Understanding the Linkage and Driving Factors to Premature Closure of Microbusinesses: A Case Study in Cebu, Philippines

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Abstract

The critical failure factors (CFFs) affecting the premature closure of microbusinesses (MBs) remain an understudied field in the scientific community. This led to the prevalent issue of rapid and continuous failure rate among MBs which necessitates the need to produce more studies to aid this sector considering its implications for employment generation, idea innovation, and an overall increase in the gross domestic product (GDP) in a country. This paper focuses on the investigation of the importance ratings of the linkage and driving CFFs across the food and clothing industry in Cebu City, Philippines. Using a Mann-Whitney U-test, the key results showed there no exist a significant difference in the importance rating of the CFFs between the two MB types. In addition, the statistical analysis showed a higher mean-rank of importance rating in the food industry compared to the clothing industry. This concludes that policymakers need not to further introduce a specific government program depending on the MB type. Furthermore, more emphasis should be geared towards the food MBs considering that it establishes a higher mean-rank rating in the CFFs and are therefore more prone to premature closures.

Keywords
Microbusiness, Premature Closure, Statistical Analysis

1. Introduction

Microbusinesses (MBs) are the smallest sector in the field of businesses, yet these are the greatest contributors to a country's gross domestic product (GDP) (Obi et al. 2018). Despite its contributions, this research domain remains rather an infant, thus, the prime problem of premature closure is still not addressed in the literature. To begin with, the world has many different definitions of MBs depending on the country, state, or region due to variations in the legislation (Manzoor et al. 2021). For one, the Small Business Administration (SBA) defines MBs as enterprises that have 1-9 employees. This definition can also differ in any state or locality, for instance, the state of Vermont, the United States of America (USA) defines MBs as a business that has at most five employees that generate $25,00 in annual revenue, while some are owned by sole-proprietors that have no employees (Murray). In another state, MBs are composed of up to 10 or fewer employees (Devins 1999; Kangasharju 2000). On the other hand, in a developing country such as the Philippines, the term MBs are commonly known as *Barangay MBs* in the Republic Act No. 9178, known as the Barangay Micro Business Enterprises (BMBEs) Act of 2002, can be defined as any business entity engaged in the operations of commodities, which includes but are not limited to agri-business, trade, and services, with a total declared assets, including loans, of at most Php 3,000,000.00 (i.e., exclusive of the land wherein the MB is situated) with its common example – the sari-sari store (A Guide to Starting a Micro Business in the Philippines, 2002).

Although the capital and gross revenues of MBs are small in comparison to medium and big enterprises, their existence displayed overall contributions in terms of improving a country's quality of life and socio-economic development (Erdin & Ozkaya 2022). Their contribution is highlighted in a study in Ethiopia wherein, MBs contributed through employment creation, poverty alleviation, and living standards improvement (Endris 2022). Evidence from data presented showed that MBs are significant drivers of economic development in transition economies such as Nigeria and other transitional economies globally (Obi et al. 2018). The study encourages government entities to further encourage initiative programs directed at existing MBs as well as the creation of new MBs to help sustain the economic

performance and growth of the country. Another study in the European Union (EU) stressed the importance of MBs. For one, MBs have an increased potential for innovation despite the limited sources available, and for another, constituting 99% of companies currently operating in the EU (Skibinski and Sipa 2017). However, most MBs have suffered the effects and aftermaths of the outbreak of the COVID-19 global pandemic wherein the entire populace bears witness to how the COVID-19 global pandemic affected the lives of many. Leading countries in Europe and America were not exempted from the effects of the pandemic and have been some of the most affected economies in the world (Szmigiera 2022). However, most of the effects especially from an economic standpoint have been observed in the marginalized regions wherein, third-world countries have experienced disproportional economic impacts such as business entities suffering a rapid decrease in the employment rates and closures due to restrictions brought out by policymakers in accordance to health and safety protocols (Antipova 2021).

This aftermath has stimulated the strong urge of people to own their respective MBs and not experience the catastrophic effects of the crisis in terms of losing one's livelihood through employment. Although being an entrepreneur is seen as the carrier of growth in the field of economics, it is not exempted from the effects of the sudden downturns from an economic standpoint (Parker et al. 2012). This led to the assumption that policymakers, as well as the scientific community, are well equipped with studies that can help alleviate this problem. However, MBs have been systematically overlooked in developing countries, which in turn resulted in few studies covering this sector (Houston & Reuschke 2017). In specific, the mortality rate of MBs has been severely overlooked in the scientific community for this has been a pressing issue even before, during, and after the pandemic. With policymakers heightening the restrictions of containment interventions, comes with the trade-off of several businesses, most predominantly MBs, closing (Bongaerts & Mazzola 2021). For example, a study in Pakistan indicated that most of the MB owners encountered several issues such as lack of financial support, supply chain disruption, decrease in demand, and an overall reduction in sales and margins, among others that lead to their rapid closures (Shafi et al. 2020). From the local standpoint, The Philippine government passed laws such as launching an emergency subsidy programs and massive public spending to support disrupted MBs however, even after two years after the pandemic, MBs are still facing the verge of closure due to the continuous drop in demand and revenue (Shinozaki & Rao 2021).

In relation to the closures of MBs, the objective of this paper is to review the critical failure factors (CFFs) which will affect the premature closures of MBs. This study will be an extension of a study based on the structural relationships among the CFFs of MBs published in 2020 which established and analyzed the CFFs using interpretative structural modeling with *Matriced' Impacts Croise's Multiplication Appliquée a UN Classement* (ISM-MICMAC) analysis (del Pilar et al. 2020). In specific, for one, this paper will extract the importance ratings of the CFFs with respect to the type of MB. This research direction does not exist in the extant literature and is therefore crucial to provide insights into the long-standing question of *why do most MBs prematurely fail constantly?* This approach of this paper aims to produce insights into the aspects of exploring if all the CFFs have the same statistical importance rating for all MB entities or are significantly different from one another. This paper can be of contribution to the policymakers through the insights of providing either a uniform or unique program for all MBs and can facilitate the business owners on knowing what to do and what to avoid in order to help their businesses foster in the long run.

1.1 Objectives

To address the gap in the literature in terms of statistically investigating whether the importance rating of the CFFs affecting the premature closure of MBs is similar regardless of the type of MB, this paper aims to investigate the following:

- To explore the importance ratings of the CFFs across various MB types; and,
- To provide insights to policymakers and MB owners on how to formulate policies to combat the premature closure of MBs.

2. Literature Review

Microbusinesses (MBs) are seen to have the potential to elevate a country's economic position due to its rampant emergence and ease of start up (Houston & Reuschke 2017). In fact, other than having a key role in the development of countries, especially in the economic sector (Atasoy et al. 2007; Campin et al. 2013; Larochelle et al. 2008), it has also created a bounty of opportunities in entrepreneurship for social groups including women (Alene 2020), family (Shafi et al. 2020), and culture-minority owners (Danish et al. 2019). With the widespread emergence of MBs in various countries and states, it has become a major challenge for owners to maintain the operations given the many factors that affect its overall function. As proof, the notion of premature closure of MBs has prompted a threat that

hinders its influx on the global scale (Samujh 2011; Mukumba 2014). With that, the dilemma of having to stay in operations while satisfying both personal and business goals remains to be a concern.

In the extant literature, previous works were able to explore and describe the factors that affect the premature closure of MBs as a way to alleviate the eventual disposition of a business ceasing to exist. In earlier phases, Waikar et al. (2011) has managed to conduct an analysis of the supplier selection of MB owners which has also proved to have an impact on its success. All of the supplier selection factors considered in their work (i.e., name of the brand, consistency, cost-effectiveness, price, loyalty, warranty of items, and quality), none were found to be unimportant. In other cases, del Pilar et al. (2020) analyzed the key factors affecting the premature closure of MBs in the local context of the Philippines. In total, there are 10 intrinsic factors considered which are categorized according to its driving and dependence powers via ISM-MICMAC analysis. A key finding of their work classified the factors as driving, linkage, autonomous, and dependent factors. Similar research work is recently performed by Garcia et al. (2022) which shows the mortality risk factors not only in MBs but also in small businesses. The direction of their work hinged on a systematic literature review and also provided insights into the identified 36 mortality risk factors. Further, their work showed the association of these factors to the processes involving innovative works, business management, and the nature of the owner. Instead of looking into the CFFs of MBs, Mor et al. (2020) has taken into account the relevant factors that induce owners to sustain their MBs amidst the challenges that continuously emerge in the general business domain. In specific, the role of high capital investment and experience in handling business enterprises has both proved to generate more chances of survival. Similarly, Mohammad (2021) focused on critical success factors (CSFs) along with the motivations and challenges including risks of operating MBs in the hospitality industry. It is found that for hospitality MBs to flourish, considerations on innovation or new business ventures and competence, as well as the commitment of owners to manage the MBs must be put into play.

The factors affecting the premature closure of MBs, or its related success, are described in the literature in various means including ISM-MICMAC analysis (del Pilar et al. 2020), survey (Waikar et al. 2011), thematic analyses technique (Mohammad 2021), multinomial logistic regression modeling (Mor et al. 2020), cross-sectional research design (Kassa & Getnet Merite 2022), literature review (Garcia et al. 2022), confirmatory factor analysis model and structural equation modeling (Singh et al. 2022), among others. However, none of these methodologies and approaches in the literature has extracted the inherent nature of MB types and its inkling towards the similarity or dissimilarity of perspectives, particularly on the importance of factors. Such a direction is necessary for the policymakers to formulate strategies and initiatives that will enable the successful operation of MBs despite the challenges faced thereof. Therefore, this research work aims to advance the research gap by providing a statistical analysis of key CFFs that affect the premature closure of MBs in view of the different perspectives of MB owners.

3. Methods

This section presents the research design, participants, and instruments utilized in the course of this paper. Furthermore, the case environment is also detailed as follows:

3.1 Case study overview

A case study is conducted in Cebu City, Philippines, a locality with which the number of MBs continues to grow every year. With the increase of MBs, also come the issue of premature closure. As such, it is imperative to consider a case similar to this in order to reflect how the CFFs play a role in the success or failure of MBs.

3.2 Research design

In this stage, the research proceeds with, first, gathering a shortlist of MBs owners in the food and clothing industry that prematurely closed down. Second, the owners are tasked to provide the importance rating of CFFs on a scale of 1-10 rating, being 1 as the least important and 10 as the most important, with respect to how each CFF affect the premature closure of their businesses. The final list of CFFs considered in this paper involves linkage and driving factors as previously identified in the pioneering work of del Pilar et al. (2020). These factors include the following: a) inability to distinguish business capital from personal money, b) information technology deficiency, c) lack of crucial infrastructural facilities, d) poor knowledge about bookkeeping, e) poor recordkeeping, and f) inadequate government programs information. These factors are deemed important to the premature closure of MBs due to its high driving power and relatively low dependence power. Other than the importance rating, MB owners also provided details on the length of their MB operation. Third, with the data already in place, a statistical analysis is carried out. Since the nature of the data available for analysis is not assured to have a normal distribution, then, Wilcoxon rank-

sum test, also known as the Mann-Whitney U test, is employed to explore the statistical similarity and difference among CFFs.

3.3 Research participants

For the purpose of this study, a convenience sampling is utilized following the qualifications considered: 1) MBs should be located in Cebu City, Philippines, 2) MBs considered should be in accordance with the definition of the *BMBE Act of 2002*, 3) the MBs are no longer currently operating, and the length of operations fall within 18-24 months, and 4) the type of MBs are in the food and clothing industry. A total of $\boldsymbol{N = 18}$ research participants are gathered of which $\boldsymbol{n = 9}$ are owners of the food industry and $\boldsymbol{n = 9}$ are owners of the clothing industry.

3.4 Research instruments

This paper utilized a survey questionnaire to gather data on the following: MB type and the importance rating of the CFFs. The survey questionnaire is made up of a series of questions specific to the CFFs of the pioneer research work of del Pilar et.al. (2020). To illustrate the query, this question is asked: *how important is it to have the ability to distinguish business capital from personal money?* then respondents choose the importance rating based on a scale rating of 1-10. To analyze the data gathered, a statistical software, IBM SPSS Statistics, version 28.0.1.1 (14) was used.

4. Data Collection

To mobilize this research, the following steps are carried out:

Step 1: Gather research participants.
A convenience sampling was employed by inquiring about probable MB owners' qualifications with respect to the length of operation and business type. If the criterion of the MB age is met (i.e., at most 18-24months) and the MB type is also satisfied (e.g., food or clothing MB type), then, the MB owner is considered a respondent. Otherwise, they are not pooled in the study.

Step 2: Distribute questionnaires to the research participants.
The use of online questionnaires is employed to gather the responses of the pooled research respondents for the following: 1) the type of MB (either food or clothing), and 2) the importance rating of each of the six CFFs in relation to the premature closure of the MBs.

Step 3: Summarize the data from the accomplished survey questionnaires.
Upon completion of the survey questionnaires, the data gathered is then summarized in a tabular form with column A as the type of MB, column B as the length of operation, and columns C, D, E, F, G, and H as the importance rating per CFF.

Step 4: Use a Wilcoxon rank-sum test to analyze the data.
As the data is summarized in a tabular form, the table can now be plugged into the IBM SPSS software to statistically analyze the importance rating for each CFF with respect to the business type using the Wilcoxon rank-sum test, also known as the Mann-Whitney U test.

Step 5: Summarize the results of the statistical test for each importance rating.
After applying the Wilcoxon rank-sum test, a table is used to show the summarized results of the statistical test for the importance rating of each CFF.

Step 6: Determine whether to accept or reject the null hypothesis.
An analysis is inferred to whether accept or reject the null hypothesis after the completion of the statistical test with the following hypothesis is established:

$$H0: \textit{the importance rating for each CFFs is similar across various types of MBs};$$
$$H1: \textit{otherwise}.$$

5. Results and Discussion

In this portion, the results of the conducted statistical analysis, as well as the discussions of the outcome of the study, are presented.

5.1 Numerical Results

This section of the paper exhibits the numerical results of the statistical analysis conducted. Note that the flow of the numerical results is a factor-to-factor presentation of the importance rating for each of the CFF. Table 1 through table 12 present the statistical results of the independent-samples Mann-Whitney U Test. It can be very well noted that for all factors considered, the decision is to retain the null hypothesis. There is not enough statistical evidence to conclude that there is a difference in the importance ratings of MB types in the food and clothing industry. Furthermore, Figures 1 through 6 show the mean-rank among importance ratings of factors. Notably, the mean-rank of the food industry is higher than the clothing industry across all factors. This implies that MB owners of the food industry perceive relatively high importance of factors compared to the clothing industry due to some latent variables.

Table 1. Hypothesis test summary (Inability to distinguish business capital from personal money)

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The distribution of Importance_Rating is the same across categories of Business Type.	Independent-Samples Mann-Whitney U Test	.730[c]	Retain the null hypothesis.

a. The significance level is .050.

b. Asymptotic significance is displayed.

c. Exact significance is displayed for this test.

Table 2. Independent-Samples Mann-Whitney U Test Summary
(Inability to distinguish business capital from personal money)

Total N	18
Mann-Whitney U	44.500
Wilcoxon W	89.500
Test Statistic	44.500
Standard Error	7.348
Standardized Test Statistic	.544
Asymptotic Sig.(2-sided test)	.586
Exact Sig.(2-sided test)	.730

Table 3. Hypothesis test summary (Having enough information technology support)

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The distribution of Importance_Rating is the same across categories of Business_Type.	Independent-Samples Mann-Whitney U Test	.931[c]	Retain the null hypothesis.

a. The significance level is .050.

b. Asymptotic significance is displayed.

c. Exact significance is displayed for this test.

Table 4. Independent-Samples Mann-Whitney U Test Summary
(Having enough information technology support)

Total N	18
Mann-Whitney U	42.000
Wilcoxon W	87.000
Test Statistic	42.000
Standard Error	9.494
Standardized Test Statistic	.158
Asymptotic Sig.(2-sided test)	.874
Exact Sig.(2-sided test)	.931

Table 5. Hypothesis Test Summary (Having the crucial infrastructural facilities)

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The distribution of Importance_Rating is the same across categories of Business_Type.	Independent-Samples Mann-Whitney U Test	.258[c]	Retain the null hypothesis.

a. The significance level is .050.

b. Asymptotic significance is displayed.

c. Exact significance is displayed for this test.

Table 6. Independent-Samples Mann-Whitney U Test Summary
(Having the crucial infrastructural facilities)

Total N	18
Mann-Whitney U	53.500
Wilcoxon W	98.500
Test Statistic	53.500
Standard Error	11.172
Standardized Test Statistic	1.164
Asymptotic Sig.(2-sided test)	.245
Exact Sig.(2-sided test)	.258

Table 7. Hypothesis Test Summary (Having the right knowledge in bookkeeping)

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The distribution of Importance Rating is the same across categories of Business_Type.	Independent-Samples Mann-Whitney U Test	.863[c]	Retain the null hypothesis.

a. The significance level is .050.

b. Asymptotic significance is displayed.

c. Exact significance is displayed for this test.

Table 8. Independent-Samples Mann-Whitney U Test Summary (Having the right knowledge in bookkeeping)

Total N	18
Mann-Whitney U	42.500
Wilcoxon W	87.500
Test Statistic	42.500
Standard Error	10.506
Standardized Test Statistic	.190
Asymptotic Sig.(2-sided test)	.849
Exact Sig.(2-sided test)	.863

Table 9. Hypothesis Test Summary (Having the right knowledge in recordkeeping)

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The distribution of Importance Rating is the same across categories of Business_Type.	Independent-Samples Mann-Whitney U Test	.796[c]	Retain the null hypothesis.

a. The significance level is .050.

b. Asymptotic significance is displayed.

c. Exact significance is displayed for this test.

Table 10. Independent-Samples Mann-Whitney U Test Summary (Having the right knowledge in recordkeeping)

Total N	18
Mann-Whitney U	44.000
Wilcoxon W	89.000
Test Statistic	44.000
Standard Error	7.357
Standardized Test Statistic	.476
Asymptotic Sig.(2-sided test)	.634
Exact Sig.(2-sided test)	.796

Table 11. Hypothesis Test Summary (Acquiring government programs information)

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The distribution of Importance Rating is the same across categories of Business_Type.	Independent-Samples Mann-Whitney U Test	.136[c]	Retain the null hypothesis.

a. The significance level is .050.

b. Asymptotic significance is displayed.

c. Exact significance is displayed for this test.

Table 12. Independent-Samples Mann-Whitney U Test Summary (Acquiring government programs information)

Total N	18
Mann-Whitney U	57.500
Wilcoxon W	102.500
Test Statistic	57.500
Standard Error	10.878
Standardized Test Statistic	1.563
Asymptotic Sig.(2-sided test)	.118
Exact Sig.(2-sided test)	.136

5.2 Graphical Results

This portion of the paper displays the graphical representations of the numerical results from the Wilcoxon rank-sum test. Note that the flow of the numerical results is a factor-to-factor presentation of the importance rating for each of the CFF.

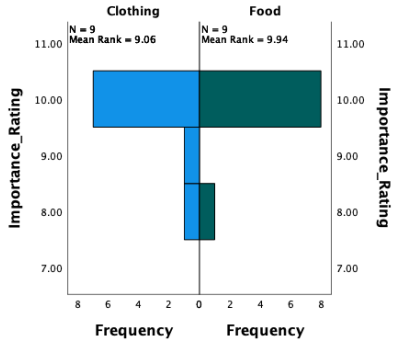

Figure 1. Mean rank of the importance rating across business types (Inability to distinguish business capital from personal money)

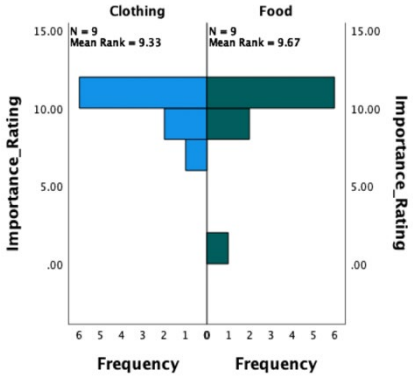

Figure 2. Mean rank of the importance rating across business types (Having enough information technology support)

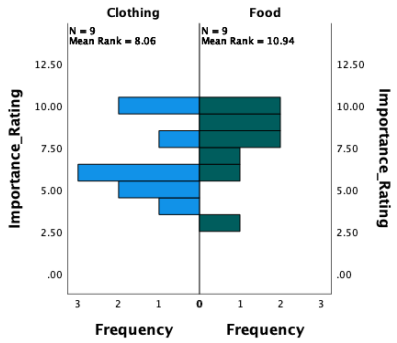

Figure 3. Mean rank of the importance rating across business types (Having the crucial infrastructural facilities)

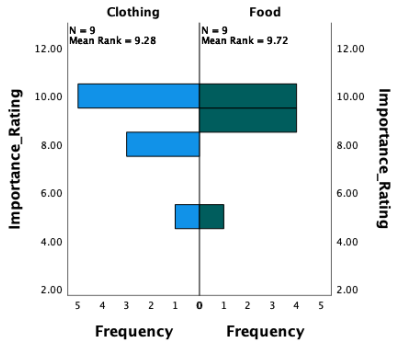

Figure 4. Mean rank of the importance rating across business types (Having the right knowledge in bookkeeping)

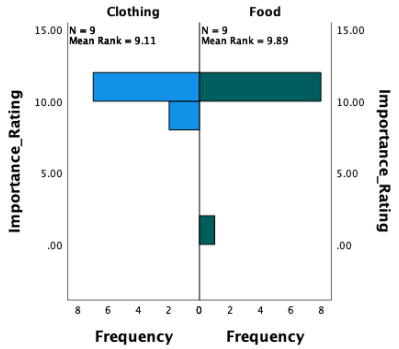

Figure 5. Mean rank of the importance rating across business types
(Having the right knowledge in recordkeeping)

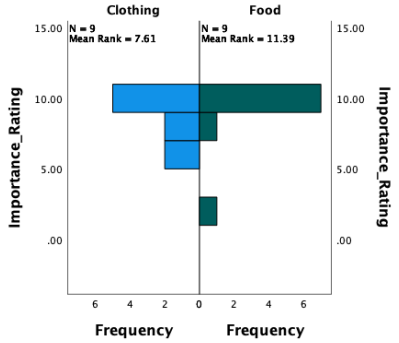

Figure 6. Mean rank of the importance rating across business types
(Acquiring government programs information)

5.3 Discussions

Based on the results obtained, it can be seen that the null hypothesis is retained; in short, there is no statistical evidence that exists implying a difference in the importance ratings of CFFs across various business types. As such, the following key takeaways of this research work are observed.

First, regardless of the MB type, the same importance is put forward by owners in order to succeed. This result can be justified by the fact that at any MB type, the same problems leading to premature closure may occur, thus, similar considerations can be found as well. Therefore, policymakers should focus more on providing generic programs in combatting premature closure; in short, specific MB-type policies are not necessary. Such a move can also have a relevant impact on the resource allocation of government initiatives that roll out a more comprehensive and all-encompassing solution.

Second, the statistical analysis also showed that the mean-rank of importance ratings between the food and clothing industry is significantly different, leaning more towards the food industry. This implies that the food industry perceives more importance to the factors affecting the premature closure of MBs given that the product provided to the market is a basic commodity and proves to be fast-moving in terms of inventory. As a result, the competition also is tighter due to the fact that there is convenience and accessibility in establishing food MBs. Such characteristic prompts policymakers to establish more programs geared toward the protection of food industry MBs from the eventual premature closure. Lastly, policymakers may also be directed to entice MB owners in the food industry to avail of their programs as may be necessary to gain a competitive advantage.

6. Conclusion

This paper takes into account the premature closure of MBs given the vital role of this business entity in increasing a country's GDP. The focus of this paper reels into the CFFs affecting the premature closure of MBs due to how this area remains understudied in the scientific community. To advance this significant research gap in the literature, a statistical analysis is performed among the importance ratings of the linkage and driving factors affecting the premature closures of MBs. The statistical analysis tool utilized is a Mann-Whitney U-Test in comparing the mean rank of the CFFs across various types of MBs. Moreover, the paper investigates the relevance of policymakers' having a general, non-specific government program in aiding the operations of MB owners.

The key results of this paper concluded there is no significant difference in the importance ratings of the CFFs affecting the premature closure of MBs regardless of the business type. This finding implies that owners' perceptions of the CFFs across various types of MBs are of the same impact in terms of their success or failure. In the Philippines' setting, the government's current practices of implementing general programs to aid all MB types is a favorable response to combat the problem of premature closure. To further expound, the mean-ranking of the importance ratings showed key results wherein MB owners of food businesses rank significantly higher in importance ratings to factor-to-factor comparison against MB owners of clothing businesses. The higher mean-rank rating in the food industry implies that this sector is more prone to the effects of the CFFs and should be allotted more aid and resources by the government to reach success and avoid premature closures. This is attributed to the food industry being the most competitive type of MB due to their products being considered a basic commodity and are fast-moving in nature.

This paper exhibits the following limitations and probable research expansions for future studies. For one, the types of MBs can consider more than two types aside from the food and clothing industries (e.g., technology, service, agri-business, among others). Having more than two types of MBs considered can be investigated by means of a k-factor statistical analysis. This investigation would provide insights into whether similar key results can be derived in retaining the null hypothesis that there exists no statistical difference in the importance ratings across multiple types of MBs. For another, the core of this paper may also be reproduced in a case study involving another environment, given that the definition of MBs differs from its state or country of origin, declared gross annual income, and total assets. This could potentially generate a significantly different result and would introduce more avenues for further research.

References

A Guide to Starting a Micro Business in the Philippines, <https://www.alburolaw.com/a-guide-to-starting-a-micro-business-in-the-philippines>.

Alene, E.T., Determinants that influence the performance of women entrepreneurs in micro and small enterprises in Ethiopia, *Journal of Innovation and Entrepreneurship*, https://doi.org/10.1186/s13731-020-00132-6, 2020.

Antipova, Anzhelika, Analysis of the COVID-19 impacts on employment and unemployment across the multi-dimensional social disadvantaged areas. *Social Sciences & Humanities Open*: vol 4, Issue 1, 2021, 100224, 2021.

Atasoy, S., McConnon, J. C., Jr., & Gabe, T., The economic impact and importance of microbusinesses to the new England economy, *Resource economics and policy department*, Staff paper vol. 560. Orono, Maine: The University of Maine, 2007.

Bongaerts, Dion and Francesco Mazzola, Closed for business: The mortality impact of business closures during the Covid-19 pandemic, *PLOS ONE,* 2021.

Campin, S., Barraket, J., & Luke, B. Micro-business community responsibility in Australia: Approaches, motivations and barriers, *Journal of Business Ethics*, vol. 115, No. 3, pp. 489–513, 2013.

Danish, R.Q., Asghar, J., Ahmad, Z., Ali, H.F., Factors affecting "entrepreneurial culture": the mediating role of creativity, *Journal of Innovation and Entrepreneurship*, https://doi.org/10.1186/s13731-019-0108-9, 2019.

Endris, Ebrahim, The role of micro, small and medium enterprises (MSMEs) to the sustainable development of sub-Saharan Africa and its challenges: a systematic review of evidence from Ethiopia, *Journal of Innovation and Entrepreneurship*, Article number: 20, 2022.

Erdin, Ceren and Gokhan Ozkaya, Contribution of small and medium enterprises to economic development and quality of life in Turkey, *Heliyon* :vol. 6, Issue 2, 2022.

Garcia, F.T., Ten Cate, C.S., de Campos, E.A.R., Callegaro, A.M., de Jesus Pacheco, D.A., Mortality Risk Factors in Micro and Small Businesses: Systematic Literature Review and Research Agenda, *Sustainability*, vol. 14, No. 5, 2022.

Houston, D., Reuschke, D. City economies and microbusiness growth, Urban Studies, https://doi.org/10.1177/0042098016680520, 2017.

Houston, Donald and Darja Reuschke, City economies and microbusiness growth, *Sage Journals ,* 2017.

Kassa, E.T., Getnet Mirete, T., Exploring factors that determine the innovation of micro and small enterprises: the role of entrepreneurial attitude towards innovation in Woldia, Ethiopia, *Journal of Innovation and Entrepreneurship*, vol. 11, No. 1, 2022.

Larochelle, S., McConnon, J. C., Jr., & Gabe, T. M., Effects of microbusiness on US regional economic growth, *Doctoral dissertation*. University of Maine, 2008.

Mohammad, A., Microentrepreneurship in the hospitality industry: understanding motivations, challenges, risks, benefits, and critical success factors, *Tourism Review International*, vol. 25, No. 1, pp.47-62, 2021.

Mor, S., Madan, S., Archer, G.R., Ashta, A. Survival of the Smallest: A Study of Microenterprises in Haryana, India, *Millenial Asia*, Vol. 11, No. 1, pp. 54-78, 2020.

Mukumba, T., Overcoming SMEs challenges through critical success factors: a case of SMEs in the Western Cape Province, South Africa, *Economic and Business Review*, vol. 16 No. 1, pp. 19-38, 2014.

Murray, Jean, Small business. 3 November 2020. <https://www.thebalancesmb.com/differences-between-micro-business-and-small-business-4159188>.

Obi, James, Contribution of small and medium enterprises to economic development: Evidence from a transiting economy, *Data in Brief*, pp. 835-839, 2018.

Parker, Simon, Emilio Congregado and Golpe Antonio, Is entrepreneurship a leading or lagging indicator of the business cycle? Evidence from UK self-employment data, *International Small Business Journal: Researching Entrepreneurship*, 2012.

Samujh, R, Micro-businesses need support: survival precedes sustainability, *Corporate Governance: The International Journal of Business in Society*, vol. 11 No. 1, pp. 15-28, 2011.

Shafi, M., Liu, J., Ren, W., Impact of COVID-19 pandemic on micro, small, and medium-sized Enterprises operating in Pakistan, *Research in Globalization*, https://doi.org/10.1016/j.resglo.2020.100018, 2020.

Shafi, Mohsin, Junrong Liu and Wenju Ren, Impact of COVID-19 pandemic on micro, small, and medium-sized Enterprises operating in Pakistan, *Research in Globalization*, pp. 100018, 2020.

Shinozaki, Shigehiro and Lakshman Rao, COVID-19 Impact on Micro, Small, and Medium-Sized Enterprises under the Lockdown: Evidence from a Rapid Survey in the Philippines. *ADBI Publications*, 2021.

Singh, S., Charmola, P., Kumar, V., Verma, P., Makkar, N., Explaining the revival strategies of Indian MSMEs to mitigate the effects of COVID-19 outbreak, *Benchmarking*, https://doi.org/10.1108/BIJ-08-2021-0497, 2022.

Skibinski, Andrzej and Monika Sipa. Sources of Innovation of Small Businesses: Polish Perspective, *Procedia Economics and Finance*, pp. 429-437, 2017.

Szmigiera, M. Impact of the coronavirus pandemic on the global economy - Statistics & Facts. 21 February 2022. <https://www.statista.com/topics/6139/covid-19-impact-on-the-global-economy/#topicHeader__wrapper>.

Waikar, A., Huynh, M.Q., Cope, R.F., Tate, U.S. Evaluating key factors in supplier selection for micro-businesses: Implications for buyer satisfaction, *International Journal of Integrated Supply Management*, vol. 6, No. 3-4, 284-309, 2011.

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