesis (H2), which states that Business Strategy has a positive effect on Competitiveness. This conclusion reflects the complexity of the relationship between Business Strategy and Competitiveness, indicating that success in creating Competitiveness depends not only on strategic choices but also on various other interrelated factors.
3. The study found that Company Size has a negative effect on Competitiveness. These results do not support the third hypothesis (H3), which states that Company Size has a positive effect on

Competitiveness. Constraints such as operational complexity in large companies hinder success in achieving Competitiveness.

4. This study found that family business characteristics have a positive influence on internal audit effectiveness. This result supports the fourth hypothesis (H4), which states that family business characteristics have a positive influence on internal audit effectiveness. An effective audit system strengthens management and compliance with policies, helping companies maintain their reputation and efficiency.
5. This study shows that a well-designed and implemented business strategy has a positive influence on internal audit effectiveness. This result supports the fifth hypothesis (H5), which states that business strategy has a positive influence on internal audit effectiveness. Companies must ensure that the implemented strategy aligns with the audit system to create operational synergy.
6. This study indicates that company size has no influence on internal audit effectiveness. This result does not support the sixth hypothesis (H6), which states that company size has a positive influence on internal audit effectiveness. This study emphasizes that success in managing internal audit does not depend on company size, but on the effectiveness of the implemented audit strategy and processes.
7. This study clearly demonstrates that internal audit effectiveness has a positive and significant influence on company competitiveness. These results support the seventh hypothesis (H7), which states that internal control effectiveness has a positive effect on competitiveness. A strong internal control system helps companies better manage risk, improve operational efficiency, and ensure regulatory compliance, which ultimately contributes significantly to competitiveness.
8. This study found that family firm characteristics have a positive effect on competitiveness through internal control effectiveness. These results support the eighth hypothesis (H8), which states that family firm characteristics have a positive effect on competitiveness through internal control effectiveness. This finding confirms the importance of family values in creating a control system that strengthens competitiveness.
9. This study found that although the direct effect of business strategy on competitiveness was insignificant, internal control effectiveness served as a mediator, increasing the effect of business strategy on competitiveness. These results support the ninth hypothesis (H9), which states that business strategy has a positive effect on competitiveness through internal control effectiveness. This means that an appropriate business strategy requires the support of an effective internal control system to truly optimize its impact on a company's competitiveness.
10. The results of the study indicate that company size does not affect competitiveness through the effectiveness of internal supervision. This result does not support the tenth hypothesis (H10), namely that company size has a positive effect on competitiveness through the effectiveness of internal supervision. Although company size can provide access to more resources, it is not enough to increase competitiveness without the support of an effective internal supervision system.

5. Discussion and Conclusion

This research tries to analyze the role of internal control effectiveness in minimizing agency conflicts in family companies, implementing better business strategies and controlling and strengthening efficient governance, especially in medium and large-scale companies which have quite complex structures in order to increase the company's competitiveness.

Effective internal control can reduce family cohesion through establishing an appropriate culture. This can be achieved by the design and implementation of supervisory policies and procedures, and through close monitoring of internal supervisory processes by internal and external auditors. Although effective

internal controls cannot completely rule out the risk of overriding and entrenching family ownership, they can detect and limit family safeguards more than ineffective internal controls can (Chen et al., 2020; Agbejule & Jokipii, 2009; Donaldson, 2001). Thus, through effective internal control, family companies are expected to be able to increase their competitiveness. Internal control is not only related to the efficiency of investment and operations in a company, but also to the efficiency of resource allocation, together influencing sustainable growth Cheng et al. (2018), thereby encouraging the company's competitive advantage.

An effective monitoring system can increase sustainable competitive advantage for the company. The research also is a combination and development of various previous studies such as Le Breton-Miller & Miller (2015); Dvouletý & Blažková, (2020); (Zamani et al., 2013); (Bardhan et al., 2015); Goode et al, (2017); (Ghani et al., 2019); (Wang & Wang, 2019); (Berrone et al., 2012); (Hauck et al., 2016) and others. This study makes a unique contribution by integrating the concept of socioemotional wealth into the analysis of family firm competitiveness, an approach still rarely recognized in the accounting literature. By recognizing that emotional factors and interpersonal relationships can influence strategic and operational decisions, this study suggests that managing emotional aspects not only benefits internal relationships but also promotes more effective management accounting. This study also highlights that managing emotional aspects can influence management accounting reporting, reflecting the firm's long-term values and goals. Although there is no direct data on the reporting process, this approach provides a new perspective on how emotional factors play a role in managerial decision-making. Overall, this study opens the door to further research that could empirically substantiate this link and provide in-depth insights into how emotional management can enable firms to more effectively address challenges and capitalize on opportunities in a competitive marketplace.

This study adopts an analytical framework that considers three dimensions simultaneously (performance, processes, and competitive potential), providing a comprehensive perspective on firm competitiveness. Unlike many previous studies that focus on only one or two dimensions, this approach provides a novel contribution to the existing literature. This study also highlights the mediating role of Internal Audit Effectiveness. The findings suggest that family firms need to implement an effective internal audit system to improve information accuracy and transparency, which in turn strengthens competitiveness. Furthermore, Internal Audit Effectiveness was shown to mediate the effect of Family Ownership Characteristics, such as Socioemotional Wealth and Business Strategy, on Competitiveness, indicating that internal audit not only improves efficiency but also optimizes the positive influence of family ownership and appropriate strategies.

The novelty lies in a deeper understanding of the dynamics of internal audit within the context of firm size. This research provides insight that in a medium-sized company environment, flexible and adaptive internal audit can optimize the potential of family firm characteristics and business strategies to create stronger competitiveness. On the other hand, in large companies, the complexity of organizational structures and more rigid audit procedures tend to limit the room for innovation and adaptation. This limitation explains why Internal Audit Effectiveness cannot mediate the positive impact of family firm characteristics and existing business strategies on competitiveness.

Thus, this research not only emphasizes the importance of internal audit in supporting competitiveness but also shows that the context of firm size plays a crucial role in determining the effectiveness of this role. These findings pave the way for further research on how large companies can overhaul or adapt their internal audit systems to enhance competitiveness in an increasingly competitive marketplace.

Declarations

All authors declare that they have no conflicts of interest.

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