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FACTORS INFLUENCING BUSINESS GROWTH AMONG MICRO, SMALL, AND MEDIUM-SIZED (MSMES) BAKERY ENTERPRISES IN NORTHERN MINDANAO PHILIPPINES

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ABSTRACT

This study aimed to examine the factors influencing business growth among 113 micro, small, and medium-sized (MSMEs) bakery enterprises in Northern Mindanao, such as in Lanao del Norte and Misamis Oriental, Philippines. Using a descriptive-quantitative research design, business growth was assessed based on year-on-year changes in sales, income, assets, and employment. Data was collected through structured surveys and analyzed using multiple linear regression estimated through the Ordinary Least Squares (OLS) method. The results indicate that entrepreneurial human capital (β = 0.1392, p = 0.050) and distribution channels (β = 0.228, p = 0.045) exert statistically significant and positive effects on business growth. The adjusted R-squared value of 0.872 indicates that 87.2% of the variance in business growth is explained by the predictors included in the model, reflecting a strong model fit and high explanatory power. Descriptive findings further reveal that 100% of respondents operate physical brick-and-mortar stores, while only 10.6% utilize online platforms for sales and marketing. In addition, 34.5% of the bakery enterprises sell through alternative outlets, and only 20.4% distribute their products through third-party vendors. These results suggest a continued reliance on traditional direct-to-consumer sales methods, with limited integration of digital or e-commerce strategies. The entrepreneurial human capital yielded an overall mean score of 3.50 (SD = 0.73), indicating that bakery owners or managers possess a solid foundation of entrepreneurial skills and knowledge. Notably, key attributes such as prior experience, relevant education, family business exposure, agility, adaptability, and technological complementarity were strongly associated with business growth. These findings reinforce the vital role of entrepreneurial human capital in navigating business challenges and leveraging growth opportunities. Future research should consider employing longitudinal and comparative case study designs to examine causal relationships and temporal patterns in MSME growth. It is also recommended to explore the impact of digital transformation readiness, government support mechanisms, and innovation capacity, particularly in enhancing competitiveness and sustainability of bakery businesses in emerging economies. Such approaches will provide richer insights into how MSMEs can scale and thrive in a rapidly evolving market landscape.

Key words: Bakeries, business growth, distribution channels, entrepreneurial human capital, MSMEs

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INTRODUCTION

As global influences and changing dietary habits reshape food consumption, baked goods such as bread and pastries have gained prominence. These products, once considered snacks, have become integral components of daily diets [1]. In the Philippines, bakeries have traditionally served as the primary sources of baked goods. However, growing consumer demand has expanded the availability of these products beyond standalone bakeries and into restaurants, grocery stores, and other retail outlets [2]. This increased accessibility has driven substantial industry growth. For instance, the Philippines bakery industry is projected to grow by 5 percent annually, reaching a market value of approximately $2.5 billion by 2027. Consumption volume is also expected to reach 34.90 billion kilograms by 2028 [3]. These trends reflect the continued expansion and diversification of distribution channels in the bakery sector.

Historically, bakery businesses in the Philippines often began as family ventures fueled by a personal passion for baking. Skills were typically passed down through informal apprenticeships and hands-on experience. Over time, this informal system gave way to more structured training through vocational programs and specialized workshops. The establishment of the Technical Education and Skills Development Authority (TESDA), which offers the Bread and Pastry Production NC II qualification, helped formalize baking education. Private institutions such as Monster Kitchen and Sweet House also contributed by offering skills-based programs tailored to aspiring bakers and operators. These educational initiatives have played a vital role in professionalizing and strengthening the industry.

Among other types, the bakery sector was selected because it is both distinct and broadly representative of typical MSMEs in the Philippines. Bakeries are deeply rooted in local communities, relying on face-to-face transactions, customer loyalty systems such as the “suki” arrangement, and traditional retail operations. They also face common challenges experienced by MSMEs, including limited digital adoption, resource constraints, and exposure to external disruptions such as the COVID-19 pandemic. Government-imposed lockdowns and mobility restrictions during the pandemic disrupted in-person sales, compelling bakery owners to adjust their business models. In other sectors facing similar constraints, such as rice farming, practical marketing systems have emerged to reduce labor intensity and bypass post-harvest limitations by linking producers directly with buyers at the pre-harvest stage [4]. Although conditions have improved, the pandemic emphasized the importance of evaluating the resilience and performance of bakery enterprises, which often operate with limited resources. In addition, the sector illustrates informal-to-formal business progression, with many owners gaining experience through apprenticeships or family mentorship. These characteristics make bakery

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businesses an appropriate case for studying entrepreneurial human capital and distribution strategies in MSME development.

The pandemic's disruptive impact on consumer behavior and business models in tourism, retail, and higher education has been discussed in the literature [5] while supply chain vulnerabilities during COVID-19 led businesses to reassess their distribution strategies in the food sector [6]. While several studies have addressed the broader effects of the pandemic on other sectors including food businesses, limited research has focused on how distribution channels and entrepreneurial human capital have contributed to MSME bakery growth, particularly in provincial areas such as Misamis Oriental and Lanao del Norte. These provinces were selected for this study because they represent regional hubs for micro and small enterprises in Northern Mindanao, including a substantial number of bakery businesses that serve as essential sources of local employment and food supply. According to the Department of Trade and Industry, food-related MSMEs comprise a large portion of registered enterprises in these areas. However, many of these businesses face ongoing challenges such as limited access to digital infrastructure, weak institutional support, and underdeveloped distribution strategies. Despite their significance, bakery MSMEs in these settings remain underrepresented in existing literature. Conducting the study in these locations therefore provides a grounded and timely understanding of how distribution practices and entrepreneurial capacity shape MSME growth in underserved yet economically vital communities.

MATERIALS AND METHODS

Study Design

This study employed a quantitative approach to determine the influence of distribution channels and entrepreneurial human capital on the business growth of selected Micro, Small, and Medium-Sized bakeries in Northern Mindanao, Philippines. The quantitative method was selected utilizing descriptive research, which presents snapshots of the current situation, including the characterization of distribution channels, the extent of entrepreneurial human capital, and the business growth of the micro-, small-, and medium-sized bakeries.

Data Collection

A purposive sampling approach was used to identify qualified respondents. Inclusion criteria included: (1) operating as a bakery business between 2018 and 2024, (2) being registered or recognized by the local government or business associations, and (3) having a manager or owner specifically involved in the daily operations such as monitoring and tracking of the performance of the enterprise. The data used in the study was primary in nature, with quantitative data gathered through the direct administration of survey instruments to the respondents. The researcher only

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conducted the survey and the interview after given approval from the university's ethics board. Target population was identified using a combination of local business directories and actual visits of the areas. Bakeries included in the sample were operational during the full six-year period from 2018 to 2024 and were classified as micro, small, or medium enterprises based on the Department of Trade and Industry's (DTI) criteria for assets and employment. To ensure relevance, only those with consistent operations stores were included. A total of 200 bakeries were identified based on the criteria, and 113 provided complete and usable responses. Respondents were asked to provide estimates for key business indicators covering the years 2018 to 2024. To aid in recall accuracy, owners were encouraged to refer to business records or financial statements when available. Interviews ranged from 45 to 60 minutes, depending on the respondents' familiarity with their business history. Bakery businesses that opened after 2018 or closed before 2024 were excluded to maintain consistency in year-on-year growth comparisons.

Research Instrument

Data was gathered using a structured questionnaire developed specifically for the study. The instrument included closed-ended questions and Likert-scale items designed to capture (a) respondent and enterprise profiles, (b) perceived entrepreneurial human capital across five dimensions, (c) use of distribution channels, and (d) self-reported business growth based on changes in sales, income, employment, and assets over five years.

Data Analysis

Descriptive statistics (frequencies, means, and standard deviations) were used to summarize the characteristics of the respondents and bakery operations. Inferential analysis multiple linear regression via Ordinary Least Squares (OLS) estimation was used to examine the relationship between the dependent variable, business growth, and two independent variables: entrepreneurial human capital and distribution channels. Entrepreneurial human capital was measured through indicators such as the owner or manager's level of experience, family background, relevant education, agility and adaptability, and technological complementarity. Distribution channels were assessed based on the means used to get a baked product from a bakery to a customer whether through brick-and-mortar or click-and-mortar. Business growth, as the dependent variable, was measured in terms of reported changes in sales, income, assets, and number of employees over a six-year period.

The model was selected because it is appropriate for analyzing the linear relationship between multiple independent variables and a single dependent variable. This is mathematically expressed as:

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$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$

In this equation:

Y represents business growth,
X_1 and X_2 represent entrepreneurial human capital and distribution channels, respectively,
β_0 is the intercept,
β_1 and β_2 are the regression coefficients, and
ε is the error term.

This model allowed us to determine how these factors influence business growth among MSME bakery enterprises in Northern Mindanao. Furthermore, data was encoded in Microsoft Excel and analysis was conducted using Jamovi, an open-source statistical software that offers a user-friendly interface built on the R statistical language. This software was chosen for its accessibility, transparency, and reliability in performing essential statistical procedures, including multiple linear regression via the Ordinary Least Squares (OLS) method.

RESULTS AND DISCUSSION

Descriptive Statistics

Profile of the Bakeries

Table 1 shows the survey results from 113 businesses which reveals that a significant majority, 80.5%, have been operating for 5 to 10 years, indicating a relatively young business landscape. Most of these businesses are micro and small enterprises, with 54.9% classified as micro and 40.7% as small, based on employee count and asset size. In terms of estimated assets, 61.1% have assets less than 3 million pesos, while only 3.5% falls within the highest asset bracket of over 15 million pesos. Many businesses also operate with a lean workforce, as more than half (54.9%) have fewer than 10 employees, and just 4.4% employ over 100 workers. These figures highlight a predominantly micro and small business environment, characterized by modest assets, limited manpower, and relatively recent establishment.

MSME Bakeries Distribution Channels

Distribution Channel refers to the means used to get a baked product from a bakery to a customer whether through brick-and-mortar or click-and-mortar.

Table 2 shows that the brick-and-mortar model, where bakery products are sold through physical stores, remains dominant. All respondents (100 percent) reported having a physical outlet, though only 34.5 percent use additional channels, and 20.4 percent distribute to cafes or groceries. This reflects a preference for direct-to-

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consumer sales, influenced by cultural practices like the "suki" system and the benefits of in-person transactions such as quality control and customer feedback. The click-and-mortar model is rare, with only 10.6 percent using online platforms. Low digital adoption may stem from poor internet access, limited digital literacy, and the perception that physical store sales are sufficient.

Overall, 89.4 percent of bakery businesses rely exclusively on brick-and-mortar models, while only 10.6 percent use both physical and online platforms. These findings align with a study showing that just 16 percent of SMEs in Southeast Asia had adopted digital technologies [4], indicating that face-to-face operations remain dominant [6]. Other reports highlight low e-commerce adoption among Philippine MSMEs [7], with only 6.2 percent of micro, 14.6 percent of small, and 13.4 percent of medium enterprises going online as of 2015. Factors influencing this include a preference for existing models, data security concerns, and poor internet access [2]. Another study noted that managing both channels can be costly and may lead to internal competition, which could reduce overall sales performance [7].

Extent of Entrepreneurial Human Capital Attributes of MSME Bakeries

Entrepreneurial human capital refers to the owner or the manager attributes and was measured in terms of experience, family background, relevant education, agility and adaptability, and technological complementarity in the bakery industry. It shows an overall mean score ($\vec{x}$) of 3.50 (SD = 0.74) which implies that the bakery owners or managers possess a high-level foundation of entrepreneurial human capital. This finding is consistent with the work of [8], who found that human capital, particularly in the form of experience and education, significantly contributes to entrepreneurial success. It also emphasized the importance of agility and adaptability as critical competencies for entrepreneurs, particularly in dynamic and competitive markets such as the food industry [9].

Table 3 presents the results which indicate that 75.2 percent of respondents exhibited a high level of entrepreneurial competence, with 23.9 percent at a good level and only 0.9 percent slightly below average. The overall mean score ($\vec{x}$) of 3.74 and standard deviation of 0.459 reflect strong agreement on the value of experiential learning in bakery operations. Respondents highly agreed that working in a bakery develops strong management skills ($\bar{x}$ = 3.69, SD = 0.73) which highlights the role of hands-on experience, especially when formal education is limited [1]. This aligns with the theory of experiential learning, which posits that learning is most effective when grounded in concrete experience [10]. Further evidence emphasizes that entrepreneurs frequently acquire knowledge through direct involvement and critical incidents, rather than through formal instruction [8]. Similarly, it has been argued that entrepreneurial capabilities are often developed through learning-by-doing processes, reinforcing the relevance of experiential learning in small business

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environments such as bakeries [11]. Family background also contributed to entrepreneurial development. Lessons taught by family members ($\bar{x}$ = 3.48, SD = 0.91) had more influence than simply growing up in a family-run bakery ($\bar{x}$ = 3.00, SD = 1.27), underscoring the importance of active mentorship. Non-formal learning, such as seminars ($\bar{x}$ = 3.77) and short courses ($\bar{x}$ = 3.75), was rated more valuable than formal degrees ($\bar{x}$ = 3.25) [12].

Agility and adaptability received the highest ratings ($\bar{x}$ = 3.73), particularly in responding to customer preferences ($\bar{x}$ = 3.82). Technological complementarity ($\bar{x}$ = 3.63) was also seen as essential. These findings confirm that practical experience, adaptability, and access to skills-based training are key to building entrepreneurial competence among MSME bakery owners [13].

Business Growth

Due to inconsistent record-keeping among respondents, business growth indicators (sales, income, assets, and number of employees) were measured through self-reported changes over time. Respondents selected from ordinal categories representing general trends (such as increased significantly, remained the same, declined), which were numerically coded for analysis. While this approach lacks precision, it allowed for standardized responses across diverse enterprises. Future studies may benefit from collecting baseline figures to calculate more accurate growth rates relative to initial business size.

Business Growth of MSME Bakeries in Terms of Sales

The sales growth is a metric that measures the increase in a company's year-on-year revenue from selling bakery products over a span of 5 years. The overall mean sales growth ($\bar{x}$ = 1.92) reflects only modest gains in revenue among bakery enterprises over the past six years. This trend is consistent with previous findings, which reported incremental growth among Malaysian bakery SMEs, often attributed to limitations in marketing and operational capacity [14]. Similarly, slow growth is common among small enterprises in emerging markets due to limited resources and managerial capacity [15].

In contrast, studies have identified strong sales growth in SMEs that adopt innovative strategies or benefit from structured support systems [16,17]. These differences suggest that while many bakery businesses may experience stable yet modest growth, targeted interventions in innovation, training, and market access could significantly enhance performance.

Table 4 reveals a fluctuating growth trend in bakery sales over the years, reflecting the broader economic disruptions caused by the COVID-19 pandemic. From 2018 to 2019, bakeries posted average growth ($\bar{x}$ = 2.11, SD = 0.57). This was followed by a significant decline in 2019 to 2020 ($\bar{x}$ = 1.51, SD = 0.58), which remained nearly

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unchanged in 2020 to 2021 ($\bar{x}$ = 1.50, SD = 0.56). These consecutive years of low growth correspond with the peak of the pandemic and strict economic restrictions. A gradual recovery began in 2021 to 2022 ($\bar{x}$ = 1.82, SD = 0.55), continued from 2022 to 2023 ($\bar{x}$ = 2.30, SD = 0.77), and was sustained into 2023 to 2024 ($\bar{x}$ = 2.27, SD = 0.69), suggesting a stabilizing trend. This aligns with findings from Ruiz-Palomo *et al* [18] who reported that small businesses began recovering in late 2021 following sharp pandemic-induced declines, especially those that adapted their operations to new economic conditions.

These findings are consistent with national and international reports on the impact of the pandemic. In the Philippines, average sales revenue dropped by 64 percent between April and July 2020, with 89 percent of firms reporting continued reductions [12]. In March 2020, there was a 65 percent decline compared to February, with 75 percent of businesses affected. The World Bank reported sustained declines of around 55 percent as of November 2020. As restrictions eased, signs of recovery began to emerge.

Business Growth of MSME Bakeries in Terms of Number of Employees

The growth in the number of employees refers to the increase in regular or tenured employees working 8 to 10 hours daily over a span of six years, as shown in Table 12. With an overall mean ($\vec{x}$) of 1.63, this suggests that there was low growth in the increase of employees. This finding is consistent with reports that MSMEs struggled to rehire or expand their workforce post-pandemic due to financial constraints and demand uncertainty [18,19]. However, this modest employment growth contrasts with trends observed in more resilient or supported SME environments, where employment rebounded more strongly due to supportive policies and strategic adaptation [17,20].

The data shown in Table 5 reveal that bakery businesses experienced low employment growth beginning in 2018 to 2019 ($\bar{x}$ = 1.58, SD = 0.54), followed by a sharp decline in 2019 to 2020 ($\bar{x}$ = 1.23, SD = 0.42), coinciding with the onset of the COVID-19 pandemic. A slight recovery was observed in 2020 to 2021 ($\bar{x}$ = 1.38, SD = 0.48) and continued into 2021 to 2022 ($\bar{x}$ = 1.55, SD = 0.55), though growth remained relatively stagnant. A notable turnaround occurred in 2022 to 2023, with employment reaching an average level ($\bar{x}$ = 1.80, SD = 0.60), followed by stronger growth in 2023 to 2024 ($\bar{x}$ = 2.27, SD = 0.80), indicating renewed business confidence and improved hiring.

The sharp drop in employment from 2019 to 2020 aligns with the Department of Finance report, which noted that 48% of firms had downsized by mid-2020 [12]. It was also observed that although sales remained low, hiring showed early signs of recovery by May 2021 [12]. This improvement reflects the easing of lockdowns and

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a gradual return to normal operations. The National Economic and Development Authority reported a drop-in unemployment from 7.4 percent in October 2021 to 4.5 percent in October 2022, the lowest since the pandemic began [14].

Business Growth of MSME Bakeries in Terms of Income

The income growth is measured based on the year-on-year income change versus income of the bakeries within a 5-year period. The growth of the income of the bakeries is on the average as reflected on its overall mean ($\bar{x}$) of 1.90. This aligns with post-pandemic recovery patterns observed in small businesses across emerging economies, where income rebound is often gradual and shaped by limited market reach and disrupted supply chains [21]. However, other studies suggest that income growth can be more dynamic in enterprises with access to digital platforms, diversified offerings, or institutional support, leading to faster financial recovery [22]. The moderate level of income growth found in this study may point to constraints in these enabling factors.

Table 6 presents the six-year income growth trend of bakeries reveals a story of resilience and strategic adaptation in the face of economic turbulence. In 2018–2019, bakeries posted average income growth ($\bar{x}$ = 2.08, SD = 0.55). However, with the onset of the COVID-19 pandemic in 2019–2020, income levels dropped significantly ($\bar{x}$ = 1.42, SD = 0.59) and remained low through 2020–2021 ($\bar{x}$ = 1.48, SD = 0.54), reflecting the economic slowdown and operational restrictions experienced by many small enterprises during lockdowns [22].

Recovery began to take shape in 2021–2022, with income growth returning to an average level ($\bar{x}$ = 1.78, SD = 0.58). A stronger rebound followed in 2022–2023 ($\bar{x}$ = 2.30, SD = 0.76), and in 2023–2024, bakeries achieved their highest income growth rate ($\bar{x}$ = 2.51, SD = 0.69), entering the high-growth category. This pattern closely parallels the recovery in sales growth, suggesting that revenue generation and profitability progressively recovered as market conditions stabilized. This is supported by findings among European SMEs, where profitability trends closely followed sales recovery, particularly for businesses that implemented adaptive strategies during and after COVID-19 lockdowns [23].

However, income growth during the recovery period was tempered by rising production costs, particularly for essential baking ingredients. It was reported that refined sugar prices in the Philippines more than doubled, from ₱54.5 per kilo in 2020/2021 to ₱105 per kilo in 2022/2023. This surge placed significant pressure on bakeries' profit margins despite growing revenues.

Business Growth of MSME Bakeries in Terms of Assets

Asset growth reflects the movement in value of bakery-owned equipment, infrastructure, and tools. As shown in Table 7, an overall mean ($\bar{x}$) of 1.74 indicates

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low asset growth among bakeries. Asset growth reflects the change in value of bakery-owned equipment, infrastructure, and tools over time. As shown in Table 7, the overall mean ($\bar{x}$ = 1.74) indicates low asset growth among bakeries. This is consistent with findings that micro and small enterprises often delay or limit capital investments during economic uncertainty, prioritizing liquidity and survival over expansion of physical assets [24]. Low reinvestment in assets may also reflect constrained access to credit and limited government support during crisis periods [25].

From 2018 to 2019, bakeries reported average asset growth ($\bar{x}$ = 1.78, SD = 0.46), reflecting moderate investment. However, asset growth dropped sharply in 2019 to 2020 ($\bar{x}$ = 1.34, SD = 0.56) due to the COVID-19 pandemic. During this period, businesses prioritized survival, delaying acquisitions and minimizing expenditures.

This trend mirrors global conditions, with the bakery sector growing only 1% CAGR during the pandemic due to uncertain supply chains and market disruptions [3]. From 2020 to 2022, asset growth remained low as owners cautiously reinvested. A turning point emerged in 2022 to 2023 when asset growth reached average levels ($\bar{x}$ = 2.07, SD = 0.66), continuing into 2023 to 2024 ($\bar{x}$ = 2.16, SD = 0.71), signalling renewed confidence.

This recovery aligns with a projected 5% annual growth in Philippine bakery sales through 2027, driven by increasing demand and the growing role of digital channels [3]. The five-year asset trend reflects an initial contraction followed by a steady rebound, illustrating MSME bakeries' resilience and adaptability in aligning asset strategies with evolving market conditions.

Inferential Statistics

The dependent variable, business growth, was constructed by aggregating standardized scores across four dimensions: sales, income, assets, and employment. Each was measured using a 4-point Likert-type scale representing year-on-year trends based on respondent recall. Independent variables were defined as follows: (1) Entrepreneurial human capital was measured using a composite mean score across five components: prior experience, relevant education or training, family background in entrepreneurship, agility/adaptability, and technological complementarity, each rated on a 4-point scale. (2) Distribution channels were assessed based on the variety and type of platforms used, including physical stores, third-party vendors, and online outlets. These variables, while ordinal in nature, were treated as continuous proxies for the purpose of this exploratory analysis to allow for the identification of potential directional relationships with business growth.

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Although the analysis focused primarily on entrepreneurial human capital and distribution channels, the authors acknowledge that business growth is influenced by a broader range of factors. Prior empirical studies and theoretical perspectives (e.g., the Resource-Based View and Dynamic Capabilities Theory) suggest that variables such as access to finance, leadership style, employee training, technology adoption, customer loyalty, and business location can significantly affect firm performance. These factors were not included in the present model due to scope limitations but are recommended for inclusion in future research to build a more holistic understanding of MSME growth.

Influence of Distribution Channels and Entrepreneurial Human Capital Towards Business Growth

The regression model was applied in an exploratory capacity to assess the general influence of the selected independent variables on business growth. Given the use of composite and ordinal-scaled inputs, the model's outputs were interpreted with caution.

The adjusted R-squared value of 0.872 indicates that only 87.2% of the variance in the bakeries' business growth can be explained by the factors included in the study such as entrepreneurial human capital (P = 0.05), and distribution channels (P = 0.045).

However, the remaining 12.8% of the variation of the bakeries' business growth may be due to dimensions not included in this study that may be considered and recommended for further studies. For instance, factors as suggested by other research that could influence the business growth of the MSME bakeries are access to finance [17], initial capital [18], and government policies and support [19]. This unexplained variance is captured in the model's error ε is equal to 0.102 and we recommend that future research investigate these additional dimensions to enhance the explanatory power of the model. Among the three indicators, it was observed that both the entrepreneurial human capital (P < 0.05) distribution channel (P = 0.045) shows a statistically significant relationship with business growth. As the study adheres to a 5% significance level, only variables with p-values below 0.05 were considered to have statistically significant effects on business growth. Accordingly, while entrepreneurial human capital demonstrated significance, distribution channel did not meet this threshold.

The model as a whole has a statistically significant relationship with business growth, as evidenced by the low p-value (0.0001), indicating that the model explains a significant portion of the variance in business growth. Thus, the multiple regression model is:

BG = 45.08 + 0.139EHC + 0.228 5DC + 0.102

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In multiple linear regression, the beta (β) coefficients represent the change in the dependent variable, in this case, business growth, for a one-unit change in the respective independent variable, holding all other variables constant.

For entrepreneurial human capital, the beta was 0.1392, indicating that for every one-unit increase in entrepreneurial human capital, business growth is expected to increase by 0.1392 units. This positive coefficient suggests a direct relationship between entrepreneurial human capital and business growth. For distribution channels, the beta was 0.228, indicating that for every one-unit increase in distribution channel effectiveness, business growth is expected to increase by 0.228 units. While this relationship is positive, it is not statistically significant at the 0.05 level. Nevertheless, beta coefficients help gauge the direction and strength of relationships within the regression model.

These findings align with existing literature. Entrepreneurial human capital, especially family support and involvement, has been shown to improve business management. Family participation significantly impacts MSME performance [20,21], and experience enhances skills and knowledge, leading to improved outcomes [25,26]. Respondents in this study strongly agreed that experience contributes to business growth.

Agility and adaptability also play essential roles. Prior studies emphasize flexibility in navigating change and uncertainty [27,28]. The ability to respond swiftly to evolving environments allows MSMEs to sustain operations and remain competitive [29,30]. Adaptability is often cited as a core growth strategy [31], with fast decision-making positively linked to performance [32].

Innovation also plays a crucial role in MSME growth [33]. This is consistent with earlier findings [27,28]. One study reported that 56% of enterprises in the Philippines are product innovators, while 31% have introduced process innovations, both of which contributed significantly to business growth [34]. Other studies confirmed that innovation leads to improved income and profitability over time [35,36].

The study affirms that distribution channels directly affect growth. Their role in market expansion and visibility has been noted in prior studies [27,37]. However, challenges such as perishability, dependence on loyal local customers [38], unstable internet [39], and fear of online criticism [40] continue to limit digital adoption in bakery MSMEs.

These findings indicate that MSMEs led by owners with stronger entrepreneurial human capital, characterized by experience, adaptability, and technological readiness, are more likely to experience growth despite external shocks. Additionally, the significant influence of distribution channels suggests that access

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to diverse sales platforms can help reduce the risks associated with reliance on traditional brick-and-mortar operations.

CONCLUSION AND RECOMMENDATIONS FOR DEVELOPMENT

This study draws on the collective perceptions of respondents, supported by empirical research and literature, to analyze additional dimensions of business growth for MSME bakeries. The null hypotheses stating that there is no significant relationship between business growth and entrepreneurial human capital, and between business growth and distribution channels, are both rejected. The findings reveal that entrepreneurial human capital and innovation significantly influence business growth. Among entrepreneurial traits, experience stands out as a major factor in effective bakery management. Although formal academic credentials are not essential, competencies can be enhanced through training, seminars, and non-formal education. Agility and adaptability also emerged as crucial for overcoming disruptions, while innovation remains a key engine of sustained growth. Distribution channels were also found to significantly affect business growth. Most MSME bakeries still favor brick-and-mortar models due to the perishable nature of baked goods and the customer's preference for freshness, which is more easily assured in physical stores. This is reinforced by the "suki" system, which strengthens customer loyalty and fosters repeat purchases. Although online platforms offer new avenues for growth, their adoption is constrained by digital unfamiliarity, unstable internet, and uncertainty surrounding digital business models. From 2018 to 2019, MSME bakeries experienced average business growth, followed by a period of low growth between 2019 and 2022 due to the COVID-19 pandemic. Recovery became evident from 2022 to 2024, with bakeries responding better to market changes and gradually regaining momentum.

In light of these findings, the study recommends the following: bakery enterprise owners and managers should invest in continuous skills development to improve innovation and agility; government agencies such as the Department of Trade and Industry and Local Government units must expand capacity-building programs and launch digital literacy campaigns; training institutions should strengthen entrepreneurial education with practical, experience-based approaches; local business chambers should support peer mentorship and cooperative distribution initiatives; and infrastructure providers should enhance internet services to support digital sales platforms. Regular monitoring of innovation outcomes is also encouraged to inform strategy refinement and ensure long-term competitiveness and resilience among bakery enterprises.

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LIMITATIONS OF THE STUDY

This study has several limitations that should be considered when interpreting the findings. First, the data relied heavily on self-reported information, including recall of business performance over a five-year period, which may be subject to memory bias or estimation errors, especially among microenterprises with limited record-keeping. Second, the use of ordinal and composite indicators to measure variables such as business growth and entrepreneurial human capital, while practical in low-resource contexts, limits the statistical precision of the regression model. The analysis was therefore exploratory and intended to suggest general patterns rather than establish predictive or causal relationships. Third, the study did not incorporate qualitative data that could have provided richer insights into operational strategies, typologies of bakery enterprises, or adaptation behaviors during disruption. Finally, the sample was geographically limited to two provinces in Northern Mindanao, which may affect the generalizability of the results to other regions or sectors. These limitations are acknowledged as areas for refinement in future research, which may benefit from a mixed-methods approach, longitudinal tracking, and broader geographic scope.

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Table 1: Profile of the Bakeries (n=113)

Years in Operation	Frequency	Percentages (%)
5 - 10	91	80.5
11 - 15	13	11.5
16 - 20	3	2.7
21 - 25	2	1.8
26 - 30	3	2.7
>30	1	0.9
Total	**113**	**100**
Mean	**9.5 years**	
Standard deviation	**4.9 years**	
Estimated Assets (Philippine Peso)		
15,000,001 - 100,000,000	4	3.5
3,000,000 - 15,000,000	40	35.4
Less than 3,000,000	69	61.1
Total	**113**	**100**
No. of Employees		
100-199	5	4.4
11 - 99	46	40.7
<10	62	54.9
Total	**113**	**100**
Size of the Business		
Medium	5	4.4
Small	46	40.7
Micro	62	54.9
Total	**113**	**100**

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Table 2: Frequency and Percentage Distribution of Bakeries Distribution Channels (n=113)

Distribution Channels	Brick-and-Mortar	Click-and-Mortar	Total
Frequency (f)	101	12	113
Percentage (%)	89.38	10.62	100

Table 3: Frequency, Percentage, and Mean Distribution of the Owner or Managers' Extent of Entrepreneurial Human Capital (n=113)

Mean Range Score	Interpretation Description	*F*	Percentage (%)
3.26 – 4.00	High Level	85	75.2
2.51 – 3.25	Good Level	27	23.9
1.76 – 2.50	Slightly Below Average Level	1	0.9
1.00 – 1.75	Low Level	0	0
Total		113	100
Mean		3.5	
Description		High Level	
Std. Deviation		0.74	
Entrepreneurial Human Capital Indicator	Mean	SD	Description
Experience	3.38	0.99	High Level
Family Background	3.3	1.01	High Level
Related Education	3.47	0.732	High Level
Agility and Adaptability	3.73	0.46	High Level
Technological Complementarity	3.63	0.49	High Level

The interpretation of mean scores was based on standard Likert-scale categorization used in social science research (Best, 1977), where ranges are defined as follows: 3.26–4.00 = High, 2.51–3.25 = Good, 1.76–2.50 = Slightly Below Average, and 1.00–1.75 = Low. This classification was used to evaluate the strength of entrepreneurial attributes among respondents

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Table 4: Indicators of the Year-on-Year Business Growth in terms of Sales

No	Indicators	*Mean*	SD	Description
1	How have your business's sales changed in 2018 – 2019?	2.11	0.57	Average Growth
2	How have your business's sales changed in 2019 – 2020?	1.51	0.58	Low Growth
3	How have your business's sales changed in 2020 – 2021?	1.50	0.56	Low Growth
4	How have your business's sales changed in 2021 – 2022?	1.82	0.55	Average Growth
5	How have your business's sales changed in 2022 – 2023?	2.30	0.77	Average Growth
6	How have your business's sales changed in 2023 – 2024?	2.27	0.69	Average Growth
	Overall Mean	**1.92**		**Average Growth**

Notes:
1. Scale Used for Responses: 4 – Increased by more than 100%, 3 – Increased by 50% to 99%, 2 – Increased by 1% to 49%, 1 – No increase or reduction in sales
2. Interpretation of Mean Scores: 3.26–4.00 = Very High Growth, 2.51–3.25 = High Growth, 1.76–2.50 = Average Growth, 1.00–1.75 = Low or No Growth

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Table 5: Indicators of the Year-on-Year Business Growth in terms of Number of Employees

No	Indicators	*Mean*	SD	Description
1	What has been the trend in your employee numbers in 2018 – 2019?	1.58	0.54	Low Growth
2	What has been the trend in your employee numbers in 2019 – 2020?	1.23	0.42	Low Growth
3	What has been the trend in your employee numbers in 2020 – 2021?	1.38	0.48	Low Growth
4	What has been the trend in your employee numbers in 2021 – 2022?	1.55	0.55	Low Growth
5	What has been the trend in your employee numbers in 2022 – 2023?	1.80	0.60	Average Growth
6	What has been the trend in your employee numbers in 2023- 2024?	2.27	0.80	Average Growth
	Overall Mean	**1.63**		**Low Growth**

Notes:
1. Scale Used for Responses: 4 – Increased by more than 100%, 3 – Increased by 50% to 99%, 2 – Increased by 1% to 49%, 1 – No increase or reduction in sales
2. Interpretation of Mean Scores: 3.26–4.00 = Very High Growth, 2.51–3.25 = High Growth, 1.76–2.50 = Average Growth, 1.00–1.75 = Low or No Growth

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Table 6: Indicators of the Year-on-Year Business Growth in terms of Income

No	Indicators	*Mean*	SD	Description
1	How has the business income changed 2018 – 2019?	2.07	0.55	Average Growth
2	How has the business income changed 2019 – 2020?	1.42	0.59	Low Growth
3	How has the business income changed 2020 – 2021?	1.48	0.54	Low Growth
4	How has the business income changed 2021 – 2022?	1.78	0.53	Average Growth
5	How has the business income changed 2022 – 2023?	2.37	0.76	Average Growth
6	How has the business income changed 2023 – 2024?	2.51	0.69	High Growth
	Overall Mean	**1.94**		**Average Growth**

Notes:
1. Scale Used for Responses: 4 – Increased by more than 100%, 3 – Increased by 50% to 99%, 2 – Increased by 1% to 49%, 1 – No increase or reduction in sales
2. Interpretation of Mean Scores: 3.26–4.00 = Very High Growth, 2.51–3.25 = High Growth, 1.76–2.50 = Average Growth, 1.00–1.75 = Low or No Growth

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Table 7: Indicators of the Year-on-Year Business Growth in terms of Assets

No	Indicators	*Mean*	SD	Description
1	How have the business assets changed in 2018 – 2019?	1.78	0.46	Average Growth
2	How have the business assets changed 2019 – 2020?	1.34	0.56	Low Growth
3	How have the business assets changed 2020 – 2021?	1.57	0.56	Low Growth
4	How have the business assets changed 2021 – 2022?	1.60	0.54	Low Growth
5	How have the business assets changed 2022 – 2023?	2.07	0.66	Average Growth
6	How have the business assets changed 2023 – 2024?	2.16	0.71	Average Growth
	Overall Mean	**1.74**		**Low Growth**

Notes:
1. Scale Used for Responses: 4 – Increased by more than 100%, 3 – Increased by 50% to 99%, 2 – Increased by 1% to 49%, 1 – No increase or reduction in sales
2. Interpretation of Mean Scores: 3.26–4.00 = Very High Growth, 2.51–3.25 = High Growth, 1.76–2.50 = Average Growth, 1.00–1.75 = Low or No Growth

Table 8: Influence of Distribution Channels and Entrepreneurial Human Capital on Business Growth

Independent Variables	Beta	SE	T-value	Probability
Entrepreneurial Human Capital (EHC)	0.139	0.0695	2.00	0.05**
Distribution Channel (DC)	0.228	0.1132	2.015	0.045*
Constant	45.081			
SE	0.102			
Adjusted R-Square	0.872			
F-value	368.64			
P-value	0.0001			
BG = 45.08 + 0.139EHC + 0.228DC + 0.102				

Significant if p-value < 0.1, p-value < 0.05**, p-value < 0.01****

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