BIBLIOGRAPHY

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Adviser: Leopoldo N. Tagarino, MRSM (Agribusiness)

ABSTRACT

This study aimed to determine the performance of the actors in the spot market chain for cabbage in terms of: product quality satisfaction, flexibility, efficiency and responsiveness and to determine whether there are differentences among the chain actors in the spot market for cabbage.

The findings revealed that the demographic profile as to age, gender, marital status, religion and their educational background do not affect the interest in engaging in vegetable business as long as they have the interest and resources to venture into it.

An important finding on product quality satisfaction, the chain actors were highly significantly different on the achievement of production/procurement/delivery targets, satisfaction to the fulfillment of orders and deliveries when needed and selling of cabbage on credit arrangement. In measuring flexibility performance, the chain actors differ very significantly different as to the criterion to produce/ procure the desired volume when buyers needed it and highly significant difference in the conflict between the buyer and seller in their business transaction For the efficiency, the chain actors were observed highly significant differences in the satisfaction with the rate of return to investment and finally, on the responsiveness, the chain actors were highly significant different in all the sets of criteria in measuring responsiveness such as: supplying the market when needed,

scheduling deliveries, finding time to deliver and to always act on the demand of the buyer.

The chain actors should always comply with their commitment in order to avoid misunderstanding and conflicts, managed long-term relationships to have a positive impact on financial aspect, and to always interact continuously on issues related to material flows and quality to attain continuous operation and good relationship.

INTRODUCTION

Rationale

Cordillera Administrative Region (CAR), a semi-temperate place is the top producer of cabbage in the country. Particularly, Benguet and Mountain Province.

Benguet recorded the highest production output form 2005-2007. Mountain province was ranked second but its production way was far behind the output of Benguet. Area harvested in Benguet was almost four times the area harvested in Mountain Province. For 3-year period, Benguet registered the highest area and average yield followed by Mountain Province. In 2007, Benguet average yield was registered 18.5 metric tons/ha followed by Mountain Province with 17.14 metric tons/ha. (Bureau of Agricultural Statistics, 2008)

Among Cordillera Administrative Region (CAR) provinces, Benguet had the highest production share at 81% followed by Mountain Province with 91%. Other provinces counted but less than .5%.

Peak harvesting and trading of cabbage in Benguet occur in the month of March and November. Lean season for the rest of the month. While in Mountain Province, January is the peak harvesting and trading month.

Marketing practices of farmers is they usually sell their produce commodity to assembler-wholesaler and retailers at the La Trinidad Vegetable Trading Post and at Baguio City Hanger Market.

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 return, sell their produce to the creditor-buyer at stipulated prices. To note, when vegetable prices dip to a low level and farmers foresee that the total cost of their sales will not compensate for the production and hauling cost, they just leave their crops un harvested to avoid more loss.

Marketing includes all the activities in the transformation of commodity concerned with the way the product is sold.

Chain actors (farmers, assembler-wholesaler, financier-assembler-wholesaler, trucker-wholesaler, wholesaler, wholesaler-retailers, and retailers) encounter problems such as loss due to unstable prices of vegetables. Sometimes the actors buy the vegetables with a higher price but when it reach the final market, the price fall due to oversupply of this commodity. Another is the loss of quality of the product during the transportation process along the market chain like bruises and rotting. Reduction of weight was also observed on the cabbage because of the respiration process that occurs after the harvest which usually reduces its water content. To conclude, performance of the chain actors depends on their behavior on how they comply with each other.

Statement of the Problem

1. What are the indicators uses by the actors in the spot market to measure performance?

2. What are the differences among the chain actors in the spot market chain for cabbage?

Objectives of the Study

1. To identify the performance of the actors in the spot market chain for cabbage in terms of: product quality satisfaction, flexibility, efficiency and responsiveness.

2. To determine whether there are differences in performance among the chain actors in the spot market chain for cabbage.

Importance of the Study

The research result would be in one way or another could be a source of information to explain the performance of chain actors in the cabbage spot market using the four dimensions of measuring performance. That is, the knowledge about the associations between chain actors of cabbage.

Scope and Delimitation of the Study

The study focuses on the spot market chains for cabbage. Specifically on the efficiency, flexibility, responsiveness and food quality of chain actors in the spot market of cabbage.

The study was conducted on November to December 2010, at the spot markets of cabbage in La Trinidad, Urdaneta City, Pangasinan and Metro Manila. The total numbers of respondents were 193 intermediaries involved in marketing of cabbage such as 46 producers, 34 assemblers or collectors, 58 distributors and 55 retailers.

REVIEW OF LITERATURE

Background of the Study

Pricing is considered by many to be the key activity (Daplian, 2001) within the free enterprise system. Product price influences wages, rent, interest and profits. That is the price of the product influences the price paid for the factors of production like labor, land, capital and entrepreneurship. Price is the basis regulatory of economic system because it influences the allocation of those factors of production, high cost of wage attracts labor; high interest rates attract capital, and so on. In the allocation of scarce resources price determined will be produced (supply) and who will get the product that is produced (demand).

In the frame of this study, supply chain and networks is defined as the interconnected business of individuals, operating independently, but dependent from each other on the supply of goods and services. 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.

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 effective 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.

There will be a common view within a chain with respect to its own behavior, also regarding its impressions of outside expectations. Dominant scientific disciplines describing and explaining behavior of chains are marketing science and economics. Other

disciplines that are contributing to the behaviorist view are psychology, law, environmental sciences, ecology, ethics, food safety, sociology, and among others. Research questions refer to e.g. determination and requirements of chain behavior, measurement of behavior c.g. performance, determination of relevant indicators related to the actual circumstances, management tools instrumental in dealing with perceptions, etc.. In practice benchmarking of chains is an important tool for chain analysis (Beers *et al*., 1998).

A product is created by a set of activities with precedence relations between them executed and directed by organizations within the production chain. The way these activities are organized, managed and controlled among several actors (e.g. companies) is the focus of the institutional approach in chain studies. The linkages between the actors are primary subject of study. The institutional perspective deals with the interaction between organizations in the chain, e.g. the way contracts are managed, the pricing processes, exchange of information, coordination and control of physical flows etc. Dominant scientific disciplines working within the realm of this perspective are organization and management theory and business economics. Other sciences involved are law, information science, transaction theory, management science, logistics etc.. Scientific issues to be researched are directed towards type of linkages, effectiveness and efficiency of linkages, conditioning of linkages etc. (Beers *et al*., 1998).

Performance measurement is used to help direct the allocation of resources, assess and communicate progress towards strategic objectives and evaluate managerial performance (Ittner and Larcker, 2003). It helps also the manager to identify good performance, helps to make tradeoff s between profit and investment, provide means to

set strategic targets and ensures that managers are aware when to get involved if business is distracting (Nelly *et al*., 1994).

According to Theodoras *et al*. (2005) despite the importance of measuring performance in obtaining competitive advantage in the supply chain, relatively little research has been undertaken to provide a thorough understanding of measuring and improving performance in the food industry.

A knowledge gap between farmers and processors about e.g. business practices, product supply, quality expectations therefore, farmers and processors pose different questions to improve supply chain performance which leads them to run the risk of mis-specifying each others decision process (Le Heron, 2001).

Performance measurement as defined by (Nelly *et al*., 2005) is the process of quantifying the efficiency and effectiveness of an action, a performance indicator is a measure used to quantify the efficiency and effectiveness of an action. According to Coeli *et al*. (2005) a natural measure of performance is a productivity ratio: the ratio of outputs to inputs, where larger values of this ratio are associated with better performance. While there are many indicators of performance that can be deployed in an organization, there is a relative small number of dimensions which contribute more than proportionally to success or failure in the market, which are Key Performance Indicator (KPIs).

Performance can be characterized cost factor and service factor. In the cost factor the cost of inventory, transportation, facilities and handling cost and information infrastructure and the service factor consider the response time, product variety, product availability and return ability (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 Meiklejohn, 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.

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 bore by each chain members involved in the production and marketing of the product (Sijses, 2004).

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- indicates the degree to which supply chain can respond to changing environment and extraordinary customer service requests (Aramyam, 2007).

Responsiveness- aims at providing the requested products with a short lead time. 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 (Luning *et al*., 2002)- consists of product safety and health; the sensory properties and shell life and; product reliability and convenience.

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 (Sijses, 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.

Conceptual Framework

From the literatures cited, there are several methods and models to measure supply chain performance (Figure 1). Performance indicators have been identified, summarized and further categorized. In these regards, the research will assess the performance in the spot market chains for cabbage using the four indicators of measuring performance such as: product quality satisfaction, flexibility, efficiency and responsiveness. The study shall focus in determining and differences of the performance of the chain actors. Specifically, the product quality satisfaction will be assess based from the physical products, the flexibility from the degree to which supply chain can respond to changing environment, efficiency the productive use of product with minimum waste and effort and finally, the responsiveness in responding readily.

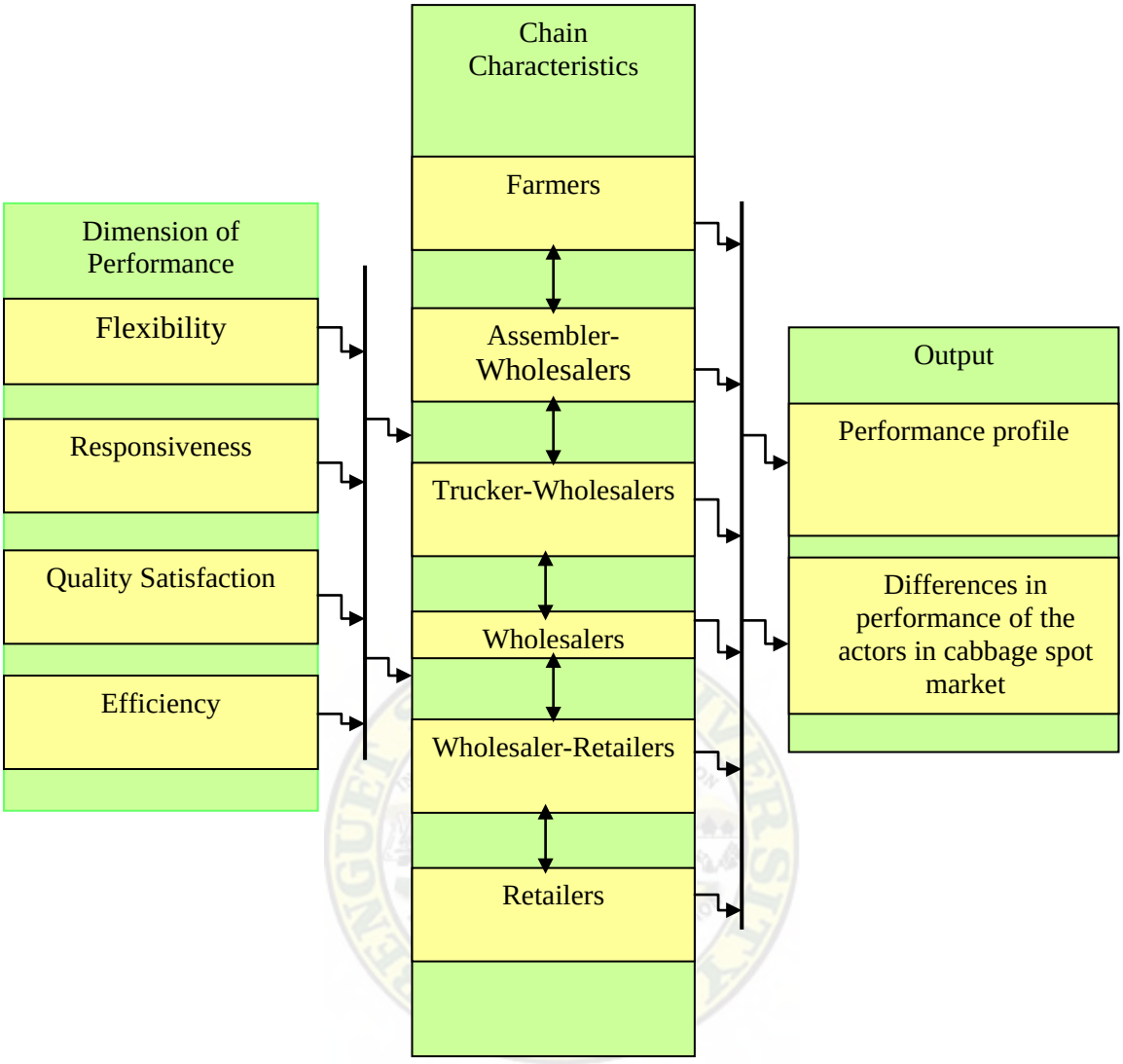

Figure 1. Conceptual framework

Definition of Terms

Performance – refers to the accomplishment of a job.

Producers/Farmers – the one who produces the commodities.

Wholesaler – refers to middlemen who directly sell potato to retailers in wholesale basis.

Assembler Wholesaler – they are the one who assemble the product to make it in large quantity.

Truckers or Viajeros – they are in charge of carrying the product to put it in the spot markets.

Retailers – refers to the individuals who market cabbage directly to ultimate consumers.

Spot market or bagsakan– place where the product are being delivered and sold.

Flexibility - respond to changing environment.

Responsiveness – the ability of a system to adjust quickly to a situation and to resume stable operation without undue delay.

Food quality - consists of product safety and health; the sensory properties and shell life and; product reliability and convenience.

Efficiency – ability to accomplish a job with a minimum expenditure of time and effort.

METHODOLOGY

Locale and Time of the Study

The research locations followed the geographic flow of fresh semi-vegetables from the major source (production) to the major market assembly and collection, and the geographic distribution markets. However, the research coverage areas were limited to selected production and marketing areas.

The primary markets (assembly/collection) were concentrated in La Trinidad, Benguet.

Secondary markets (distribution) were the major vegetables trading centers (commonly called "bagsakan") at Balintawak market in Quezon City, Urdaneta City, Pangasinan.

While the tertiary markets include the retailing markets within these trading centers and other retail market outlets such as Novaliches, Pasay Kamuning, Dapitan, Blumentritt and Libertad.

Respondents of the Study

Respondents of the study were the different chain actors involved in marketing of cabbage in the spot markets. There were 193 intermediaries involved in the product flow of cabbage such as 46 producers, 34 assemblers or collectors, 58 distributors and 55 retailers.

Data Gathering Procedure

The research instrument used to gather the data was the interview schedules and observations.

Data Gathered

The data gathered was the performance indicators in cabbage spot market chains in terms of efficiency, flexibility, responsiveness and product quality. Also on the differences in performance among the chain actors and the comparison of performances of various sectors using the four dimensions of measuring quality.

Data Analysis

The data gathered were tabulated in the excel program and analyzed using the SPSS version 16. For descriptive analysis, frequency counts and percentage was used while the statistical test, kruskal-wallis was used.

RESULTS AND DISCUSSION

Demographic Profile of the Respondents

Table 1 presents the demographic profile of the respondents which represents the different classification of the respondents as to their age, gender, marital status, religion and their educational background.

Age. This shows that majority of the farmers (39%), assembler-wholesalers (32%), trucker-wholesalers (42%) and wholesalers (30%) belong to age bracket 21-30 years old. While the assembler-wholesalers (32%), financier-assembler-wholesalers (47%) and wholesaler-retailers (39%) have the age ranging from 31-40 years old. It could be noted, however that there are respondents with age of over 61 years old. Thus, it implies that age is not a requirement to engage in vegetable business as long as they have the resources and interest to venture into it.

Gender. Majority of the farmers (91%), assembler-wholesalers (68%), and trucker-wholesalers (67%) are dominated by male while the other groups are female. The result implied the difference according the nature of activity or business performed.

Marital Status. Almost all of respondents were married with the exception of the wholesalers (60%) are dominated by single. There were also respondents that are separated and widowed. Thus, regardless of marital status, anybody could engage in vegetable business.

Religion. As to religious affiliation of the respondent, catholic constituted the largest number and only few belongs to Protestants and other religious denomination. It shows that most of the respondents (chain actors) belong to Christian community.

Educational background. Majority of the respondents are college graduate but it

Table 1: Respondent's Profile

	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 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
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	67	5	42	6	60	15	42	9	16
Married	30	65	17	89	13	87	7	59	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
Religion														
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
Educational 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
AW- assembler-wholesaler
FAW- financier-assembler-wholesaler
TW- trucker-wholesaler
W- wholesaler
WR- wholesaler-retailer
R- retailer

was noted that it was only slightly ahead of greater number of respondents compared to the high school graduate, 56% of the retailers were high school graduate. Thus, the result implies that educational background is not a necessary to engage in vegetable business as long as there is the interest and a knowledge on computation.

Number of Years Engage in Vegetable Business

Table 2 shows that majority of the chain actors are engage in vegetable business production from one to five years, farmers (17%), assembler-wholesalers (47%), trucker-wholesalers (33%), wholesalers (60%), wholesaler-retailers (89%), retailers (31%) and 11-15 years for the financier-assembler-wholesalers (47%). All the other years bracket were few respondents respond. Hence, it implies that it is not a necessary for anyone to have a long experience to engage in vegetable business.

Organizational Affiliations

As to the organizational affiliation (Table 3), majority of all the chain actors do not belong to any organization, farmers (89%), assembler-wholesalers (74%), financier-assembler-wholesalers (53%), trucker-wholesalers (42%), wholesalers (70%), wholesaler-retailers (69%), and retailers (87%). However, there are also few respondents who were a member of cooperatives and other organization. The result implies that it is not a necessary for the chain actors to join in any organizations.

Table 2.Number of Years Engaged

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

Table3.Organizational Affiliation

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 Association	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

Legend: F- farmer
AW- assembler-wholesaler
FAW- financier-assembler-wholesaler
TW- trucker-wholesaler
W- wholesaler
WR- wholesaler-retailer
R- retailer

Spot Market Chain for Cabbage

Figure 2 shows the different chain actors playing in the cabbage spot market. It shows whom the different market intermediaries' trade within the procurement and selling of cabbage. This therefore shows the flow of cabbage in the spot market from its point of production to the final consumer.

It was shown in the result that farmers have access to the different buyers in the spot market. Farmers can sell the produced cabbage with any of the buyers in La Trinidad Trading Post such assembler-wholesalers, financier assembler wholesalers, trucker wholesalers, wholesalers and wholesaler-retailer and retailers. However some of them can access to buyers on other selling place such Urdaneta and Balintawak.

Furthermore the result shows that there are many spot market chain for cabbage such as: farmers to assembler-wholesalers, financier assembler wholesalers, trucker wholesalers, wholesalers and wholesaler-retailer and retailers within La Trinidad Vegetable Trading Post (LTVTP), it implies that chain actors can produce/ procure or sell the cabbage with in LTVTP. Moreover, spot market chain for cabbage flows from farmer in LTVTP to assembler-wholesalers, financier assembler wholesalers, trucker wholesalers, wholesalers and wholesaler-retailer and retailers at Urdaneta Trading Post, it revealed that through chain actors cabbage are available to different selling place or spot market.

The trucker-wholesalers from LTVTP are supplied by farmers and assembler-wholesalers either from private and non private. The procured cabbage is distributed by the trucker-wholesalers to wholesalers in Balintawak, wholesaler-retailers and retailers in Urdaneta market. The wholesaler-retailers in LTVTP directly buy cabbage from

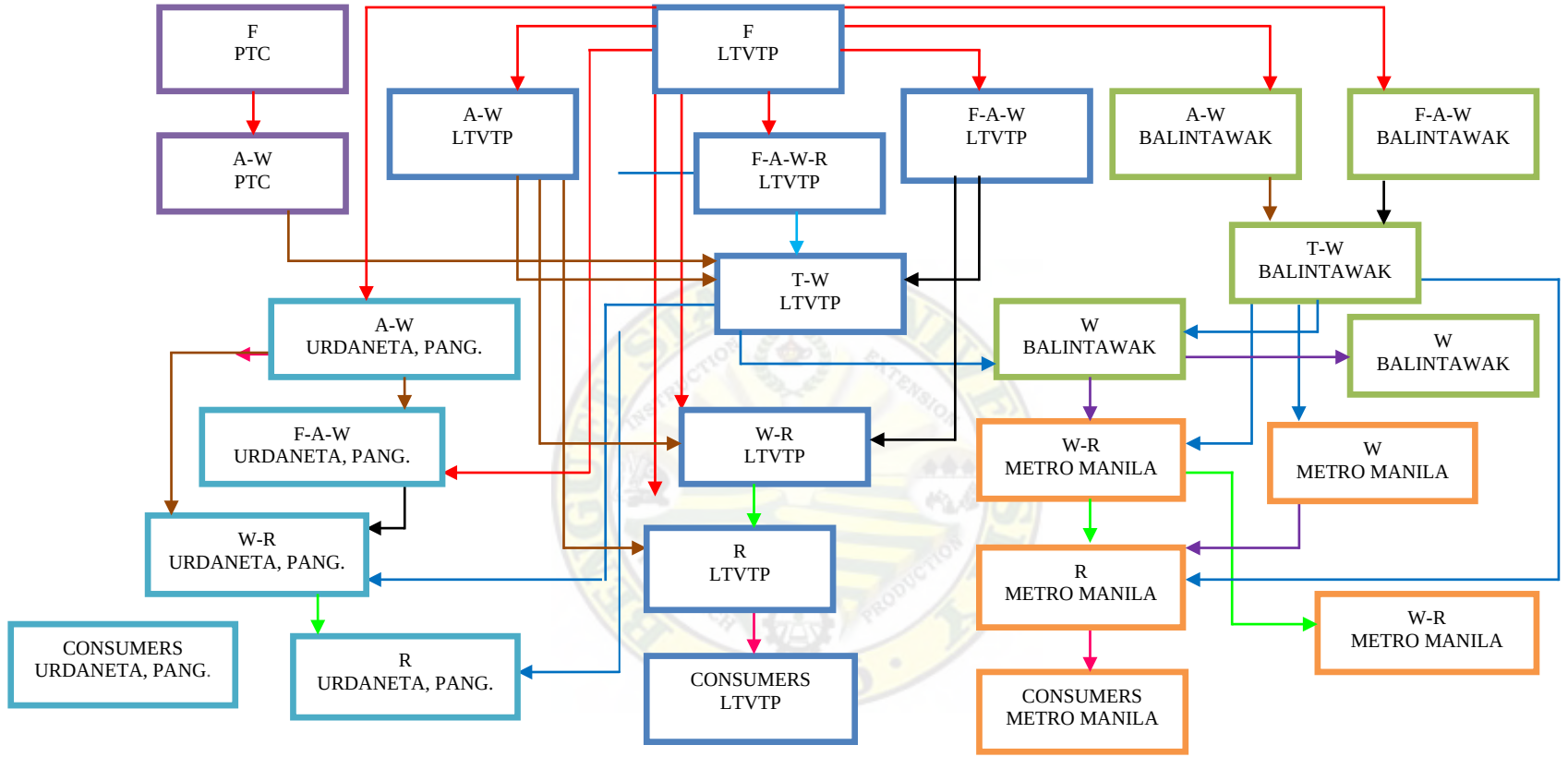

Figure 2. Spot market chain and location for cabbage

assembler-wholesalers aside from farmers and sell to retailer and end users in the same place. Other spot market chain for cabbage follow the flow of farmers at LTVTP to assembler-wholesalers, trucker wholesalers and wholesalers in Balintawak, from Balintawak chain actors wholesaler retailer and retailer procure or buy produced cabbage that this chain actors will sale in Metro Manila.

The financier-assembler-wholesalers in Balintawak has a direct access from farmers at LTVTP and sell to trucker-wholesalers at Balintawak. The trucker-wholesalers distributes it to wholesalers in Balintawak and Metro Manila and to wholesaler-retailers as well.

The wholesaler-retailer in Metro Manila buy cabbage from Balintawak wholesaler and trucker wholesaler. Wholesaler-retailer sells the procured cabbage to some wholesaler-retailer and retailers.

Product quality satisfaction

Consists of product safety and health; the sensory properties and shell life and; product reliability and convenience.

Table 4 reveals that majority of the farmers (54%), assembler-wholesaler (68%), wholesaler-retailer (61%) and retailer (49%) moderately agree that they meet the physical quality of cabbage bought or sold. As to the buyers requirement on the quality of cabbage delivered, greater percentage of farmers (41%), assembler-wholesaler (58%), financier-assembler-wholesaler (47%), trucker-wholesaler (50%), and retailers (51%) moderately agree, however, (50%) of the wholesaler wholesalers were undecided and wholesaler-retailers (39%) strongly agree. For the satisfaction on the volume produce/procure/sold to the buyer, greater number of the respondents on the farmers (46%), assembler-

Table 4a. Product quality satisfaction

STATEMENT	1		2		3		4		5		AVE
	N	%	N	%	N	%	N	%	N	%	
Farmer											
1. The quality of cabbages I produce/procure/sold meets my expectation.	0	0	2	4	13	28	25	54	6	13	4
2. The quality of cabbages delivered meets the buyer's requirements.	0	0	4	9	17	37	19	41	6	13	4
3. I am satisfied with the volume I produce/procure or sold to the buyer.	1	2	5	11	9	20	21	46	10	22	4
4. I always achieve my production/procurement/delivery targets.	1	2	4	9	28	61	9	20	4	9	3
5. I am satisfied to fulfill the orders and deliveries of cabbages when needed.	2	4	8	17	16	35	14	30	6	13	3
6. I am satisfied selling cabbages to buyers on credit arrangement.	12	26	7	15	19	41	5	11	3	7	3
7. The quality of cabbages I supplied in the market is reliable.	0	0	5	11	11	24	22	48	8	17	4
8. The buyers are always satisfied as to variety of product, price, and quality/quantity.	0	0	1	2	21	46	20	43	4	9	4
Assembler-Wholesaler											
1. The quality of cabbages I produce/ procure/sold meets my expectation.	0	0	0	0	3	16	13	68	3	16	4
2. The quality of cabbages delivered meets the buyer's requirements.	0	0	0	0	4	21	11	58	4	21	4
3. I am satisfied with the volume I produce/procure or sold to the buyer.	0	0	0	0	3	16	10	53	6	32	4
4. I always achieve my production/procurement/delivery targets.	1	5	1	5	2	11	9	47	6	32	4
5. I am satisfied to fulfill the orders and deliveries of cabbages when needed.	0	0	1	5	5	26	4	21	9	47	4
6. I am satisfied selling cabbages to buyers on credit arrangement.	0	0	9	47	6	32	3	16	1	5	3
7. The quality of cabbages I supplied in the market is reliable.	0	0	0	0	3	16	11	58	5	26	4
8. The buyers are always satisfied as to variety of product, price, and quality/quantity.	0	0	0	0	7	37	7	37	5	26	4

Numerical value and descriptive equivalent:

1-Strongly disagree
2-disagree
3-undecided
4-moderately agree
5-strongly agree

Table 4a. Continued…

STATEMENT	1		2		3		4		5		AVE.
	N	%	N	%	N	%	N	%	N	%	
Financier-Assembler-Wholesaler											
1.The quality of cabbages I produce/ procure/sold meets my expectation.	0	0	0	0	2	12	6	35	9	53	4
2. The quality of cabbages delivered meets the buyer's requirements.	0	0	1	6	2	12	8	47	6	35	4
3. I am satisfied with the volume I produce/procure or sold to the buyer.	0	0	0	0	1	6	8	47	8	47	4
4.I always achieve my production/ procurement/ delivery targets.	0	0	1	6	8	47	4	24	4	24	4
5.I am satisfied to fulfill the orders and deliveries of cabbages when needed.	0	0	2	12	2	12	5	29	8	47	4
6. I am satisfied selling cabbages to buyers on credit arrangement.	4	24	5	29	5	29	2	12	1	6	2
7. The quality of cabbages I supplied in the market is reliable.	0	0	0	0	2	12	9	53	6	35	4
8. The buyers are always satisfied as to variety of product, price, and quality/quantity.	0	0	1	6	4	24	9	53	3	18	4
Trucker-Wholesaler											
1The quality of cabbages I produce/ procure/sold meets my expectation.	0	0	0	0	5	42	2	17	5	42	4
2. The quality of cabbages delivered meets the buyer's requirements.	0	0	0	0	4	33	6	50	2	17	4
3.I am satisfied with the volume I produce/procure or sold to the buyer.	0	0	0	0	0	0	7	58	5	42	4
4.I always achieve my production/ procurement /delivery targets.	0	0	2	17	1	8	4	33	5	42	4
5.I am satisfied to fulfill the orders and deliveries of cabbages when needed.	0	0	1	8	1	8	3	25	7	58	4
6.I am satisfied selling cabbages to buyers on credit arrangement.	2	17	3	25	5	42	1	8	1	8	3
7.The quality of cabbages I supplied in the market is reliable.	0	0	0	0	0	0	9	75	3	25	4
8.The buyers are always satisfied as to variety of product, price, and quality/quantity.	0	0	0	0	4	33	5	42	3	25	4

Table 4a. Continued…

STATEMENT	1		2		3		4		5		AVE.
	N	%	N	%	N	%	N	%	N	%	
Wholesaler											
1.The quality of cabbages I produce/ procure/sold meets my expectation.	1	10	0	0	6	60	2	20	1	10	3
2.The quality of cabbages delivered meets the buyer's requirements.	0	0	1	10	5	50	2	20	2	20	4
3.I am satisfied with the volume I produce/procure or sold to the buyer.	0	0	1	10	4	40	2	20	3	30	4
4.I always achieve my production/ procurement/delivery targets.	0	0	3	30	3	30	2	20	2	20	3
5.I am satisfied to fulfill the orders and deliveries of cabbages when needed.	0	0	2	20	1	10	3	30	4	40	4
6.I am satisfied selling cabbages to buyers on credit arrangement.	1	10	1	10	5	50	1	10	2	20	3
7.The quality of cabbages I supplied in the market is reliable.	0	0	0	0	3	30	5	50	2	20	4
8.The buyers are always satisfied as to variety of product, price, and quality/quantity.	0	0	0	0	4	40	3	30	3	30	4
Wholesaler-Retailer											
1.The quality of cabbages I produce/ procure/sold meets my expectation.	0	0	1	3	7	19	19	53	9	25	4
2.The quality of cabbages delivered meets the buyer's requirements.	0	0	2	6	7	19	22	61	5	14	4
3.I am satisfied with the volume I produce/procure or sold to the buyer.	0	0	1	3	8	22	13	36	14	39	4
4.I always achieve my production/ procurement/delivery targets.	0	0	3	8	8	22	17	47	8	22	4
5. I am satisfied to fulfill the orders and deliveries of cabbages when needed.	0	0	2	6	11	31	10	28	13	36	4
6.I am satisfied selling cabbages to buyers on credit arrangement.	2	6	5	14	11	31	13	36	5	14	3
7.The quality of cabbages I supplied in the market is reliable.	0	0	1	3	6	17	19	53	10	28	4
8.The buyers are always satisfied as to variety of product, price, and quality/quantity.	0	0	1	3	11	31	17	47	7	19	4

Table 4a. Continued…

STATEMENT	1		2		3		4		5		AVE.
	N	%	N	%	N	%	N	%	N	%	
Retailer											
1.The quality of cabbages I produce/ procure/sold meets my expectation.	1	2	2	4	13	24	27	49	12	22	4
2.The quality of cabbages delivered meets the buyer's requirements.	3	5	1	2	17	31	28	51	6	11	4
3.I am satisfied with the volume I produce/procure or sold to the buyer.	2	4	5	9	9	16	24	44	15	27	4
4.I always achieve my production/ procurement/delivery targets.	8	15	5	9	16	29	18	33	8	15	3
5. I am satisfied to fulfill the orders and deliveries of cabbages when needed.	9	16	6	11	9	16	16	29	15	27	3
6.I am satisfied selling cabbages to buyers on credit arrangement.	16	29	7	13	19	35	13	24	0	0	3
7.The quality of cabbages I supplied in the market is reliable.	1	2	3	5	10	18	28	51	13	24	4
8.The buyers are always satisfied as to variety of product, price, and quality/quantity.	1	2	1	2	19	35	20	36	14	25	4

Table 4b. Descriptive analysis and test statistics

STATEMENT	MEAN	CHI-SQUARE	DF	ASYMPT. SIG.
1.The quality of cabbage I produce/procure sold meets my expectation.	3.89	5.762	3	.124
2.The quality of cabbages delivered meets the buyer's requirements.	3.73	7.238	3	.065
3.I am satisfied with the volume I produce/procure or sold to the buyer.	3.96	7.065	3	.070
4.I always achieve my production/ procurement/delivery targets.	3.5	13.794	3	.003**
5.I am satisfied to fulfill the orders and deliveries of cabbages when needed.	3.68	15.881	3	.001**
6. I am satisfied selling cabbages to buyers on credit arrangement.	2.75	12.489	3	.006**
7.The quality of cabbages I supplied in the market is reliable.	3.95	7.156	3	.067
8.The buyers are always satisfied as to variety of product, price, and quality/quantity.	3.77	3.641	3	.303

Legend: **- highly significant

wholesalers (53%), financier-assembler-wholesalers (47%), trucker-wholesalers (58%), wholesaler-retailers (47%) and retailers (44%) moderately agree, only the wholesalers where 40% were undecided. As to the achievement on the production/procurement/delivery targets, larger number of the respondents from farmers (61%), financier-assembler-wholesalers (47%), wholesalers (30%), wholesaler-retailers (31%), and retailers (29%) were undecided, however, for the assembler-wholesalers (47%) moderately agree and for the trucker-wholesalers (42%) strongly agree. On the satisfaction on the fulfillment of orders and deliveries when needed, significant number of the assembler-wholesalers (47%), financier-assembler-wholesalers (47%), trucker-wholesalers (58%), and wholesalers(40%) strongly agree and farmers (35%) were undecided, for the wholesaler-retailers (36%) and retailers (29%) moderately disagree. As to the selling of cabbage on credit arrangement, farmers (41%), financier-assembler-wholesalers (29%), trucker-wholesalers (42%), wholesalers (50%), were undecided, however, there were farmers (26%), trucker-wholesalers (17%) and retailers (29%) strongly disagree. Majority of the farmers (48%), assembler-wholesalers (58%), financier-assembler-wholesalers (53%), trucker-wholesalers (75%), wholesalers (50%), wholesaler-retailers (53%), moderately agree that the quality of the cabbage they supplied in the market were reliable. As to the satisfaction of buyers as to variety, price, quality/quantity, farmers (46%), assembler-wholesalers (37%), wholesalers (40%) were undecided, financier-assembler-wholesalers (47%) strongly agree, and assembler-wholesalers (37%), trucker-wholesalers (42%), wholesaler-retailers (47%), and retailers (36%) moderately agree. The mean average implied that the chain actors were undecided that they are satisfied of selling cabbage on credit arrangement and they moderately agree

in terms of the physical quality of cabbage, the buyers requirement as to the quality of cabbage delivered, satisfaction with the volume procure/produce or sold to the buyer, achievement of production/procurement/delivery targets, satisfaction to the fulfillment of orders and deliveries when needed, the reliability of the quality supplied in the market and the satisfaction of the buyers as to variety of product, price and quality/ quantity. The chain actors give much importance on the satisfaction to the fulfillment of orders and deliveries followed by the achievement of production/procurement/delivery targets, the satisfaction of selling cabbage on credit arrangement, they give less much importance on the satisfaction of buyers as to variety, price, and quality/quantity followed by the expectation to meet the quality of cabbage produce/procure/ sold to the buyer and then on the reliability of the quality of cabbage supplied in the market. The chain actors highly significantly differ on the achievement of production/procurement/delivery targets. On the other hand, they highly differ on the satisfaction to the fulfillment of orders and deliveries when needed which means that the chain actors really depend on their own capital for them to produce. Moreover, the chain actors also highly differ on selling of cabbage on credit arrangement that implies that the seller are selective in choosing to whom they sell their product on credit arrangement.

Flexibility performance

Indicates the degree to which supply chain can respond to changing environment and extraordinary customer service requests.

Table 5 shows that greater percentage of the farmers (43%), trucker-wholesalers (17%) and retailers (29%) were undecided, for assembler-wholesalers (32%) were moderately agree and undecided, financier-assembler-wholesalers (35%) strongly agree

Table 5a. Distribution of respondents according to flexibility

STATEMENT	1		2		3		4		5		AVE.
	N	%	N	%	N	%	N	%	N	%	
Farmer											
1. I can produce/procure the desired volume when buyers needed it.	1	2	10	22	20	43	11	24	4	9	3
2. I exert effort to produce the desired volume and quality when buyers demand it.	1	2	2	4	9	20	21	46	13	28	4
3. The buyer is flexible to buy cabbages regardless of quantity and quality.	1	2	3	7	14	30	20	43	8	17	4
4. The buyer and seller have little conflict in the business transaction.	3	7	7	15	18	39	15	33	3	7	3
Assembler-Wholesaler											
1. I can produce/procure the desired volume when buyers needed it.	0	0	1	5	6	32	6	32	6	32	4
2. I exert effort to produce the desired volume and quality when buyers demand it.	0	0	0	0	6	32	8	42	5	26	4
3. The buyer is flexible to buy cabbages regardless of quantity and quality.	0	0	0	0	5	26	10	53	4	21	4
4. The buyer and seller have little conflict in the business transaction.	1	5	2	11	5	26	10	53	1	5	3
Financier-Assembler-Wholesaler											
1. I can produce/procure the desired volume when buyers needed it.	0	0	1	6	4	24	6	35	6	35	4
2. I exert effort to produce the desired volume and quality when buyers demand it.	0	0	1	6	1	6	7	41	8	47	4
3. The buyer is flexible to buy cabbages regardless of quantity and quality.	1	6	0	0	4	24	6	35	6	35	4
4. The buyer and seller have little conflict in the business transaction.	1	6	0	0	6	35	5	29	5	29	4
Trucker-Wholesaler											
1. I can produce/procure the desired volume when buyers needed it.	1	8	1	8	2	17	3	25	5	42	4
2. I exert effort to produce the desired volume and quality when buyers demand it.	0	0	1	8	1	8	3	25	7	58	4
3. The buyer is flexible to buy cabbages regardless of quantity and quality.	0	0	0	0	3	25	6	50	3	25	4
4. The buyer and seller have little conflict in the business transaction.	1	8	0	0	2	17	7	58	2	17	4

Numerical value and descriptive value:

1-Strongly disagree
2-disagree
3-undecided
4-moderately agree
5-strongly agree

Table 5a. Continued…

STATEMENT	1		2		3		4		5		AVE.
	N	%	N	%	N	%	N	%	N	%	
Wholesaler											
1. I can produce/procure the desired volume when buyers needed it.	0	0	0	0	3	30	4	40	3	30	4
2. I exert effort to produce the desired volume and quality when buyers demand it.	0	0	0	0	2	20	4	40	4	40	4
3. The buyer is flexible to buy cabbages regardless of quantity and quality.	0	0	0	0	3	30	3	30	4	40	4
4. The buyer and seller have little conflict in the business transaction.	0	0	2	20	4	40	2	20	2	20	3
Wholesaler-Retailer											
1. I can produce/procure the desired volume when buyers needed it.	1	3	3	8	9	25	11	31	12	33	4
2. I exert effort to produce the desired volume and quality when buyers demand it.	1	3	0	0	3	8	18	50	14	39	4
3. The buyer is flexible to buy cabbages regardless of quantity and quality.	0	0	1	3	11	31	15	42	9	25	4
4. The buyer and seller have little conflict in the business transaction.	2	6	3	8	11	31	15	42	5	14	4
Retailer											
1. I can produce/procure the desired volume when buyers needed it.	3	5	9	16	16	29	15	27	12	22	3
2. I exert effort to produce the desired volume and quality when buyers demand it.	3	5	5	9	10	18	22	40	15	27	4
3. The buyer is flexible to buy cabbages regardless of quantity and quality.	4	7	7	13	11	20	23	42	10	18	4
4. The buyer and seller have little conflict in the business transaction.	8	15	5	9	20	36	20	36	2	4	3

Table 5b. Descriptive analysis and test statistics

STATEMENT	MEAN	CHI-SQUARE	DF	ASYMP. SIG.
1. I can produce/procure the desired volume when buyers needed it.	3.59	17.330	3	.001**
2. I exert effort to produce the desired volume and quality when buyers demand it.	4	6.984	3	.072
3. The buyer is flexible to buy cabbages regardless of quantity and quality.	3.74	4.500	3	.212
4. The buyer and seller have little conflict in the business transaction.	3.35	12.527	3	.006**

Legend: **- highly significant

and moderately agree, for the wholesalers (40%) moderately agree and on the wholesaler-retailers (33%) strongly agree that they can produce the desired volume when buyers needed. As to the exertion of effort to produce the desired volume when buyers demand it, farmers (46%), assembler-wholesalers (42%), wholesaler-retailers (50%), and retailers (40%) moderately agree and majority of the financier-assembler-wholesalers (47%), trucker-wholesalers (58%) and wholesalers (42%) strongly agree. For the flexibility of the buyer to buy regardless of quality and quantity, greater percentage of the different chain actors falls under moderately agree except for the wholesalers (40%) strongly agree. For the last criterion on measuring efficiency is the buyer and seller have little conflict on their business transaction where there were farmers (39%), financier-assembler-wholesalers (35%), wholesalers (40%), and retailers (36%) undecided; majority on the respondents from assembler-wholesalers (53%), trucker-wholesalers (58%), wholesaler-retailers (42%) moderately agree, however, there were retailers (15%) who strongly disagree that means that they do not have any conflict with their buyers. The mean average implies that the different chain actors were undecided that they can produce the desired volume when buyers needed it and the buyer and seller have little conflict on their business transaction, moreover, they moderately agree that they exert effort to produce the desired volume when buyers demand it and the flexibility of the buyers to buy cabbage regardless of quality and quantity. The respondents of the different chain actors gives much importance on the production/procurement of the desired volume when buyers demand it, followed by the conflict between the buyer and seller on their business transaction then on the exertion of effort to produce the desired volume and quality when buyers demand it and lesser importance on the flexibility of the buyer to

buy cabbage regardless of volume and quality. Thus, the test statistics results implied that the chain actors are highly significantly difference as to the criteria of producing the desired volume when buyers needed it, it implies that the seller always depend on the availability of supply, and also highly significantly difference on the conflict between the buyer and seller in their business transaction that means that the different chain actors always wants that they have the power or control on their business transaction. The respondents were no significantly difference on the exertion of effort to produce the desired volume when buyers demand it which means that all of them exert effort and no significant difference on the flexibility of the buyers to buy cabbage regardless of quality and quantity.

Efficiency performance

Measures how well the resources are utilized which include production costs, profit, return on investment and inventory.

Table 6 indicates that the farmers (41%), trucker-wholesaler (50%) and financier-assembler-wholesaler (29%) strongly agree that they were happy that they can produced the desired volume out their limited resources, however, for the financier-assembler-wholesalers(29%) were undecided and moderately agree; for the assembler-wholesaler (47%), wholesaler (40%), wholesaler-retailer (47%) and retailer (44%) moderately agree. As to the adequacy of income received, greater percentage of the respondents from all the chain actors, farmers (39%), assembler-wholesalers (42%), financier-assembler-wholesalers (59%), trucker-wholesalers (42%), wholesalers (50%), wholesaler-retailers (47%), and retailers (45%) moderately agree. For the exertion of effort to reduce the cost

Table 6a. Distribution of respondents according to efficiency

STATEMENT	1		2		3		4		5		AVE
	N	%	N	%	N	%	N	%	N	%	
Farmer											
1. I am happy to produce the desired volume out of my limited resources.	1	2	2	4	10	22	14	30	19	41	4
2. The income I received is adequately rewarding.	1	2	3	7	16	35	18	39	8	17	4
3. I exert effort to reduce the cost of production.	0	0	2	4	11	24	17	37	16	35	4
4. I am satisfied with the rate of return to my investment.	0	0	6	13	19	41	13	28	8	17	4
Assembler-Wholesaler											
1. I am happy to produce the desired volume out of my limited resources.	0	0	0	0	7	37	9	47	3	16	4
2. The income I received is adequately rewarding.	0	0	0	0	6	32	8	42	5	26	4
3. I exert effort to reduce the cost of production.	0	0	0	0	4	21	9	47	6	32	4
4. I am satisfied with the rate of return to my investment.	0	0	1	5	2	11	12	63	4	21	4
Financier-Assembler-Wholesaler											
1. I am happy to produce the desired volume out of my limited resources.	2	12	0	0	5	29	5	29	5	29	4
2. The income I received is adequately rewarding.	0	0	0	0	2	12	10	59	5	29	4
3. I exert effort to reduce the cost of production.	0	0	0	0	4	24	5	29	8	47	4
4. I am satisfied with the rate of return to my investment.	0	0	0	0	4	24	7	41	6	35	4
Trucker-Wholesaler											
1. I am happy to produce the desired volume out of my limited resources.	0	0	1	8	1	8	4	33	6	50	4
2. The income I received is adequately rewarding.	0	0	0	0	3	25	6	50	3	25	4
3. I exert effort to reduce the cost of production.	0	0	0	0	2	17	5	42	5	42	4
4. I am satisfied with the rate of return to my investment.	0	0	0	0	2	17	7	58	3	25	4

Numerical value and descriptive equivalent:

1-Strongly disagree
2-disagree
3-undecided
4-moderately agree
5-strongly agree

Table 6a. Continued…

STATEMENT	1		2		3		4		5		AVE.
	N	%	N	%	N	%	N	%	N	%	
Wholesaler											
1. I am happy to produce the desired volume out of my limited resources.	0	0	1	10	3	30	4	40	2	20	4
2. The income I received is adequately rewarding.	0	0	3	30	1	10	5	50	1	10	3
3. I exert effort to reduce the cost of production.	1	10	2	20	2	20	1	10	4	40	4
4. I am satisfied with the rate of return to my investment.	0	0	1	10	1	10	6	60	2	20	4
Retailer											
1. I am happy to produce the desired volume out of my limited resources.	2	4	3	5	12	22	24	44	14	25	4
2. The income I received is adequately rewarding.	1	2	1	2	12	22	25	45	16	29	4
3. I exert effort to reduce the cost of production.	1	2	3	5	9	16	18	33	24	44	4
4. I am satisfied with the rate of return to my investment.	1	2	0	0	12	22	27	49	15	27	4

Table 6b. Descriptive analysis and test statistics

STATEMENT	MEAN	CHI-SQUARE	DF	ASYMP. SIG.
1. I am happy to produce the desired volume out of my limited resources.	3.95	5.656	5.656	.130
2. The income I received is adequately rewarding.	3.91	6.073	6.073	.108
3. I exert effort to reduce the cost of production.	4.11	1.180	1.180	.758
4. I am satisfied with the rate of return to my investment.	3.78	11.427	11.427	.010*

Legend: **- significant

of production larger number from the farmers (37%), assembler-wholesalers (47%), and trucker-wholesalers (42%) moderately agree and for the financier-assembler-wholesalers (47%), trucker-wholesalers (42%), wholesalers (40%), wholesaler-retailers (50%), and retailers (44%) strongly agree. As to the satisfaction with the rate of return to investment, retailers (41%) were undecided, majority of the assembler-wholesalers (63%), trucker-wholesalers (58%), wholesalers (60%), and retailers (49%) moderately agree. The mean

average implied that only on the exertion of effort to reduced the cost of production where the respondents were moderately agree, the chain actors were undecided as to the happiness to produce the desired volume out of their limited resources, adequacy of income received, and satisfaction with the rate of return to investment. The chain actors were looking more on the satisfaction with the rate of return to investment followed by the adequacy of the incomes receive, happiness to produce the desired volume out of limited resources and give less importance on the exertion of effort to reduced the cost of production. Thus, the test statistics implied that the chain actors were highly significantly differ on the satisfaction with the rate of return to investment that implies that it may not be the other criteria to measure the efficiency of the performance of the chain actors. The respondents do not have significant difference on the happiness to produce the desired volume out of limited resources, adequacy of the incomes receive and exertion of effort to reduced the cost of production.

Responsiveness performance

Aims at providing the requested products with a short lead time, when buyers and suppliers interact on issues related to material flows and quality, there were significant effects in terms of speed and delivery punctuality.

Table 7 implies that farmers (41%) moderately disagree that they can supply the market with desired quality/quantity when needed, majority of the assembler-wholesaler (53%), trucker-wholesaler (58%) moderately agree, higher percentage on the wholesaler (50%), wholesaler-retailer (31%), and retailers (29%) were undecided, however, there were retailers (13%) strongly disagree which implies that they always depend on the availability of supply from their supplier. As to the scheduling of deliveries to meet the

Table 7a. Distribution of respondents according to responsiveness

STATEMENT	1		2		3		4		5		AVE.
	N	%	N	%	N	%	N	%	N	%	
Farmer											
1. I can supply the market with desired quality/quantity when needed.	2	4	19	41	15	33	7	15	3	7	3
2. I always schedule my deliveries to meet the time in the market.	4	9	10	22	16	35	9	20	7	15	3
3. I always find time to deliver cabbages when customers/market needs it.	5	11	12	26	14	30	9	20	6	13	3
4. I always act on the demand/complaints of buyers related to quality/quantity.	3	7	7	15	17	37	12	26	7	15	3
Assembler-Wholesaler											
1. I can supply the market with desired quality/quantity when needed.	1	5	0	0	2	11	10	53	6	32	4
2. I always schedule my deliveries to meet the time in the market.	0	0	2	11	6	32	3	16	8	42	4
3. I always find time to deliver cabbages when customers/market needs it.	0	0	2	11	3	16	6	32	8	42	4
4. I always act on the demand/complaints of buyers related to quality/quantity.	0	0	1	5	5	26	8	42	5	26	4
Financier-Assembler-Wholesaler											
1. I can supply the market with desired quality/quantity when needed.	0	0	0	0	5	29	6	35	6	35	4
2. I always schedule my deliveries to meet the time in the market.	1	6	0	0	6	35	4	24	6	35	4
3. I always find time to deliver cabbages when customers/market needs it.	1	6	0	0	3	18	8	47	5	29	4
4. I always act on the demand/complaints of buyers related to quality/quantity.	0	0	0	0	6	35	7	41	4	24	4
Trucker-Wholesaler											
1. I can supply the market with desired quality/quantity when needed.	0	0	0	0	2	17	7	58	3	25	4
2. I always schedule my deliveries to meet the time in the market.	0	0	1	8	3	25	1	8	7	58	4
3. I always find time to deliver cabbages when customers/market needs it.	1	8	0	0	2	17	5	42	4	33	4
4. I always act on the demand/complaints of buyers related to quality/quantity.	0	0	0	0	2	17	5	42	5	42	4

Numerical value and descriptive equivalent:

1-Strongly disagree
2-disagree
3-undecided
4-moderately agree
5-strongly agree

Table 7a. Continued…

STATEMENT	1 N	1 %	2 N	2 %	3 N	3 %	4 N	4 %	5 N	5 %	AVE.
Wholesaler											
1. I can supply the market with desired quality/quantity when needed.	0	0	3	30	5	50	1	10	1	10	3
2. I always schedule my deliveries to meet the time in the market.	1	10	3	30	1	10	1	10	4	40	3
3. I always find time to deliver cabbages when customers/market needs it.	2	20	1	10	2	20	2	20	3	30	3
4. I always act on the demand/complaints of buyers related to quality/quantity.	0	0	0	0	3	30	4	40	3	30	4
Retailer											
1. I can supply the market with desired quality/quantity when needed.	7	13	11	20	16	29	14	25	7	13	3
2. I always schedule my deliveries to meet the time in the market.	14	25	8	15	13	24	10	18	10	18	3
3. I always find time to deliver cabbages when customers/market needs it.	10	18	10	18	14	25	11	20	10	18	3
4. I always act on the demand/complaints of buyers related to quality/quantity.	1	2	9	16	20	36	16	29	9	16	3

Table 7b. Descriptive analysis and test statistics

STATEMENTS	Mean	Chi-square	df	Asymp. sig.
1. I can supply the market with desired quality/quantity when needed.	3.420	0.000	3	0.000**
2. I always schedule my deliveries to meet the time in the market.	3.320	0.002	3	0.002**
3. I always find time to deliver cabbages when customers/market needs it.	3.340	0.000	3	0.000**
4. I always act on the demand/complaints of buyers related to quality/quantity.	3.660	0.000	3	0.000**

Legend: **- highly significant

time in the market, farmers (35%) and financier-assembler-wholesalers were undecided, assembler-wholesaler (42%), financier-assembler-wholesalers (35%), trucker-wholesalers (58%), and wholesalers (40%) strongly agree, in the case of the retailers (29%) strongly disagree that implies that they do not deliver their products to their buyer, instead, it was the buyer who come and buy to them. For the finding time to deliver cabbage when customers/ markets needs it, farmers (30%), and retailers (25%) were undecided, slight

higher on the financier-assembler-wholesalers (47%), trucker-wholesalers (42%), and wholesaler-retailers (30%) moderately agree, moreover, assembler-wholesalers (42%) and wholesalers (30%) strongly agree. However, farmers (11%), trucker-wholesalers (8%), wholesalers (20%), wholesaler-retailers (14%), and retailers (18%) strongly disagree which implies that some of this chain actors do not find time to deliver their products, instead it was their buyer who come and buy to them. As to act on the demand/complaints of buyers related to quality/quantity, almost near to half of the respondents, assembler-wholesalers (42%), financier-assembler-wholesalers (41%), trucker-wholesalers (42%), wholesalers (40%) and wholesaler-retailers (61%) moderately agree, in the case of the farmers (37%) and retailers (36%) were undecided. The mean average implies that the chain actors moderately agree that they always act on the demand/complaints of buyers related to quality/quantity and they were undecided in terms of supplying the market with desired quality and quantity when needed, scheduling of deliveries to meet the time in the market and to always find time to deliver the cabbage when customer/ market needs it. The respondents give much importance on supplying the market with desired quality/quantity when needed, followed by the act on the demand/complaints of buyers related to quality/quantity, finding time to deliver the cabbages when customers/markets needs it and they give less importance on the scheduling of deliveries to meet the time in the market. The chain actors were highly significantly differ in all the sets of criteria in measuring responsiveness; supplying the market with desired quality/quantity when needed that implies that the chain actors employ different strategies such as contacting other people to find good quality; to always schedule deliveries to meet the time in the market which implies that they should

buy and deliver earlier their product and to always negotiate but continuing communicating the viajeros so that as the viajeros arrived they deliver earlier; to always find time to deliver cabbages when customers needs it which means that the chain actors should be responsible in complying to their commitment with their buyers; to always act on the demand/ complaints of buyers related to quality/ quantity, it implies that the physical quality and quantity may not be as expected by the buyer.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The study was undertaken to assess the performance of the actors in the spot market chains for cabbage. Specifically, the study aims to identify the performance of the actors in the spot market chain for cabbage and to determine whether there are differences among the chain actors in the cabbage spot market chains for cabbage.

The demographic profile shows that age, gender, marital status, religion and educational background do not affect the interest in engaging in vegetable business as long as they have the interest and resources to venture into it.

Among the chain actors, they give much importance on the product quality satisfaction to the fulfillment of orders and deliveries, followed by the achievement of production/procurement/delivery targets, the satisfaction of selling cabbage on credit arrangement; they give less much importance on the satisfaction of buyers as to variety, price, and quality/quantity in measuring product quality satisfaction. As to the flexibility, The respondents of the different chain actors gives much importance on the production/procurement of the desired volume when buyers demand it, followed by the conflict between the buyer and seller on their business transaction then on the exertion of effort to produce the desired volume and quality when buyers demand it and lesser importance on the flexibility of the buyer to buy cabbage regardless of volume and quality. For the efficiency, the chain actors were looking more on the satisfaction with the rate of return to investment followed by the adequacy of the incomes receive, happiness to produce the desired volume out of limited resources and give less importance on the exertion of effort to reduced the cost of production. And finally, is for the responsiveness,

the respondents give much importance on supplying the market with desired quality/quantity when needed, followed by the act on the demand/complaints of buyers related to quality/quantity, finding time to deliver the cabbages when customers/markets needs it and they give less importance on the scheduling of deliveries to meet the time in the market.

Conclusions

The following conclusions were drawn from the results of the study:

The actors in the spot market chains for cabbage were indicated highly significant difference on the product quality satisfaction in terms of the achievement of production, procurement and delivery targets, satisfaction on the fulfillment of orders and deliveries of cabbage when needed and on the and satisfaction of selling cabbage on credit arrangement.

In the flexibility, the actors were significantly difference in the production/ procurement of cabbage with the desired volume when buyers needed and on the conflict of buyers and seller on their business transaction.

Moreover, on the efficiency, the chain actors were significantly difference in terms of the satisfaction of the rate of return to their investment.

Finally, actors were significantly different in responsiveness performance in terms of the following: supplying the market with desired quantity and quality when needed; schedule of deliveries to meet the time in the market; finding time to deliver cabbage when customers or market needs it, and; to act on the demand or complaints of buyers related to the quality or quantity of the cabbage.

Recommendations

To have a good performance among the chain actors, the actors should have give priorities on the handling of their products to minimize damages or injuries with the use of packaging materials and refrigerated trucks to minimize loses. They should also have a strong communication with respect to volume and quality and strong coordination in order to meet deliveries. The actors should always comply with their commitments or promises in order to avoid misunderstanding and conflicts. Furthermore, they should strategically managed long-term relationships to have a positive impact on financial aspect. Finally, the buyers and suppliers should have interacted continuously on issues related to material flows and quality to attain continuous operation and good relationship.

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APPENDIX A

Communication Letter

November, 2010

Sir/Madam,

Warm greetings!

I am a graduating student of Benguet State University taking up Bachelor of Science in Agribusiness major in Enterprise Management. As part of the course requirement, I am presently conducting an undergraduate research study entitled " PERFORMANCE OF ACTORS IN THE SPOT MARKET CHAINS FOR CABBAGE".

In connection with this, may I ask you to fill up or answer the questionnaire made for this purpose? Rest assured that all the information you will provide will be treated with outmost confidentiality. Your favorable approval is highly appreciated.

Thank you for your kindness and cooperation. May God bless you!

Sincerely yours,

JAMES C. ESTONG, Jr.
Researcher

Noted by:

LEOPOLDO N. TAGARINO
Adviser

APPENDIX B

Interview Schedule

This research aims to investigate the cabbage supply networks. All information solicited would be treated with confidentiality. Please answer the questions honestly by putting (/) mark in the appropriate space provided for.

Thank you very much!

Respondent's Name: (Optional) _____ No. _____

Respondent's Group:

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

A.SOCIO-ECONOMIC 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 engage in vegetable farming business: _____
7. Organizational affiliation: [ ] Farmers' Association [ ] Cooperatives

[ ] Others, specify _____

B. Who were the buyers of the vegetables you produced/procured/? (Please identify)

[ ] Assembler-Wholesalers; [ ] Financier-Assembler-Wholesalers;
[ ] Trucker-Wholesalers; [ ] Wholesalers; [ ] Wholesaler-Retailers; [ ] Retailers

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

[ ] La Trinidad Vegetables Trading Post; [ ] Baguio Hangar Market
[ ] Private Trading Center in La Trinidad [ ] Metro Manila (Specify)_____
[ ] Other Market: Please specify _____

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

D.1 Product Quality - consists of product safety and health; the sensory properties and shell life and; product reliability and convenience.

a. The quality of cabbage I produce/procure/ 1 2 3 4 5
sold meets my expectation. Strongly Disagree□□□□□Strongly Agree
b. The quality of cabbage delivered meets
the buyer's requirements. Strongly Disagree□□□□□Strongly Agree
c. I am satisfied with the volume I produce/
procure or sold to the buyer. Strongly Disagree□□□□□Strongly Agree
d. I always achieve my production/procurement/
delivery targets. Strongly Disagree□□□□□Strongly Agree
e. I am satisfied to fulfill the orders and deliveries
of cabbages when needed. Strongly Disagree□□□□□Strongly Agree
f. I am satisfied selling cabbages
to buyers on credit arrangement. Strongly Disagree□□□□□Strongly Agree
g. The quality of cabbages I supplied in
the market is reliable. Strongly Disagree□□□□□Strongly Agree
h. The buyers are always satisfied as to variety to
product, price, and quality/quantity. Strongly Disagree□□□□□Strongly Agree

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

a. I can produce the desired volume
when buyers needed it. Strongly Disagree□□□□□Strongly Agree
b. I exert effort to produce the desired volume
and quality when buyers demand it. Strongly Disagree□□□□□Strongly Agree
c. The buyer was flexible to buy cabbages regardless
of volume and quality. Strongly Disagree□□□□□Strongly Agree
d. Buyer has no complaints about our
business transactions. Strongly Disagree□□□□□Strongly Agree

D.3 Efficiency- measures how well the resources are utilized which include production costs, profit, return on investment and inventory

a. I am happy to produce the desired volume
out of my limited resources. Strongly Disagree□□□□□Strongly Agree
b. The income I received was
adequately rewarding. Strongly Disagree□□□□□Strongly Agree
c. I exert effort to reduce the cost
of production. Strongly Disagree□□□□□Strongly Agree
d. I am satisfied with the rate of
return to my investment. Strongly Disagree□□□□□Strongly Agree

D.4 Responsiveness- aims at providing the requested products with a short lead time when buyers and suppliers interact on issues related to material flows and quality, there were significant effects in terms of speed and delivery punctuality

a. I can supply the market with desired quality/ quantity when needed.. Strongly Disagree□□□□□Strongly Agree

b. I always schedule my deliveries to meet the time in the market. Strongly Disagree□□□□□Strongly Agree

c. I always find time to deliver vegetables when customer/ market need it. Strongly Disagree□□□□□Strongly Agree

d. I always act on the demand/ complaints of buyers related to quality/ quantity. Strongly Disagree□□□□□Strongly Agree