

SUPPLY CHAIN PLANNING PRACTICES, SUSTAINABILITY, AND PROFITABILITY OF GRMHC, INC.: BASIS FOR PUTTING UP A COMMISSARY

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ABSTRACT

The study aimed at examining the supply chain planning practices, sustainability, and profitability of GRMHC, INC. to determine the relationship between the variables as basis for putting up a commissary. Descriptive correlational research design was employed. The population of this study consisted of 47 key personnel of GRMHC, Inc. and its six (6), branches handling key positions. Using the Slovin's formula, a sample size of 42 was arrived at. The study revealed that the respondents are aware and confident that GRMHCI has been undertaking activities to promote effective management of their supply chain which involves the process of coordinating assets to optimize the delivery of goods, services, and information from supplier to customer, balancing supply, and demand. Likewise, GRMHCI has the ability to produce a return on its investment based on its resources well within the standards for caterers and way beyond the standards for full-service restaurants. In essence, the results yield substantial implications to enhance the sustainability of its business operation, GRMHCI should periodically evaluate its operation using the Sustainability Assessment of Foodservice Checklist to check whether refrigerator and freezer doors have audible alarms for open doors or automatic locks; to look into the process of recycling cooking oil and/or transferring the cooking oil used to recycling companies, and to ensure the regularity of purchasing one or more products from a charitable foundation or a social enterprise that provides social impact, and synergistically consolidate the operation of GRMHCI six branches through the operation of a Commissary to further maximize profit.

Keywords: Commissary, Profitability, Supply Chain Planning Practices, Sustainability, Quantitative Research.

INTRODUCTION

Food service is defined as the foremost segment of hospitality industry accounted with approximately \$800 billion-dollar net income. In the United States, average households allotted 50% of their profit to food expenses. In lieu of the consumers' rising demand for food is its increasing demand to know where and how the food is prepared. From a production view, micro producers tend to struggle on space rental as they only offer small batches of food products and gain low profit from it. Wherefore, to optimize sales and cut off expenses, various food firms considered analyzing the management of their supplies, figuring out portioning and packaging, assuring that the quality of food products withstand the delivering conditions, and founding a commissary kitchen - an internal facility which creates meal components or entire

dishes and thereafter distributes it to restaurant branches (Pennstate, 2016). Unfortunately, Isacson and Klitte (2020) found that 90% of all startups in Sweden failed to maintain their business operation due to premature scaling. Richardson (2019) then suggested that in setting up a commissary, an analysis of market factors that influence the demand for kitchen space is needed. Specifically, supply chain management, profitability, and sustainability of food industry will first be evaluated and considered in putting up a central kitchen. Moving forward, an increased interest in both logistics and supply chain management (SCM) practices are evident in today's competitive environment in the hospitality field. Thoroughly, Nijaguna and Raghavendra (2015) claimed that the creation of supply chain leads to a better understanding of the whole chain; thus, the implementation of common standards becomes relaxed. Nguyen (2016) found that HaiHa Confectionery Joint-Stock Company in Vietnam has inefficient supply chain management; while Gebreyesus (2016) discovered that MOHA Soft Drinks Industry Ethiopia in Ethiopia is perceived to have efficient SCM practices. Liuspita and Purwanto (2019) added that profitability is also a factor in assessing commercial firms since it gauges the business' ability to generate profits and its economic success which helps in attracting possible investors. In Stockholm, Sweden, Hermann (2015) discovered that 3 out of 12 fast food company owners perceived high profitability due to appropriate pricing and management strategies. Similarly, Popov (2017) stated that Aqua Caffe and Food in Serbia attained high profitability thru formulating an attractive menu and competitive meal prices for permanent and new guests.

Further, Batat (2020) indicated two critical findings in exploring the dimension of food sustainability in the luxury gastronomic industry: (1) Chef's definition of sustainable food experience must encompass both functional aspects (i.e. eco-friendly practices, and sustainable and healthy food) and experiential aspects (i.e. sensory, creativity, pleasure, aesthetic); and, (2) Chef's motivations to promote a sustainability incorporate, in addition to extrinsic factors (planet and people) and intrinsic factors (plate, pleasure and place). In the United States, Reinke (2017) discovered that small firms have vulnerable sustainability caused by weak organization and inability to address barriers. In contrast, Adoukonou (2019) divulged that small firm owner view their business sustainable since they pursued economic, social, and environmental protection goals. Accordingly, they must ensure and invest towards a dynamic managerial strategy which deals to innovation and partnerships.

The small family business, GRM Food Services, now GRM Homestyle Cooking, Inc. (GRMHCI) started in 2002 from a small 'panciteria' and 'lugawan' in the main streets of Carmona, serving snack meals to local customers. The food stall had a good foot traffic back then because of its proximity to a Jeepney terminal. Considering the good investment return from food vending, GRM Food Services (formerly a single proprietorship) started doing canteen business in 2002. It did not stop its catering services and continued offering packed meals in various LGU-initiated projects and activities in Carmona, Cavite using its own small family kitchen. With supplies coming from Binan Public Market and small local suppliers from nearby towns, they were able to sustain the needs of the small catering business. Likewise, in 2002 it started operating in employees' cafeteria – serving employees of manufacturing companies in industrial parks in Carmona, Cavite, in Laguna. GRMHC, INC. have branches in Binan – Joyson Safety Systems Phil; Cabuyao - ATEC Phils. Inc.; Calamba – NEXEM Technologies; Sta. Rosa - LAMCOR Phils. Inc. and two branches in Tanauan, Batangas – Brother Industries Phils. Inc. and Collins Aerospace with the total of around 15,000 customers being served 24/7. GRMHCI maintains an administration office located in Carmona, Cavite that houses the office of the President and General Manager, and the HR, Finance, IT, and General Affairs departments which serve as the support services extended to the main canteen

operation. With the increasing scope of canteen operation, the company was incorporated in 2014. Each of the 6 branches maintains its own kitchen provided by the client company. The six (6) branches operate independently. Procurement is being handled by the branch manager – the menu plan dictates what supplies are to be purchased from suppliers. They have their own control of the raw materials, stocking, usage, and management of the inventories. Expenses are not being monitored. Wastage has no control. A commissary appears to be the synergistic solution to the uncoordinated and inefficient operation of the 6 branches of GRMHC, INC. The commissary food service system centralizes food procurement, food production, and food is transported to satellites (receiving kitchen) where it is served to customers. Prepared food may be stored frozen, chilled, or hot-held. Advantages of this system include lower food and supply costs, purchasing power, ingredient control is improved, and lower labor costs. However, the disadvantages include high initial capital investment, transportation costs, and perceived loss of quality and food safety problems. Based on the aforementioned studies and scenario, a study on the supply chain planning practices, sustainability and profitability of GRMHC, INC. was conducted for the purpose of determining the relationship between the variables as basis for putting up a commissary.

METHODS

This study on supply chain management (supply chain planning practices), sustainability, and profitability of GRMHC, Inc. used the descriptive-correlational research design. According to Gravetter and Forzano (2012) as cited by Tanyag (2018). The population of this study consisted of 47 key personnel of GRMHC, Inc. and its six (6), branches handling key positions. Using the Slovin's formula, a sample size of 42 was arrived at. Actual selection of the respondents was done using stratified random sampling technique. The respondents as proportionately distributed were as follows: to wit; GRMHCI management (5), Joyson Safety Systems Phils. Inc. (5), ATEC Phils. Inc. (5), NEXEM Technologies (5), LAMCOR Phils. Inc. (5), Brother Industries Phils. Inc. (9) and Collins Aerospace (8).

Based on the review of related conceptual literature and research articles, a 3-part researcher-made questionnaire was constructed for the purpose of generating the needed primary data. Part I focused on the supply chain management planning practices of GRMHCI, Inc. and its six (6) branches which was measured using the four-point Likert scale such as (4 = 3.25 - 3.99) Strongly Agree, (3 = 2.50 - 3.24) Agree, (2 = 1.75 - 2.49), Disagree, and (1 = 1.00 - 1.74) Strongly Disagree. Part II covered the sustainability of the business operations of the corporation. In this regard, the level of Sustainability Assessment of Foodservice Checklist as modified was used (Da Costa Maynard, Zandonadi, Nakano, & Botelho, 2020) which was measured using the four-point Likert scale such as (4 = 3.25 - 3.99) Strongly Agree = Very High, (3 = 2.50 - 3.24) Agree = High, (2 = 1.75 - 2.49) Disagree = Low, and (1 = 1.00 - 1.74) Strongly Disagree = Very Low. Part II dealt on the profitability of the corporation and its branches.

The questionnaire underwent validation by a panel of experts - a researcher, a statistician, and a businessman, who perused over it and offered some suggestions for its improvement. Further, the tool was subjected to a reliability test using Cronbach Alpha resulting in reliability indices of 0.922 for supply chain management planning practices and 0.930 for sustainability of business operations. Notably the researcher, being the president of GRMHCI, Inc., explained the purpose of the study to the respondent-personnel and elicited their cooperation to participate in the process of data gathering. She personally administered the survey questionnaire and retrieved the same immediately after its accomplishment to ensure 100% retrieval rate.

Thereafter, the data were coded and encoded in Excel format then sent to the statistician for statistical treatment and initial analysis. Likewise, the statistical tools used in the treatment of data are as follows: Weighted mean was used to determine the supply chain management planning practices and level of sustainability of GRMHCI, Inc., and Pearson Product Moment Correlation was utilized in determining the relationships between supply chain management planning practices and level of sustainability; between supply chain management planning practices and profitability; and between level of sustainability and profitability.

RESULTS AND DISCUSSIONS

Discussion of the supply chain planning practices, sustainability, and profitability of GRMHC, Inc.: basis for putting up a commissary is presented in the succeeding tables and textual presentations:

Table 1. SCM Supply Chain Planning Practices of GRMHC, Inc.

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. The company defines its plan using planning and statistical forecasting, for example, based on historical data.	3.12	Agree	10
2. The company generates a plan aligned with seasonality and product life cycle trends.	3.21	Agree	7
3. The company's key personnel agree on an inventory strategy, like raw materials inventory, etc. for the GRMHCI 6 branches.	3.27	Strongly Agree	6
4. The company key personnel agree on the safety stock which is an additional quantity of an item held in the inventory to reduce the risk that the item will be out of stock.	3.43	Strongly Agree	1
5. The company key personnel agree on the reorder point and replenishment order.	3.36	Strongly Agree	2
6. The company ensures that it balances excess at individual branches which occurs when the projected demand is greater than the safety stock at a certain point in time.	3.17	Agree	9
7. The company ensures that it balances shortage at individual branches which occurs when the projected demand is less than the safety stock at a certain point in time.	3.31	Strongly Agree	5
8. The company formulates policies to maintain all costs in line with budget guidelines and volumes of business.	3.33	Strongly Agree	3.5
9. The company manages its constraints to ensure that there is enough capacity to fulfill demand increases and balance worker capacity with material levels.	3.19	Agree	8
10. Decisions are made by evaluating financial trade-offs to maximize revenue and optimize inventory management.	3.33	Strongly Agree	3.5
Average	3.27	Strongly Agree	

As presented in Table 1, the respondents 'strongly agreed' with an average weighted mean of 3.27 to the supply chain planning practices of GRMHC, Inc. This implies that they were aware and confident that GRMHCI had been undertaking activities to promote effective management of their supply chain which involves the process of coordinating assets to optimize the delivery of goods, services, and information from supplier to customer, balancing supply and demand. The study's conclusion that GRMHCI had been undertaking activities to promote effective management of their supply chain which involves the process of coordinating assets to optimize the delivery of goods, services and information from supplier to customer, balancing supply

and demand finds support in the study of Gebreyesus (2016) which states that MOHA Softdrink Industry in Ethiopia was perceived to have an efficient SCM. SCM strategy influences their internal organization particularly their SC and organizational performances. Inclusion of SCM is a matter of survival in the current competitive market in food and beverage industry. This study further indicated the effects of a strategic SCM as to wit: (1) efficient delivery service, (2) effective production control, (3) organized inventory management. It can also be considered during decision-making process since implementing SCM practices improve the business operational performance. Therefore, to foster organization performance, emphasis on SCM measures must be given due emphasis (Gebreyesus, 2016). On the other hand, Singh and Akoijam (2020) claimed that ineffective supply chain management is accountable for the food wastage in the locale. Nguegan and Mafini (2017) identified seven problems in regard SCM as to wit (1) human resource management, (2) technology, (3) facilities, (4) supplier relationship management, (5) customer relationship management, (6) regulatory factors, and (7) logistics and transportation. Consequently, their determination of the problems surrounding SCM aid them in addressing their firm's logistic issues and improving their performance.

Table 2. Level of Sustainability of the GRMHCI Business Operation: Water, Energy and Gas Supply

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. The company has goals for the rational use of water, such as the use limit per activity (for example: for each meal served, 10 liters of water are spent).	2.90	High	11
2. The company performs preventive maintenance of the plumbing.	3.29	Very High	1.5
3. The company, in case of a water leak, performs immediate repair.	3.24	High	4
4. Employees verify that taps, when not in use and at the end of the service, are closed (note: confirm with the employee).	3.21	High	5
5. The pressure of kitchen faucets, washbasins, and bathrooms is regulated and limited to allow water savings.	2.93	High	9.5
6. The water reservoir is adequately kept covered and conserved, and is free from cracks, leaks, infiltrations, peeling, and other defects.	3.26	Very High	3
7. The company does not use running water to melt ice in sinks or thaw food.	2.81	High	13
8. Employees remove dirt without water from utensils before putting them in the washing machine.	2.50	High	14
9. When cleaning floors, the water flow is interrupted when it is not necessary to use it.	2.93	High	9.5
10. The company has reduced energy expenditure by at least 15% in the last six months, or 30% in the previous 12 months (see history of energy expenditure)	2.83	High	12
11. The refrigerator and freezer doors have audible alarms for open doors or automatic locks.	2.44	Low	15
12. The temperature of refrigerators, cooling chambers, and freezers are adequate and has a monitoring record.	3.14	High	6
13. The company performs and documents the maintenance recommended by the manufacturer for electronic devices to ensure that all equipment is	3.29	Very High	1.5

functioning correctly and maintains energy efficiency levels.			
14. The company cleans the air cooler filters with suitable detergents or contracts a third-party company for this service and changes the replaceable filters according to the manufacturer's guidelines.	2.95	High	8
15. The company has documented targets for reducing the use of liquefied petroleum gas.	3.10	High	7
Average	2.99	High	

As revealed in Table 2, the level of sustainability of GRMHCI business operation along the category of "water, energy and gas supply" was 'high' with an average weighted mean of 2.99 as rated by the respondents. This implies that the company, as seen by the respondents, was cognizant of and actively involved in the practices that the company adopts as a whole to reduce water, energy, and gas consumption. GRMHCI's adoption of the industry practices to reduce water, energy, and gas consumption in its business operation jibes with the opinion of Prigge (2016) who observed that reducing a business's impact on the environment means reducing waste and reducing waste means saving money. Cost savings through energy efficiency upgrades and renewable energy investments may be adopted by restaurants. He suggested the adoption of an Energy Management System (EMS), which allows for real-time tracking and monitoring of energy use across facilities. Reducing water use not only directly saves money on the water bill, but it also saves money on the energy used to pump the water, the energy used to heat the water and the costs associated with sending the water off to be treated. Some water efficiency opportunities in restaurants include low-flow nozzles and fixtures, water capture and reuse dishwasher systems, waterless urinals and behavior change (Prigge, 2016).

Table 3. Level of Sustainability of the GRMHCI Business Operation: Menu and Food Waste

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. The company owns and uses the technical preparation sheets to make the preparations.	3.19	High	9.5
2. The company offers a separate menu or substitutions to meet diet restrictions, such as gluten-free preparations, vegetarian cuisine, vegan menu, or preparations to meet religious restrictions.	3.21	High	6.5
3. The company has documented commitments, with a defined term, to reduce the use of sugar, salt, or saturated fat on the menu.	3.12	High	11
4. The company includes seasonal products in its menu, changing it throughout the months of the year.	3.21	High	6.5
5. Suppliers of products of animal origin have certificates that prove that animals are raised without the application of antibiotics or organics.	3.36	Very High	2
6. The company only purchases products of animal origin that have an animal welfare certification seal.	3.27	Very High	4
7. The company does not use ingredients or products with transgenic ingredients in its composition in the production of meals.	2.93	High	14.5
8. The company prioritizes the full use of food, producing safe preparations that use peels, stalks, and/or	3.02	High	13

edible shavings of vegetables and fruits as ingredients.			
9. The company assesses its food waste during food preparation.	3.20	High	8
10. The company assesses its food waste during food distribution.	3.19	High	9.5
11. The company discards food waste in the form of composting, anaerobic digestion, maceration, donates to feed pigs, or establishes partnerships with cooperatives that carry out these processes.	3.10	High	12
12. The company trains its employees to avoid food waste during all stages of meal production, from the receipt of food to distribution.	3.38	Very High	1
13. The company carries out smart ordering systems, inventory monitoring, inventory rotation and/or other inventory management strategies to avoid food waste.	3.26	Very High	5
14. The company has goals for reducing/controlling food waste.	3.33	Very High	3
15. The company recycles cooking oil and/or transfers the cooking oil used to recycling companies.	2.93	High	14.5
Average	3.18	High	

As shown in Table 3, the level of sustainability of GRMHCI business operation along the category of ‘menu and food waste’ was ‘high’ with an average weighted mean of 3.18 as rated by the respondents. This means that the company, as witnessed by the respondents, adhered to standard practices of menu planning, food production, and prevention and control of food waste due to overbuying, overproduction, and spoilage. Prigge (2016) opined that reducing solid waste, and especially food waste, is a major opportunity for many restaurants to save money and enhance public perception and community relations. According to the World Resources Institute, approximately one-third of all food produced in the world intended for human consumption is lost or wasted. This inefficiency equates to a loss of \$940 billion per year and contributes to 8% of annual global greenhouse gas emissions. These financial losses are much greater for the food waste that’s closer to the fork than to the farm, because all the costs of agriculture, production and distribution are embedded in that waste. According to Ritchie (201), food processing (from the farm into final products), transport, packaging and retail all require energy and resource inputs. Many assume that eating local is key to a low-carbon diet, however, transport emissions are often a very small percentage of food’s total emissions – only 6% globally. While supply chain emissions may seem high, at 18%, it is essential for *reducing* emissions by preventing food waste. Food waste emissions are large: one-quarter of emissions (3.3 billion tons of CO₂eq) from food production ends up as wastage either from supply chain losses or consumers. Durable packaging, refrigeration and food processing can all help to prevent food waste.

Table 4. Level of Sustainability of the GRMHCI Business Operation: Waste Reduction, Construction Materials, Chemicals, Employees and Social Sustainability

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. The company has an operational policy that contains a documented strategy on solid (non-food) waste management.	3.12	High	8.5

2. The company separates recyclable materials, that is, selective collection.	3.17	High	6.5
3. The company limits packaging and orders products in bulk to avoid waste generation.	3.12	High	8.5
4. The company does not use disposables and/or adopts strategies to minimize the use of these materials as much as possible, with documented goals.	3.00	High	10
5. The company adopts strategies to reduce the use of plastic in the distribution of meals.	3.19	High	5
6. The company returns packaging boxes for suppliers to reuse and/or provides suppliers with their returnable boxes for the delivery of goods.	2.95	High	12.5
7. The furniture (tables, chairs, and others) of the company is made of durable materials that can be repaired.	3.33	Very High	2
8. The company uses only ecological cleaning products.	3.21	High	4
9. The company uses cleaning concentrates and dilution control systems and/or employee training and monitoring for adequate dilution to minimize the use of chemicals.	2.98	High	11
10. The team has already undergone environmental training (energy efficiency and water efficiency).	2.95	High	12.5
11. The team has already undergone environmental training (fundamentals of sustainability).	2.86	High	14
12. The staff has undergone some training on healthy eating and the health impact of what they are producing	3.17	High	6.5
13. The company has a strategy regarding donations or support to its community.	3.26	Very High	3
14. The company has initiatives to promote healthy eating education for the local community (schools, colleges, community groups).	3.36	Very High	1
15. The company purchases one or more products from a charitable foundation or a social enterprise that provides social impact. (For example, a product made from leftover food, bread from a social enterprise bakery, etc.).	2.76	High	15
Average	3.09	High	

As indicated in Table 4, the level of sustainability of GRMHCI business operation along the category of ‘waste reduction, construction materials, chemicals, employees and social sustainability’ was ‘high’ with an average weighted mean of 3.09 as rated by the respondents. This means that the company was cognizant of the forms of waste and had readily available sustainability actions that can reduce an individual's, organization's or society's use of the earth's natural resources and personal resources. Social sustainability is about understanding the impacts of corporations on people and society. In corporations, social sustainability performance issues include human rights, fair labor practices, living conditions, health, safety, wellness, diversity, equity, work-life balance, empowerment, community engagement, philanthropy, volunteerism, and more. Though social impact, or social sustainability, issues are not easily quantifiable or measurable, they are easier to identify (ADEC, Innovations, 2021). Acar, et al., (2019) investigated sustainability concepts, linking them with social, environmental, and operational activities in the food supply chain. Building on the literature treating social sustainability as an antecedent of environmental sustainability, they presented the effects of environmental sustainability on operational performance using constructs that

reflect flexibility, quality, and responsiveness. The results showed that social sustainability is positively associated with environmental sustainability. Moreover, environmental sustainability has a positive influence on operational performance measures: flexibility, quality, and responsiveness with effect sizes that range from medium to large. Thus, organizations in the food supply chain should consider not only the economic, but also the social and the environmental aspects of sustainability. Maheshwari et al. (2020) explored the role of employee relations and human resource management (HRM) practices on firms' commitment to sustainability in the context of micro, small and medium enterprises (MSME) in India. The findings implied that MSMEs and food processing industries are critical to the growth of Indian economy and likewise for other emerging and developing economies. They are especially critical for their contribution to overall employment and sustainability comprising the second, third and fourth supplier links in supply chains. They have a major impact on sustainability outcomes and the life quality of employees.

Table 5. Composite Table for the Level of Sustainability of the GRMHCI Business Operation

Indicators		Weighted Mean	Verbal Interpretation	Rank
1.	Water, Energy and Gas Supply	2.99	High	3
2.	Menu and Food Waste	3.18	High	1
3.	Waste reduction, Construction Materials, etc.	3.09	High	2
Overall Weighted Mean		3.09	High	

As gleaned from Table 5, the level of sustainability of the GRMHCI business operation was generally 'high' with an overall weighted mean of 3.09. Its sustainability along "menu and food waste" was high with a weighted mean of 3.18 (Rank 1), followed by "waste reduction . . . social sustainability" with a weighted mean of 3.09 (Rank 2), and "water, energy and gas supply" with a weighted mean of 2.00 (Rank 3). This means that GRMHCI was able to meet the needs of its clientele and sustain its operation without compromising the economy, social resources and environment (profit, people and planet). In the study of Vu, Chan and Chiu (2017), it was shown that most of the factors of business sustainability employed to measure sustainability food service operations are supported. This study showed that environmental and social sustainability are significantly recognized in the corporation. More importantly, through the data analysis, a new factor of social sustainability, namely, community contribution has been found. The study is certainly applicable to other food service operations who wish to achieve a good degree of business sustainability.

Table 6. Profitability of the Corporation's Business Operation for the Past Three Years

ROI (%)	2017		2018		2019		Average	
	F	%	F	%	F	%	F	%
10 and below	25	60	18	43	20	48	21	50
11 – 15	9	21	13	31	12	28	11	26
16 and above	8	19	11	26	10	24	10	24
Total	42	100	42	100	42	100	42	100

As indicated in Table 6, the profitability of GRMCI based on return on investment (ROI) for SY 2017 was 10% and below as confirmed by 25 or 60 percent of the respondents; 11-15% as confirmed by 9 or 21 percent of the respondents; and 16% and above as confirmed by 8 or 19 percent of the respondents. For SY 2018, ROI was 10% or below as confirmed by 18 or 43 percent of the respondents; 11-15% as confirmed by 13 or 31 percent of the respondents; and

16% and above as confirmed by 11 or 26 percent of the respondents. For SY 2019, 10% or below as confirmed by 20 or 48 percent of the respondents; 11-15% as confirmed by 12 or 28 percent of the respondents; and 16% and above as confirmed by 10 or 24 percent of the respondents. As a whole, 21 or 50 percent of the respondents calculated the average net profit of 10% and below for 3 years which falls within the average standard ROI for food business; 11 or 26 percent had it at 11-15% and 10 or 24 percent had it at 16% and above, way above the average standard. This means that GRMHCI has the ability to produce a return on its investment based on its resources well within the standards for caterers and way beyond the standards for full-service restaurants. According to Sacks (2016), the average pretax profit of all of the caterers over the years has been 7% to 8%. For purposes of comparison, the average pretax profit in the full-service restaurant industry is 3% to 4%. Johannis and Hofstrand (n.d) described profitability as the primary goal of all business ventures. Without profit, the business will not survive. Measurement of the former and present profitability and projection of future profitability is important. Conversely, a highly profitable business has the ability to reward its owners with a high return of investment. Moreover, Zouaghi, Sánchez-García, and Hirsch (2017) distinguished the drivers of profitability.

Table 7. Relationship between the Supply Chain Planning Practices and Level of Sustainability of GRMHCI

Indicators	Pearson r	p-value	Interpretation
Water, Energy and Gas supply	0.556 Moderate correlation	0.000**	Significant
Menu and Food Waste	0.518 Moderate correlation	0.000**	Significant
Waste Reduction, Construction Materials, Chemicals, Employees and Social Sustainability	0.369 Low correlation	0.016*	Significant
**Significant @ 0.01; *Significant @ 0.05			

As reflected in Table 7, significant relationships were noted between supply chain planning practices and level of sustainability along “Water, Energy and Gas Supply” as indicated by a Person r value of 0.556 and a computed p-value of 0.000 ($p < 0.01$); between supply chain planning practices and level of sustainability along “Menu and Food Waste” as indicated by a Person r value of 0.518 and a computed p-value of 0.000 ($p < 0.01$); and between supply chain planning practices and level of sustainability along “Waste Reduction, Construction Materials, Chemicals, Employees and Social Sustainability” as indicated by a Person r value of 0.369 and a computed p-value of 0.016 ($p < 0.05$). This means that the more GRMHC implements the supply chain planning practices, the higher is its level of sustainability. This finding is affirmed by the finding of Suomela (2017), which stated the direct relationship between SCM and sustainability. Based on his findings, lack of SCM practices may lead to unsustainable business. Further, it also stressed that SCM should call for the need to collaborate, build long-term relationship, and power symmetry between the supplier and the buyers for a sustainable operation. Consequently, it laid down five general categories to consider in implementing SCM: (1) orientation; (2) continuity; (3) collaboration; (4) risk management; (5) proactivity.

Further, this corroborated by Arthur (2017) who also claimed a direct relationship between SCM and business sustainability. SCM is considered as strategy in maintaining business operations as it indicates internal and logistic organization to meet the firms’ vision, mission, and objective – long-term operation and prosperous profitability. Thus, to improve the business competitiveness and maintain its operation, five dimensions of SCM practices are

recommended namely (1) strategic partnership, (b) strong customer relationship, (c) innovated information sharing, (d) quality information sharing, and (e) lean internal practices.

Table 8. Relationship between the Supply Chain Planning Practices and Profitability of GRMHCI

Indicators	Chi-square test	p-value	Interpretation
Supply Chain Planning Practices and Profitability of GRMHCI	4.955	0.292	Not Significant
Significance level @ 0.05			

As presented in Table 8, there was no significant relationship between the GRMHCI's supply chain planning practices and its profitability as shown by Chi-square value of 4.944 and the computed p-value of 0.292 which higher than the 0.05 significance level. This means that GRMHCI's profitability is not dependent on its supply chain planning practices. Similar finding was observed in the study of Woldemariam (2017), which showed an indirect relationship between SCM efficiency and profitability. Profitability declined by 3.5% when capital investment for supply chains increased by 1%. Large size firms have advantage on the scale of economies which enabled them to have a more efficient SCM, production, and bargaining power which leads to an increase on net income. Indeed, the finding was contrary to the Alahmad (2021) which investigated the relationship between supply chain management practices (SCMPs) and supply chain performance (SC performance) within different industries in the Kingdom of Saudi Arabia. The research suggests that SCMPs, including supply chain planning (SC planning), level of information sharing (IS), customer relationship management (CRM), and supplier relationship management (SRM) were all positively related to SC performance. The research employed perceptual performance measures to gauge return on investment, revenue, and sales.

Table 9. Relationship between Level of Sustainability and Profitability of GRMHCI

Indicators	Chi-square test	p-value	Interpretation
Water, Energy and Gas supply	13.536	0.009	Significant
Menu and Food Waste	6.144	0.189	Not Significant
Waste Reduction, Construction Materials, Chemicals, Employees and Social Sustainability	7.000	0.030	Significant
Significant @ 0.05			

As gleaned from Table 9, there was a significant relationship between level of sustainability along "Water, Energy and Gas Supply" and profitability as shown by Chi-square value of 13.536 and the computed p-value of 0.009 which was lower than the 0.05 significance level. Moreover, level of sustainability along "Waste Reduction, Construction Materials, Chemicals, Employees and Social Sustainability" was also significantly related to profitability as indicated by the Chi-square value of 7.000 and the computed p-value of 0.030 which was lower than the 0.05 significance level. This means that GRMHCI's profitability was dependent on the level of sustainability along the two indicators. The finding of the study is similar to that of Bodhanwala and Bodhanwala (2018), which investigated whether corporate sustainability impacts profitability performance, revealed that a significant positive relationship between sustainability and firm performance measures (return on invested capital, return on equity, return on assets and earnings per share). Motwani and Pandya (2016) studied the impact of

sustainability reporting on the firm's profitability using the global reporting initiative (GRI) guidelines to identify the sustainability measures as overall sustainability reporting scores (OSR) and the scores of its four key variables viz. community (COM), employee (EMP), environment (EMP) and governance (GOV). The study concluded that overall sustainability reporting practices have a significant positive impact on firm's profitability to some extent. Laskar's (2019) study examined the relationship between corporate sustainability reporting and firm's profitability of Indian and South Korean companies. The regression results indicated that, for South Korean firms, the association is positive and significant. However, in Indian context, the impact of sustainability performance is negative.

CONCLUSION

The respondents are aware and confident that GRMHCI has been undertaking activities to promote effective management of their supply chain which involves the process of coordinating assets to optimize the delivery of goods, services and information from supplier to customer, balancing supply and demand, adopts and implements practices that reduce water, energy, and gas consumption, adheres to standard practices of menu planning, food production, and prevention and control of food waste due to overbuying, overproduction, and spoilage, and is cognizant of the forms of waste and has readily available sustainability actions to perform. Additionally, the organization's or society's use of the earth's natural resources and personal resources, GRMHCI has the ability to produce a return on its investment based on its resources well within the standards for caterers and way beyond the standards for full-service restaurants. The more GRMHCI implements the supply chain planning practices, the higher is its level of sustainability, GRMHCI's profitability is not dependent on its supply chain planning practices, and its profitability is dependent on level of sustainability along "Water, Energy and Gas Supply" and "Waste Reduction, Construction Materials, Chemicals, Employees and Social Sustainability", however, it is not dependent on the level of sustainability along "Menu and Food Waste".

RECOMMENDATIONS

Based on the findings and conclusions, the following recommendations are offered: GRMHCI should utilize planning and statistical forecasting (Ex. historical data) to ensure that it balances excess at individual branches which occurs when the projected demand is greater than the safety stock at a certain point in time, and in order to further enhance the sustainability of its business operation. GRMHCI should periodically evaluate its operation using the Sustainability Assessment of Foodservice Checklist to check whether refrigerator and freezer doors have audible alarms for open doors or automatic locks; to look into the process of recycling cooking oil and/or transferring the cooking oil used to recycling companies; and to ensure the regularity of purchasing one or more products from a charitable foundation or a social enterprise that provides social impact.

Likewise, synergistically consolidate the operation of GRMHCI and its six branches through the operation of a Commissary to further maximize profit, in the supply chain planning practices of GRMHCI, it should not lose track of the dimensions of sustainability, i.e., the economical, ecological, and social circumstances in which food is produced and offered. Thus, key personnel of the company should attend training on re-conceptualizing supply chain and for purposes of knowledge-sharing. GRMHCI could conduct a review of its supply chain planning practices (i.e., inventory management, supplier cash control, operating expenses control, customer cash control, etc.) to further improve profitability, and it should further

enhance its high level of sustainability along the area of 'menu and food waste' by minimizing food waste through creative menu solutions to further improve profitability.

REFERENCES

- Acar, M. F., Aktas, E., Agan, Y. & Bourlakis, M. (2019). Does Sustainability Pay? Evidence from the Food Sector, *Journal of Foodservice Business Research*. Volume 22, 2019 - Issue 3
- Adoukonou, V. (2019). *Strategies for Small Business Sustainability*. (Doctoral Dissertation). Walden University. Retrieved from <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=7780&context=dissertations>.
- Alahmad, Y. Y. (2021). *The Relationship between Supply Chain Management Practices and Supply Chain Performance in Saudi Arabian Firms*. *American Journal of Industrial and Business Management*, 11, 42-59 <https://www.scirp.org/journal/ajibm>.
- Amentae, T. (2018). *Supply Chain Management Approach to Reduce Food Losses: Empirical Results of Selected Food Commodities in Ethiopia*. (Doctoral Dissertation). Swedish University of Agricultural Sciences. Retrieved from https://pub.epsilon.slu.se/15462/7/amentae_t_k_180514.pdf/.
- Arthur, S. (2017). *Sustainable Supply Chain: Maintaining a Competitive Advantage in Retail Organizations*. (Doctoral Dissertation). Walden University. Retrieved from <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=5226&context=dissertations>.
- Ashrafi, M., Acciaro, M., Walker, T. R., Magnan, G. M., & Adams, M. (2019). Corporate sustainability in Canadian and US maritime ports. *Journal of Cleaner Production*, 220, 386-397.
- Backstrom, S.L. & Karlsson, J. (2015). *Corporate Sustainability and Financial Performance - The influence of board diversity in a Swedish context*. (Master's Thesis). Uppsala University. Retrieved from <http://www.diva-portal.org/smash/get/diva2:822784/FULLTEXT01.pdf>.
- Bagla, R. & Khan, J. (2017). Customers' expectations and satisfaction with online food ordering portals. *Prabandhan: Indian Journal of Management*, 10(11) 31-44.
- Barone, A. (2020). Total Quality Management. <https://www.investopedia.com/terms/t/total-quality-management-tqm.asp>.
- Batat, W. (2020). Pillars of sustainable food experiences in the luxury gastronomy sector: A qualitative exploration of Michelin-starred chefs' motivations. *Journal of Retailing and Consumer Services*, 57.
- Bedenik, N. O. (2018). Business between Profitability and Sustainability. *EFZG Working Paper Series*, 18 (3), 1-10.
- Bodhanwala, S. & Bodhanwala R. (2018). Does corporate sustainability impact firm profitability? Evidence from India *Management Decision*.
- Chen, Q. (2018). *Study of the Impact of Quality Management System on Chinese Baby Dairy Product Industry*. (Doctoral Dissertation). University of Central Lancashire. Retrieved from <http://clock.uclan.ac.uk/23645/1/23645%20Chen%20Qingxin%20Final%20The%20sis%20%28Master%20Copy%29.pdf>.
- Chiang, C. & Sheu, R. (2020). How the sustainability of your recipes? *International Journal of Gastronomy and Food Science*, 22.
- Coyle, J.J. (2016). *Supply Chain Management: A Logistics Perspective*. California: Cengage Learning.

- Crawford, R. (2019). Restaurant Profitability and Failure Rates: What You Need to Know. Modern Restaurant Management. Retrieved from <https://modernrestaurantmanagement.com/restaurant-profitability-and-failure-rates-what-you-need-to-know/>.
- Christopher, M. (2016). Logistics and Supply Chain Management. UK: Pearson.
- Da Costa Maynard, D., Zandonadi, P.Z., Nakano, E.Y., & Botelho, R.B.A. (2020). Sustainability Indicators in Restaurants: The Development of a Checklist. Sustainability, 12, 4076; doi:10.3390/su12104076.
- Dufwa, L. & Hammarstrom, M. (2015). Corporate Sustainability and the Financial Implications for the European Basic Materials Industry. (Bachelor's Thesis). University of Gothenburg. Retrieved from <https://core.ac.uk/reader/43560350>.
- Elkington, J. (2012). The Zeronauts: Breaking Sustainability Barrier. Routledge.
- Emamisaleh, K., Rahmani, K., & Iranzadeh, S. (2018). Sustainable Supply Chain Management Practices and Sustainability Performance in the Food Industry. The South East Asian Journal of Management.
- Gebreyesus, N. (2016). Employees' Perception on the Effects of Supply Chain Management Strategy on Firm Performance: The Case of MOHA Soft Drinks Industry S.C. Addis Ababa. (Master's Thesis). Addis Ababa University. Retrieved from <http://etd.aau.edu.et/bitstream/handle/123456789/6698/Natnael%20gebreyesus.pdf?sequence=1&isAllowed=y>.
- Gołaś, Z. (2020). Effect of inventory management on profitability: evidence from the Polish food industry: Case study. Agricultural Economics (Zemědělská ekonomika), 66(No. 5) 234-242.
- Grau, A. & Reig, A. (2020). Operating leverage and profitability of SMEs: agri-food industry in Europe. Small Business Economics.
- Hermann, T. (2015). Pricing strategy for products in the healthy fast-food sector in Stockholm. (Master's Thesis). KTH Industrial Engineering and Management. Retrieved from <http://kth.diva-portal.org/smash/get/diva2:823017/FULLTEXT01.pdf>.
- Hong, J., Zhou, Z., Li, X., et al. (2020). Supply chain quality management and firm performance in China's food industry—the moderating role of social co-regulation. International Journal of Logistics Management 31(1) 99-122.
- Isaac, K. (2018). Supply Chain Management Practices: A Case Study of a Food Production Company. (Vaasan Ammattikorkeakoulu University of Applied Sciences). Retrieved from https://www.theseus.fi/bitstream/handle/10024/157712/Kumah_Isaac.pdf?sequence=1&isAllowed=y.
- Isacsson, H. & Klitte, J. (2019). Forming a Supply Chain Strategy for a Startup. (Master's Thesis). Lund University. Retrieved from http://www.pm.lth.se/fileadmin/pm/Exjobb/Exjobb_2019/Isacsson__Hanna__Klitte_Jakob/MasterThesis-5.pdf.
- Jenkins, W. (2015). Marketing Strategies for Profitability in Small Independent Restaurants. (Doctoral Dissertation). Walden University. Retrieved from <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=2406&context=dissertations>.
- Johanns, A & Hofstrand, D. (n.d.). Understanding Profitability. <https://www.extension.iastate.edu/agdm/wholefarm/html/c3-24.html>.
- Kumar, A., Singh, R. & Modgil, S. (2020). Exploring the relationship between ICT, SCM practices and organizational performance in agri-food supply chain. Benchmarking 27(3) 1003-1041.
- Laskar, N. (2019) Does Sustainability Reporting Enhance Firms Profitability? A Study on Select Companies from India and South Korea. Indian Journal of Corporate Governance

- Le, T. T. (2020). The effect of green supply chain management practices on sustainability performance in Vietnamese construction materials manufacturing enterprises. *Uncertain Supply Chain Management*.
- Liuspita, J. & Purwanto, E. (2019). The Profitability Determinants of Food and Beverages Companies Listed at The Indonesia Stock Exchange. *International Journal of Scientific & Technology Research*, 8 (9), 197-202. Retrieved from <http://www.ijstr.org/final-print/sep2019/The-Profitability-Determinants-Of-Food-And-Beverages-Companies-Listed-At-The-Indonesia-Stock-Exchange.pdf>.
- Lyons, S. (2016). Ratios and benchmarks as tools for local food hub decision-making: A comparative case study. (Master's Thesis). Iowa State University. Retrieved from <https://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=6095&context=etd>.
- Maheshwari, M., Samal, A. & Bhamoriya, V. (2020). Role of employee relations and HRM in driving commitment to sustainability in MSME firms. *International Journal of Productivity and Performance Management*, Vol. 69 No. 8, pp. 1743-1764. <https://doi.org/10.1108/IJPPM-12-2019-0599>.
- Maness, P. (2016). Everything You Need to Know to Start a Community Commercial Kitchen. TriMark. Retrieved from <https://www.trimarkusa.com/news-room/trimark-blog/2016/october-2016/everything-you-need-to-know-to-start-a-community-c>.
- Maynard, D. d. C., Vidigal, M. D. & Botelho, R. B. A. (2020). Environmental, social and economic sustainability indicators applied to food services: A systematic review. *Sustainability (Switzerland)*.
- Modgil, S. & Sharma, S. (2017). Linkage between total quality and supply chain management practices and operational performance: a review. *International Journal of Services and Operations Management*. Vol.27 No.1 Mohamed, Y., Abdul Rahim, A., & Ma'aram, A. (2020). The effect of halal supply chain management on halal integrity assurance for the food industry in Malaysia. *Journal of Islamic Marketing*.
- Motwani S. S. & Pandya H. B. (2016). Evaluating the Impact of Sustainability Reporting on Financial Performance *International Journal of Research in IT & Management*.
- Mukhamedjanova, K.A. (2020). Concept of Supply Management. *Journal of Critical Reviews* ISSN- 2394-5125 Vol 7, Issue 2.
- Nguegan, C. & Mafini, C. (2017). Supply chain management problems in the food processing industry: Implications for business performance. *Acta Commercii - Independent Research Journal in the Management Sciences*.
- Nguyen, D. H. (2016). Analysis of Supply Chain Management (SCM) in Haiha Confectionery Joint-Stock Company (HAIHACO) and Developing Plan for its System. (Bachelor's Thesis). Satakunta University of Applied Sciences. Retrieved from <https://core.ac.uk/download/pdf/80989878.pdf>.
- Nijaguna, G. & Raghavendra, A. N. (2015). Supply Chain Management in Hospitality Industry: Impact on Service Quality in McDonald's Restaurants, Bangalore. *Global Institute for Research & Education*, 4(2), 22-29. Retrieved from <https://www.longdom.org/articles/supply-chain-management-in-hospitality-industry-impact-on-service-quality-in-mcdonalds-restaurants-bangalore.pdf>.
- Nuestro, E. (2020). OPINION: The Future of Restaurants in The Philippines And How F&B Industry Can Bounce Back. *Philippines Tatler*. Retrieved from <https://ph.asiatatler.com/dining/the-future-of-restaurants-in-the-philippines-how-fb-industry-can-bounce-back>.
- Pennstate (n.d.). Food Service in The Hospitality Industry. Retrieved from <https://psu.pb.unizin.org/hmd329/chapter/ch1/>.
- Perry, C. (2018). What's a Commissary Kitchen. *Medium*. Retrieved from <https://medium.com/@k.christin.perry/whats-a-commissary-kitchen-3b79b3ecdc27>.

- Pintuma, S., Khaengkhan, M., Waiyawuththanapoom, P. et al. (2020). Moderating effect of information sharing on the relationship of supply chain management capabilities and business performance: A study of the food industry. *International Journal of Supply Chain Management*. 9(2) 341-351.
- Prigge, Josh (2016). Time to Fire Up Restaurant Sustainability-Here's How. TDn2K Global Best Practices Conference.
- Popov, G. (2017). The researcher recommended business owners to take advantage of utilizing information technology for a more direct contact with tourists and customers. (Master's Thesis). Singidunum University. Retrieved from file:///C:/Users/Hami%20C3%B1ia/Downloads/MR%20%20Economic%20and%20financial%20analysis%20of%20planning%20the%20menu%20in%20Aqua%20Caffe%20and%20Food%20restaurant.pdf.
- Purvis, B., Mao, Y., & Robinson, D. (2018). Three pillars of sustainability: in search of conceptual origins. *Sustainability Science*. Volume 1.
- Reinke, A. (2017). Sustainability and Social Responsibility in Small Food Enterprises: Barriers and Enablers. (Doctoral Dissertation). Walden University. Retrieved from <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=4609&context=dissertations>.
- Richardson, L. (2019). How to start a Commissary Kitchen. *The Food Corridor*. Retrieved from <https://www.thefoodcorridor.com/2019/08/27/how-to-start-a-commissary-kitchen/>.
- Ritchie, H. (2019). Food production is responsible for one-quarter of the world's greenhouse gas emissions. Retrieved from <https://ourworldindata.org/food-ghg-emissions>.
- Ruffolo, C. (2020). Baton Rouge Commissary Kitchens: The Benefits of Using a Commissary. Louisiana Culinary Institute. Retrieved from <https://www.lci.edu/baton-rouge-commissary-kitchens-the-benefits-of-using-a-commissary>.
- Sacks, C. (2016). "What's a fair profit margin for a caterer?" *Catersource*. <https://www.catersource.com/business-operations/what%E2%80%99s-fair-profit-margin-caterer>.
- Sanyal, R. (2019). *Planned Growth and Economy*. S. Chand.
- Sel, Ç., Soysal, M. & Çimen, M. (2017). A green model for the catering industry under demand uncertainty. *Journal of Cleaner Production*. 167 459-472.
- Semerad, D. (2017). How To Leverage Sustainability To Increase Business Profitability. *Forbes*. Retrieved from <https://www.forbes.com/sites/forbesagencycouncil/2017/10/31/how-to-leverage-sustainability-to-increase-business-profitability/#267540b03440>.
- Sergio, B.D. (n.d.). *Food Service Systems: A Guide to Centralized Foodservice Systems*. Introduction to Foodservice Systems.
- Sharma, J., Tyagi, M. & Bhardwaj, A. (2017). Parametric review of food supply chain performance implications under different aspects. *Journal of Advances in Management Research*.
- Shegelman, I., Kirilina, V. & Vasilev, A. et al. (2020). Supply chain management application in functional food industry. *International Journal of Supply Chain Management* 9(3) 537-549.
- Siagian, H., William Gomel, E. & Josowanto Oei, S. (2020). The Effect of its Application on Supply Chain Performance Through Green Supply Chain Management in Food and Beverage Industry in Surabaya, Indonesia. *SHS Web of Conferences*, 76 01010.
- Singh, T & Akoijam, S. (2020). Supply chain management of food processing industry in Manipur: Challenges and perspectives. *International Journal on Emerging Technologies*. 11(1) 36-42.
- Stanton, D. (2017). *Supply Chain Management for Dummies*. NJ: John Wiley & Sons, Inc.

- Suomela, A. (2017). Transparency in supply chains to ensure sustainability – Case Study from Food Industry. (Master's Thesis). Lappeenranta University of Technology. Retrieved from http://essay.utwente.nl/73368/1/Suomela_MA_Behavioural%20Management%20and%20Social%20Sciences.pdf.
- Vu, H., Chan, H., Lim, M. et al. (2017). Measuring business sustainability in food service operations: a case study in the fast-food industry. *Benchmarking*, 24(4) 1037-1051.
- Vuković, B., Andrić, M. & Jakšić, D. (2017). The impact of working capital management on company's profitability: Empirical evidence from Serbia. *Custos e Agronegocio* 13(1) 333-349.
- Wachira, R. N. (2017). Financial Sustainability Determinants of Government Owned Entities in Kenya. (Doctoral Dissertation). Jomo Kenyatta University of Agriculture and Technology. Retrieved from http://ir.jkuat.ac.ke/bitstream/handle/123456789/4840/Print%20Copy%20final%20thesis%20%20Rosaly%20N%20_ONedits.pdf?sequence=1&isAllowed=y.
- What Is Profitability? - Definition & Analysis. (2015, October 14). Retrieved from <https://study.com/academy/lesson/what-is-profitability-definition-analysis-quiz.html>.
- What is social sustainability? ADEC Innovations. (April 3, 2021). Retrieved from <https://www.esg.adec-innovations.com/about-us/faqs/what-is-social-sustainability/>
- Woldemariam, Y. (2017). Determinants of Profitability: Evidence from Large Manufacturing Food and Beverage Companies of Addis Ababa. (Master's Thesis). Addis Ababa University. Retrieved from <http://etd.aau.edu.et/bitstream/handle/123456789/5728/Yodit%20Yirgu.pdf?sequence=1&isAllowed=y>.
- Yildiz Çankaya, S. & Sezen, B. (2019). Effects of green supply chain management practices on sustainability performance. *Journal of Manufacturing Technology Management*
- Zhu, L. (2017). Economic analysis of a traceability system for a two-level perishable food supply chain. *Sustainability (Switzerland)* (2017) 9(5).
- Zouaghi, F., Sánchez-García, M. & Hirsch, S. (2017). What drives firm profitability? A multilevel approach to the Spanish agri-food sector. *Spanish Journal of Agricultural Research*, 15(3).