

The conceptual framework of traditional supply chain business essay

[Business](#)



A supply chain may be defined as an integrated process wherein a number of various business entities (i. e., suppliers, manufacturers, distributors, and retailers) work together in an effort to: (1) acquire raw materials, (2) convert these raw materials into specified final products, and (3) deliver these final products to retailers. This chain is traditionally characterized by a forward flow of materials and a backward flow of information. For years, researchers and practitioners have primarily investigated the various processes of the supply chain individually (Benita, 1998). Recently, however, there has been increasing attention placed on the performance, design, and analysis of the supply chain as a whole. From a practical standpoint, the supply chain concept arose from a number of changes in the manufacturing environment, including the rising costs of manufacturing, the shrinking resources of manufacturing bases, shortened product life cycles, the levelling of the playing field within manufacturing, and the globalization of market economies. The current interest has sought to extend the traditional supply chain to include reverse logistics (Benita, 1998). Ishii et al. (1988) develop a deterministic model for determining the base stock levels and lead times associated with the lowest cost solution for an integrated supply chain on a finite horizon. The stock levels and lead times are determined in such a way as to prevent stock out, and to minimize the amount of obsolete (. dead.) inventory at each stock point. Their model utilizes a pull-type ordering system which is driven by, in this case, linear (and known) demand processes. According to Benita (1998), an important component in supply chain design and analysis is the establishment of appropriate performance measures. A performance measure, or a set of performance measures, is

used to determine the efficiency and/or effectiveness of an existing system, or to compare competing alternative systems. Performance measures are also used to design proposed systems, by determining the values of the decision variables that yield the most desirable level(s) of performance.

Statement of the Research Problem

In 1900, founder of General Motors, William Durant, claimed that profit is outcome of a cost stream that spread throughout the supply chain, not result of an accounting exercise. Since then, the principle of identifying profit and controlling cash flow has been used to dominate organizational performance measurement. Generally the efficiency of supply chain which is usually managed as a series of simple business functions is measured by taking the ratio of revenue over the total supply chain operational cost. However, since increasing demands for quick order fulfilment and fast delivery, new trends have emerged. As such, in addition to usual financial measures, other specific indicators such as customer's satisfaction should be considered. Emergence of multiple performance measures has made the efficiency measurement task, difficult and sophisticated. Also the tool utilizing to measure the performance should not only provide quantitative reasoning but should also provide qualitative perspective to remain aligned with strategic goals of the organization (Morteza & Negar, 2010). Because of the benefit of economies of scale in transportation associated with bulk shipments from the supplier to the facilities, some amount of inventory may be kept at these facilities. Furthermore, some assembly and packaging activities may be performed at these facilities to satisfy orders from different retailers.

However, the amount of final product delivered on time to a retailer may not

be exactly the amount requested. This is because of the quality issues resulting from different production/assembly capabilities in different facilities, mistakes made during the assembly/ packaging operations, and damages caused by loading and transportation (Lian & Zuo-Jun, 2007). Unfortunately, critical parameters such as customer demands, prices, and resource capacities are quite uncertain. Moreover, the arrival of regional economic alliances, for instance the Asian Pacific Economic Alliance and the European Union, have prompted many corporations to move more and more towards global supply chains, and therefore to become exposed to risk factors such as exchange rates, reliability of transportation channels, and transfer prices (Vidal & Goetschalckx, 2001). Unless the supply chain is designed to be robust with respect to the uncertain operating conditions, the impact of operational inefficiencies such as delays and disruptions will be larger than necessary (Santoso et al., 2005). A recent study (Hicks, 2002) found that after a company announces a supply chain disruption, such as a production or shipment delay, its stock price can decrease significantly, with an average decrease of 8.6% on the day of the announcement, and is often followed by further decreases, as much as 20% over the next six months.

Justification of the Study

Continued deflationary trends in many markets around the world are creating greater pressure for cost reduction in order that margins can be maintained. Customers and consumers are increasingly value driven and consequently less brand or supplier loyal. In this more challenging world there is a growing recognition that the supply chain provides one of the last remaining opportunities for significant cost reduction. Beside this, prices

which is categorised as a critical parameter is a factor that leads to breakdown of companies in developing and develop world of which Ghana is not exceptional. The most interesting aspect of it is that companies that do not improve in their supply chain management experience shortage of products. This could have been solved by mapping supply chain, through designing parameters and also conducting researchers. However, most companies in Ghana have not done this. Above statement has therefore compared the researcher to conduct a study on critical parameters of cost effective of supply chain.

Objectives of the Study

The objectives of the study are;

General Objective

The main objective is to identify the critical parameters of cost effective supply chain at Newmont Ghana Limited in Asutifi District.

Specific Objectives

To find out the effect of customer demands on cost effective supply chain. To identify the effect of prices on cost effective supply chain. To determine the effect of risk factors on cost effective supply chain. To assess the effect of resource capacity on cost effective supply chain.

Research Questions

What are the effects of customer demands on cost effective supply chain?

Do prices have direct impact on cost effective supply chain? What would be

the effect of risk factors to cost effective supply chain? What are the effects of risk factors on cost effective supply chain?

Significance of the Study

This study would educate industries or production firms on the importance of supply chain management. The study would also bring to their notice the effects of critical parameters on cost effective supply chain. This study would also bring to the notice of retailers or customers about the importance of supply chain management and its critical parameters. As an academia, this study would serve as a reference point for other scholars who have interest to research into similar topics.

The Conceptual Framework of Traditional Supply Chain

The traditional supply chain is defined as an integrated manufacturing process wherein raw materials are manufactured into final products, then delivered to customers (via distribution, retail, or both). Figure 1 below illustrates the structure of the traditional supply chain.

SupplyManufacturingDistributionConsumersRetailSource: Adapted from Beamon (1998). Design, modelling, and analysis of the traditional supply chain has primarily focused on optimizing the procurement of raw materials from suppliers and the distribution of products to customers. The issues considered within this scope of analysis include (Beamon, 1998):

Production/Distribution Scheduling: Scheduling the manufacturing and/or distribution schedule. Inventory Levels: Determining the amount and location of every raw material, sub-assembly, and final assembly storage. Number of Stages (Echelons): Determining the number of stages (or echelons) that will

comprise the supply chain. This involves either increasing or decreasing the chain. s level of vertical integration by combining (or eliminating) stages or separating (or adding) stages, respectively. Distribution Center (DC) - Customer Assignment: Determining which DC(s) will serve which customer(s). Plant - Product Assignment: Determining which plant(s) will manufacture which product(s). Buyer - Supplier Relationships: Determining and developing critical aspects of the buyer and supplier relationship. Product Differentiation Step Specification: Determining the step within the process of product manufacturing at which the product should be differentiated (or specialized). Number of Product Types Held in Inventory: Determining the number of different product types that will be held in finished goods inventory.

LITERATURE REVIEW

Effect of Customers demand on Cost Effective Supply Chain

According to (Swink, Golecha, & Richardson, 2010), in the customer-centric business environment that characterizes the twenty-first century, production capacity exceeds customer demand for many industries. Prices are now determined by a different set of competitive market forces than what existed when capacity constrained the sales volume. Managers in today's global business world are well aware of the fierce competitive environment in which they must manage their enterprises. Consumers are demanding better products, and they want them cheaper and faster. To remain competitive, organizations must respond to these customer demands in a world where product life cycles are shrinking. Not only must organizations excel at producing the goods or services in which they are engaged, but they also

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must excel at delivering those products quickly and efficiently throughout the supply chain and ultimately to the end user (the consumer). Consumers demand quality products. As environmental awareness and expectations increase, so do demands for products with improved environmental qualities, including energy-efficient appliances, organic food and fabrics, recycled paper goods, and non-toxic cleaners. Past studies have shown that pinning down the exact status of environmental consumerism is challenging and subject to debate. Even as " 79% of Americans consider themselves environmentalists and 67% state they would be willing to pay 5-10% more for environmentally compatible goods," actual buying practices have not supported opinion polls. Consumers rarely accept environmentally-preferred products with inferior performance, and very few are willing to pay a price premium for environmental attributes (Roberts, 1996). The fast-moving consumer goods industry displays similar behaviour. Consider the production and distribution of diapers. Given the consistency in diaper demand, it would be reasonable to expect the diaper supply chain to operate efficiently. Indeed, when logistics executives at Proctor & Gamble examined the demand for its diapers at retail stores, it found a relatively level demand. However, the orders Proctor & Gamble placed on its suppliers showed considerable variation (Gilmore, 2010). In some cases, organizations have even added inventories in a planned manner to ward off any supply chain disruptions that might result from the bullwhip effect. In 2009, Caterpillar acted proactively to restock its inventories to meet an increased demand for construction and mining equipment in the following years. Caterpillar asked its steel suppliers to plan for a 2010 demand that would double the amount

demanded in 2009 (Aeppel, 2010). Caterpillar decided on this strategy even though its own sales were very unlikely to change by a corresponding amount during the first half of the year 2010 because it wanted the suppliers to increase production gradually and thereby ameliorate the bullwhip effect. Caterpillar also visited with key suppliers in late 2009 to ensure that the suppliers had the resources to boost output quickly. In extreme cases, Caterpillar even helped some suppliers get financing. Caterpillar's strategy appears to have worked successfully. The organization had nine straight three-month rolling periods of growth during the last nine months of 2010. Caterpillar reported that construction sales rose 49% in the three months ended January 2011, driven by a continuing rebound in North American demand (Aeppel, 2010). Clearly, the ' Collaborative' buying behaviour is more driven by a need for trusting relationships and predictability, rather than price. The ' Consistent' buying behaviour is focused on predictable low-cost service, and is very price sensitive. The ' Dynamic' buying behaviour' is price aware, but customers exhibiting this type of response will pay a premium if their largely unpredictable and demanding behaviour is met, at speed (Martin & John, 2005). And finally, the ' Innovative Solutions' buying behaviour is only interested in a quick and creative solution, at practically any price! So the key task becomes one of understanding the mix of these and any similar behaviour segments for a given product/service category. Once this is completed, a pricing strategy by customer-segment type is easily developed, especially in business-to-business marketplaces. If the initial segmentation is well done, then even if a particular customer is forced to change their preferred or dominant buying behaviour for short intervals

because of internal or external pressures, they would normally move to another of the known buying behaviour options, thereby making the task of responding much easier than the case where exceptions are continually created, often at excessive cost (Martin & John, 2005). Altogether, consumer demands create serious challenges for supply chain management because while environmental expectations are high and extend beyond final manufacturers to include multi-tiered suppliers, consumers are unwilling to sacrifice product performance or price. Improved environmental performance, whether necessitated by regulatory directives or consumer demand, require product design changes which ultimately affect supply chain functions in planning, sourcing, manufacturing, and marketing. In the case of directives, often regulatory agencies provide technical assistance and facilitate compliance activities to a degree. However, the onus of meeting consumer pressures for environmental improvement in a time of greater corporate ethical responsibility is on those who sell the products. Consumers also demand competitively-priced products. In order to offer the "right price" and maintain profitability, production system costs must be carefully balanced with performance along the supply chain. Ample anecdotal and empirical evidence suggests that environmental waste equals financial waste in production systems (US Environmental Protection Agency (2001). High utilities, fuel costs, and waste disposal fees provide incentive for the adoption of environmental management systems that streamline production and yield greater efficiencies along the supply chain. An oft-cited paper by Michael Porter and Claas van der Linde published in 1995 present basic reasoning for environmental improvements as investments that yield

both product and process benefits and possibly create major competitive advantages in innovation and operations (Porter & van der Linde, 1995).)

Effects of Prices on Cost Effective Supply Chain

The opening years of the new Millennium have seen the emergence of new deflationary pressures. Whilst trends to price reduction may not be universal there can be no doubting that most markets are more price competitive today than they were a decade ago. Prices in the high streets and the shopping malls continue to fall in many western countries and upstream of the retail store the prices of components, raw materials and industrial products follow the same downward pattern (Martin & John, 2005).

Reviewing literature shows focuses on cost-based performance measures because the metric of cost has conveniences in understanding and that's why managers used to welcome it more (Ballou et al., 2000). Although various applications of Data Envelop Analysis in different fields, majority of these research assumes that the input and output parameters of the supply chain are deterministic. However in the real world problems, some factors such as demands, allocations, cost of shipment, and even locations of customers and facilities are usually changing. Hence uncertainty should be considered while evaluating supply chain performance (Morteza & Negar, 2010). First there are new global competitors who have entered the marketplace supported by low cost manufacturing bases. The dramatic rise of China as a major producer of quality consumer products is evidence of this. Secondly, the removal of barriers to trade and the de-regulation of many markets have accelerated this trend enabling new players to rapidly gain ground. One result of this has been over-capacity in many industries

(Greider, 1998). Over-capacity implies an excess of supply against demand and hence leads to further downward pressure on price. Environmental taxes either "impose a tax cost on a product or activity that is environmentally damaging or they give a tax benefit to some product or activity that is environmentally beneficial." (Environmental Tax Policy Institute, 2005). For example, in the United States, the federal government imposes an excise tax on ozone-depleting chemicals and offers a tax credit to people who buy electric vehicles. In this sense, environmental taxes do not replace regulatory directives, but rather help regulate the use of resources by visibly changing the purchase price. Environmental taxes, if applied aggressively and globally, may transform the way supply chains are designed and operated. For instance, suppose the United States levied a substantially higher gasoline tax. Logistics systems might change dramatically in light of escalating transportation costs. This response could either foster regional supply chains and economic development or irreparably damage international markets. Environmental fees create the same affect, increasing the cost of select activities to environmentally-preferable ends. Fees may be applied to landfill, hazardous waste, or raw material extraction, with ramifications that ripple along the supply chain. While a large body of literature discusses the use of taxation to shape consumer behaviour and raise government revenue (Boyd, 1997), the direct impact of various taxation schemes on the management of global supply chains is not addressed. Environmental taxes and fees may be effective instruments for environmental progress, though arguably less effective for supply chain progress. In changing the visible price of a product or activity, supply chain

decision outcomes may be different, but the decision framework and business processes in place may stay the same. There is also evidence that customers and consumers are more value conscious than has hitherto been the case (Frank, George & Narasimhan, 2004). Brands and suppliers that could once command a price premium because of their perceived superiority can no longer do so as the market recognises that equally attractive offers are available at significantly lower prices. The success of many retailers' own label products or the inroads made by low-cost airlines provide testament to this sea change. As out-sourcing increases the supply chain becomes more like a network than a chain (Normann & Ramirez, 1994), and, as a result, the number of interfaces between organisations increases. It is our contention that a growing proportion of total costs in the network occur at these interfaces. These costs have sometimes been labelled 'transaction' costs (Williamson, 1985) but in truth they are much more than the everyday costs of doing business. These costs result as much as anything from the lack of transparency and visibility across organisational boundaries. When we talk of visibility and transparency we mean the ability to see clearly from one end of the supply chain to another and, in particular, to share information on supply and demand issues across corporate boundaries. The need to take a supply chain view of cost is further underscored by the major trend that is observable across industries worldwide towards outsourcing. For many companies today, most of their costs lie outside their legal boundaries. Activities that used to be performed in-house are now outsourced to specialist service providers. The amazing growth of contract manufacturing in electronics bears witness to this trend. If the majority of an organisation's

costs lie outside the business then it follows that the biggest opportunities for improvement in their cost position will also be found in that wider supply chain (Martin & John, 2005).

Effect of Risk Factors on Cost Effective Supply Chain

Supply risk involves the potential occurrence of events associated with inbound supply that can have significant detrimental effects on purchasing firms (Zsidisin et al., 2000). As previously mentioned, there are numerous factors present in the world environment that affect supply management professionals perception of risk. One of the potential consequences of the war in Iraq is higher oil prices and its effect on logistics costs. Another is the instability of the relations between Pakistan and India. Also, threats from North Korea could affect purchases of items in South Korea and China. To safeguard themselves from such risks, companies will have to develop supply managers who understand these issues and prepare strategies to mitigate their consequences. Supply managers must understand the business context in which their company's corporate strategy was developed (Arminas, 2003). In addition to world political events, there are several conditions that create risks in a supply chain. These include product availability (Singh, 1998), distance from source (MacKinnon, 2002), industry capacity (Lee et al., 1997), demand fluctuations (Singh, 1998), changes in technology (Iyer, 1996), and labor markets (Wiseman and Gomez-Mejia, 1998), financial instability (Larson & Kulchitsky, 1998) and management turnover (Wiseman & Gomez-Mejia, 1998). Increased distance adds uncertainty to supply continuity through longer lead times and potential transportation disruptions. Supplier capacity constraints result in the inability

to supply the quantities demanded by purchasers. Fluctuations in demand may tax a supplier beyond its abilities through insufficient utilization of equipments and employees (Lee et al., 1997). Other capacity risks include volume/product mix requirement fluctuations that result from the increased customers' sophistication and the unpredictability of demand and process technological changes. Also, if a supplier cannot implement technological changes in the long term, that supplier may not be able to produce items to necessary demand level and at a competitive price. Unreliable and unresponsive supply chains are more likely to suffer from glitches in matching supply and demand. Glitches could be due to many reasons including inaccurate forecast, poor planning, part shortages, quality problems, production problems, equipment breakdowns, capacity shortfall, and operational constraints (Fisher & Raman, 1996). Additionally, supply chain professionals are faced with business risks associated with the financial instability of a supplier. With the increased reliance on outsourcing financial stability of suppliers, who influence a major portion of firms' costs, becomes more critical (Larson & Kulchitsky, 1998). Purchasing/supply management is expected to mitigate risk and, at the same time, control costs and assure continuity of supply. Previous research findings lead to the conclusion that relationships exist between risk, strong pursuit of objectives, early supplier involvement, and careful development, evaluation and management of suppliers (Laios & Moschuris, 1999). However, traditional strategies that were used to buffer risk implied that the purchasers' main role was to react to internal customer needs. Under this philosophy a purchase requisition is received from another department and an order is

placed with a supplier. Purchasing is largely transaction-oriented and risk averse. Evaluations are based on two major criteria;(1) Administrative costs involved; and(2) Cost savings on material expenditures. In order to manage preliminary risk, purchasers are moving to adopt closer relationships with key suppliers. These suppliers are expected to provide solutions and compliment or enhance the buying firm's core competencies. Dell Computer is often cited as an example of a firm that has implemented this close working arrangement with its suppliers (Antonette et al., 2002).

Effect of Resource Capacity on Cost Effective Supply Chain

The World ResourceInstitute reports that consumption of fish and fishing products has doubled in the past thirty years and has increased five-fold since 1950 (Kura et al., 2004). " Fish supply has become one of the major natural resource concerns, as seventy-five percent of commercially important marine and most inland water fish stocks are either currently being over-fished, or are being fished at their biological limit." (Kura et al., 2004). Unilever is one of the world's leading suppliers of food, home care, and personal care consumer goods. In the mid-1990s, Unilever launched a comprehensive effort to secure a sustainable supply of fish. First, they provided seed money to the World Wildlife Foundation to research the situation and establish the Marine Stewardship Council as an independent organization to certify sustainable fish supplies. Then, they initiated discussion with competitors and national regulatory bodies in support of the Council's standards. Finally, Unilever publicly endorsed the work of the Stewardship Council and committed to purchasing only certified fish (www.unilever.com/ourvalues/environmentandsociety/default.asp, accessed May <https://assignbuster.com/the-conceptual-framework-of-traditional-supply-chain-business-essay/>

5, 2005). The availability of energy and water resources for manufacturing also presents a challenge to supply chain management. Water shortages are increasing world-wide as demand for drinking and irrigation grows. The United Nations Environmental Program reports that one third of the world's population lives in countries where consumption exceeds 10% of total supply and more than 2.7 billion people will face severe water shortages by the year 2025 (www.unep.org/vitalwater/, accessed May 30, 2005). The corresponding rates of production inevitably place strains on the natural environment's ability to supply resources and absorb wastes. Traditional supply chains " are based on a linear production paradigm which relies on constant input of virgin natural resources and unlimited environmental capacity for assimilation of wastes and emissions (Geyer & Jackson, 2004). Despite considerable progress in resource conservation and process efficiency measures, this paradigm is still pervasive. The secure supply of critical feed-stocks will remain a supply chain challenge into the future.

RESEARCH METHODOLOGY

3.0 Introduction

This chapter is based on the various procedures undertaken to achieve the specific objectives of this study. Based on this, this chapter would include; background of the study area, study design and type, study population, variables, sampling technique and sample size, data collection technique, pretesting, data analysis, limitation of the study and ethical consideration.

3. 1 Setting

Asutifi District shares boundaries with Sunyani District to the north, Tano District northeast, Dormaa District to the northwest, Asunafo North District to the southwest and Ahafo Ano District (Ashanti Region) to the southeast. It has a total land surface area of 1500 sq. km. There are about 140 settlements in the District with four traditional paramountcies, namely: Kenyasi No 1, Kenyasi No. 2, Hwidiem and Acherensua. It is one of the 13 old districts in the Region, and was created in 1988. It has Kenyasi as the district capital, which is about 50km from Sunyani, the capital city of Brong Ahafo region and 65km from Kumasi. From the National Population and 2010 census, the district has a population 108, 044. Of the 140 settlements, Kenyasi and Hwidiem are urban settlements having population of over 5, 000. The District can be described as typical rural. It is currently estimated at 15% urban (Asutifi District Health Directorate Report, 2011). The predominant occupation in the District is subsistence farming which engages about 75% of the economically active labour force. The service sector employs 12% followed by commerce, 7% and industry 5% in that order. About 96% of those engaged in other occupations outside agriculture still take up agriculture as a minor activity. A variety of crops ranging from cash to food crops grow well in the District. The major crops cultivated in the District include cassava, maize, cocoyam, oil palm, cocoa, vegetables, legumes and plantain. The district is one of the leading producers of plantain in the nation. The district is also coined with mining activities (District Health Directorate Report, 2011).

3. 2 Study Design and Type

This study would be descriptive study with cross sectional study design.

Descriptive study would be used to describe the characteristics under study.

Cross sectional study design would also be used to make inference to the study assuming the sample size to be the entire population.

3. 3 Study Population

The study population for this study would be staff at the marketing department of Newmont Ghana Limited in Asutifi district and suppliers providing services to the company. They would be used due to their profession and also the direct role in supply chain management.

3. 4 Sample Size and Sampling Technique

The Sample size would be calculated based on the number of population at the study area, lower margin expected of 0. 5 margins of error and at a reliability coefficient of at 95% confidence interval. For the sampling, a multistage sampling procedure would be used in the selection of respondents from the community. For a better representation of the district, Newmont Ghana Limited would be selected. Thus, the Newmont would be conveniently chosen but would be randomly selected from firms operating within the districts. The systematic sampling technique would be used after obtaining the number of staff from the sample frame; a random sampling technique would also be employed to select the population under study.

3. 6 Data Collection Technique

The researcher would use questionnaire made up of open and closed ended questions. The idea of using questionnaire is that most of the respondents

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can read and write and based on that questionnaires would be the most effective tool to collect the data.

3. 7 Plan for Data Processing and Analysis

The analysis of data would be done using Statistical Package for Social Scientist (SPSS) version 16. Descriptive and inferential statistics would be used to describe and make inferences from the data. Chi square of test would be used to determine the association of variables stated under the hypothesis. The findings would be therefore presented in tables, graphs and charts.

3. 8 Ethical Consideration

An informed consent form would be used to seek the consent of respondents of the study. They would be assured of confidentiality of their response. In addition, they would be assured that their participation would not affect them but for academic purposes. Further consent would be sought from the Management Team of Newmont, staff and identifiable groups before the commencement of the study.

3. 9 Pre – Testing of Instruments

Following training of research assistance, the data collection instruments would be pre-tested at one of the communities within the area chosen for the study. This would be done to ensure validity of data. Lessons learnt from the test would be used to make the necessary amendments or corrections to improve the reliability and validity of the data collection tools.

3. 10 Limitation

The instrument could be limited in determining the critical parameters of supply chain. Considering the limitation in the use of qualitative tools however, this would be minimized through the use of in-depth structured questionnaire, and interviews. Further, the use of local language (Twi) may lead to misunderstanding or misinterpretation of the import of the set questions and may therefore to inaccurate results.

BUDGET FOR THE STUDY

Strategy	Activity	Inputs	Unit Cost	GH ¢	Total Cost (GH ¢)
Recruit 2 research Assistants	Assist in research activities		GH ¢ 400 *	2800	800
Recruit research secretary	Design formats to compile data & report writing		GH ¢ 250 *	1250	250
Recruit Biostatistician	Gather data, organize, analyse and interpret		GH ¢ 380	380	380
Group meetings	Formulate the problem statement	Problem Analysis	Setting Objectives	Review Literature	Methodology
			GH ¢ 100 *	4400	400
Transportation	To visit the various communities by meeting with elders of the various communities		GH ¢ 300	300	300
Group meeting	To develop the various data collection tools, techniques and pretesting		GH ¢ 50 *	4200	200
Printing	Print questionnaire		GH ¢ 80	80	80
Employ data collection clerks	To collect data		GH ¢ 50 *	8400	400
Training for data collection clerks	To train data collection clerks on how to collect data		GH ¢ 5 *	840	40
Data Collection	Motivating respondents after data collection	Transportation	GH ¢ 5 *	468	couple
			GH ¢ 120	2340	120
			GH ¢ 120	2340	120

GRAND TOTAL**GH € 5, 310****TENTATIVE SCHEDULE OF ACTIVITIES**

Task to be performed	Dates (2013)	Research Person
Finalize research proposal and clearance from funding agency	10th-13th February	Principal Investigator
Recruit personnel for the research	14th & 15th February	Principal Investigator
Training of research team	19th - 21st February	Principal Investigator
Develop tools, guides and protocols	23th -24th February	Principal Investigator & Team
Obtain clearance for the study	25th-26th February	Principal Investigator & Research Assistants
Translation of research tools	27th & 28th February	Research Team
Pre testing of tools	1st-4th March	Research Assistants
Finalization of research tools printing	5th March	Research Team
Procurement of equipment and stationeries	8th March	Research Team
Develop logistics for data collection	15th March	Research Team
Collect data	18th - 28th March	Research Team
Preliminary data analysis	End of each session and end of each months	Research Team
Analyze data and write report	3rd -5th April	Research Team
Produce the final report	30th April	Research Team