

Technopreneurial Dynamics: Unveiling Utilization and Confronting Challenges in Restaurants and Bars Across Surigao City, Philippines

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Abstract: This study strategically explores the technological landscape of restaurants and bars in Surigao City, Philippines, employing a purposive data sampling technique encompassing bars, restobars, and restaurants. The investigation dives into how these establishments utilize technology, considering demographic factors, the extent of utilization, and the challenges faced. The findings indicate a moderate level of technological utilization and challenges, with room for improvement to enhance business performance. Interestingly, the research unveils uniform experiences across various demographic profiles, emphasizing the need for universal strategies. Furthermore, it concludes that the challenges faced are independent of the extent of technological adoption, highlighting the importance of tailored approaches. In summary, the study offers valuable insights and practical recommendations for optimizing technological integration and overcoming challenges in business.

Keywords: Technopreneurship, demographic profiles, technological applications.

I. Introduction

In the ever-evolving landscape of contemporary business, entrepreneurship stands as a beacon for individuals and professionals navigating the complexities of establishing and sustaining enterprises. Beyond mere financial viability, the allure of entrepreneurship lies in its potential for growth, stable income, and a competitive edge. The ongoing technological revolution has ushered in a new era of opportunities, compelling businesses to adapt and leverage these advancements for sustainable success (Khin & Ho, 2019).

Global challenges, epitomized by the recent pandemic, have underscored the imperative for rejuvenation and innovative strategies (Sazzad et al., 2021). In this context, technology emerges as an indispensable tool, not just for job-seeking but also for the establishment and management of businesses online. This research aims to unravel the intricate relationship between technology and the food and dining industry, which is currently undergoing creative transformations worldwide. Whether through the integration of technology into traditional business models or the emergence of innovative, experience-centric ventures, technology has become an integral part of the food industry's evolution (Nosratabadi et al., 2020).

Focused specifically on Surigao City, colloquially known as the City of Island Adventures, this study delves into the economic challenges facing the locality, compounded by recent global events such as the COVID-19 pandemic and natural disasters like Typhoon Odette. The latter, making landfall in December 2021, caused widespread devastation, particularly within the municipality of Burgos, adversely affecting millions. Consequently, the local business landscape, ranging from street vendors to upscale restaurants, experienced substantial repercussions. Despite these pronounced adversities, this investigation underscores the remarkable resilience exhibited by small and medium enterprises (SMEs) in the food sector. These entities have demonstrated a capacity for gradual recovery and an adaptive response to technological transformations. Surigao City, renowned for its vibrant food culture and top tourist destinations, serves as a unique context for understanding how local food businesses navigate customer demands and ensure sustainability.

This research aims to identify the technological tools and applications employed by restaurant and bar owners, examining both the opportunities they present and the challenges they pose in the context of Surigao City's economic landscape. The study also explores the utilization of electronic payment systems, online banking, and the integration of online delivery services like Food Panda and Maxim Delivery as key components of technological adaptation.

Additionally, it investigates the role of social media and product innovation in marketing, showcasing how businesses leverage free-to-download tools to reach a wider customer base. Through this comprehensive research endeavor, the study aims to contribute invaluable insights into the journey of Surigao City's food businesses. By shedding light on the transformative power of technology in the face of adversity, this research illuminates the pivotal role of technological innovation in the pursuit of economic revitalization and sustainable growth.

1.1 Framework of the study

This study was anchored in the Technology Acceptance Model (TAM), a theoretical framework widely employed to examine individuals' perceptions influencing their intent and actual use of specific technologies. TAM, conceptualized through the lenses of perceived usefulness and perceived ease of use, provides a comprehensive understanding of user attitudes toward a system, shedding light on both behavioral intention and behavioral use of the technology (Davis, 1989). Building upon this theoretical foundation, the study draws inspiration from "A View of Technology, Innovations and Entrepreneurship" by Fowosire, Idris, and Opoola, emphasizing the fusion of technology and entrepreneurship, particularly relevant to the fast-developing restaurant and food business sector.

Considering the increasing reliance on technology in the industry, this research aims to explore the utilization and challenges faced by restaurants and bars in integrating technological applications. As customers align themselves with technological updates and trends, the adoption of software applications becomes both a necessity and a challenge for restaurant businesses striving to innovate. The study seeks to unveil the intricacies of these challenges, viewing them as opportunities for improvement within the restaurant and hospitality sector.

The rationale behind conducting this study lies in the imperative for restaurant and bar businesses to enhance operations and boost sales in the face of evolving technological landscapes. By delving into Technopreneurship, the study aims to identify the benefits and opportunities this approach brings to the restaurant and hospitality industry. The surge in technological advancements, including the introduction of apps, digital kiosks, and self-service technologies, presents a transformative trend in the Food and Beverage (F&B) industry (Cavusoglu, 2019).

This study holds practical implications for a diverse audience, including restaurant and bar business investors, the local community, future researchers, and hospitality management practitioners. The findings are intended to inform strategic decision-making, foster technological innovation, and contribute to the overall growth and sustainability of businesses in the sector. The outcomes will be formally endorsed to the Department of Trade and Industry, offering actionable insights for industry stakeholders and policymakers.

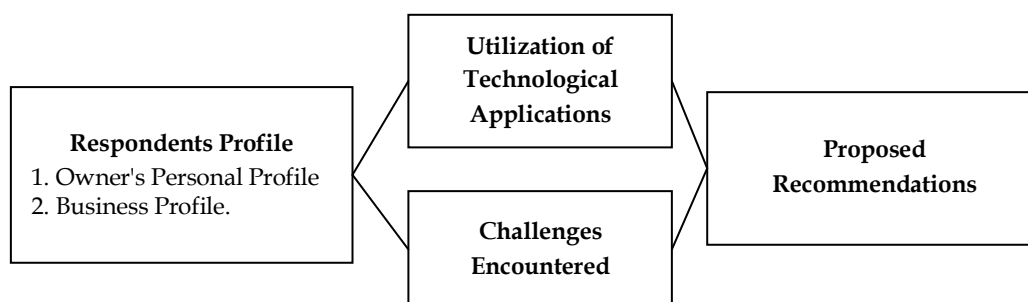


Fig -1: Research Paradigm

1.2 Statement of the Problem

This study aims to explore the ever-changing terrain of restaurant and bar businesses in Surigao City by investigating key aspects. It delves into the demographic profiles of owners/managers, the depth of technological integration, and the challenges faced in this dynamic sector. These questions are thoughtfully crafted to offer a comprehensive insight into how technological use, demographic traits, and operational realities are interwoven in the restaurant and bar landscape of the city.

1. What is the demographic profile of the Restaurant and bar Owner/Managers
 - 1.1 Personal Profile
 - 1.1.1 Age
 - 1.1.2 Gender
 - 1.1.3 Civil status
 - 1.1.4 Highest educational attainment
 - 1.2 Business Profile

- 1.2.1 Type of ownership
- 1.2.2 Capitalization
- 1.2.3 Number of employees
- 1.2.4 Years in operations

2. What is the extent of utilization of technological applications of restaurants and bars in Surigao City?
3. What is the level of challenges encountered by restaurants and bars on its technological applications?
4. Is there a significant difference in the utilization of technological applications of restaurants and bars when grouped according to demographic profile?
5. Is there a significant difference in the challenges encountered by restaurants and bars on its technological application when grouped according to demographic profile?
6. Is there a significant relationship between the extent of technological utilization on the level of challenges encountered by restaurants and bars in Surigao City?
7. What recommendations can be proposed based on the demographic and technological landscape of the restaurant and bar industry in Surigao City?

The following null hypotheses were tested at a 0.05 level of significance:

H_{01} : There is no significant difference in the respondents' extent of utilizing technological applications and challenges in the utilization of technological applications when grouped based on demographic profile.

H_{02} : There is no significant difference in the respondents' extent of challenges in the utilization of technological applications when grouped based on demographic profile.

H_{03} : There is no significant relationship between the respondents' extent of utilization and the extent of challenges encountered in technological applications.

II. Related Literature

Technopreneurship in the Digital Era

Technopreneurship, the fusion of technology and entrepreneurship, signifies the emergence of a distinctive group of innovators leveraging technological advancements to establish and manage businesses (Belmonte & Lira, 2023; Ramlee, 2022; Yashfeen & Mahmood, 2022). This concept involves actively identifying and pursuing technological opportunities for the development and commercialization of innovative products and services. Situated at the crossroads of technology and business innovation, technopreneurship involves the strategic use of advanced tools like online marketing, data analytics, and robotics to drive business processes and outcomes (Belmonte & Lira, 2023). Technopreneurs, characterized as tech-savvy business owners, seamlessly integrate technology into their operations, demonstrating a dynamic and adaptive entrepreneurial approach (Ramlee, 2022).

The conceptualization of technopreneurship has gained global recognition, with countries such as the Philippines, Malaysia, and Pakistan acknowledging its potential as a transformative force addressing challenges like youth unemployment and promoting economic growth (Tempat, 2022; Run, 2021). Despite its perceived significance, the widespread adoption of technopreneurship faces limitations, prompting a clear call for educational institutions to take a pivotal role in offering tailored courses and support systems to cultivate technopreneurial skills. The intricacy of technopreneurship is underscored by its involvement in complex production, operational, and managerial processes, necessitating entrepreneurs to embody crucial qualities such as creativity, innovation, risk-taking, and ambition (Ully, 2022).

In essence, technopreneurship epitomizes a new wave of innovators who utilize technology as a driving force for business success (Ramlee, 2022). As the entrepreneurial landscape evolves alongside technological advancements, a comprehensive understanding of technopreneurship becomes essential for individuals and institutions aiming to navigate and prosper in the dynamic intersection of technology and business.

Impact of External Factors on Entrepreneurship: A Dual Challenge

The intricate interplay between the COVID-19 pandemic and natural disasters has left an indelible mark on the operational dynamics of various businesses, with notable implications for both the technology and food sectors. The pandemic's repercussions have been particularly pronounced in terms of investment, causing a decline for nascent businesses, especially those in their embryonic stages, and industries acutely affected by the crisis (Chida et al., 2023). This crisis underscored the pivotal importance of businesses having resilient plans to weather challenging times and demonstrating adaptability when confronted with unforeseen circumstances (Christiano, 2021).

Research further illuminates that the journey to recovery is notably arduous for small businesses, those contending with supply chain disruptions and those navigating markets significantly disturbed by the pandemic (Chida

et al., 2023). However, amid these challenges, a silver lining emerges, not only within the technology sector but also in the realm of food businesses. The increased reliance on online meetings and a heightened awareness of the pivotal role of technology have prompted innovation not only among tech companies but also within food businesses (Stephanie et al., 2022). This interconnectedness becomes particularly evident as food businesses have adapted to changing consumer behaviors, leveraging technology for online ordering, contactless delivery, and virtual experiences. The pandemic has acted as a catalyst for innovation in both sectors, fostering an environment where technology and food businesses converge in their resilience and adaptability to navigate the complex and evolving business landscape shaped by the pandemic and external disruptions.

Evolution of the Food Industry: Navigating Trends and Challenges

The food industry is undergoing a blending of technology and traditional methods, giving rise to new strategies in culinary entrepreneurship. Entrepreneurs are exploring various models, including quick-service restaurants that use technology for streamlined ordering, as well as personalized and experiential food businesses. Consumers are showing a growing preference for direct-to-consumer models, opening up opportunities for innovation in segments like fine wines, fresh smoothies, and health-focused foods (Khairunnisa et al., 2023; Massa et al., 2023; El Ghorab, 2023).

Extent of Technological Applications in Restaurant and Bar Businesses

The adoption of technological applications in the restaurant and bar industry extends across various operational facets. Property Management Systems (PMS) have become integral tools for efficient management, enhancing reservation systems, tracking inventory, and optimizing overall operational workflows (Amoako-Agyeman & Ansah, 2021). Social media platforms, as highlighted by Johnson, Smith, and Davis (2020), play a pivotal role in marketing and guest engagement. Platforms like Facebook, Instagram, and Twitter not only facilitate targeted advertising but also provide a direct avenue for customer interaction, feedback, and brand promotion. Online ordering systems represent another dimension of technological integration. Flores and Lago (2019) emphasize the increasing prevalence of online platforms for ordering and delivery services. Such systems not only cater to changing consumer preferences but also contribute to the expansion of market reach. Electronic payment methods further enhance the customer experience, offering convenience and security in financial transactions (Ting & Kwan, 2014).

Challenges Faced by Restaurant and Bar Businesses in Adopting Technology

Despite the evident benefits, the adoption of technological applications in restaurant and bar businesses is not without challenges. Financial constraints emerge as a common hurdle, particularly for small and family-owned establishments (Cruz & Paragas, 2019; Gomez et al., 2016). The capitalization challenges impede the implementation of advanced technological solutions, limiting the potential for enhanced operational efficiency and customer service. Technical difficulties and integration issues pose additional challenges. Ting and Kwan's (2014) study reveals that businesses face obstacles related to the complexity of technology, inadequate training, and difficulties in integrating new systems with existing processes. These challenges are not exclusive to specific demographic groups, emphasizing the universal need for comprehensive support and resources (Flores & Lago, 2019).

Relationship Between Technological Utilization and Challenges

A notable finding in recent literature is the lack of a significant relationship between the extent of technological utilization and the challenges encountered by restaurant and bar businesses. The study by Ting and Kwan (2014) suggests that challenges such as technical difficulties, lack of training, and integration issues are consistent irrespective of the level of technological adoption. This underscores the need for businesses to proactively address these challenges, emphasizing that simply increasing the extent of technological utilization may not inherently resolve the associated difficulties (Flores & Lago, 2019).

Implications for Restaurant and Bar Businesses

The implications drawn from the literature review point to a nuanced landscape where technological applications offer substantial benefits but necessitate careful navigation of associated challenges. For restaurant and bar businesses, investing in technological infrastructure goes beyond the adoption of specific tools; it requires a holistic approach. Addressing financial constraints involves strategic planning, exploring cost-effective solutions, and leveraging government initiatives designed to support small and medium enterprises (SMEs). Comprehensive training programs for staff, coupled with accessible technical support, can mitigate challenges related to technical difficulties and integration issues. Importantly, these measures need to be implemented regardless of the current level of

technological adoption, emphasizing the universal nature of challenges faced by businesses in this industry (Flores & Lago, 2019; Ting & Kwan, 2014).

Synthesis

A synthesis of various studies reveals the dynamic interplay between technology and entrepreneurship in the hospitality sector, particularly in restobars. The adoption of technological applications, including Property Management Systems, social media platforms, online ordering, delivery services, and electronic payments, is reshaping business operations and customer experiences. The advantages include operational effectiveness, improved customer service, enhanced inventory management, and increased market reach. However, these advancements also bring forth challenges, necessitating a balance between technology adoption and mitigating potential drawbacks.

The literature review highlights the multifaceted relationship between technology and entrepreneurship, encompassing diverse sectors such as hospitality, finance, government initiatives, and legal frameworks. The synthesis of studies provides a comprehensive understanding of the current landscape, challenges, and opportunities arising from the integration of technology into entrepreneurial endeavors. The subsequent sections of the research paper will delve deeper into specific aspects, exploring the impact of cyber entrepreneurship in the food industry, the role of electronic payments in business transactions, and the implications of government initiatives on small and medium enterprises, among other focal points.

III. Method

3.1 Research Design

This research adopted a quantitative approach, utilizing the descriptive survey method to comprehensively investigate and delineate the contemporary challenges and advantages faced by restaurant and bar businesses in Surigao City. The chosen research design was considered fitting as it aimed to elucidate the current landscape of the industry, capturing both its benefits and challenges.

A purposive data sampling technique was employed to strategically select participants who possess valuable insights into the dynamics of the local restaurant and bar business. The researcher identified and engaged 35 participants, encompassing establishments categorized as bars, restobars, and restaurants within Surigao City. The study primarily focused on engaging restaurant and bar owners in Surigao City, extending its purview to encompass entrepreneurs operating in various niches such as bar and grill businesses, online food ventures, karaoke hubs, and lounges. The selection criteria ensured that the participants were currently active in the market, maintaining ongoing operations up to the present date.

The Department of Trade and Industry (DTI) in Surigao City offered a listing of 65 registered restaurants. However, through a purposive selection process, only 35 establishments were chosen for participation. This subset was specifically chosen because it represented the total number of qualified restaurants equipped with bars or offering wine and liquor services at any time. Consequently, 35 structured questionnaires were distributed among the selected establishments, with a final collection of 32 responses. This rigorous approach in participant selection and data gathering enhances the study's reliability and validity, providing a robust foundation for the analysis of the benefits and challenges faced by the restaurant and bar businesses in Surigao City.

3.2 Research Instrument

In this study, a researchers-made questionnaire served as the primary research instrument. To enhance its validity, the questionnaire underwent a rigorous validation process conducted by five experts in the business management industry. Subsequent improvements were implemented based on the valuable feedback obtained during the validation phase.

The questionnaire encompassed two main sections. The initial part focused on gathering participant profiles, delving into demographic aspects such as age, gender, years of operation in the city, capitalization, and ownership. Additionally, this section delved into the utilization of technological applications within their establishments. The latter part of the questionnaire was dedicated to probing the challenges associated with the adoption and implementation of technological applications in the participants' respective restaurant and bar businesses.

3.3 Data Gathering Procedure

The initiation of the research process involved formal communication. A letter, officially addressed to the Dean of the Graduate School, sought permission to conduct the study, including off-campus interviews. Concurrently, letters were dispatched to respected food business entrepreneurs, securing permission to conduct assessments, specifically targeting restaurant and bar owners.

Upon obtaining the necessary approvals, the researcher employed a purposive sampling technique to select participants and schedule appointments for the survey. The administration of the survey was conducted using meticulously validated questionnaires, ensuring reliability and consistency in data collection.

3.4 Data Processing and Analysis

The collected data underwent a thorough process of organization, tabulation, and analysis conducted by an experienced statistician. Microsoft Excel and IBM SPSS Statistics Version 22 were the primary tools for handling and analyzing the data.

Various statistical techniques were thoughtfully applied to gain comprehensive insights, including Frequency Count and Percentage for describing respondent profiles, Mean and Standard Deviation to clarify the extent of technological application utilization and challenges, Independent T-Test to discern differences based on variables like sex and civil status, One-way ANOVA to identify age-related differences, Mann Whitney U-Test to discern differences based on ownership, capitalization, and the number of employees. This test was also used to identify distinctions in challenges based on civil status, ownership, capitalization, the number of employees, and years in operation. The Kruskal Wallis H-Test was employed to identify differences based on age, while the Spearman Rho Correlation was utilized to ascertain significant relationships between the extent of utilization and challenges encountered in technological applications.

The meticulous selection of these statistical tools was guided by the nature of the data, ensuring the robustness and reliability of the research findings, particularly when normality assumptions were not met, as confirmed through the Shapiro-Wilk Test.

IV. Results and Discussions

Demographic Profile

This part illustrates the frequency count and the percentage distribution in terms of Restaurant and bar owners' business profiles.

The demographic profile comprises the 32 respondents/participants actively engaged in managing and owning restaurants, bars, or restobars. The predominant age group falls between 31 and 48 years, with a notable presence of young working adults, particularly females, commonly observed in restobars and entertainment establishments. Most respondents are married, with a slight difference compared to single male workers. Most businesses represented are sole proprietorships with capitalization exceeding P500,000. These enterprises typically employ fewer than 10 workers, categorizing them as micro-enterprises. The majority of establishments have operated for less than 10 years.

Table 1 - Demographic Profile of the Respondents

Variables	Frequency	Percentage
Age		
30 yearsold and below	11	34
31-45 yearsold	12	38
46 yearsold and above	9	28
Sex		
Male	15	47
Female	17	53
Civil Status		
Single	15	47
Married/Separated	17	53
Type of Ownership		
Sole Proprietorship	22	69
Partnership/ Corporation	10	31
Capitalization		
50,000 – 500,000	14	44
More than 500,000	18	56
Number of Employees		
1-10 employees	21	66
More than 10 employees	11	34

Years in Operation		
1-10 years	23	72
More than 10 years	9	28

Table 2. Extent in Utilizing Technological Applications

Indicators	Rank	Mean	SD	Verbal Description	Interpretation
1. Bank transfer payments and deposits	3	3.13	0.94	Moderately Agree	Moderately Utilized
2. Property Management System	1	3.31	0.74	Strongly Agree	Highly Utilized
3. Online Food Delivery Service	4	2.72	1.08	Moderately Agree	Moderately Utilized
4. Social media marketing (Facebook, Instagram, Twitter)	2	3.19	1.00	Moderately Agree	Moderately Utilized
5. Debit and Credit cards	8	2.50	1.14	Moderately Agree	Moderately Utilized
6. Online Government website access	6	2.56	1.08	Moderately Agree	Moderately Utilized
7. Accounting Software	5	2.69	1.03	Moderately Agree	Moderately Utilized
8. Security Access / Security Monitoring	3	3.13	0.87	Moderately Agree	Moderately Utilized
9. Online Ordering Solutions and Digital Kitchen Display Screens	7	2.53	0.98	Moderately Agree	Moderately Utilized
10. Quality Control Checklist	3	3.13	0.87	Moderately Agree	Moderately Utilized
Average		2.89	1.01	Moderately Agree	Moderately Utilized

As illustrated in Table 2, the majority of respondents reported moderate utilization across various technological applications, with the exception of one – the Property Management System (PMS). PMS stands out as a pivotal tool in business operations, commonly employed for order management, menu and inventory control, billing, payments, staff management, system integration, and customer relations management. The implementation of PMS in restobar businesses significantly enhances operational effectiveness and efficiency. The implementation of point-of-sale (POS) systems in the hospitality industry positively influences customer satisfaction, staff performance, and financial outcomes by enhancing service quality attributes (Maia, 2023 & Paulo, 2023).

Conversely, the least utilized technological application is the acceptance of debit and credit cards, which involves the use of ATM cards swiped in machines provided by banks. In today's modern landscape, a significant portion of customers prefers card payments, posing both an area for improvement and a challenge for restobar businesses to address. Smith et al., (2022) affirm that the increasing use of credit and debit cards in restobar businesses has heightened customer convenience and satisfaction, ultimately contributing to higher sales volumes.

Table 3. Extent of Challenges Encountered in Technological Applications

Indicators	Rank	Mean	SD	Verbal Description	Interpretation
1. Safety and security/password and privacy access	2	3.13	3.13	Moderately Agree	Moderate Challenges
2. Money transfer processing fee	7	2.84	0.81	Moderately Agree	Moderate Challenges
3. Internet connectivity and stability access	6	2.91	0.96	Moderately Agree	Moderate Challenges
4. Resistance to change and software updates	8	2.69	0.93	Moderately Agree	Moderate Challenges
5. Technological knowledge and staff training	1	3.16	0.81	Moderately Agree	Moderate Challenges
6. Business competitors' updates	5	3.00	0.72	Moderately Agree	Moderate Challenges
7. Poor guest experience or guest interaction	9	2.56	0.88	Moderately Agree	Moderate Challenges
8. Calculating and analyzing product cost and price	3	3.09	0.78	Moderately Agree	Moderate Challenges
9. Delivery time and distribution process	7	2.84	0.92	Moderately Agree	Moderate Challenges
10. Reaching new customers	4	3.06	0.76	Moderately Agree	Moderate Challenges
Average		2.93	0.86	Moderately Agree	Moderate Challenges

As outlined in table 3 depicting the extent of challenges in technological applications, the data indicates a moderate level of challenges, implying that restobar owners were not severely impacted by the use of technological applications. Nevertheless, there is room for improvement. Topping the list of challenges are technological knowledge and staff training, indicating a limited application of technology in some restobars. This underscores the critical importance of investing in employee training and development. Johnson, Anderson, and Thompson (2021) emphasize that effective training and development programs have a positive impact on restobar business performance, fostering

improved customer experiences, higher employee engagement, and enhanced financial outcomes. The study underscores the significance of aligning training programs with business objectives, continuous evaluation and feedback, and the integration of practical skills and knowledge.

On the other hand, the least challenging factor is poor guest experience or interaction. This finding underscores the preference of most customers for human interaction and relations in the hospitality and food business. Maintaining excellent customer service and care remains essential, as the use of technology can potentially impact guest relations, emotional engagement, and overall customer experience. Johnson, Smith, and Davis (2020) highlight a significant positive correlation between training and development efforts and organizational performance outcomes, emphasizing the importance of continuous learning, skill enhancement, and career development opportunities for employees in the hospitality sector.

Table 4. Significant Difference in the Extent of Utilizing Technological Applications when Grouped According to Demographic Profile

Variables	t-value	Z-stat	F-value	p-value	Decision
Age			0.310	0.736	Accept H_{01}
Sex	-1.40			0.175	Accept H_{01}
Civil Status	-0.15			0.878	Accept H_{01}
Type of Ownership		-0.51		0.610	Accept H_{01}
Capitalization		-1.15		0.252	Accept H_{01}
Number of Employees		-0.08		0.936	Accept H_{01}
Years in Operation	0.89			0.383	Accept H_{01}

In Table 4, the analysis of utilization levels across variables, namely type of ownership, capitalization, and number of employees, disclosed a deviation from normal distribution in the data. Subsequently, recognizing this non-normality, the Mann-Whitney U-Test, a fitting non-parametric test, was employed for these specific variables.

Based on the statistical analysis conducted for various profile variables, there is no evidence to support the presence of a significant difference in the extent to which technological applications are utilized. The acceptance of the null hypothesis (H_{01}) for all variables implies that any observed variations in technology utilization can be attributed to random chance rather than being systematically influenced by the demographic factors under consideration.

In simpler terms, the study found that factors such as age, gender, civil status, type of ownership, capitalization, number of employees, and years in operation do not play a significant role in influencing how extensively technological applications are used in the context of the study. The lack of statistical significance suggests that variations in these demographic characteristics do not have a meaningful impact on the adoption and use of technology in the studied population of restaurants and bars.

Table 5. Significant Difference in the Extent of Challenges Encountered in Technological Applications when grouped According to Demographic Profile

Variables	t-value	Z-stat	Chi-square	p-value	Decision
Age			3.777	0.151	Accept H_{02}
Sex	-1.70			0.100	Accept H_{02}
Civil Status		-1.44		0.150	Accept H_{02}
Type of Ownership		-0.99		0.318	Accept H_{02}
Capitalization		-1.43		0.153	Accept H_{02}
Number of Employees		-0.08		0.937	Accept H_{02}
Years in Operation		-0.82		0.412	Accept H_{02}

In Table 5, only the data on the extent of challenges under the variable sex are normally distributed (see Appendix A-2). In this case, an independent sample t-test was employed, while Mann Whitney U-Test and Kruskal Wallis H-test were employed for the rest of the profile variables.

Given that all the p-values exceed the 0.05 significance level, there are no noteworthy differences in the extent of challenges faced in technological applications when respondents are categorized based on their profile variables. This suggests that the challenges encountered by respondents in utilizing technological applications for their businesses remain consistent across various demographic factors, including age, sex, civil status, type of ownership, capitalization, number of employees, and years in operation.

The analysis, supported by the provided p-values and decisions, indicates that, for each variable, the null hypothesis (H_{02}) is not rejected. Consequently, there is no significant distinction observed between the compared groups. The analysis, guided by the provided p-values, denotes the absence of a significant difference for any of the variables (age, sex, civil status, types of ownership, capitalization, number of employees, and years in operation). According to J. Smith's (2023) research study, the aim is to provide valuable insights into the demographic profiles of restobar owners. By comparing and analyzing these characteristics, the study contributes to understanding the diverse backgrounds and experiences that shape the restobar industry. These findings have implications for business strategies, marketing approaches, and future research endeavors within this dynamic sector.

Table 6. Significant Relationship between the Extent of Utilization and Extent of Challenges Encountered in Technological Applications

Variables	Correlation Coefficient	p-value	Decision
Extent of Utilization	0.638	0.0001	Reject H_{03}
Extent of Challenges			

Because the data on the extent of challenges among respondents is not normally distributed, we opted for the Spearman Rho correlation, a non-parametric test. This choice is suitable for skewed or non-normally distributed data, ensuring a reliable exploration of relationships within the study's context.

In examining the results, it is evident that the data presents a substantial and statistically significant positive relationship between the extent of utilizing technological applications and the challenges encountered by the respondents in the restobar business. With a correlation coefficient of 0.638 and a p-value of 0.0001, both surpassing the conventional significance threshold of 0.05, we can confidently assert that this relationship is not attributable to random chance.

The correlation coefficient of 0.638 suggests a moderately strong positive association, indicating that as restobar businesses intensify their use of technological applications, there is a corresponding increase in the challenges they confront, and vice versa. This finding aligns with previous research by Ting, I., and Kwan (2014), conducted on small and medium-sized enterprises (SMEs) in Hong Kong, which reported a similar positive relationship between technological application utilization and challenges faced.

The rejection of the null hypothesis (H_{03}) underscores the practical importance of this relationship in the context of restobar operations. As restobars strive to enhance their efficiency and customer service through technological integration, they should be cognizant of the challenges that may accompany these advancements. This insight is crucial for informed decision-making, allowing businesses to address challenges and optimize the benefits of technological applications proactively.

This study contributes valuable insights into the nuanced dynamics between technological adoption and challenges within the restobar industry. The findings emphasize the need for a strategic and informed approach to technological integration, acknowledging that while technology offers numerous advantages, it also poses challenges that necessitate careful consideration and management by businesses in the competitive landscape.

V. Conclusion

The study's exploration of the utilization of technological applications underscores the pervasive integration of technology within the restobar industry. Evidently, businesses are actively embracing diverse technological platforms to augment their operations and elevate the overall customer experience. This widespread adoption highlights a transformative shift where technology has become an indispensable component of the restobar landscape.

Delving into the challenges of utilizing technological applications, the study identified a uniformity in challenges encountered by respondents across various demographic groups. This implies that challenges, ranging from technical difficulties to insufficient training and integration issues, are consistent irrespective of the respondents' profile characteristics. The significance of this insight lies in recognizing the universal nature of these challenges, emphasizing the need for comprehensive support, training programs, and resource allocation to maximize the benefits derived from technological applications in the restobar business.

Analyzing the relationship between utilization and challenges revealed a noteworthy finding: there is no significant relationship between the extent of technological application utilization and the encountered challenges. This implies that the challenges faced are not contingent on the extent to which these applications are employed. Consequently, restobar businesses must proactively address challenges, irrespective of their technological adoption levels, to ensure seamless operations and optimize the advantages offered by technology.

In conclusion, the study underscores the pivotal role of technological applications in the restobar business. While respondents displayed a consistent level of utilization, they also confronted similar challenges. Therefore, strategic investments in appropriate training and technical support are imperative for the potential adoption and effective use of technological applications. By taking these measures, restobar owners and managers can enhance efficiency, elevate customer service, and ultimately improve overall business performance in a dynamic and technologically driven environment.

VI. Recommendations

The study puts forth several key recommendations aimed at empowering restaurant and bar business owners to leverage technological applications effectively and navigate potential challenges:

Adoption of Debit and Credit Cards: Embrace the use of debit and credit cards for billing and payments to enhance accessibility and cater to the preferences of modern customers. This strategic move not only facilitates smoother transactions but also contributes to increased sales and operational efficiency.

Integration of Property Management System (PMS): Encourage the implementation of a Property Management System to optimize business operations. PMS can play a pivotal role in order management, menu and inventory control, billing, payments, staff management, and integration with various system applications. Its utilization can significantly enhance the overall efficiency and effectiveness of restobar operations.

Investment in Staff Training and Development: Prioritize the training and development needs of staff and employees to equip them with the necessary skills and technological knowledge. This proactive approach ensures that employees remain competitive in terms of management practices and technological operations, contributing to the overall success of the business.

Emphasis on Customer Service and Relations: Recognize the paramount importance of customer service and relations in restobar operations. While technological advancements are valuable, it is essential to balance them with a commitment to maintaining strong guest relations and interactions. This can be achieved through personalized service and a focus on enhancing the emotional connection with customers.

Implementing these recommendations is paramount for overcoming challenges associated with technological applications. By doing so, restobar owners can harness the full potential of technology to streamline operations, elevate customer experiences, and ultimately foster business growth in the fiercely competitive restobar industry. Additionally, the research study, with its valuable insights and recommendations, holds great significance as a reference for future business owners, newcomers in the industry, hospitality management practitioners, and researchers. Its endorsement to the Department of Trade and Industry ensures its accessibility and contribution to the continuous improvement of restobar businesses.

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