



# The Impact of Demographic Factor on Malaysia's Small and Medium-Sized Family Enterprises Performance: Insights from a Partial Least Squares Analysis

Nor Razuana Amram<sup>1</sup>, Noor Hidayah Zainudin<sup>2</sup>, Hasroloffendy Hassan<sup>3</sup> and Norhafizah Abdul Halim<sup>4</sup>

<sup>1,3,4</sup> Faculty of Business and Management, Universiti Teknologi MARA Kedah Branch, Sungai Petani Campus, 08400 Merbok, Kedah, Malaysia

<sup>2</sup> USAS Takaful Academy, Universiti Sultan Azlan Shah, Kuala Kangsar, 33000, Malaysia  
razuana@uitm.edu.my

**Abstract.** Small and Medium-sized Family Enterprises (SMFEs) encounter significant challenges in optimizing their business performance. Therefore, this research aims to explore the impact of demographic factors on the performance of these enterprises. The research utilizes Partial Least Squares-Structural Equation Modeling (PLS-SEM) as the analytical approach that based on data gathered from 399 respondents from the general populace in sampled regions with stratified sampling 2023. The results show that the demographic factors namely owner position, gender, age, and formal education had an insignificant relationship with SMFE performance on whole model basis but independently, owner position significantly influenced SMFE performance during the period under review. The position of the owner, gender, age, and formal education were not assessed directly but were looked at as factors affecting SMFE performance. They further suggest adopting training development approaches integrating education, mentoring, and intergenerational collaborations to create a demographic mythology. Policymakers should align these with the Twelfth Malaysian Plan, which focuses on education for future leadership development in rural areas and qualitatively raising SMFE contributions to Gross Domestic Product (GDP). Hence, future studies should explore the regional and cultural differences that may affect demographic impacts on business performance, particularly in family-owned SMEs.

**Keywords:** Demographic factors, Business performance, Partial Least Squares (PLS), SMFEs

## 1 Introduction

Small and Medium Family Enterprises (SMFEs) are the backbone of an economy's growth and sustainability in one country. According to Omar (2017), the development of family entrepreneurship in a country is closely linked to SMEs' creation and business activities. Bumiputera SMFEs refer specifically to SMEs in Malaysia owned and operated by the Bumiputera ethnic groups (SME Corporation Malaysia, 2022).

Therefore, entrepreneurship is an important issue highlighted in the National Transformation Plan as a means of social and economic change. Kuratko and Audretsch (2022) defined entrepreneurship as raising national wealth by stimulating economic growth, creating additional jobs and contributing to the general public's standard of living. In other words, entrepreneurship encourages the formation of innovative, productive, and fast-growing enterprises. The growth of a country's economy relies on the efforts of its entrepreneurial people. Individuals, communities, and governments reap economic and social benefits when entrepreneurial spirit is encouraged (Mokhber et al., 2017).

According to Maseda et al. (2019), a family business is an asset that should be transferred from generation to generation, and families must have a strong interest in business continuity. In contrast, Lwango et al. (2017) and Omar (2017) defined the criteria established for a family business as one run solely by family members, which explains the differences between family and non-family businesses. Moreover, family businesses are seen as a source of pride and security, with many families viewing entrepreneurship as a means of accumulating wealth and providing for future generations (Chaudhary et al., 2021).

A survey by Calabrò and Valentino (2019) revealed that family businesses contributed 9% to the European Gross Domestic Product (GDP) under the STEP Project Global Consortium (SPGC), European Family Business (EFB), and Klynveld Peat Marwick Goerdeler (KPMG) program. The program encouraged more family members to work in businesses sectors where it increases the household income and enhance the country's GDP growth (Calabrò & Valentino, 2019).

In Malaysia, SMEs contribute over a third of the GDP and provide job opportunities for over four million workers (Bank Negara Malaysia, 2021). In Malaysia, 98.5% of business establishments are SMEs (Mokhber et al., 2017). In 2019, the GDP of SMEs increased by 5.8% where it contributes to Malaysia's overall GDP growth of 4.3% (Department of Statistics, 2023). Recognizing the significance of SME family businesses, the Malaysian government has introduced numerous initiatives as well as policies to foster their growth and advancement under the Twelfth Malaysia Plan. These initiatives include financial assistance, tax incentives, training programs, and access to technology and markets (SME Corporation Malaysia, 2022). Overall, SMEs and family businesses are crucial contributors to Malaysia's economy, and their success is vital for the country's sustained economic growth and prosperity (Department of Statistics, 2023). Therefore, SMEs play a pivotal role in economic development and growth (Muneer et al., 2017).

In SME businesses, family members should ensure stable business performance through the family members involvement. According to Mokhber et al. (2017), effective demographic factors can directly impact overall business performance. Therefore, the corresponding business performance issue is addressed in this study through The Twelfth Malaysia Plan and the National Entrepreneurship Framework (NEF, 2030). The Twelfth Malaysia Plan outlines programs developed by the Ministry of Entrepreneur Development (MED) to support SMEs and business entrepreneurs (Ministry of Economy, 2020). According to the Ministry of Economy (2020), the programs can be categorized as: (1) funding; (2) research grants; (3)

training and capacity building; (4) infrastructure/business premises/equipment; (5) technology; (6) market access; (7) social enterprise; and (8) globalization.

## 2 Literature Review

It is noteworthy that Rey-Martí et al. (2023) concluded that demographic factors such as age, education, gender, educational background and entrepreneur experience directly impacted SME business performance. These factors are highly recognized and influenced the increase in SME business performance. The ownership position will affect the decision-making and resource allocation activities of the organization. Gundlach & Sammartino (2019) asserted that older entrepreneurs are often in their leadership roles with years of experience and networks, which are required to navigate market challenges as well as leverage resources. On the other hand, Ali et al. (2023) ardently highlighted that the position of persons belonging to an organization significantly influenced the performance of SMEs owing to the direct integration of strategy implementation.

Alene (2020) explored women's gender as a factor contributing to business performance in Ethiopia. Thus, the results show that the factors influencing business performance were level of education, entrepreneur experiences, financial access, government support, land ownership, and tax rights. Other entrepreneurs' experiences also influence factors that can enhance young entrepreneurs' attachment to higher levels of adapting in the digital era (Khosravi et al., 2022). Ali et al. (2023) found that the age of an entrepreneur is the main factor contributing to SME business performance. According to Zhao et al. (2020), entrepreneurs of the young age were more talented and aggressive, representing businesses' competitive advantage in the market by adopting new technology. Subsequently, old-age entrepreneurs were also the main players in business because they have a lot of experience, are knowledgeable, have large networks, and a decision-makers in business management (Gundlach & Sammartino, 2019; Alemu & Dame, 2016). Therefore, a mix of age in organizations will help businesses grow and increase their performance.

Additionally, the educational background is also a factor that shapes decision-making and technical expertise that will impact the business performance of the SME (Acs & Lippi, 2021). Thus, this study realizes that demographics are important in increasing business performance. Hence, this research aims to investigate the impact of demographic factors on the business performance of SMFEs.

## 3 Methodology

This study examined SME business owners in Perlis, Kedah, Terengganu, and Kelantan in Peninsular Malaysia. It focused on family owners or managers from these family businesses. The target population included 163,694 registered businesses under SME Corporation Malaysia as of December 31, 2023, from different industries and states, as shown in Figure 1. The study sample comprised 399 (Krejcie & Morgan,

1970), randomly chosen respondents using stratified sampling. The analysis employed Partial Least Squares-Structural Equation Modeling (SEM) as its framework.

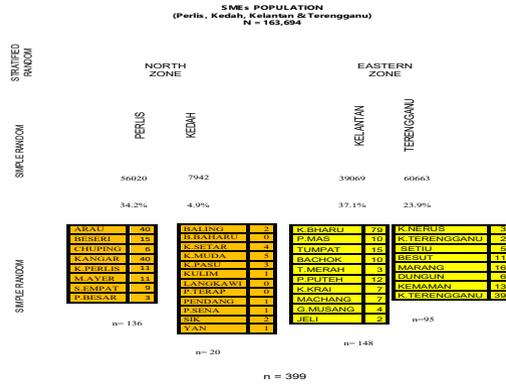


Figure 1: Across various industries and states

## 4 Result

The formative measurement model was evaluated based on convergent validity, indicator collinearity, statistical significance, and indicator weight significance, as recommended by Hair et al. (2017). Convergent validity was measured at 1.0, reflecting a correlation greater than 0.70 among demographic components. Correspondingly, the Variance Inflation Factor (VIF) value was below 3, indicating no collinearity issues (Figure 2).

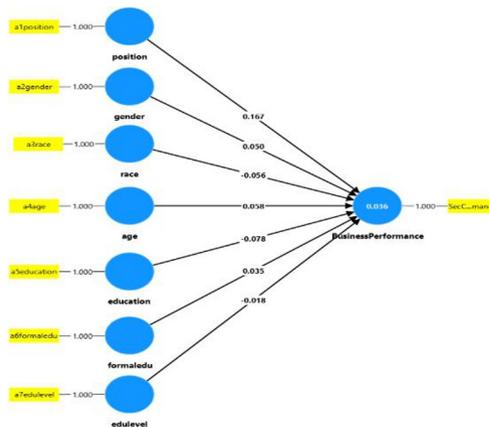


Figure 2: The measurement model

The next step involved assessing the statistical significance as well as the relevance of indicator weights. Since PLS-SEM is a nonparametric approach, bootstrapping was employed to determine statistical significance. After verifying the statistical significance with regard to the indicator weights, their relevance was assessed. The weights were typically normalized to a range between -1 and +1, though extreme values outside this range may occur, often suggesting potential issues like collinearity or limited sample sizes.

A value near 0 suggests a weak relationship, while values nearing  $\pm 1$  represent strong positive or negative relationships. The model exhibited a confidence interval for weights; all indicators reached 1.0, signifying statistical significance and relevance. After successfully evaluating the measurement model, the structural model was analyzed based on criteria such as the Coefficient of Determination ( $R^2$ ) cross-validated redundancy ( $Q^2$ ) using the blindfolding technique, as well as the statistical significance and relevance of the path coefficients. Additionally, the PLSpredict procedure was employed to assess the model's predictive capability.

Note that  $R^2$  represents the proportion of variance explained by each endogenous construct, indicating the model's explanatory strength.  $R^2$  values of 0.75, 0.50, and 0.25 are classified as substantial, moderate, and weak, respectively (Hair et al., 2011). However, acceptable  $R^2$  thresholds vary by discipline. For instance, in financial studies, an  $R^2$  of 0.10 may suffice. This study's  $R^2$  value was 0.036, indicating low explanatory power. This suggests that while demographic composition statistically substantially affected business performance, the effect was weak. Among the model's dimensions, the location factor demonstrated the strongest relationship, with a value of 0.167 (Figure 3).

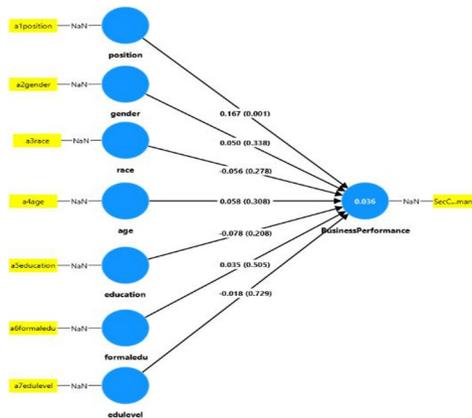


Figure 3. The structural model

Consequently, predictive accuracy was further assessed through the  $Q^2$  value. The blindfolding technique predicted missing data points, with smaller discrepancies between predicted and actual values reflecting higher predictive accuracy. For PLS models,  $Q^2$  values greater than 0 indicate low predictive accuracy, whereas values of

0.25 and 0.50 indicate medium and high accuracy, respectively. This study's  $Q^2$  value was -0.001, indicating negligible predictive accuracy.

Additionally, the model's predictive power was evaluated using PLSpredict, comparing predictive error metrics such as the Root Mean Square Error (RMSE) as well as the naive Linear Model (LM) benchmark. Both the RMSE and LM values were 0.602. If the RMSE value does not exceed the naive benchmark, the model demonstrates strong predictive capacity. Correspondingly, while the model displayed high predictive power in some respects, its overall predictive accuracy was low, as reflected in the  $Q^2$  value.

## 5 Discussion

Based on the above finding, the results show a weak relationship with the explanatory power ( $R^2 = 0.036$ ). A weak relationship is shown between the demographic factors (position, gender, age, and formal education) and SME business performance. The results indicate that the position dimension had a strongest relationship with business performance (0.167). This finding is corresponding to Zhao et al. (2020) which concluded that the strengths of different positional leaders provide strategic direction, and younger leaders drive innovation (Zhao et al., 2020). Therefore, in family businesses, positions are often inherited or based on familial roles rather than merit.

Age significantly influences SME performance by shaping entrepreneurial capabilities. Ali et al. (2023) identified entrepreneurial age as a key factor influencing SME performance. According to Zhao et al. (2020), mixed up of younger and older entrepreneurs could strengthen SME performance where different level of age groups within the family businesses provides a great innovation and experience hence driving a better performance. Gender serves a substantial role in the performance of SMEs particularly in the context of family-owned businesses. Women entrepreneurs often bring unique advantages vital for SMEs competing in dynamic markets (Zhao et al., 2020). On the other hand, female entrepreneurs often excel in building relationships and networks where it plays a critical components for sustained business growth (Gundlach & Sammartino, 2019; Ali et al., 2023).

Formal education shapes an entrepreneur's capabilities (Alene, 2020). A higher level of formal education often correlates with better business outcomes. Meanwhile, Maseda et al. (2019) found that formal education is critical for leaders in positions of authority, as it enhances their ability to integrate modern business practices with traditional methods. Therefore, entrepreneurs with formal education are more likely to adopt new technologies, which drives competitive advantage (Zhao et al., 2020).

## 6 Conclusion

As a conclusion, this study displays that when combined together, demographic factors have a weak influence on business performance but single demographic like owner position could significantly affect the SMFEs performance. This study implies

that family-owned SMEs performance could be enhanced by emphasizing on key positions through leadership trainings. Align with Malaysia's Twelfth Plan, the targeted programs that relate to education, leadership, and gender inclusivity can boost SMEs' contribution to the economy. Further studies should explore the regional and cultural differences that may affect demographic impacts on business performance, particularly in family-owned SMEs.

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