

BIBLIOGRAPHY

DUYAN, SAMUEL L. APRIL. 2011. Quality and Performance in the Spot Market Chains for Cabbage. Benguet State University, La Trinidad, Benguet.

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ABSTRACT

This study was conducted from November 2010 to January 2011 at La Trinidad, Benguet, Metro Manila and Urdaneta City, Pangasinan. A total of 193 respondents were interviewed to know what are the perceived qualities used in purchasing cabbage, the performances in the spot market and whether there is a direct relationship between quality and performance.

The results revealed that quality was perceived in terms of product, service and functional quality. The different criteria of product and functional quality were used as basic considerations in purchasing cabbage in the spot market. Service quality criteria was also considered which involves as to supplier gives notice to the buyers about supply shortage and price changes and as to supplier exerts effort to produce/procure cabbages ordered

Moreover, the performance dimensions in the spot market included product quality satisfaction, flexibility, efficiency and responsiveness. Most of the criteria in these dimensions were considered except as to the actors were satisfied selling to buyers on credit arrangement; whether the seller and buyer have little conflict in their business transaction, whether the actors can supply the market with desired quality/quantity when

needed and whether the actors schedule their deliveries to meet the time in the market and when customers need it.

The symmetric measures Kendall's tau-b and gamma were used to analyze whether there is a direct relationship of quality to performance. The findings proved that there is a direct relationship of quality dimensions to performance dimensions in some of the groups of actors however in most groups of actors; it showed no direct correlation of quality to performance. This result further indicated the individualism of the majority of the group of actors in making decisions regarding the quality and trading of cabbage in the spot market chains.



INTRODUCTION

Rationale

The Cordillera Administrative Region (CAR) in Northern Luzon is the major producer of cabbages and is responsible for 81 percent of cabbage production in the Philippines (BAS, 2008).

The majority of fresh vegetables in the Philippines (75-85%) are sold through the traditional marketing system (ACIAR, 2007). Surveys and consultation with farmers show that there is a serious problem in marketing and that a greater chunk of the peso income derived from vegetable farming is shared by the trader or middlemen. Prices are being manipulated by syndicate, traders or middlemen, putting the farmers at their mercy. Other factors may be due to the absence of an efficient market network coupled with the absence of communication facilities, trading centers, market assistance centers, transportation and inadequate storage facilities, and credit assistance to farmers (Benguet Socio-Economic Profile, 2007).

Farmers usually harvest and sell their produce to assemblers-wholesalers who transport the produce to the La Trinidad Vegetable Trading Post and Baguio City Market. The La Trinidad Vegetable Trading Post was established to thwart the practice of middlemen intercepting cargoes and directing them to non-consignees who offered higher prices. As envisaged, the trading post has reduced the number of middlemen and increased the prices of the commodities, thus increasing the income of farmers. It is believed that some 8,840 farmers deliver their produce to the La Trinidad Vegetable Trading Post and 5,580 farmers deliver produce to the Baguio City Market (ACIAR, 2007). Eighty-five percent of Luzon's vegetable supply comes from Benguet; however,



about 50% of the bulk of vegetable goes directly to Manila markets. Other farmers deliver their produce to nearby municipalities and to adjacent provinces such as La Union, Pangasinan, Nueva Vizcaya, Tarlac, Pampanga, Olongapo and Laguna. Some are also shipped to Visayas and Davao (Benguet Socio-Economic Profile, 2007).

The primary factors considered by farmers in the choice of market outlets are: regular buyers, better price and convenience. Another factor considered is the credit-marketing tie-up. It means that buyers extend loans (in cash or in kind) to the producers without interest. The producers, in turn, sell their produce to the creditor-buyer at stipulated prices (Benguet Socio-Economic Profile, 2007).

The operation of fresh vegetables sector supply chain in the Philippines is generally characterize as spot-markets or networks, hence the transactions involves the interactions of chain actors in the market. These chain actors (farmers, assemblers, trucker-wholesalers, wholesalers, wholesalers-retailers and retailers) may assume varied perceptions about quality. In most cases, the physical quality of vegetables is given more importance while the other criteria are sometimes overlooked. The study will examine the perceived quality based on the descriptions and dimensions on quality as technical and functional quality (Gronroos, 1990) and the service quality (Parasuraman, 1998). Technical quality is the physical description of the agricultural products, functional quality is the process of delivering the products to customers while service quality is the additional requirements a supplier is willing to do to retain customer's business.

According toliteratures there are several methods and models to measure supply chain performance. Aramyan (2007) identified, summarized and categorized performance indicators which includephysical quality, flexibility, responsiveness and efficiency.The



quality performance shall focus on the perceived satisfaction on the product and service quality. Specifically, the physical quality performance will be assess based from the physical products and the service quality will be on related services performed. Moreover, flexibility indicates the degree to which supply chain can respond to changing environment. The assessment will focus on the degree of flexibility of the chain actors in terms of the volume of production and procurement, the pricing and the alternative buyers. The performance will be evaluated in terms of efficiency using the costs, profit and the return on investments. Finally, responsiveness aims at providing the requested products with a short lead time (Persson and Olhager, 2002).

This study analyzed the spot market chains for cabbage focusing on quality and performance in the Cordillera Administrative Region, Philippines.

Statement of the Problem

1. What are the perceived qualities used in purchasing cabbage in the spot market?
2. What are the performances in the spot market?
3. Is there a direct relationship of quality to performance?

Objective of the Study

1. Identify the perceived qualities used in purchasing cabbage in the spot market in terms of:
 - a. Product Quality
 - b. Service Quality
 - c. Functional Quality



2. Identify the performances in the spot market in terms of:
 - a. Product Quality Satisfaction
 - b. Flexibility
 - c. Efficiency
 - d. Responsiveness
3. Assess whether there is a direct relationship of quality to performance.

Importance of the Study

The study provided information about the quality of cabbage required in the spot market and about the performances of the different chain actors for further improvement in response to providing good quality of cabbage.

In the Philippines, agricultural commodity supply chains researches become a research priority agenda for industry development. Hence, this research would contribute in some ways information about cabbage in the spot markets, an avenue for future research and development programs that could be introduced to sustain the quality of cabbage. Furthermore, it provided literature on agricultural commodity like cabbage.

Scope and Delimitation of the Study

The scope of this study focused on the cabbage sector supply chain analysis in the Cordillera Administrative Region, Philippines using the supply chain management theories with emphasis on the behavioral dimension specifically focusing on the perceived quality and performance of cabbage supply chain.

The limitations associated in this study primarily relate:

1. The cabbage spot market or wet market supply chain operations. Institutionally



initiated vegetables supply chains that involve highly organized firms will not be considered.

2. The chain actors involved in production and market transactions on cabbage in the region particularly in Benguet shall be the major focus of this research and exclude the other actors involved in other type or variety of vegetables from the other regions.

3. The research locations to be covered will be limited to major production areas of cabbage such as Benguet and marketing areas such as La Trinidad, Benguet, Metro Manila and Urdaneta City, Pangasinan.

4. The analysis focused on the objectives and framework of this research.



REVIEW OF LITERATURE

Supply Chain Management

Supply chain management is defined as a network of connected and independent organizations mutually and cooperatively working together to control, manage, and improve the flow of materials and information from supplier to end user (Christopher, 1998).

Supply Chain and Networks

Folkerts and Koehorst (1998), define supply chain as “a set of interdependent companies that work closely together to manage the flow of goods and services along the value-added chain of agricultural and food products, in order to realize superior customer value at the lowest possible cost.” Van der Vorst (2000), further defined supply chain as “a network of physical and decision making activities connected by material and information flows that cross organizational boundaries.” According to Lambert and Cooper (2000), there are four main characteristics of a supply chain. First, it goes through several stages of increasing intra- and inter-organizational, vertical coordination. Second, it includes many independent firms, suggesting that managerial relationship is essential. Third, a supply chain includes a bi-directional flow of products and information and the managerial and operational activities. Fourth, chain members aim to fulfill the goals to provide high customer value with an optimal use of resources.

Supply chain means the process of planning, implementing and controlling the efficient, cost effective flow and storage of raw materials, in-process inventory, finished goods and related information from the point-of-origin to point of final consumption for



the purpose of conforming to customer requirements (Council of Logistics Management, 1986). Supply chain is a dual flow of products and information. It is the drive to meet the central needs of the consumer and it stresses the importance of the relationships between participants in the marketing system. However, the tendency is often focus solely on the immediate economic aspects when firms are building supply chains (Champion and Fearnle, 2000). Hongze Ma (2005) pointed out that supply chain is a network of organizations from suppliers with the purpose to improve the flow of material and information. Drabenstott (1999), discusses the increasing move toward the development of supply chains and describes supply chain structures where all stages of production, processing and distribution are bound together tightly to ensure reliable, efficient delivery of high quality products.

Networks or business networks on the other hand is defined as a set of two or more connected business relationships, in which each exchange relation is between business firms that are conceptualized as collective actors (Anderson, Håkansson and Johanson, 1994). Networks are specific properties of the transaction relationships, typified by relational relationships in which formal and informal sharing and trust building mechanisms are crucial (Zylbersztjn and Farina, 2003). In essence are the concept of “collective actor” and consequently the existence of “collective actions.” Networks are looked upon as the total actors within one industry and/or between related industries, which can potentially work together to add value to customers. The basic assumptions on networks: (1) There exist a collective actors within an industry who can potentially work together to add value to customers, (2) One actor is dependent on the resources controlled by another, and (3) There are established long-term relationships



with formal and informal sharing and trust-building mechanisms. Powell (1990) further extends the assumption that there are gains to be generated in pooling of resources.

In essence, the fresh vegetable production and marketing flow is regarded as a supply chain and this is largely due to the involvement of a number of people or business entities performing different tasks until the product reaches the consumers. The people (individuals, business entities) are chain actors that undertake different functions from production to assembly to distributions and retailing of vegetables. The business is independently managed with intra and inter-organizational relationships. In the exchange processes, there involve bi-directional flow of products (materials and services) and information through the interactions of people with either formal or informal relationships. Moreover, these individuals are largely interdependent on the supply of products, thus with assumed coordination mechanisms to facilitate marketing transactions.

Perceptions

Robbins (1988) defined perception as a process by which individuals organize and interpret their sensory impressions in order to give meaning to their environment. People can emerge with different perceptions on the same object because of three perceptual processes: selective attention, selective distortion, and selective retention.

Selective attention means that a marketer has to work hard to attract consumers' notice.

Selective distortion is the tendency to twist information in a way that will fit one's preconceptions. Unfortunately, there is not much a marketer can do about selective distortion.



In selective retention, people will forget much that they learn but will tend to retain information that supports their attitudes and beliefs. Because of selective retention, people likely remember good points mentioned about a product they like and forget good points mentioned about competing products (Berelson and Steiner, 1964). A number of factors operate to shape and sometimes distort perception. These factors can reside in the perceiver, in object, or target, or in the context of the situation which the perception is made. When an individual looks at a target and attempts to interpret what he sees, his personal characteristics heavily influence the interpretation. These personal characteristics include attitudes, personality, motives, interest, past experiences, and expectations. Individuals cannot assimilate all they observe, so they engage into selectivity depending on the observer's interests, background, experience, and attitudes.

Quality and Its Dimension

Quality is determined by a customer and is based upon the customer's actual experience with product measured against the customer's stated requirements. It does not necessarily mean best; quality may also mean fitness for intended purpose. Customers that are in businesses will define quality very clearly using specifications, standards and other measures. However, it is not just product quality that is important; quality also describes the way in which suppliers go about meeting the needs of their customers, providing the product on time, in the quantity required, correctly packaged and correctly invoiced. Perceived quality therefore is a major factor by which people make distinctions in the marketplace. Quality entails being responsive, pro-active and reactive, and about being able to meet customer's special request.



Gronroos (1990) describes quality by differentiating it into two dimensions: technical and functional. Technical quality describes the customer's specifications. This is a physical description of the product in terms of its size, shape, color, freedom from pests and diseases, purity (in terms of its freedom from chemical contaminants, pathogenic organisms and genetically modified plants), maturity or freshness, and the manner in which the product is packed. Functional quality, on the other hand, describes the way a supplier goes about delivering the product to the customer. Fundamentally, this means being able to deliver the product when the customer wants it. By implications, it involves many inter-related activities such as production, scheduling, storage and warehousing, logistics, ordering and invoicing. Parasuraman (1998) introduced a third dimension called service quality, which describes the extra things a supplier is willing to do to retain customer's business. While the exact meaning of the term "service" varies with the nature of the product and the requirements of the buying organizations, service may include such variables as providing technical assistance, innovative suggestions, credit arrangements, support for special needs, or providing advance notice of impending price changes or shortages in supply (Hutt and Speh, 1995).

In conclusion, there are three dimensions of quality: technical, functional and service. Gronroos (1990) specifically described technical quality as the physical description of the agricultural products and functional quality as the process of delivering the products to customers. Service quality as Parasuraman (1998) introduced and described that there are additional requirements a supplier is willing to do to retain customer's business. Hutt and Speh (1995) further elaborated the meaning of service and identified the variables. This study therefore examined the quality of cabbages



perceived by the different group of actors in the spot market chains.

Supply Chain Performance

The impact of supply chain linkages on operational and business performance has been the subject of a number of empirical studies. These studies have encompassed a variety of supply chain definitions, performance measures and methodologies (Fynes *et al.*, 2005). For instance, Carter and Ellram (1994) found that supplier involvement in product design has a positive impact on product quality using a case study design. Narasimhan and Jayaran (1998) examined relationship between sourcing decisions, manufacturing goals, customer's responsiveness and manufacturing performance using structural equation modelling. They found that integrating supply chain activities involves aligning sourcing decisions to achieve manufacturing goals in terms of dependability, flexibility, cost and quality. Likewise, Carr and Pearson (1999) found that strategically managed long-term relationships with key suppliers can have a positive impact on financial (as distinct from manufacturing) performance. Kaynak and Pagán (2003) using stochastic frontier modelling, found that characteristics internal to the firm such as top management commitment to purchasing and supply management had a positive effect on production efficiency. Likewise, Salvador *et al.* (2001) found that when buyers and suppliers interact on issues related to material flows and quality, there are significant effects in terms of speed and delivery punctuality. More recently, Tan *et al.* (2002) develop a comprehensive set of supply chain practice and supply chain performance metrics and found that while some practices had a positive effect on performance, others had an adverse effect.



The nature of any performance measurement system will be extremely significant in determining what employees and functions do, and how they do it. Measurement therefore needs to be placed in a strategic context, because the way that individuals and the teams are assessed will determine the nature of the activities which they undertake, and how they interpret their tasks. The employee who is given a job to do and criteria to meet will not stop to evaluate the suitability of these criteria (even if they personally disagree with the criteria which have been set), but will seek to meet their own personal objectives, or maximize their own performance within the criteria identified in the belief that personal rewards will be optimised as a result. Johnson and Scholes (1980) argue that the dominant purpose of performance measures should be to help employees monitor their own performance: ‘in this way it is more likely that objectives will be owned by those responsible for achieving them, and in turn, that they will regard them as useful measures against which to monitor their own performance’.

Strategy and effective implementation are perhaps the most fundamental requirements for a successful performance measurement system. The requirement is for a process of comprehensive identification of all the different types of activities in which an organization is involved, in order to give them a coherent focus to ensure they are all driving in the same direction. Each top level objective should have a ‘strategic staircase’, represented by milestones, the achievement of which will lead to those objectives. The ultimate purpose behind the system should be to help employees improve their own performance (Ghorpade and Chen, 1995).

The performance of the supply chain can refer both to the performance of the industry as well as the individual firm supply chain. Furthermore, performance has three



dimensions: effectiveness, efficiency and equity. Since the objectives of efficiency and effectiveness influence make-versus-buy or “outsourcing” decisions of supply chain members, they thus, are influenced by the structure and conduct in that chain. The first dimension of performance is effective, when it meets the demand of its ultimate customers concerning product, price and service outputs (consistent and on-time delivery, continuity and flexibility in supply, assortment and variety, etc.). This also includes the measurement of customer satisfaction. The second dimension of performance is efficiency. Measurement of efficiency of individual supply chain members can be derived from the contribution ratio. The third component of performance is equity. The equity level within a supply chain is indicated by the degree of resemblance between the share of total contribution margin gained and the share of total supply costs borne by each chain members involved in the production and marketing of the product (Sijses, 2004).

Performance can be characterized as cost factor and service factor. The cost factor considers the cost of inventory, transportation, facilities and handling cost and information infrastructure and the service factor considers the response time, product variety, product availability, customer experience, order visibility and returnability (Hongze Ma, 2005).

Performance measurement as a subject involves the development of goals and their related measures, as well as the appropriate mechanisms of feedback. It must therefore reflect the operating assumptions of the organization, in terms of culture, strategy and operational processes. This requires the identification of the pressures, which the organization faces, both internal and external, and should consequently lead to a set of action plans for specific areas of organizations (Hines *et al.*, 2000). Performance



measurement of any activity should be designed to bring about improvement in that activity, highlighting variances over time, and enabling a more efficient allocation of resources (Geanuracos and Meikklejohn, 1994).

Performance metrics are necessary to confirm that the supply chain is functioning as expected, or that there are problems that must be addressed. There are several measures that can be used that relate to such things as late deliveries, inventory turnover, response time, quality issues, and so on in the retail sector, the fill rate (the percentage of demand filled from stock on hand) is often very important. Another approach is to use the Supply Chain Operations Reference (SCOR) model. The SCOR model reflects an effort to standardize measurement of supply chain performance.

Aramyan *et al.* (2006) summarized the different methods to assess supply chain performance, the advantages and disadvantages of each method; and developed a conceptual framework for agri-food supply chain performance indicators. The categories are chosen from the literature review on supply chain performance measures from different sectors and these include efficiency, flexibility, responsiveness and food quality.

Flexibility

Flexibility indicates the degree to which supply chain can respond to changing environment and extraordinary customer service requests (Bowersox and Closs, 1996; Beamon, 1998; and Aramyam, 2007).

Responsiveness

Responsiveness aims at providing the requested products with a short lead time (Persson and Olhager, 2002). Salvador *et al.* (2001) found that when buyers and suppliers



interact on issues related to material flows and quality, there are significant effects in terms of speed and delivery punctuality.

Food Quality

Food quality is based on the food quality developed by Luning *et al.*, (2002) which consists of product safety and health; the sensory properties and shelf life, and product reliability and convenience.

Efficiency

Efficiency measures how well the resources are utilized (Lai *et al.*, 2002) which include production costs, profit, return on investment and inventory. Measurement of efficiency of individual supply chain members can be derived from the contribution ratio (Sijeses, 2004). Grimsdell (1996) identified the fundamental requirements for efficient supply performance between agricultural growers and consumers as: scale of operation, producer flexibility, continuity of supply, quality control, strategic alliances, and communications.

Definition of Terms

Quality – providing customers with products that consistently meet their specifications.

Performance – the degree to which a supply chain fulfils end user requirements concerning the relevant performance indicators at any point in time.

Spot market or wet market – place where the product is delivered and sold.

Dimensions – indicators or parameters used in the observation.



Production cost – combined cost of raw materials and labour in producing goods.

Fill rate – percentage of units ordered that are shipped on a given order.

Product lateness – the amount of time between the promised product delivery date and the actual delivery date.

Response time – the amount of time between an order has been done and its corresponding delivery.

Lead time – total amount of time required to produce a particular item or service.

Shelf life – the length of time a packaged food will last without deteriorating.

Product safety – product does not exceed an acceptable level of risk associated with pathogenic organisms or chemical and physical hazards such as microbiological, chemical contaminant in products and micro-organisms.

Product reliability – refers to the compliance of the actual product composition with the product description.

Convenience – the information provided on the packaging is useful, complete and understandable

Conceptual Framework

The frame of the study analyzed the dimensions of quality in terms of technical (physical), service and functional used in purchasing cabbages in the spot markets, the performances of chain actors in the spot market such as product quality satisfaction, flexibility, responsiveness and efficiency and the direct relationship of quality to performance.



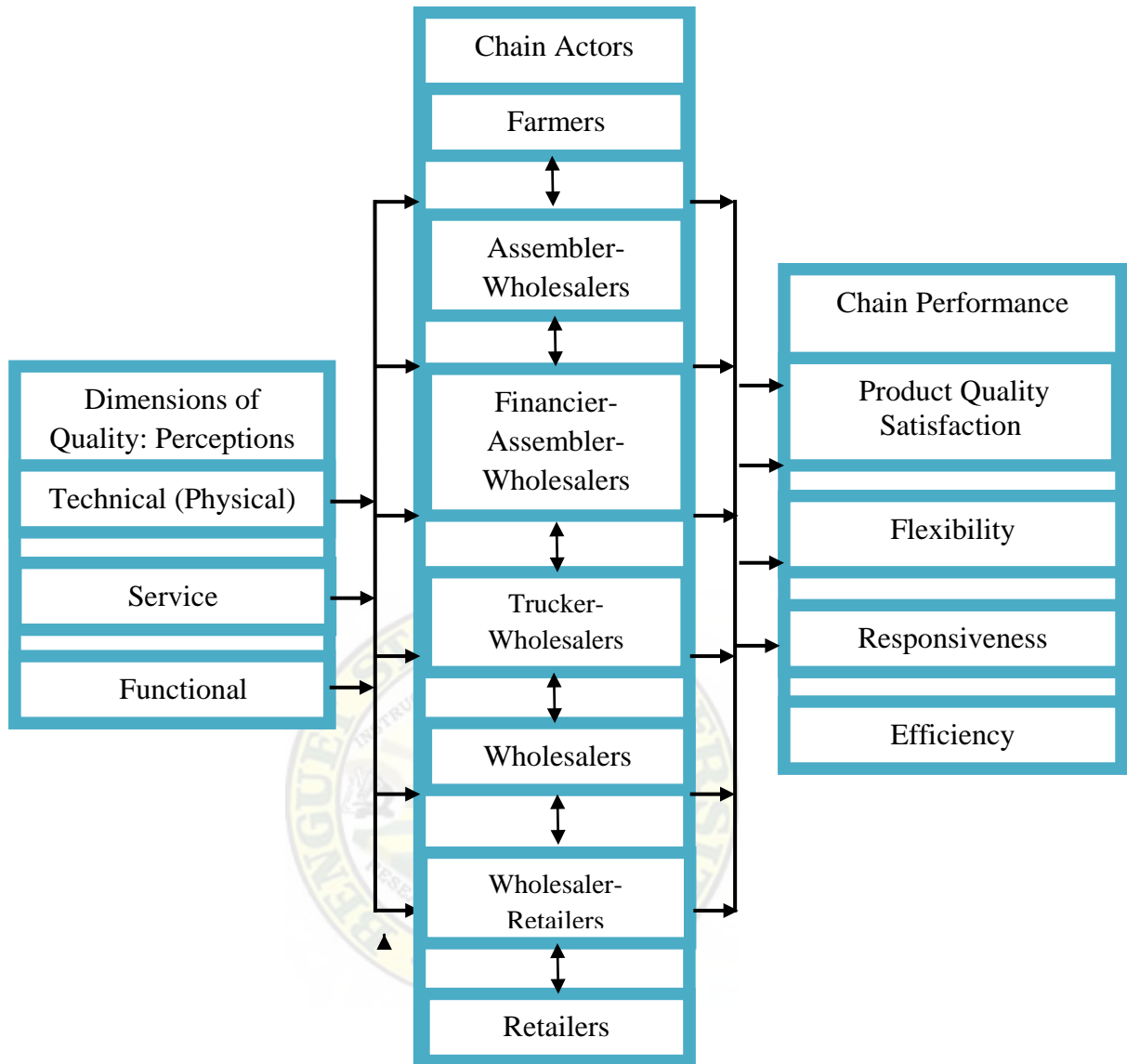


Figure 1. Conceptual framework



METHODOLOGY

Locale and Time of the Study

The research locations followed the geographic flow of cabbage from the major source (production) to the major market assembly and collection, and the distribution and retail markets. The research coverage areas are limited to selected production and marketing areas.

The primary market (assembly/collection) was concentrated in La Trinidad, Benguet. Secondary markets (distribution) were the major vegetables trading centers (commonly called “bagsakan”) in Balintawak, Quezon City and Urdaneta City, Pangasinan. While the tertiary markets were the retail markets in La Trinidad, Benguet, Metro Manila and Urdaneta City, Pangasinan. The research was conducted from November 2010 to January 2011.

Respondent of the Study

The respondents represented the major actors in the fresh vegetables supply chain. Specifically, the target respondents are classified into four major groups as shown below.

Table 1. Classification and type of respondents

CLASSIFICATION	TYPE OF RESPONDENTS
Production	Cabbage farmers
Assembly/Collection	Assembler-wholesalers; Financier-assembler-wholesalers
Distribution	Trucker-wholesalers; wholesalers; wholesaler-retailers
Retailing	Retailers



The production group was composed of Benguet farmers producing cabbage. The next group of respondents was the primary buyers representing the assembly/collection group. This consisted of the assembler-wholesalers and the financier-assembler-wholesalers. Most of them were operating in the La Trinidad Vegetable Trading Postand in the privatetrading centers. The third group was the distributors consisted of the trucker-wholesalers, wholesalers and wholesaler-retailers. The trucker-wholesalers were those responsible in the transportation and distribution of vegetables to various geographic market outlets. The wholesalers and wholesaler-retailers, on the other hand, were traders in the spot markets to whom the trucker-wholesalers supply the vegetables. The last group was the retailers representing the last link in the marketing process. The retailers sold the vegetables to ultimate users or consumers.

Sample size.The population of the different target groups was large, hence the quota sampling method will be used in the study. Table 2 shows the distribution of samples by respondent groups. The total number of samples in the production group was 46. The assembly group was identified but a limited number were interviewed. A total sample of 19 assembler-wholesalers and 15 financier-assembler-wholesalers were interviewed. The distribution group composed of 12 trucker-wholesalers, 10 wholesalers and 36 wholesaler-retailers with a total of 58 distributors while the last group interviewed was the retailing group and it comprised of 55 retailers in the wet markets. Overall, the research has a total sample of 193 respondents.



Table 2. Distribution of sample size according to respondent groups

RESPONDENTS GROUP	TOTAL SAMPLE SIZE
Farmers	46
Assemblers/Collectors	
• Assembler-wholesalers	19
• Financier-assembler-wholesalers	15
Distributors	
• Trucker-wholesalers	12
• Wholesalers	10
• wholesaler-retailers	36
Retailers	55
TOTAL	193

Data Gathering Procedure

The data gathering procedure was obtained through interview with the different chain actors and observations. The farmers were identified and interviewed in the trading post similarly with the assembly or collection and distribution groups while the other respondents like the wholesalers and wholesaler-retailers were interviewed in the “bagsakan” markets. On the other hand, the retailers were identified from the secondary markets and followed them up in their retail market outlets for interviews.

Data Gathered

The data gathered were the perceived quality in terms of technical, service and functional quality and performance in terms of product quality satisfaction, flexibility, efficiency and responsiveness.



Data Analysis

The data gathered weretabulated in the excel program and analyzed using descriptive analysis such as frequency counts and percentage and using statistical package for social sciences (SPSS) version 16 such as Kendall's tau-b, gamma, Spearman correlation and Pearson's regression.



RESULTS AND DISCUSSION

Demographic Profile of the Respondents

Table 3 presents the demographic profile of the different groups of respondents. The respondents were grouped based on their function. The production group involved the farmers or producers; the assembly group included those that performed assembling-wholesaling and financing-assembling-wholesaling; the distribution group distributed cabbage by trucking-wholesaling, wholesaling and wholesaling-retailing; and the retailing group composed those that sold in retail basis. They were characterized based on their age, gender, marital status, religious affiliation and educational background.

Age. Most of the market chain actors have an age ranging from 21-40 years and few were 20 years old and below. However there were some of chain actors with an age of 61 years old and over particularly the retailers, wholesaler-retailers and farmers. On the average, it indicates that the production and distribution groups were younger as compared to assembly and retailing groups. The result implies that most of the respondents involved in the spot market chain for cabbage were middle aged individuals.

Gender and marital status.As to gender, most of the farmers, assembler-wholesalers and trucker- wholesalers were male, while the other groups were dominated by females. Therefore, this indicates that there was variation of function between male and female in the spot market chain for cabbages.

In terms of marital status, majority of the respondents were married followed by a number of single and the least were either separated or widowed. The findings therefore implied that regardless of marital status, engaging in vegetable trading could be an occupation thus as a source of livelihood.



Table 3. Demographic profile of respondents

PARTICULARS	PRODUCTION		ASSEMBLY				DISTRIBUTION				RETAILING			
	F		A-W		F-A-W		T-W		W		W-R		R	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Age														
20 and below	5	11	2	11	0	0	0	0	4	40	3	8	2	4
21-30	18	39	6	32	1	7	5	42	3	30	12	33	12	22
31-40	10	22	6	32	7	47	4	33	1	10	14	39	10	18
41-50	9	20	4	21	4	27	2	17	1	10	3	8	21	38
51-60	3	7	1	5	3	20	1	8	1	10	3	8	8	15
61 and above	1	2	0	0	0	0	0	0	0	0	1	3	2	4
TOTAL	46	100	19	100	15	100	12	100	10	100	36	100	55	100
Average Age		33				37						33		41
Gender														
Male	42	91	13	68	5	33	8	67	4	40	12	33	9	16
Female	4	9	6	32	10	67	4	33	6	60	24	67	46	84
TOTAL	46	100	19	100	15	100	12	100	10	100	36	100	55	100
Marital Status														
Single	16	35	2	11	1	7	5	42	6	60	15	42	9	16
Married	30	65	17	89	13	87	7	58	4	40	20	56	43	78
Separated	0	0	0	0	1	7	0	0	0	0	0	0	2	4
Widow	0	0	0	0	0	0	0	0	0	0	1	3	1	2
TOTAL	46	100	19	100	15	100	12	100	10	100	36	100	55	100
Religious Affiliation														
Catholic	33	72	14	74	11	73	12	100	9	90	23	64	45	82
Protestant	8	17	3	16	3	20	0	0	1	10	9	25	6	11
Others	5	11	2	11	1	7	0	0	0	0	4	11	4	7
TOTAL	46	100	19	100	15	100	12	100	10	100	36	100	55	100
Educ. Background														
Elementary	13	28	1	5	2	13	2	17	1	10	4	11	10	18
High School	20	43	9	47	6	40	4	33	4	40	16	44	31	56
College	13	28	9	47	7	47	6	50	5	50	14	39	12	22
Vocational	0	0	0	0	0	0	0	0	0	0	2	6	2	4
TOTAL	46	100	19	100	15	100	12	100	10	100	36	100	55	100

Legend:

F-Farmer

A-W-Assembler-Wholesaler

F-A-W-Financier-Assembler-Wholesaler

T-W-Trucker-Wholesaler

W-Wholesaler

W-R-Wholesaler-Retailer

R-Retailer



Religious affiliation. Table 3 shows the religious affiliation of the respondents, Catholic (76%) comprised the largest number followed by the Protestants (16%) and only few were being affiliated to other religion (8%).

Educational background. Table 3 further presents the educational background of the respondents. Most of the respondents have attended or finished high school followed by college and then elementary. Some have taken up vocational course particularly the wholesaler-retailers and retailers. This shows that all of them have attained formal education.

Number of Years Engaged in Vegetable Business

Table 4 indicates the number of years the different respondents were engaged in vegetable business.

Among the different groups of respondents, the result shows that most of the farmers were engaged in farming business from 1-20 years. It also shows that majority of the respondents in the assembly group have been doing business from 1-15 years and few of them have been trading from 21-25 years. Among the distribution group, majority of them were engaged in vegetable business for 5 years or less and the rest are from 6-10 years. The retailing group has been engaged in their vegetable business from 1-10 years.

On the average, the producers and retailers were engaged in the business for a longer period with a similar number of 14 years respectively while the assembly and distribution groups had lesser number of years in the business with 9 and 5 years respectively.



Table 4. Number of years engaged in vegetable business

YEARS	PRODUCTION		ASSEMBLY				DISTRIBUTION				RETAILING			
	F		A-W		F-A-W		T-W		W		W-R		R	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Below 1 Yr.	0	0	1	5	0	0	0	0	1	10	0	0	2	4
1-5	17	37	9	47	4	27	4	33	6	60	32	89	17	31
6-10	6	13	5	26	2	13	3	25	3	30	4	11	9	16
11-15	6	13	3	16	7	47	4	33	0	0	0	0	5	9
16-20	9	20	0	0	0	0	0	0	0	0	0	0	11	20
21-25	2	4	1	5	2	13	1	8	0	0	0	0	2	4
26-30	2	4	0	0	0	0	0	0	0	0	0	0	8	15
31 and above	4	9	0	0	0	0	0	0	0	0	0	0	1	2
TOTAL	46	100	19	100	15	100	12	100	10	100	36	100	55	100
Average Years		14				9						5		14

Organizational Affiliation of Respondents

Table 5 shows the organizational affiliations of respondents such as farmers' association, cooperative, other organization or none at all.

The data show that most of the respondents of the different groups were not affiliated to any organizations. It could be noted however that representative number from each group were members of cooperatives and other organizations.

The result could mean that these respondents could not see the importance of the organizations or the benefits derived from it.



Table 5. Organizational affiliation of respondents

ORGANIZATION	PRODUCTION		ASSEMBLY				DISTRIBUTION				RETAILING			
	F		A-W		F-A-W		T-W		W		W-R		R	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Farmer's Assoc.	1	2	0	0	0	0	0	0	2	20	0	0	0	0
Cooperatives	1	2	2	11	4	27	3	25	1	10	8	22	2	4
Others	3	7	3	16	3	20	4	33	0	0	3	8	5	9
None	41	89	14	74	8	53	5	42	7	70	25	69	48	87
TOTAL	46	100	19	100	15	100	12	100	10	100	36	100	55	100

Spot Market Chain
and Location for Cabbage

Figure 2 illustrates the different chain actors involved in the flow of cabbage from producers to retailers and their location.

The figure shows that farmers from the La Trinidad Vegetable Trading Post sold their cabbages to the different buyers in the spot market. Most of the buyers included the assembly groups from La Trinidad, Benguet, Urdaneta City, Pangasinan and Balintawak, Quezon City. However, there were also a number of farmers from private trading center in La Trinidad that sold their cabbages to assembler-wholesalers at the same trading center. This indicated that while the farmers have access to the different buyers, majority of them sold their produce to the assembly groups.

The assembly groups from the different spot markets sold their produce to the distribution and retailing groups of these different spot markets. The distribution groups specifically the trucker-wholesalers from the La Trinidad Vegetable Trading Post deliver the cabbages to Urdaneta City and Balintawak and distribute to the wholesalers, wholesaler-retailers and retailers. Similarly, the trucker-wholesalers from Balintawak distribute the products to other distributors such as the wholesalers and wholesaler-



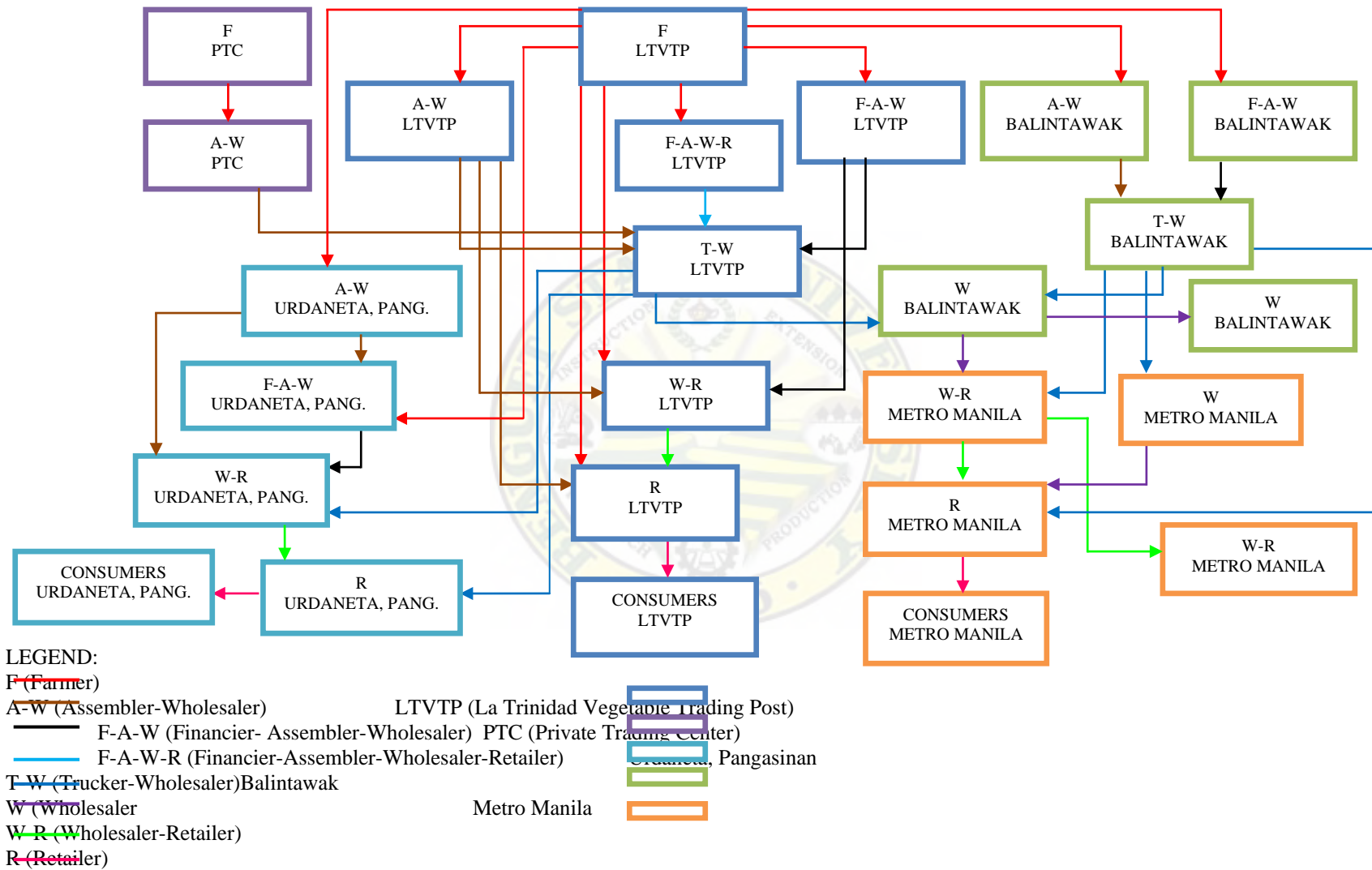


Figure 2. Spot market chain and location for cabbage

retailers and also to retailers from Balintawak and from other parts of Metro Manila.

Moreover, the wholesalers and wholesaler-retailers from the different spot markets sold the cabbages to the retailers. Conversely, these wholesalers and wholesaler-retailers also sold their cabbages to similar wholesalers and wholesaler-retailers. This implied that the trading of cabbages also occurred between the same groups.

Finally, the actors on the retailing group from the different spot markets sold the cabbages to the final consumers mainly to the households and some to the institutional buyers such as the restaurants and or hotels.

Perceived Qualities Used in Purchasing Cabbage

Product quality. On the average, the perception on the different criteria of product quality is agreed (Table 6). It implies that these different criteria were used as basic considerations in purchasing cabbage in the spot market. The results validated the report of Gronroos (1990) on product quality as the physical description of the product in terms of its size, shape, color, freedom from pests and diseases, purity (freedom from chemical contaminants), maturity or freshness, and the manner in which the product is packed. Moreover, the cabbages being fully trimmed, clean, firm and crunchy and the variety being specified were also considered.

Service quality. Table 6 also illustrates the average responses on the criteria of service quality. The respondents regardless of their group agree as to supplier gives notice to the buyers about supply shortage and price changes and as to supplier exerted effort to produce/procure cabbages ordered which could be traced from the description of service quality as the extra things a supplier is willing to do to retain customer's business by Parasuraman (1998).



Table 6. Distribution of respondents as to perception on quality

STATEMENT	MEAN
PRODUCT QUALITY	
1. Freedom from chemical residue.	3.88
2. Freedom from pests and diseases.	4.15
3. Variety, color and size are specified.	4.23
4. Freedom from physical injury.	4.04
5. It is fresh, clean and fully trimmed.	4.41
6. It is firm and crunchy.	4.42
SERVICE QUALITY	
1. Supplier (seller) extends credit term to buyers.	3.15
2. Supplier has an outstanding loan/cash advance from the buyer.	2.71
3. Supplier gives notice to buyers about supply shortage and price changes.	3.46
4. Supplier exerts effort to produce/procure cabbages ordered.	3.83
5. Supplier extends support services to the buyer in the delivery.	3.06
6. Supplier has adequate logistics in trading.	3.02
FUNCTIONAL QUALITY	
1. Supplier (seller) adheres to production/procurement/delivery targets.	3.61
2. Supplier classifies the cabbages properly.	3.74
3. Supplier accurately weighed and packed the cabbages.	3.94
4. Supplier has adequate supply of cabbages when the buyers want it.	3.75
5. Supplier accepts orders and delivers the cabbages when needed.	3.61
6. Supplier is flexible in pricing the cabbages and accepts payment term.	3.81

Scale Used:

1-1.8 – Strongly Disagree

1.9-2.6 – Disagree

2.7-3.4 – Undecided

3.5-4.2 – Agree

4.3-5 – Strongly Agree



The respondents exhibited their neutrality in terms as to supplier extends credit term to buyers or vice versa, whether supplier extends support services in the delivery and whether the supplier has adequate logistics in trading. It shows that sometimes, either the supplier has an outstanding loan/cash advance from the buyer or the supplier extends credit term to the buyer. The data supported the statement of Hutt and Speh (1995) that is the elaboration of the meaning of service and identified some variables such as providing technical assistance, innovative suggestions, credit arrangements, support for special needs, or providing advance notice of impending price changes or shortages in supply.

Functional quality. Table 6 further indicates the perception about functional quality. The respondents considered the different criteria as defined by Gronroos (1990) that is the ability to deliver the product when customers want it which involved many inter-related activities such as production, scheduling, storage and warehousing, logistics, ordering and invoicing.

The results showed that the respondents agreed to production and scheduling, dealing as to supplier adheres to production/procurement/delivery targets; in logistics involving whether supplier classified, weighed and packed the cabbages; storage and warehousing indicating the adequacy of supply of cabbages when buyers want it; and in ordering and invoicing specifying whether supplier accepts orders and delivers the cabbages when needed and is flexible in pricing and accepts payment term.

Performances of Chain Actors in the Spot Market

Product quality satisfaction. On the average, the respondents agreed with the different criteria used to measure product quality satisfaction (Table 7). Thus confirmed the findings of Carter and Ellram (1994) that supplier involvement in product design has



Table 7. Distribution of respondents as to performance

STATEMENT	MEAN
PRODUCT QUALITY SATISFACTION	
1. The quality I produced/procured/sold meets my expectation.	3.89
2. The quality of cabbages delivered meets the buyer's requirements.	3.73
3. I am satisfied with the volume I produced/procured/sold to the buyer.	3.96
4. I always achieve my production/procurement/delivery targets.	3.50
5. I am satisfied to fulfill the orders and deliveries when needed.	3.68
6. I am satisfied selling to buyers on credit arrangement.	2.75
7. The quality of cabbages I supplied in the market is reliable.	3.95
8. The buyers are always satisfied as to variety of product, price, and quality/quantity.	3.77
FLEXIBILITY	
1. I can produce/procure the desired volume when buyers needed it.	3.59
2. I exert effort to produce the desired volume/quality when buyers demand it.	4.00
3. The buyer is flexible to buy cabbages regardless of quantity and quality.	3.74
4. The buyer and seller have little conflict in the business transaction.	3.35
EFFICIENCY	
1. I am happy to produce the desired volume out of my limited resources.	3.95
2. The income I received is adequately rewarding.	3.91
3. I exert effort to reduce the cost of production.	4.11
4. I am satisfied with the rate of return to my investment.	3.87
RESPONSIVENESS	
1. I can supply the market with desired quality/quantity when needed.	3.36
2. I always schedule my deliveries to meet the time in the market.	3.29
3. I always find time to deliver cabbages when customers/markets need it.	3.37
4. I always act on the demand/complaints of buyers related to quality/quantity.	3.68



a positive impact on product quality which was further supported by Drabenstot (1999) discussions' on the increasing move toward the development of supply chains and description on supply chain structures where all stages of production, processing and distribution are bound together tightly to ensure reliable, efficient delivery of high quality products.

However, the respondents were undecided as to the actors' satisfaction in selling cabbages to buyers on credit arrangement. It shows that though the actors allowed selling on credit, the buyers may not comply with the arrangement made such that these buyers were delayed when paying or pay on installment basis. This result was proved by Tan *et al.* (2002) who develop a comprehensive set of supply chain practice and supply chain performance metrics and found that while some practices had a positive effect on performance, others had an adverse effect.

Flexibility. On the average, Table 7 indicates that almost all of the respondents agreed to the different criteria of flexibility except from little conflict in the business transaction. Performance measurement as a subject involves the development of appropriate mechanisms of feedback. It must therefore reflect the operating assumptions of the organization, in terms of culture, strategy and operational processes. This requires the identification of the pressures, which the organization faces, both internal and external, and should consequently lead to a set of action plans for specific areas of organizations (Hines *et al.*, 2000). This implies that the conflict among the actors is an unavoidable factor during vegetable trading business due to differences of culture, internal and external pressures as cited by Hines *et al.* (2000).



Efficiency. It shows that on the average, the respondents agreed with the different criteria of performance efficiency (Table 7). The respondents regardless of their functions exerted effort to reduce the cost of production and although the actors have limited resources, they were happy to produce/procure/sold the desired volume as validated by Kaynak and Pagan (2003) on their findings that characteristics internal to the firm such as top management commitment to purchasing and supply management had a positive effect on production efficiency. This in turn, the result further presents that the actors were satisfied with the income received and with the rate of return to their investment. This can be attributed from the finding that strategically managed long-term relationships with key suppliers can have a positive impact on financial performance (Carr and Pearson, 1999).

Responsiveness. The respondents agreed as to they act on the demand/complaints of buyers related to quality/quantity (Table 7). However, the respondents were undecided with the other criteria of responsiveness in terms of supplying the market with the desired quality/quantity and scheduling of deliveries to meet the time in the market and when buyers needed it. This result implies that there were times the respondents were not conforming as to the other criteria but as found out by Salvador *et al.* (2001) that when buyers and suppliers interact on issues related to material flows and quality, there were significant effects in terms of speed and delivery punctuality.

Relationship of Quality to Performance

Product Quality to Performance

Product quality to product quality satisfaction. The statistical result shows no direct relationship of product quality to product quality satisfaction (Table 8). The



different perceived product qualities were being considered conversely, majority of the actors agreed with the different product quality satisfactions such that the quality produced/procured/sold meets their expectation and the buyers' requirement, the actors were satisfied with the volume produced/procured/sold, satisfied to fulfill the orders and deliveries and always achieve their production/procurement/delivery targets, the quality supplied in the market was reliable and that the buyers were always satisfied as to the variety, price and quality/quantity. Therefore, the result implied that the respondents would largely depend on their product quality satisfaction from the products supplied.

Table 8. Correlation of product quality to product quality satisfaction

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	0.138	0.130	1.053	0.292
	Gamma	0.205	0.191	1.053	0.292
	Spearman Correlation	0.156	0.147	1.050	0.300 ^c
	Pearson's R	0.139	0.147	0.934	0.355 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	0.037	0.173	0.212	0.832
	Gamma	0.051	0.238	0.212	0.832
	Spearman Correlation	0.050	0.201	0.281	0.780 ^c
	Pearson's R	0.114	0.197	0.651	0.520 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	-0.061	0.115	-0.527	0.598
	Gamma	-0.090	0.170	-0.527	0.598
	Spearman Correlation	-0.070	0.132	-0.522	0.603 ^c
	Pearson's R	-0.113	0.122	-0.850	0.399 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	0.207	0.121	1.701	0.089
	Gamma	0.294	0.168	1.701	0.089
	Spearman Correlation	0.231	0.137	1.726	0.090 ^c
	Pearson's R	0.187	0.148	1.384	0.172 ^c
	N of Valid Cases	55.000			



Product quality to flexibility. Table 9 shows that there is a direct relationship on product quality to flexibility particularly to assembly group. This means the assemblers could make adjustment in procurement of cabbage as to quality and quantity since this group has greater control in grading the products. Also they could have influence in production through extension of credit to many farmers thus guarantee the supply of desired quality and the increase in quantity procured.

Table 9. Correlation of product quality to flexibility

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	0.162	0.121	1.326	0.185
	Gamma	0.221	0.164	1.326	0.185
	Spearman Correlation	0.203	0.144	1.377	0.175 ^c
	Pearson's R	0.197	0.134	1.336	0.189 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	0.364	0.134	2.607	0.009*
	Gamma	0.493	0.168	2.607	0.009*
	Spearman Correlation	0.418	0.152	2.604	0.014 ^c
	Pearson's R	0.481	0.14	3.104	0.004 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	-0.045	0.116	-0.387	0.699
	Gamma	-0.064	0.165	-0.387	0.699
	Spearman Correlation	-0.047	0.135	-0.352	0.726 ^c
	Pearson's R	-0.147	0.114	-1.112	0.271 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	0.134	0.108	1.252	0.211
	Gamma	0.178	0.142	1.252	0.211
	Spearman Correlation	0.172	0.130	1.271	0.209 ^c
	Pearson's R	0.105	0.122	0.768	0.446 ^c
	N of Valid Cases	55.000			

*-with direct correlation



Product quality to efficiency. The statistical data showed no direct relationship of product quality to efficiency among the different groups of respondents (Table 10). Regardless of the quality and quantity, the actors could find ways to achieve efficiency especially in increasing their income. Furthermore, the actors would do their best to reduce the cost of production hence will provide a satisfying rate of return to their investment.

Table 10. Correlation of product quality to efficiency

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	-0.115	0.137	-0.846	0.397
	Gamma	-0.157	0.188	-0.846	0.397
	Spearman Correlation	-0.130	0.158	-0.873	0.387 ^c
	Pearson's R	0.007	0.173	0.046	0.963 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	0.210	0.137	1.509	0.131
	Gamma	0.289	0.186	1.509	0.131
	Spearman Correlation	0.254	0.161	1.484	0.148 ^c
	Pearson's R	0.276	0.122	1.622	0.115 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	0.155	0.119	1.321	0.187
	Gamma	0.229	0.174	1.321	0.187
	Spearman Correlation	0.178	0.134	1.352	0.182 ^c
	Pearson's R	0.049	0.129	0.364	0.717 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	-0.043	0.111	-0.389	0.698
	Gamma	-0.061	0.156	-0.389	0.698
	Spearman Correlation	-0.055	0.132	-0.403	0.688 ^c
	Pearson's R	-0.095	0.113	-0.695	0.490 ^c
	N of Valid Cases	55.000			



Product quality to responsiveness. The findings showed direct correlation of the perceived product qualities to responsiveness in the assembly group (Table 11). In particular, the assemblers respond accordingly to the needs of the buyers as to quality, quantity, time of deliveries, time when customers need it and the demand/complaints of buyers. Other groups of respondents were not particular to the aforementioned criteria as long as they could do their own business not considering the interest of most of their buyers relative to the product quality of the cabbages.

Table 11. Correlation of product quality to responsiveness

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	-0.175	0.124	-1.423	0.155
	Gamma	-0.241	0.169	-1.423	0.155
	Spearman Correlation	-0.207	0.144	-1.402	0.168 ^c
	Pearson's R	-0.138	0.134	-0.923	0.361 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	0.357	0.136	2.522	0.012*
	Gamma	0.485	0.178	2.522	0.012*
	Spearman Correlation	0.414	0.158	2.569	0.015 ^c
	Pearson's R	0.387	0.140	2.375	0.024 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	-0.004	0.130	-0.033	0.974
	Gamma	-0.006	0.181	-0.033	0.974
	Spearman Correlation	-0.008	0.147	-0.058	0.954 ^c
	Pearson's R	-0.002	0.167	-0.013	0.990 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	-0.057	0.107	-0.534	0.593
	Gamma	-0.077	0.143	-0.534	0.593
	Spearman Correlation	-0.066	0.131	-0.481	0.632 ^c
	Pearson's R	-0.080	0.131	-0.581	0.564 ^c
	N of Valid Cases	55.000			

*-with direct correlation



Service Quality to Performance

Service quality to product quality satisfaction. Table 12 showed that there is no direct correlation between perceived service qualities to product quality satisfaction. This implied that all respondent groups undertake the business more independently thus, focus more on their interest to have the products to sell in the market and at the same time to generate income. Moreover, the finding further justifies the individualistic behavior in the business operation thus causing constraints in improving the service quality in the spot market chains.

Table 12. Correlation of service quality to product quality satisfaction

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	0.104	0.134	0.771	0.441
	Gamma	0.145	0.185	0.771	0.441
	Spearman Correlation	0.132	0.156	0.883	0.382 ^c
	Pearson's R	0.161	0.147	1.081	0.286 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	-0.183	0.139	-1.298	0.194
	Gamma	-0.263	0.196	-1.298	0.194
	Spearman Correlation	-0.215	0.161	-1.248	0.221 ^c
	Pearson's R	-0.236	0.15	-1.372	0.180 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	0.044	0.119	0.37	0.712
	Gamma	0.061	0.165	0.37	0.712
	Spearman Correlation	0.052	0.138	0.389	0.699 ^c
	Pearson's R	0.083	0.152	0.624	0.535 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	0.120	0.124	0.972	0.331
	Gamma	0.162	0.167	0.972	0.331
	Spearman Correlation	0.137	0.144	1.005	0.319 ^c
	Pearson's R	0.104	0.134	0.762	0.449 ^c
	N of Valid Cases	55.000			



Service quality to flexibility. Among the different groups of actors, there is a direct correlation between service quality and flexibility (Table 13) on the assembly group. This means, that being directly dealing with the producers and the distributors, assemblers attend to the needs of the suppliers and buyers of cabbage. This further supports the findings on the product quality and flexibility. Thus, the assemblers address the needs of their clients such as farmers and distributors. This explains that while some actors have limited resources other actors provide financial and technical support services which were utilized to produce the desired volume thus, in turn give them adequate income and rate of return to their investment.

Table 13. Correlation of service quality to flexibility

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	0.161	0.122	1.308	0.191
	Gamma	0.209	0.158	1.308	0.191
	Spearman Correlation	0.193	0.148	1.304	0.199 ^c
	Pearson's R	0.207	0.146	1.402	0.168 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	-0.284	0.133	-2.119	0.034*
	Gamma	-0.375	0.172	-2.119	0.034*
	Spearman Correlation	-0.339	0.156	-2.040	0.050 ^c
	Pearson's R	-0.331	0.15	-1.982	0.056 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	-0.016	0.118	-0.136	0.892
	Gamma	-0.021	0.156	-0.136	0.892
	Spearman Correlation	-0.022	0.140	-0.163	0.871 ^c
	Pearson's R	-0.091	0.126	-0.681	0.499 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	-0.068	0.119	-0.569	0.569
	Gamma	-0.088	0.154	-0.569	0.569
	Spearman Correlation	-0.080	0.143	-0.581	0.564 ^c
	Pearson's R	-0.076	0.146	-0.557	0.580 ^c
	N of Valid Cases	55.000			

*-with direct correlation



Service quality to efficiency. Statistical results showed direct correlation of service quality to efficiency among the distribution group (Table 14). Since the distributors were taking risks of bringing the products to the ultimate market, they aimed to improve service quality and efficiency.

Service quality to responsiveness. Table 15 revealed no direct relationship of service quality to responsiveness. Therefore, this further substantiated the findings that the actors in the spot market chains operate, manage and decide independently about the business operation thus making little efforts to the demands of the buyers.

Table 14. Correlation of service quality to efficiency

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	0.148	0.143	1.037	0.300
	Gamma	0.195	0.188	1.037	0.300
	Spearman Correlation	0.162	0.162	1.087	0.283 ^c
	Pearson's R	0.130	0.158	0.869	0.390 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	0.019	0.166	0.113	0.910
	Gamma	0.025	0.219	0.113	0.910
	Spearman Correlation	0.023	0.191	0.132	0.896 ^c
	Pearson's R	0.043	0.202	0.246	0.807 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	0.307	0.106	2.860	0.004*
	Gamma	0.423	0.140	2.860	0.004*
	Spearman Correlation	0.355	0.121	2.846	0.006 ^c
	Pearson's R	0.342	0.122	2.722	0.009 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	-0.041	0.119	-0.342	0.732
	Gamma	-0.053	0.156	-0.342	0.732
	Spearman Correlation	-0.044	0.141	-0.318	0.752 ^c
	Pearson's R	-0.091	0.129	-0.663	0.510 ^c
	N of Valid Cases	55.000			

*-with direct correlation



Table 15. Correlation of service quality to responsiveness

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	0.104	0.128	0.811	0.418
	Gamma	0.138	0.169	0.811	0.418
	Spearman Correlation	0.124	0.153	0.826	0.413 ^c
	Pearson's R	0.155	0.156	1.040	0.304 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	-0.132	0.140	-0.931	0.352
	Gamma	-0.184	0.194	-0.931	0.352
	Spearman Correlation	-0.150	0.169	-0.857	0.398 ^c
	Pearson's R	-0.191	0.132	-1.103	0.278 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	0.010	0.116	0.082	0.934
	Gamma	0.013	0.154	0.082	0.934
	Spearman Correlation	0.015	0.137	0.111	0.912 ^c
	Pearson's R	-0.007	0.131	-0.054	0.957 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	0.148	0.116	1.281	0.200
	Gamma	0.184	0.144	1.281	0.200
	Spearman Correlation	0.176	0.142	1.305	0.197 ^c
	Pearson's R	0.148	0.139	1.087	0.282 ^c
	N of Valid Cases	55.000			

Functional Quality to Performance

Functional quality to product quality satisfaction. The results indicated direct relationship of functional quality to product quality satisfaction among the distribution and retailing groups (Table 16). As discussed earlier, the buyers expected that suppliers should provide or perform other functions to facilitate business transaction. therefore the distributors and retailers acquire/procure the cabbage of desired quality, quantity and timeliness of the product to meet the demands in the market. However, there are times the actors were unsatisfied selling on credit arrangement regardless of meeting the demands of their buyers.



Table 16. Correlation of functional quality to product quality satisfaction

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	0.189	0.128	1.455	0.146
	Gamma	0.255	0.170	1.455	0.146
	Spearman Correlation	0.225	0.148	1.532	0.133 ^c
	Pearson's R	0.214	0.133	1.451	0.154 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	0.275	0.138	1.947	0.052
	Gamma	0.409	0.195	1.947	0.052
	Spearman Correlation	0.309	0.156	1.841	0.075 ^c
	Pearson's R	0.296	0.143	1.750	0.090 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	0.332	0.091	3.499	0.000*
	Gamma	0.483	0.122	3.499	0.000*
	Spearman Correlation	0.382	0.104	3.091	0.003 ^c
	Pearson's R	0.365	0.094	2.933	0.005 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	0.251	0.127	1.966	0.049*
	Gamma	0.338	0.170	1.966	0.049*
	Spearman Correlation	0.279	0.146	2.114	0.039 ^c
	Pearson's R	0.229	0.154	1.714	0.092 ^c
	N of Valid Cases	55.000			

*-with direct correlation

Functional quality to flexibility. Statistical results showed that except the assembly group, functional quality has direct correlation to flexibility (Table 17). This means that the production, distribution and retailing group could perform the activities to meet the functional quality and at the same time tend to become flexible in order to meet the quality demands in the market. Furthermore, the findings confirmed that these different groups of respondents can respond to changing environment and can attend to the extraordinary service requests of their customers related to functional quality specifically the delivery of the products to the customers.



Table 17. Correlation of functional quality to flexibility

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	0.276	0.105	2.567	0.010*
	Gamma	0.355	0.130	2.567	0.010*
	Spearman Correlation	0.347	0.124	2.451	0.018 ^c
	Pearson's R	0.340	0.117	2.397	0.021 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	0.288	0.149	1.925	0.054
	Gamma	0.391	0.195	1.925	0.054
	Spearman Correlation	0.327	0.168	1.956	0.059 ^c
	Pearson's R	0.301	0.160	1.786	0.084 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	0.327	0.099	3.398	0.001*
	Gamma	0.448	0.130	3.398	0.001*
	Spearman Correlation	0.388	0.113	3.152	0.003 ^c
	Pearson's R	0.274	0.099	2.132	0.037 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	0.357	0.114	3.035	0.002*
	Gamma	0.450	0.138	3.035	0.002*
	Spearman Correlation	0.418	0.129	3.347	0.002 ^c
	Pearson's R	0.484	0.120	4.027	0.000 ^c
	N of Valid Cases	55.000			

*-with direct correlation

Functional quality to efficiency. The finding showed no direct correlation of functional quality to efficiency among the different groups of respondents (Table 18). This indicated that all the respondent groups have independent thinking and decision as to delivering the desired quality of products to their customers and as to how they utilized their limited resources in producing the desired volume which in turn give them adequate income and satisfying rate of return to their investment. Thereby, the different groups independently have meet functional quality and efficiency.



Table 18. Correlation of functional quality to efficiency

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	0.076	0.124	0.610	0.542
	Gamma	0.102	0.167	0.610	0.542
	Spearman Correlation	0.093	0.148	0.620	0.538 ^c
	Pearson's R	0.078	0.133	0.522	0.604 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	0.216	0.178	1.221	0.222
	Gamma	0.286	0.235	1.221	0.222
	Spearman Correlation	0.227	0.198	1.321	0.196 ^c
	Pearson's R	0.144	0.195	0.825	0.416 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	0.111	0.114	0.981	0.327
	Gamma	0.168	0.171	0.981	0.327
	Spearman Correlation	0.127	0.130	0.958	0.342 ^c
	Pearson's R	0.052	0.111	0.391	0.697 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	0.196	0.104	1.858	0.063
	Gamma	0.268	0.140	1.858	0.063
	Spearman Correlation	0.235	0.124	1.763	0.084 ^c
	Pearson's R	0.196	0.120	1.455	0.152 ^c
	N of Valid Cases	55.000			

Functional quality to responsiveness. Among the different groups of respondents, the statistical data showed direct correlation of functional quality to responsiveness (Table 19). This indicated that relative to meeting the functional quality, the different actors could not respond/act to meet the different perceived functional qualities which could due to lack of interaction with their buyers in the spot market since as cited by Salvador *et al.* (2001) that when buyers and sellers interact on issues related to material flows and quality, there were significant effects in terms of speed and delivery punctuality.



Table 19. Correlation of functional quality to responsiveness

RESPONDENT GROUP	SYMMETRIC MEASURES	VALUE	ASYMP. STD. ERROR ^a	APPROX. T ^b	APPROX. SIG.
Production	Kendall's tau-b	0.284	0.110	2.575	0.010*
	Gamma	0.375	0.141	2.575	0.010*
	Spearman Correlation	0.345	0.130	2.434	0.019 ^c
	Pearson's R	0.330	0.121	2.320	0.025 ^c
	N of Valid Cases	46.000			
Assembly	Kendall's tau-b	0.374	0.138	2.658	0.008*
	Gamma	0.512	0.176	2.658	0.008*
	Spearman Correlation	0.416	0.156	2.586	0.014 ^c
	Pearson's R	0.351	0.125	2.124	0.042 ^c
	N of Valid Cases	34.000			
Distribution	Kendall's tau-b	0.366	0.103	3.412	0.001*
	Gamma	0.508	0.132	3.412	0.001*
	Spearman Correlation	0.416	0.115	3.422	0.001 ^c
	Pearson's R	0.479	0.115	4.087	0.000 ^c
	N of Valid Cases	58.000			
Retailing	Kendall's tau-b	0.227	0.111	2.021	0.043*
	Gamma	0.280	0.135	2.021	0.043*
	Spearman Correlation	0.289	0.131	2.198	0.032 ^c
	Pearson's R	0.331	0.125	2.552	0.014 ^c
	N of Valid Cases	55.00			

*-with direct correlation

Legend:

- a. Not assuming the null hypothesis.
- b. Using the asymptotic standard error assuming the null hypothesis.
- c. Based on normal approximation.



SUMMARY, CONCLUSION AND RECOMMENDATION

Summary

This study aimed to know what are the perceived qualities used in purchasing cabbage, the performances in the spot market and whether there is a direct relationship of quality to performance. The study was conducted from November 2010 to January 2011 in La Trinidad, Benguet, Metro Manila and Urdaneta City, Pangasinan. A total of 193 were taken as respondents of the study. An interview schedule was used by the researcher in the study.

Most of the respondents have an age ranging from 21-40 years; there were more females than males and majority of the respondents were married. More than two-thirds were Catholic members, few were Protestants and a little number was being affiliated to other religions. Most of the respondents have attended or finished high school followed by college and elementary while some have taken up vocational course.

The average number of years showed that the producers and retailers were engaged in the business for a longer period with a similar number of 14 years respectively while the assembly and distribution groups had lesser number of years in the business with 9 and 5 years respectively.

The farmers from the La Trinidad Vegetable Trading Post sold their cabbages to the different buyer in the spot market but there are also a number of farmers from private trading center in La Trinidad that sold their cabbages to assembler-wholesalers at the same trading center. The assembly groups from the different spot markets sold their produce to the distribution and retailing groups of these different spot markets. The distribution groups specifically the trucker-wholesalers from the La Trinidad Vegetable



Trading Post delivers the cabbages to Urdaneta City and Balintawak and distributes to the wholesalers, wholesaler-retailers and retailers. Furthermore, the wholesalers and wholesaler-retailers from the different spot markets sold the cabbages to the retailers. However, these wholesalers and wholesaler-retailers also sold their cabbages to similar wholesalers and wholesaler-retailers. Finally, the actors on the retailing group from the different spot markets sold the cabbages to the ultimate consumers.

The perceived different criteria of product quality were being considered. It implies that these different criteria were used as basic consideration in purchasing cabbage in the spot market. One-third of the service quality was regard as basic criteria and it involved as to supplier gives notice to the buyers about supply shortage and price changes and as to supplier exerts effort to produce/procure cabbages ordered while two-third of the service quality criteria was sometimes considered which included as to supplier extends credit term to buyers or vice versa and whether supplier extends support services to the buyers in the delivery and has adequate logistics in trading. Moreover, the perceived functional quality criteria were also regard as basic consideration in purchasing cabbage. The respondents considered the different criteria of functional quality being able to deliver the product when customers want it.

Majority of the respondents agreed with the different criteria of performance product quality however the respondents are undecided as to the actors are satisfied selling cabbages to buyers on credit arrangement. Almost all of the respondents agreed as to the different criteria of performance flexibility except as to the respondents have little conflict with the buyers in the business transaction. And in terms of performanceefficiency, the respondents agreed with the different criteria specifically as to



exerting effort to reduce the cost of production. Furthermore, the respondents are undecided with the criteria of performance responsiveness but believed as to the actors act on the demand/complaints of buyers related to quality/quantity.

Using the symmetric measures Kendall's tau-b and gamma, the result indicates that there was a direct relationship on the different groups of quality to performance specifically on the assembly group of product quality to flexibility and product quality to responsiveness, on the assembly group of service quality to flexibility, on the distribution group of service quality to efficiency, on the distribution group and retailing group of the functional quality to product quality, on the different groups except on the assembly group of the functional quality to flexibility and on the different groups of functional quality to responsiveness. The findings showed no direct correlation of quality to performance among the most groups of actors however there were some groups that have direct relationship. This indicated the individualism of the majority of the group of actors in making decisions regarding quality and trading of cabbage in the spot market chain.

Conclusions

Based on the findings of this study, the following conclusions are drawn.

1. The different criteria of product quality in terms as to the cabbages are free from chemical residue, pests and diseases and physical injury; the variety, color and size are specified and the cabbages are fresh, clean, fully trimmed, firm and crunchy were considered.

2. Some of the service quality criteria were perceived specifically as to supplier gives notice to the buyers about supply shortage and price changes and as to the actors exert effort to produce/procure cabbages ordered however most of the criteria was



sometimes perceived in terms as to supplier extends credit term to buyers or vice versa and whether supplier extends support services to the buyers in the delivery and has adequate logistics in trading.

3. The different criteria of functional quality used in purchasing cabbage in the spot market were considered and it involved whether the supplier (seller) adheres to production/procurement/delivery targets, has adequate supply, accepts orders and delivers the cabbage when needed, as to the actors classified, accurately weighed and packed the cabbages and is flexible in pricing and accepts payment term.

4. The actors considered most of the performance product quality satisfaction such that the quality they produced/procured/sold/delivered meets their expectation and the buyer's requirement, satisfied with the volume they produced/procured/sold, always achieve their production/procurement/delivery targets, satisfied to fulfill orders and deliveries, the quality they supplied in the market is reliable and the buyers are always satisfied as to variety of product, price and quality/quantity but not as to they are satisfied selling on credit arrangement due to incompliance of buyers with the arrangement made.

5. Almost all of the respondents believed with the performance flexibility as to the actors can produce/procure the desired volume when buyers needed it, exerts effort to produce the desired volume and as to buyer is flexible to buy regardless of quantity and quality except as to buyer and seller have little conflict in the business transaction.

6. The actors considered all the criteria of performance efficiency such that the actors were happy to produce the desired volume out of their limited resources, exerted effort to reduce the cost of production and the actors were satisfied with the rate of return to their investment and with the income received.



7. The actors were undecided with the performance responsiveness in terms as to the actors can supply the market with the desired quality/quantity, always schedule their deliveries and find time to deliver when customers/markets need it the actors agreed as to they always act on the demand/complaints of buyers related to quantity/quality.

8. There was a direct relationship of quality dimensions to performance dimensions among some groups of respondents however there is no direct relationships among the most groups of actors. This shows that majority of the group of chain actors in the spot market decide independently with regards to quality and trading of cabbage.

Recommendations

Based on the conclusions drawn from this study, the following are suggested for the improvement of quality and performance in the spot market chains for cabbage:

1. The perceptions on the product, service and functional qualities imply a positive and suitable result, thus the actors involved should maintain or further enhance the quality specifically as to the service quality of the cabbages produced/procured/sold/delivered to ensure a continuous high quality of cabbages available in the market.

2. The findings of the study are indicative of a very good performance of the different chain actors in relation to product quality satisfaction, flexibility and efficiency and a satisfactory performance as to responsiveness. These different chain actors should uphold their performance in their vegetable trading business to maintain or attract more customers.

3. The results of the study revealed several problems on quality and performance. The following criteria were doubted by some actors which mean that these criteria were



not considered sometimes or that the actors have difficulty dealing with it at times. This criteria involved such as the satisfaction of sellers selling cabbages on credit arrangement, the sellers having outstanding credit from their buyers or vice versa, the seller extending support services to the buyer in the delivery of cabbages, the suppliers having adequate logistics in trading, the actors supplying the market with desired quantity/quality when needed, the actors scheduling their deliveries to meet the time in the market and when customers need it. Some of these problems arose between or among actors of cabbages which can also be solved by the actors involved. These actors should be in conformity dealing with one another or else may cause problems between or among them.

The concerned agencies of the government must strengthen their implementation regarding the marketing of vegetables produced by local farmers otherwise develop dynamic programs that boost up the advocacy on marketing of these vegetables. These agencies should also provide a more comprehensive technical and financial assistance most especially to the farmers of the local vegetable industry of the country.

4. The statistical data showed that majority of the different groups of actors decide independently regarding the quality and trading of cabbage in the spot market. This result indicated that majority of the actors only think of their interest in the business operation. Thus, to ensure good quality and a more effective trading of cabbage in the spot market chains, these different groups of respondents should consider the interest of every actor involved.



LITERATURE CITED

- AUSTRALIAN CENTRE FOR INTERNATIONAL AGRICULTURAL RESEARCH. 2007. The Vegetable Industry in the Philippines. Retrieved August 15, 2010 from http://avrdc.org/publications/socio/veg_industry/Philippines.pdf
- ANDERSON, J. C., H. HAKANSSON, and J. JOHANSON. 1994. Dyadic Business Relationships within a Business Network Context, *Journal of Marketing*. Vol. 58, October, Pp. 1-15.
- ARAMYAN, L. 2007. Measuring Supply Chain Performance in the Agri-Food Sector. Ph.D-thesis, Wageningen University, Wageningen. The Netherlands.
- ARAMYAN, L., J. M. CHRISTIEN, A. ONDERSTEIJN, G.J.M. OUDE LANSINK and K. OLAF VAN. 2006. Quantifying the Agri-Food Supply Chain. Springer, Dordrecht, Pp. 47-64.
- BUREAU OF AGRICULTURAL STATISTICS. 2008. StatGuide for farmers. Production and Marketing Statistics on: cabbage, carrots and white potato. Benguet. Vol. 2, No. 2, P. 11.
- BEAMON, B. M. 1998. Supply Chain Design and Analysis: Models and Methods. *International Journal of Production Economics*. Vol. 55, No. 3, Pp. 281-294.
- BENGUET SOCIO-ECONOMIC PROFILE. 2007. Economic Sector: Market Structure/System of Vegetables. Provincial Planning and Development Office. Benguet. Pp. 66-67.
- BERELSON, B. and G. A. STEINER. 1964. *Human Behaviour: An Inventory of Scientific Findings*. New York: Harcourt, Brace Jovanovich, pp88. As cited in *Marketing Management*. Kotler, P. Prentice Hall/Irwin 11th Ed. P.197.
- BOWERSOX, D. J. and J. D. CLOSS. 1996. *Logistical Management: The integrated supply chain process*. Mc-Graw Hill, New York, USA.
- CARR, A. S. and J. N. PEARSON. 1999. Strategically Managed Buyer-Supplier Relationships and Performance Outcomes. *J. Op. Manage.* Pp 17, 497-519.
- CARTER, J. R. and L. M. ELLRAM. 1994. The Impact of Interorganizational Alliances in Improving Supplier Quality. *Int. J. Phys. Distrib. & Logis. Management*. Pp. 15-23.



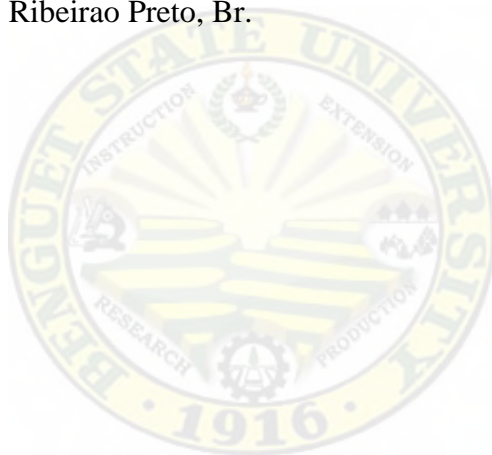
- CHAMPION, S. C. and A. P. FEARNE. 2000. Supply Chain Management: A “First Principles” Consideration of its Application to Wool Marketing. A Paper presented at the International Wool Textile Organization Technical Meeting, Nice France. Retrieved November 2000 from <http://www.imperial.ac.uk/agriculturalsciences/cfcr:pdfdoc:champion2001.pdf>
- CHRISTOPHER, M. G. 1998. Logistics and Supply Chain Management: Strategies for Reducing Costs and Improving Services. Pitman Publishing, London.
- COUNCIL OF LOGISTICS MANAGEMENT. 1986. What is it All About? Oak Brook, Illinois, U.S.A.
- DRABENSTOTT, M. 1999. Consolidation in U. S. Agriculture Leading to New Rural Landscape and Public Policy Considerations. Feedstuffs. P. 33.
- FOLKERTS, H. and H. KOEHORST. 1998. Challenges in International Food Supply Chains: Vertical Coordination in the European Agribusiness and Food Industries, British Food Journal. Pp. 100, 385-388.
- FYNES, B., S. de BURCA and C. VOSS. 2005. Supply Chain Relationship Quality, The Competitive Environment and Performance. International Journal of Production Research, Vol. 43, No.16. www.ucd.ie/busadmin/ijpr05.pdf
- GEANURACOS, J. and I. MEIKLEJOHN. 1994. Performance Measurement: the New Agenda Using Non-financial Measures to Improve Profitability. London Business Intelligence.
- GHORPADE, J. and M. CHEN. 1995. Creating Quality Driven Performance Appraisal Systems, Academy of Management Executive, Vol. 9.
- GRIMSDELL, K. 1996. The Supply Chain for Fresh Vegetables: What it Takes to Make it Work. Supply Chain Management: An International Journal. 1 (November): 11-4 In: Matanda, M. J. and B. Schroder. Business-To Business Relationship By Categories of Suppliers In The Marketing Channel. Dynamics in Chain and Networks. Proceedings of the Sixth International Conference on Chain and Network Management in Agribusiness and the Food Industry. 27-28 May 2004. Wubben. Wageningen Academic Publishers. Pp. 532-537.
- GROONROOS, C. 1990. Service Management and Marketing: Managing Moments of Truth in Service Competition. Lexington, Massachusetts, Lexington Books.
- HINES, P., R. LAMMING, D. JONES, P. COUSINS, and N. RICH. 2000. Value Stream Management: Strategy and Excellence in the Supply Chain. Financial Times Prentice Hall.



- HONGZE MA, 2005. Supply chain management. Logistics, Turku School of Economics and Business Administration. <http://www.tukkk.fi/markkinointi/log/log1/>
- HUTT, M. D. and T. W. SPEH. 1995. Business Marketing Management: A Strategic View of Industrial and Organizational Markets, Fifth Edition. Florida, Dryden Press. (From P.J. Batt Paper – Incorporating Measures of Satisfaction)
- JOHNSON, G. and K. SCHOLLES. 1980. Exploring Corporate Strategy. London, Prentice-Hall. 2nd Edition.
- KAYNAK, H. and J. A. PAGAN. 2003. Just-in-Purchasing and Technical Efficiency in the US Manufacturing Sector. Int. J. Prod. Res., 41(1), Pp. 1-14.
- LAI, K., E. W. T. NGAI, and T. C. E. CHENG. 2002. Measures for Evaluating Supply Chain Performance in Transport Logistics. Transportation Research, Part E 3, Pp. 439-456.
- LAMBERT, D. M. AND M. C. COOPER. 2000. Issues in Supply Chain Management. Ind. Market Manag. Pp. 29, 65-83.
- LUNING, P. A., W.J. and W. M. F. JONGEN. 2002. Food Quality Management: A Techno Managerial Approach, Wageningen Academic Publishers, Wageningen.
- NARASIMHAN, R. and J. JAYARAN. 1998. Causal Linkages in Supply Chain Management: An Exploratory Study of North American Manufacturing Firms. Decision Sciences, 29, Pp. 579-605.
- PARASUMAN, A. 1998. Customer Service in Business-to-Business Markets: An Agenda for Research. Journal of Business and Industrial Marketing, 13(4/5), Pp. 309-321.
- PERSSON AND OLHAGER. 2002. Performance simulation of supply chain design. International Journal of Production Economics. Vol. 77, No. 3, Pp. 231-245.
- POWELL, W. W. 1990. "Neither Market nor Hierarchy: Network Forms of Organization". In: B.M. Staw, L.L. Cummings (eds), Research in Organizational Behavior, Vol.12, JAI Press. Pp. 295-336.
- ROBBINS, S. P. 1988. Management: Concepts and Applications. Prentice-Hall International, Inc. 2nd Edition.
- SALVADOR, F., C. FORZA, M. RUNGTUSANATHAM and T. Y. CHOI. 2001. Supply Chain Interactions and Time-related Performances: An Operations Management Perspective, Int. J. Op. Prod. Manage., 21, Pp. 461-475.



- SIJSES, S. 2004. Structure, Conduct and Performance in the International Chain of Jepara-Made Furniture. Dynamics in Chain and Networks. Proceedings of the sixth International Conference on Chain and Network Management in Agribusiness and the Food Industry. 27-28 May 2004. Editors: Bremmers, H. J., Omta, S. W. F., Treinekens, J. H. and E. F. M. Wubben. Wageningen Academic Publishers. Pp. 118-123.
- TAN, K. C., S. B. LYMAN, and J. D. WISNER. 2002. Supply Chain Management: A Strategic Perspective. Int. J. Op. & Prod. Manage., 22, Pp. 614-631.
- VAN der VORST, J. G. A. J. 2000. Effective Food Supply Chains: Generating, Modeling and Evaluating Supply Chain Scenarios, PhD-thesis Wageningen University, Wageningen.
- ZYLBERSZTJN, D. and E. M. M. FARINA. 2003. Dynamics of Network Governance: A Contribution to the Study of Complex Forms. Paper Presented at the IV International Conference of Agri-Food Chain/Networks Economics and Management, Ribeirao Preto, Br.



APPENDICES**APPENDIX A**

Letter to the Respondents

Benguet State University
COLLEGE OF AGRICULTURE
La Trinidad, Benguet

November 2010

Sir/ Madam,

The undersigned fourth year student taking up Bachelor of Science in Agribusiness majoring in Enterprise Management at Benguet State University is conducting a research entitled “QUALITY AND PERFORMANCE IN THE SPOT MARKET CHAINS FOR CABBAGE.”

In this regard, may I ask a portion of your precious time to answer all the questions to complete the research undertaking. Rest assured that all information you will give be treated with utmost confidentiality.

Thank you very much and God bless.

Very truly yours,

SAMUEL L. DUYAN
Researcher

Noted:



LEOPOLDO N. TAGARINO
Adviser

APPENDIX B

Interview Schedule

This research aims to investigate the fresh vegetable supply networks. All information solicited will be treated with confidentiality. Please answer the questions honestly by putting check mark [✓] in the appropriate box provided for. Thank you very much!

Respondent's Name: _____ No. _____

Respondent's Group:

1. Production Group: Farmers
2. Assembly (Collection) Group: Assembler-Wholesaler Financier-Assembler-Wholesaler
3. Distribution Group: Trucker-Wholesaler Wholesaler
 Wholesaler-Retailer
4. Retailing Group: Retailers

A. Respondent's Profile

1. Age: _____
2. Gender: _____ Male _____ Female
3. Marital status: Single Married Separated Widowed
4. Religion: Catholic Protestant Others, specify _____
5. Educational background: Elementary High School College Vocational
6. Number of years engaged in vegetable business: _____
7. Organizational affiliation: Farmers' Association Cooperatives Others, specify _____

B. What are the vegetables you frequently produce/procure and sell in the market?

- Potato Cabbage Chayote Others, specify _____

C. Who are the buyers of vegetables you produced/procured?

- Assembler-Wholesalers Financier-Assembler-Wholesalers Financier-Assembler-Wholesaler-Retailer Trucker-Wholesalers Wholesalers Wholesaler-Retailers Retailers

D. Where do you sell the vegetables produced/procured?

- La Trinidad Vegetables Trading Post Others, specify _____
 Private Trading Center in La Trinidad, specify _____
 Metro Manila, specify _____

E. PERCEPTIONS: QUALITY

What product quality criteria do you perceive as having been the bases of the buyers in choosing or buying the vegetables?

E.1. Product (Technical) Quality. Technical quality is the physical description of the agricultural products.

1 2 3 4 5

1. Freedom from chemical residue. Strongly Disagree Strongly Agree
2. Freedom from pests and diseases. Strongly Disagree Strongly Agree
3. Variety, color and size of cabbages are specified. Strongly Disagree Strongly Agree
4. Freedom from physical injury. Strongly Disagree Strongly Agree
5. Cabbages are fresh, clean and fully trimmed. Strongly Disagree Strongly Agree
6. Cabbages are firm and crunchy. Strongly Disagree Strongly Agree

What service quality criteria do you perceive as having been the bases of the buyers in choosing or buying the cabbages?

E.2. Service Quality. Service quality is the additional requirement a supplier is willing to do to retain customer's business.

1 2 3 4 5

1. Supplier (seller) extends credit term to buyers. Strongly Disagree Strongly Agree



2. Supplier has an outstanding loan/cash advance from the buyer. Strongly Disagree Strongly Agree
3. Supplier gives notice to the buyers about supply shortage and the price changes.
Strongly Disagree Strongly Agree
4. Supplier exerts effort to produce/procure cabbages ordered. Strongly Disagree Strongly Agree
5. Supplier extends support services (comboys, packing) to the buyer in the delivery of cabbages.
Strongly Disagree Strongly Agree
6. Supplier has adequate logistics (facilities, equipments, workforce) in trading.
Strongly Disagree Strongly Agree

What functional quality criteria do you perceive as having been the bases of the buyers in choosing or buying the cabbages?

E.3. Functional Quality. Functional quality is the process of delivering the products to customers.

1 2 3 4 5

1. Supplier (seller) adheres to production/procurement/delivery targets.
Strongly Disagree Strongly Agree
2. Supplier classifies/grades the cabbages properly. Strongly Disagree Strongly Agree
3. Supplier accurately weighed and packed the cabbages. Strongly Disagree Strongly Agree
4. Supplier has adequate supply of cabbages when the buyers want it.
Strongly Disagree Strongly Agree
5. Supplier accepts orders and delivers the cabbages when needed.
Strongly Disagree Strongly Agree
6. Supplier is flexible in pricing the cabbages and accepts payment term.
Strongly Disagree Strongly Agree

F. PERFORMANCE (Operations): Assess the performance of the supply network operation using the following metrics:

F.1. Product Quality. Food quality consists of product safety, the sensory properties, and product reliability and convenience.

1 2 3 4 5

1. The quality I produced/procured/sold meets my expectation. Strongly Disagree Strongly Agree
2. The quality of cabbages delivered meets the buyer's requirements.
Strongly Disagree Strongly Agree
3. I am satisfied with the volume I produced/procured/sold to the buyer.
Strongly Disagree Strongly Agree
4. I always achieve my production/procurement/delivery targets. Strongly Disagree Strongly Agree
5. I am satisfied to fulfill the orders and deliveries when needed. Strongly Disagree Strongly Agree
6. I am satisfied selling to buyers on credit arrangement. Strongly Disagree Strongly Agree
7. The quality of cabbages I supplied in the market is reliable. Strongly Disagree Strongly Agree
8. The buyers are always satisfied as to variety of product, price, and quality/quantity.
Strongly Disagree Strongly Agree

F.2. Flexibility. Flexibility indicates the degree to which supply chain can respond to changing environment and extraordinary customer service requests.

1 2 3 4 5

1. I can produce/procure the desired volume when buyers needed it.
Strongly Disagree Strongly Agree
2. I exert effort to produce the desired volume and quality when buyers demand it.
Strongly Disagree Strongly Agree
3. The buyer is flexible to buy cabbages regardless of quantity and quality.
Strongly Disagree Strongly Agree
4. The buyer and seller have little conflict in the business transaction.
Strongly Disagree Strongly Agree



F.3. Efficiency. Efficiency measures how well the resources are utilized which include production costs, profit, return on investment and inventory. 1 2 3 4 5

1. I am happy to produce/procure the desired volume out of my limited resources. Strongly Disagree Strongly Agree
2. The income I received is adequately rewarding. Strongly Disagree Strongly Agree
3. I exert effort to reduce the cost of production/procurement. Strongly Disagree Strongly Agree
4. I am satisfied with the rate of return to my investment. Strongly Disagree Strongly Agree

F.4. Responsiveness. Responsiveness aims at providing the requested products with a short lead time. This involves the interaction between buyers and suppliers on issues related to product, payment, and information flows and quality, there are significant effects in terms of speed and delivery punctuality. 1 2 3 4 5

1. I can supply the market with desired quality/quantity when needed. Strongly Disagree Strongly Agree
2. I always schedule my deliveries to meet the time in the market. Strongly Disagree Strongly Agree
3. I always find time to deliver cabbages when customers/markets need it. Strongly Disagree Strongly Agree
4. I always act on the demand/complaints of buyers related to quality/quantity. Strongly Disagree Strongly Agree

