

CUSTOMER RELATIONSHIP MANAGEMENT, KNOWLEDGE MANAGEMENT, AND INNOVATION CAPABILITIES OF THE FOOD INDUSTRY**Lyra Crizelle M. Hernandez**School of Business and Management
Lemery Colleges, Lemery, Batangas, Philippines**ABSTRACT**

The purpose of this paper is to examine and elaborate the relationship between customer relationship management (CRM) and knowledge management (KM), as well as innovation capabilities in the food industry. The CRM dimensions are long-term partnership, information sharing, customer involvement, joint-problem solving and technology based CRM. The knowledge management practices are knowledge acquisition, knowledge dissemination and responsiveness to knowledge. The aspects of innovation capability are product innovation, process innovation, administrative innovation, marketing innovation and services innovation. Data from managers of casual dining and quick service restaurants were collected. A correlation analysis was employed to examine the relationship between CRM and KM, and as well as innovation capabilities. The following were the results of the study: food establishments from the cities and quick service restaurants have higher level of knowledge management practices than those in non-cities and casual dining. All dimensions of CRM have a significant relationship with all practices of knowledge management. These is a strong and positive relationship between knowledge management and innovation capabilities except product innovation. The findings suggest that knowledge management contributes to CRM activities but not all innovation programs are backed up by knowledge management. This clearly indicates the need for customer knowledge management mechanism that can help in the creation of new product developments.

Keywords:

Information sharing, casual dining, quick service restaurants

INTRODUCTION

Organizations can achieve success by leveraging knowledge to enhance their ability to sustain customer relationships and improve their innovation capacity. The primary driver of competitiveness and economic growth is innovation, which is fueled by emerging needs and demands. In the context of rapidly evolving technology and unpredictable markets, it is imperative for producers to enhance their innovation capabilities in order to meet the requirements of customers and industry standards, thereby maintaining a sustainable competitive advantage [1]. According to Tidd et al [2] findings, producers who exhibit superior performance in product and service innovation may reap twice the benefits compared to those who do not engage in innovation.

In recent times, the food service industry in the Philippines has witnessed a noteworthy improvement, which can be attributed to the augmented spending power of individuals, influenced by the fast-paced lifestyle prevalent in contemporary times. Food industry stakeholders are expanding their reach to accommodate a larger population of Filipinos who are seeking increased levels of comfort and convenience. Food service industry stakeholders are presently directing their efforts towards attracting the millennial demographic, which constitutes one-third of the nation's populace and is recognized as the most significant consumer group. Considering this aspect, it is evident that the aforementioned customer category plays a significant role in propelling advancements within the food service industry.

Albert et al. [3] conducted a study on the innovative behavior of firms in the Philippines and identified several factors that hindered such behavior. These factors included challenges in interpersonal communication related to knowledge

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management practices, the size of the firm, and its location within the Philippine Economic Zone Authority industrial park. Furthermore, the influence of innovation has frequently been predominantly determined by customer demand.

The customer appears to be a recurring theme throughout all industrial revolutions. According to Oram [4] among the various technologies driving Industry 4.0, it is the novel customer relationship technologies that will distinguish the successful entities from the unsuccessful ones.

The clientele plays a pivotal role in facilitating the growth and advancement of any enterprise or organization. The concept of Customer Relationship Management (CRM) is a strategic approach that involves the integration of individuals, organizations, and technological advancements to gain a comprehensive understanding of customers' satisfaction needs. In contemporary times, the utilization of CRM is not limited to industry leaders alone, as it is increasingly being employed by various organizations to attain a competitive advantage. The act of surviving has become an imperative necessity. The permanence of CRM is attributed to the fact that customers, including both individual consumers and corporate entities, anticipate service providers to be customer-focused.

The implementation of Customer Relationship Management (CRM) holds significant importance in a corporate setting, as it enables organizations to proactively assess the satisfaction and loyalty of their customers. Customer Relationship Management (CRM) is a business strategy that involves the collection, storage, and analysis of customer data to enhance organizational processes and create novel customer experiences. According to Payne and Frow [5], CRM is a methodical approach to managing customer relationships that leverages information technology and customer insights to create value for all stakeholders involved.

The enhancement of innovation capability and the attainment of a sustainable competitive advantage are increasingly perceived as the primary benefits of customer relationship management [6]. The effective conversion of customer information into customer knowledge is a key objective of successful customer relationship management (CRM), which is closely associated with knowledge management.

The success of CRM is believed to be driven by customer awareness, which is essential for comprehending consumer behaviors and introducing novel products and services, as per Salojarvi et al. [7]. Organizations have attempted to integrate their customer relationship management (CRM) and knowledge management practices due to the recognition that knowledge management plays a crucial role in the successful implementation of CRM.

In order to achieve their objectives, enterprises require access to resources and infrastructure. One crucial aspect for knowledge managers in the development of intricate designs is the management of customer knowledge. Managers can facilitate employee participation in knowledge and information processes by utilizing different components of customer relationship management (CRM) in order to foster innovation. However, companies that strive to improve their databases through customer engagement have the potential to outperform competitors in product and service development and market expansion, as most offerings are influenced by consumer preferences and appeal. The centrality of knowledge management in fostering innovation capabilities and its significance as a fundamental requirement for the innovation process in organizations is widely acknowledged. The extent to which innovation capabilities are related to customer relationship management and the mediating function of knowledge management has not been thoroughly investigated. Therefore, the objective of this research is to examine the correlation between Customer Relationship Management (CRM) and Knowledge Management (KM), along with their impact on the organization's innovation capabilities. The present study centers on examining the internal mechanism of Customer Relationship Management (CRM) by incorporating knowledge management as a variable, as well as exploring the external mechanisms of CRM by utilizing the five components of CRM as variables.

OBJECTIVES OF THE STUDY

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The food service sector has demonstrated proficiency in implementing customer relationship management (CRM) and leveraging technology and innovation to gain a competitive edge and enhance ongoing progress. Nevertheless, the intermediary function of knowledge management in relation to CRM and innovation capabilities has not been thoroughly investigated. The overarching aim of the study was to examine the correlation between customer relationship management and knowledge management, alongside the innovation capabilities of enterprises operating within the food service sector in Batangas. The research was structured to ascertain the firmographic characteristics of food industry organizations with respect to their geographic location, industry classification, duration of operation, and workforce size. The study aimed to investigate the implementation of customer relationship management in food establishments across multiple dimensions, including information sharing, customer involvement, joint problem-solving, long-term partnership, and technology-based CRM. Furthermore, the study sought to determine the distinct capacities for innovation across various domains, including product, process, service, marketing, and administrative innovation. This study aimed to ascertain the methods employed by the subjects in acquiring and disseminating knowledge, as well as their level of responsiveness to new knowledge. The objective of the study was to examine the variations in CRM, knowledge management, and innovation capability based on the firmographic profile of the organizations. The present study aimed to examine the correlation between customer relationship management and innovation capabilities in conjunction with knowledge management. The present investigation aimed to construct a unified model that elucidates the interplay between customer relationship management, knowledge management, and innovation capabilities, with the ultimate goal of enhancing the food industry's ongoing progress.

METHODS

Research Design

The methodology employed in the study was descriptive research. Self-administered survey questionnaires were completed by managers of food service restaurants.

A correlation analysis was conducted to examine the relationship between the dependent, mediator, and independent variables. The study conducted an analysis of knowledge management, customer relationship, and innovation capability through the utilization of one-way ANOVA and two-tailed t-test.

Participants of the Study

The study involved the enlistment of 168 managers from casual dining and quick service restaurants located in cities and class A municipalities within Batangas province. The objective was to assess the potential of customer relationship management (CRM) and innovation, while also examining the mediating role of knowledge management. The province of Batangas comprises the cities of Sto. Tomas, Tanauan, Lipa, and Batangas. The municipalities of San Juan, Rosario, Bauan, Calaca, Balayan, Nasugbu, and Lemery are classified as first-class municipalities. The study was motivated by the pivotal role played by the food service industry in the economic development of Batangas.

Research Instrument

The survey questionnaire was adopted from studies of Lin [8] and Darroch [9]. The survey was pilot tested and reviewed to ensure its validity and reliability. Based on the results of the reliability test, the survey questionnaire is valid and reliable. With a Cronbach Alpha of .954, questions under customer relationship management are excellent. Innovation capabilities are also excellent with Cronbach Alphas of .953. Knowledge management also passed the reliability test with a Cronbach Alpha of .913.

To attain the research goals, a survey questionnaire comprising four sections was employed. These sections included the firmographic data of the restaurants, customer relationship management practices, innovation capabilities of the company, and knowledge management practices. The survey responses were evaluated utilizing a four-point Likert scale, which spanned from strongly disagree to strongly agree.

Data Gathering Procedure

The study sample consisted of food enterprises in the province of Batangas that were classified based on the Cities and Municipalities Competitiveness Index of the Department of Trade and Industry. Included in the sample were food enterprises in cities and first-class municipalities in the province.

A pre-test was conducted to verify the reliability and validity of the survey instrument. A letter of request for approval was directed to the management of the aforementioned restaurants in order to obtain permission to carry out the study. Following the approval process, the survey was administered by the researcher directly to the managers. The managers exhibited a high level of expertise in the areas of customer relationship management, knowledge management practices, and innovation capabilities within their respective organizations, as evidenced by their comprehensive responses to all inquiries. The survey was conducted on a voluntary basis, allowing the respondents to exercise their discretion in deciding whether or not to participate. An alternative option for managers would be to conduct an online survey. The study ensures the preservation of confidentiality regarding the disclosed data, which was exclusively utilized for the stated objective.

Data Analysis

A correlation analysis was conducted in the study to ascertain the strength of the relationship among the dependent, mediator, and independent variables. This study conducted one-way ANOVA and t-test (two-tailed) to explore the relationship between knowledge management and customer relationship, as well as innovation capability.

RESULTS AND DISCUSSION

Table 1: Firmographic Profile of the Organizations in the Food Industry

Profile	Category	Frequency	Percent
Location	City	108	64.3
	Non-City	60	35.7
Category	Quick Service Restaurant	127	75.6
	Casual Dining	41	24.4
Number of years in operation	1-4	125	74.4
	5-9	32	19.0
	10-14	6	3.6
	15-19	1	.6
	20&above	4	2.4
Number of employees	1-24	76	45.2
	25-49	44	26.2
	50-74	16	9.5
	75-99	22	13.1
	100&Above	9	5.4

Table 1 shows the firmographic profile of the establishments in the food service industry in Batangas. Of 168 participating firms, majority are from the cities (64.3%), and the rest are from non-cities or first class municipalities (35.7%). With regard to the category in the food industry, the responding companies are dominated by quick service restaurants (75.6%), while the others are from casual dining restaurants (24.4%). In terms of the number of years in operation, most of the firms have been running for 1 – 4 years (74.4%), followed by 5 – 9 years (19%), 10 – 14 years (3.6%), 20 years and above (2.4%), and 15 – 19 years (0.6%). Pertaining to the number of employees, a large part of

the food industry has 1 – 24 employees (45.2%), while the others have 25 – 49 employees (26.2%), 75 – 99 employees (13.1%), 50 – 74 employees (9.5%), and 100 and above employees (5.4%).

Table 2: Customer Relationship Management in terms of Long-term partnership

Long-term partnership	WM	VI	Rank
1. Our company is committed to improving the management of anything suggested by customers.	3.72	Strongly Agree	2
2. Our customers are trusted and willing to provide recommendations about our company's products and services.	3.62	Strongly Agree	6
3. Our company systematically provides customized products and services to our key customers.	3.62	Strongly Agree	5
4. Our company strongly promotes customer loyalty or retention programs.	3.71	Strongly Agree	3
5. Our company maintains interactive, two-way communication with customers.	3.76	Strongly Agree	1
6. Our company cares about long-term growth and success with customers.	3.69	Strongly Agree	4
Composite Mean	3.69	Strongly Agree	

Table 2 exhibits long-term partnership customer relationship management. Managers highly agree that food enterprises have diverse strategies to ensure long-term client partnerships with a composite mean of 3.69. The composite mean of 3.69 and ratings ranging from 3.62 to 3.76 show that these businesses have excellent long-term client relationship management. These companies created diverse customer relationships. Managers thought their restaurants had two-way customer communication, with a weighted mean of 3.76. Service providers are paying more attention to clients, actively seeking input, and directly contacting them to learn about eating experience satisfaction [10]. Marketers create a venue for restaurant criticism and genuine customer communication. Facebook and Twitter are also wonderful tools for company-customer engagement. The respondents scored the establishments lowest in consumer trust and desire to suggest their products and services, with a weighted mean of 3.62. Existing and new customers interact based on satisfaction and trust. High-trust, satisfied customers recommend [11]. Customer involvement is important when it inspires customers to return and give recommendations when asked. Customer involvement also provides recommendations, emphasizing the necessity of long-term trust in relationships for positive activities. Bonuses for product promotion can also boost customer loyalty. These restaurants rarely solicit feedback or give incentives for suggestions.

Table 3: Customer Relationship Management in terms of Information Sharing

Information Sharing	WM	VI	Rank
Our company...			
1. discusses market demand information with customers.	3.15	Agree	4
2. shares competitive product information with customers.	3.13	Agree	5
3. works together with customers in identifying customer expectations and preferences.	3.42	Agree	2
4. shares sales promotion information with customers.	3.25	Agree	3
5. shares new product introductions with customers.	3.56	Strongly Agree	1
Composite Mean	3.30	Agree	

Table 3 shows how firms share customer relationship management information. As shown by the composite mean of 3.30, managers believe effective CRM implementation in food enterprises requires different customer information exchange strategies. These firms communicate to share information. According to the weighted mean of 3.56,

enterprises and customers communicate information about new product introductions the most. Ernst et al. [12] argue that categorizing clients by preferences allows organizations to create new items that meet their needs. Customer-shared data allows for more product innovation. The above cover a range of actions from project inception to deployment. Customers receiving competitive product information ranked lowest, with a weighted mean of 3.13. Behravan and Rahman [13] said consumers now research products and services online before buying. Consumers must research products before buying. However, research shows that the Internet has allowed more companies to promote their brands and products, contradicting this phase of the consumer's purchase journey. Role ambiguity in retail raises questions like whether employees should promote products or serve customers. Should the corporation provide product details before the customer asks or after?

Table 4: Customer Relationship Management in terms of Customer Involvement

Customer Involvement	WM	VI	Rank
Our key customers are involved in...			
1. new product development activities.	3.43	Agree	1
2. reviewing operations on a regular basis.	3.29	Agree	5
3. modifying products.	3.40	Agree	2
4. business assessments.	3.32	Agree	4
5. processing technology.	3.35	Agree	3
Composite Mean	3.36	Agree	

Table 4 compares customer relationship management approaches based on customer involvement. Managers agree that food establishments use various methods to engage customers, based on the composite mean of 3.36. The composite mean of 3.36 and ratings ranging from 3.29 to 3.43 show that the institutions in question perform well in customer relationship management. These companies involve customers in various business improvement projects. A weighted mean of 3.43 suggests that many companies allow customers to participate in new product development to create more unique products and services. Customers are considered collaborators from the start in improving products, services, and the company-customer relationship, according to Greenberg [14]. Highly engaged consumers can help organizations with product creation, brand enhancement, and testing. However, managers ranked firms lowest in customer involvement in operations reviews with a weighted mean of 3.29. Were et al. [15] say customer management is key to a good food service experience. Cost, real-time customer input, and satisfaction surveys drive customer quality management. These restaurants' customers don't evaluate operations regularly. However, their criticism helps management understand how to enhance daily operations.

Table 5: Customer Relationship Management in terms of Joint problem-solving

Joint problem-solving	WM	VI	Rank
1. Our key customers work with us to overcome difficulties.	3.39	Agree	3
2. Our company is jointly responsible with our key customers in getting things done.	3.48	Agree	1
3. Our company works with our key customers to help solve each other's problems.	3.45	Agree	2
Composite Mean	3.44	Agree	

Table 5 shows collaborative issue resolution customer relationship management by organization. According to the composite mean of 3.44, managers agree that food outlets use various methods to solve problems with customers. Their composite mean of 3.44 and evaluations ranging from 3.39 to 3.48 demonstrate high levels of customer relationship management focusing on collaborative problem-solving. These firms facilitate client-company problem-solving. A weighted mean of 3.48 in Table 5 shows that respondents believe their companies and primary consumers share task completion. These companies consider co-creating value with customers by sharing duties. Companies collaborate on customer issues. The lowest weighted mean was 3.39 for customer collaboration to solve company problems. Radzi et al. [16] argue that food establishments only interact with clients about customer experience, products, and services. Customer support representatives focus on store-level concerns. In routine operational reviews, managers ranked the entities lowest in customer involvement using a weighted mean of 3.29. Were et al. [15] argue that good customer service is essential to a good food service experience. Service cost, customer feedback, and

satisfaction surveys drive customer quality management. These restaurants' consumers probably don't evaluate them. Managers gain valuable insights from employee comments on how to improve daily operations.

Table 6: Customer Relationship Management in terms of Technology-based CRM

Technology-based CRM	WM	VI	Rank
1. Our company uses a call center or computer telephone integration to deal with customer demands, complaints, and suggestions.	3.49	Agree	5
2. Our company uses automated systems to track sales processes, analyze customers' trade-off information, find problems, and assist with work arrangements and adjustments.	3.54	Strongly Agree	3
3. Our company uses a management information system to collect customers' trade-off information and to integrate database.	3.44	Agree	6
4. Our company constructed an integrated CRM performance evaluation system.	3.55	Strongly Agree	1
5. Our company establishes perfect web-based customer interaction.	3.54	Strongly Agree	2
6. Our company uses data warehousing and data mining to save customers' information for identifying which of the potential customer's information is more valuable.	3.50	Strongly Agree	4
Composite Mean	3.51	Strongly Agree	

Technology-based CRM strategies are summarized in Table 6. Based on a composite mean score of 3.51, managers strongly believe that technology must be used to streamline CRM operations in the food service business. These firms use various technologies to improve CRM. The weighted mean of 3.55 shows that managers believe their organizations have a robust CRM performance review system. Payne [5] says CRM's strategy framework ends with performance assessment. This system ensures that the organization's strategic CRM goals are realized, laying the groundwork for future improvements. The results show that these food establishments define their needs and understand CRM benchmarks, metrics, and KPIs. Customer outcomes make the balanced scorecard a popular cross-functional metric. This lets them develop a customer experience scorecard and success map. Using management information systems to collect trade-off information, the enterprises scored the lowest with a weighted mean of 3.44. Trade-off analysis evaluates customer choices. Consumer compromises among service aspects must be assessed as affirmed by Lam [17]. However, management information system use is insufficient to assess the likely impact of service characteristic changes on customer loyalty.

Table 7: Innovation Capabilities in terms of Product Innovation

Product innovation	WM	VI	Rank
1. Our company launches new products.	3.69	Strongly Agree	1
2. Our company extends numbers of product lines.	3.63	Strongly Agree	4
3. Our company engages in new product development to obtain patents.	3.68	Strongly Agree	2
4. With new product developments, our company enlarges new markets.	3.64	Strongly Agree	3
5. Our company launches customized products according to market demands.	3.62	Strongly Agree	5
Composite Mean	3.65	Strongly Agree	

Table 7 shows how different companies innovate products. Managers are confident in food outlets' product innovation skills, as shown by the composite mean of 3.65. With a weighted mean of 3.69, most firms' product innovation efforts focused on new product introduction. Product innovation begins with the launch of a new product. Ottenbacher and

Harrington [18] say quick-service restaurants develop new goods methodically. It appears to combine tangible product innovation with intangible criteria. Innovation begins when a notion is turned into a new product or service. Research, management, and production aid this. Respondents gave their firms a low weighted mean score of 3.62 for responding to market demands with customized products. This remark contradicts the idea that innovation is how a company changes new products or services through research and development and market demand analysis. Bharadwaj and colleagues [19] found that only experienced buyers desire personalization. This means that most people don't use a design technique.

Table 8: Innovation Capabilities in terms of Process Innovation

Process innovation	WM	VI	Rank
Our company...			
1. imports new process technology.	3.48	Agree	5
2. obtains process technology patents.	3.46	Agree	6
3. adopts advanced computer-aided equipment.	3.54	Strongly Agree	3
4. adopts advanced real-time process control technology.	3.53	Strongly Agree	4
5. imports advanced automatic quality restriction equipment / software.	3.56	Strongly Agree	1
6. imports advanced programmable equipment.	3.56	Strongly Agree	2
Composite Mean	3.52	Strongly Agree	

Process innovation capabilities are shown in Table 8. According to the composite mean of 3.52, managers believe food enterprises may innovate, particularly in process innovation, which involves many activities. The composite mean of 3.52 and the grading range of 3.46 to 3.56 demonstrate the organizations' outstanding process innovation capabilities.

The weighted mean of 3.56 indicates that most firms use sophisticated automated quality control equipment or software. Rodgers [20] states that food business specialists value technology. This includes equipment, facility, and food service system design. These companies use advanced software and equipment to manufacture, store, prepare, and distribute food. With a weighted mean of 3.46, participants ranked their firms lowest in process technology patent acquisition. According to Moser [21], using patents tactically to repress competitors and collect licensing fees diminishes their ability to promote innovation. Patent policy affects invention distribution, making it important. However, patent law reforms stimulate innovation and dispersion by easing entrance. Innovative food companies and restaurants are dedicated to finding the next big innovation, even while patents are limited.

Table 9: Innovation Capabilities in terms of Marketing Innovation

Marketing innovation	WM	VI	Rank
Our company...			
1. leads innovative pricing methods in markets.	3.60	Strongly Agree	5
2. leads innovative distributing methods to markets.	3.64	Strongly Agree	4
3. leads innovative promotion methods to markets.	3.69	Strongly Agree	2
4. continually enlarges potential demand markets.	3.66	Strongly Agree	3
5. utilizes advanced CRM systems in markets.	3.71	Strongly Agree	1
Composite Mean	3.66	Strongly Agree	

Table 9 shows company marketing innovation capability. Managers believe food outlets can innovate, especially in marketing, based on a composite mean score of 3.66. As shown by a weighted mean of 3.71, managers recognize that their organizations use advanced CRM systems in diverse markets. CRM systems collect, store, organize, and share customer data across a business, according to Salojarvi et al. [7]. Restaurants use CRMs to understand customers. CRM data helps restaurant management understand customer patterns, preferences, and individual customers. Loyalty programs compel eateries to give regulars freebies and incentives. However, food establishments had the lowest weighted mean of 3.60 for market price innovation. The combination of customer perceptions, price elasticity, and

psychological pricing makes menu pricing complicated as affirmed by Ozmedir & Caliskan [22]. Menu pricing can greatly affect customers' eating experiences. Price-ending presentation and consumer price perceptions influence menu item ratings. The food establishments under review use combo meals, coupons, and "9" price ends, which are commonly used by other market players.

Table 10: Innovation Capabilities in terms of Service Innovation

Service innovation	WM	VI	Rank
1. Our company imports innovative implied warranty and maintenance systems for enhancing customer satisfaction.	3.66	Strongly Agree	4
2. Our company imports innovative claim clearing payment procedures and methods for enhancing customer satisfaction.	3.72	Strongly Agree	3
3. Our company imports innovative before-sale or after-sale service methods for enhancing customer satisfaction.	3.74	Strongly Agree	2
4. Our company adopts innovative order management and follow-up systems.	3.75	Strongly Agree	1
Composite Mean	3.72	Strongly Agree	

Table 10 shows firms' innovation capability in service innovation. Managers believe food companies may innovate, especially in service, based on a composite mean of 3.72. The weighted mean score of 3.75 indicates that participants believe their firms use innovative order management and follow-up techniques. Modern restaurants use internal and third-party software, social media platforms, blogs, and mobile apps, according to scholarly sources Kim et al., Kwok & Yu [23] [24]. Menu display, ordering, referrals, bookings, and marketing use these techniques. POS terminals and smartphone apps are used for ordering. These businesses manage quick service restaurant lineups, order taking, and payment wait times in addition to food delivery. The managers' evaluation of their restaurants showed a weighted mean of 3.66, indicating a low ranking in creative implied warranty of food sold and maintenance methods to increase customer satisfaction. Shaharudin et al. [25] report a shift in consumer demand from manufacturing to product. Fresh, appealing, and tasty food is more important than its preparation. "Food quality" relates to food acceptability for ingestion. Participating restaurants can quickly prepare, process, and serve meals. Food innovation stresses product consistency.

Table 11: Innovation Capabilities in terms of Administrative innovation

Administrative innovation	WM	VI	Rank
Our company			
1. adopts innovative reward systems.	3.68	Strongly Agree	3
2. adopts innovative work designs.	3.50	Strongly Agree	5
3. adopts innovative administration aiming at new product development.	3.55	Strongly Agree	4
4. engages in organizational reconstruction for pursuing operational efficiency.	3.72	Strongly Agree	2
5. engages in business process re-engineering.	3.74	Strongly Agree	1
Composite Mean	3.64	Strongly Agree	

Table 11 shows organizational administrative innovation. Based on a composite mean score of 3.64, managers believe food enterprises are capable of administrative innovation. Based on a weighted mean of 3.74, most firms use business process re-engineering for administrative innovation. Re-engineering business processes with customer service in mind helps optimize operational procedures and service, according to Ozdemir et al. [22]. Business process re-engineering must consider the implications of innovative customer service reconceptualization, process function, information technology, and substantial changes. The results show that the restaurants polled recognize the benefits of product delivery reconfiguration. These companies realized that centralized commissaries would benefit from food preparation from restaurants. This method improves quality control, reduces kitchen mistakes, and encourages better customer service. The survey participants gave their firms the lowest ranking for creative work design, with a weighted

mean of 3.50. This requires adopting new methods for streamlining routine tasks and providing work directives, which are rarely executed without creative systems and technology.

Table 12: Knowledge Management Practices in terms of Acquisition

Acquisition	WM	VI	Rank
Our company...			
1. values employees' attitudes and opinions and encourages employees to up-skill.	3.77	Strongly Agree	2.5
2. has well-developed financial reporting systems.	3.77	Strongly Agree	2.5
3. is sensitive to information about changes in the marketplace.	3.74	Strongly Agree	4
4. employs and retains a large number of people trained in science, engineering, or math.	3.63	Strongly Agree	6
5. works in partnership with international customers.	3.65	Strongly Agree	5
6. gets information from market surveys.	3.92	Strongly Agree	1
Composite Mean	3.74	Strongly Agree	x

Table 12 shows how companies acquire knowledge. Based on a composite mean score of 3.74, managers believe that successful knowledge management requires different knowledge acquisition approaches. A weighted mean of 3.92 indicates that most participants use market surveys to get data. Ottenbacher [18] says modern quick-service restaurants use advanced market analysis technology in their innovation cycle. Market research helps managers and innovation teams make smart decisions during ideation. Market research helps these restaurants improve customer service and menus. The lowest observed knowledge acquisition practice in firms that recruit science and mathematicians has a weighted mean of 3.63. Hospitality training helps retail workers improve their skills, learn new things, and share expertise with food industry peers.

Table 13: Knowledge Management Practices in terms of Dissemination

Dissemination	WM	VI	Rank
1. Our company readily disseminates market information around the organization.	3.74	Strongly Agree	3
2. Our company disseminates knowledge on-the-job.	3.72	Strongly Agree	4
3. Our company uses techniques such as quality circles, case notes, mentoring and coaching to disseminate knowledge.	3.75	Strongly Agree	2
4. Our company uses technology to facilitate communication.	3.76	Strongly Agree	1
5. Our company prefers written communication to disseminate knowledge.	3.71	Strongly Agree	5
Composite Mean	3.74	Strongly Agree	

Table 13 summarizes organizations' dissemination-related knowledge management approaches. The composite mean of 3.74 suggests that managers believe good knowledge management involves a variety of knowledge dissemination strategies. A weighted mean of 3.76 suggests that participants believe their firms use technology to improve communication. Technology allows two-way, individualized, interactive, and database-oriented communication, according to Moreno & Tejada [26]. Technology improves website, social media, and email functionality and accuracy. These restaurants use computers to manage their skills, information, and material. Restaurants use smartphones and other gadgets to record data and send it to the office. Dining apps improve customer experience and provide restaurant operations insights. Writing has the lowest weighted mean for knowledge diffusion, at 3.71. Writing

is expensive and time-consuming, which explains this. Response time is long and flexibility is low. It can unexpectedly protect company operations. Writing takes time to communicate with all parties, delaying decision-making.

Table 14: Knowledge Management Practices in terms of Responsiveness to knowledge

Responsiveness to knowledge	WM	VI	Rank
Our company...			
1. responds to knowledge about customers.	3.75	Strongly Agree	2
2. responds to knowledge about competitors.	3.76	Strongly Agree	1
3. responds to knowledge about technology.	3.72	Strongly Agree	4
4. is flexible and opportunistic by readily changing products, processes and strategies.	3.73	Strongly Agree	3
Composite Mean	3.74	Strongly Agree	

Table 14 shows how responsive organizations are to knowledge management practices. Based on a composite mean of 3.74, managers believe that good knowledge management involves a variety of practices that prioritize prompt and appropriate knowledge response. A weighted mean of 3.76 shows that respondents know food establishments respond to competitor information. Gold et al. [27] state that firms with strong knowledge management in a vital domain should respond quickly to rival strategic moves. Advanced-knowledge organizations can achieve their goals faster, cheaper, and better than their competitors, according to Gebert et al. [28]. Strong social knowledge management resources allow companies to develop sophisticated and effective apps faster than their competitors. They can also anticipate organizational demands and deliver innovative product features before their competition. The study shows that organizations use both tangible and intangible resources to compete in equivalent markets. Responding to emerging technologies had the lowest weighted mean, 3.72. Inventory, self-ordering, and waste management systems are technological advancements. The discovery supports claims that the food industry does not naturally use technology and instead prioritizes product improvements, often in the form of product line extensions or imitative products, over adaptations as affirmed by Massa & Testa [29]. The food service industry uses knowledge management to gain a competitive edge.

Significant Difference on Customer Relationship Management, Knowledge Management, and Innovation Capabilities when grouped according to Firmographic Profile.

Cities and non-cities customer relationship management differ statistically. The estimated p-values, especially for information sharing and collaborative problem-solving, are below the 0.05 alpha level. The data show that city food establishments share information and collaborate on problems more than non-cities ones. Food outlets differ in service and marketing innovation. Cities innovate more than non-cities. The study shows that knowledge management practices vary greatly. Specifically, cities have better knowledge management practices in knowledge acquisition, diffusion, and response than non-cities. Chi [30] states that consumer behavior affects customer orientation, satisfaction, needs, and expectations. Due to market heterogeneity in two regions, the results differed. Fast-food customers are more loyal to convenient locations as affirmed by Min & Min [31]. Customers have become more concerned about restaurant locations, especially those near their homes, schools, and workplaces. City restaurants can distribute promotional campaigns and information over more channels than non-cities. Information sharing aims to build client loyalty by providing and transmitting relevant customer data. Cities are better at analyzing problems, finding solutions, and working with clients than non-cities. These city businesses exceed client expectations and set the industry standard with innovative services and marketing. City areas have better knowledge management practices than non-cities locations.

Quick-service and casual-dining restaurants use technology-driven CRM techniques differently. The study found that quick-service restaurants use more technology-based CRM than casual dining restaurants. The computed p-value of 0.028 is below the alpha level of 0.05. The estimated p-value of more than 0.05 alpha level shows that innovative capabilities were observed similarly. The estimated p-value of 0.016, which is below the alpha level of 0.05, shows that information management practices differ in knowledge diffusion. According to the mean rank, quick service restaurants have better knowledge dissemination practices than casual dining restaurants. Quick service restaurants and casual dining places differ mainly in industry standards. Quick-service restaurants offer drive-thru ordering, dine-in, and delivery, whereas casual dining restaurants offer table service. According to Medeiros and Salay [32], affordability and efficiency were the main criteria in choosing fast-food establishments. Quick-service restaurants now

provide home delivery, pre-ordering, and faster payment processing to reduce wait times. Quick Service Restaurants (QSRs) or fast food franchises are expanding through larger shop formats and more locations due to competition. Quick-service restaurants (QSRs) should train and equip its staff to give customers with fast, accurate service.

The study shows that food establishments' customer relationship management differs by duration. Customer involvement and cooperative problem solving differ between those in business for 1-4 years and those for 5-9 years. The statistical analysis shows p-values below the 0.05 alpha threshold. According to mean rank scores, food establishments that have been open for 1-4 years have higher customer engagement and collaborative problem-solving than those that have been open longer. The estimated p-value exceeds 0.05, showing no statistically significant difference in innovation capacity and knowledge management practices between the two groups. The difference test excluded the small number of establishments with a decade or more of operation. Kallidin [33] found that consumer interaction increases restaurant loyalty. Involvement predicts loyalty and return. Most restaurants are one to nine years old. One-to-four-year-old companies understand the importance of customer engagement and problem-solving.

In collaborative issue resolution and technology-driven CRM, food establishments differ statistically. The estimated p-value is below the 0.05 alpha threshold. The mean rank shows that firms with 75-99 people have more collaborative problem-solving practices than those with 50-74 employees. The study found that companies with 25-49 workers use technology-based CRM practices more than those with 50-74 employees. The p-value of 0.021 is below the alpha level of 0.05. The estimated p-value of less than 0.01 alpha level shows that process, service, and marketing innovation capabilities differ statistically. The mean ratings show that 25-49-employee companies had more process and service innovation than 50-74-employee companies. In the meanwhile, businesses with 1-24 employees have more marketing innovation than those with 50-74. The study shows that food enterprises' knowledge acquisition, distribution, and responsiveness tactics vary. Statistical analysis showed a p-value below 0.01 alpha level. The mean rank scores show that food enterprises with 25-49 employees have better knowledge management practices than those with 50-74. A restaurant industry study found that companies with moderate to high organizational participation outperformed those with low participation. According to Ogbeide and Harrington [34], the association between the variables is stable in small and large firms and throughout food service sectors. Strategic management engagement was assessed for top, middle, lower, and frontline staff. New product innovations, seminars, company evaluations, market patterns, and requirements occupy staff. These companies and their workers work with clients to solve tough problems.

Relationship of Customer Relationship Management and Innovation Capabilities with Knowledge Management

The research revealed a noteworthy correlation between the implementation of customer relationship management and knowledge management practices among food companies in Batangas. The computed p-values fall below the significance level of 0.01, suggesting a positive correlation of mild to moderate strength. It can be inferred that food enterprises exhibiting superior customer relationship management are more likely to possess effective knowledge management practices. There exists a significant positive correlation between knowledge management and innovation capability, with the exception of product innovation. There exists a positive correlation between knowledge management practices and innovation skills in food establishments. The capacity for innovation and the management of customer relationships are directly impacted by knowledge management. The implementation of customer relationship management (CRM) systems can aid organizations in effectively managing their knowledge resources. Interactions between customers, employees, and companies serve as a valuable source of learning. The possession of organizational knowledge is a prerequisite for fostering innovation. In order to enhance their competitive edge and foster innovation, companies allocate significant resources towards knowledge management. There is a positive correlation between knowledge acquisition, dissemination, and responsiveness with extended partnerships, information sharing, customer engagement, collaborative problem-solving, and technology-oriented customer relationship management (CRM). According to Salojarvi et al. [7], organizations utilize organizational communication, customer contacts, and technology infrastructure to gather, retain, and evaluate consumer data. It has been observed that the implementation of knowledge management systems has a positive impact on the management of customer relationships. The implementation of knowledge management practices has been observed to enhance the level of innovation within culinary establishments. As affirmed by Lopez-Nicolas & Merono-Cerdan [35], the process of knowledge creation is a crucial factor in fostering innovation and enhancing competitiveness. The non-excludable and repeatable nature of knowledge facilitates the dissemination of innovative ideas in a cost-effective and efficient

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manner when made widely accessible. The present research has revealed that there exists no association between knowledge management and product creation, which is in contrast to the findings of earlier studies (Lopez-Nicolas & Merono-Cerdan [35]). Quests have the potential to generate novel commodities and procedures across various sectors. The creation of products is highly valued in the context of knowledge management.

CONCLUSION AND RECOMMENDATION

Majority of food establishments in Batangas are located in cities, with fast food chains dominating the industry. These establishments have relatively short operating histories, and many operate with a small workforce of fewer than 24 employees. The statistical results demonstrate a high level of customer relationship management (CRM) practices, including long-term partnerships, information sharing, and technology-based CRM. Collaboration and access to information and resources contribute significantly to innovation in product and process. Food establishments prioritize technology-driven CRM systems to effectively communicate with consumers and demonstrate high levels of innovation across various areas. Information and technology play a crucial role in promoting innovation, enabling electronic data collection, consumer information systems, and knowledge and relationship services. These establishments also prioritize knowledge management, particularly in information sharing, which enhances consistency and facilitates customer communication. City-based food establishments adopt customer-centric strategies and have higher levels of innovation capabilities and knowledge management compared to non-city establishments. Quick service restaurants exhibit more technology-based CRM and knowledge management practices than casual dining. The duration of operation further affects CRM capabilities, with newer establishments displaying higher levels of customer involvement and joint problem-solving. Overall, CRM dimensions, such as information sharing, customer involvement, and long-term partnership, have positive relationships with knowledge management and innovation. Knowledge management is a crucial aspect of successful CRM implementation, enabling companies to acquire, share, and create relevant knowledge, leading to effective products, improved customer relationships, and increased innovation capacity.

The recommendation is to prioritize customer involvement and joint problem-solving for food establishments to enhance product, process, and service improvements. Recognizing loyal customers as business partners is crucial. Developing a management information system for tracking and reviewing customer data is recommended. Long-term cooperation should be encouraged through unique financial recommendations and work proposals. Customer feedback and recommendations should be utilized in product creation, changes, and pricing. Implementing online ordering systems for important customers can boost innovation. Organizational learning and training are suggested to improve knowledge management. Sharing competitive product knowledge with customers is valuable. Interactions and fulfillment of promises should be prioritized in customer relationship management. Creating a customer knowledge management database can provide a competitive advantage. Regular meetings or consultations should be held to gather customer feedback during product development or updates. The integrated framework that aligns customer relationship management, knowledge management, and innovation capabilities should guide decision-making. Businesses should merge internal efforts and joint initiatives with customers to achieve desired innovation capabilities. CRM implementation, KM practices, and innovation capabilities should be aligned and integrated.

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