

# Mobile Phone Features And Their Corresponding Benefits As Accrued By Micro Traders

Ismail Mahamud Zakaria, Iddrisu Ibrahim

**Abstract:** Mobile phones have numerous features used by many people for many reasons. This study examines the mobile phone features micro traders often used and the corresponding benefits gained. To achieve this, a survey was carried out in the Madina market Accra, among micro traders. Market business was grouped into four: general micro-trade activity, Pre-trade activity, During trade and Post trade activities. A comprehensive questionnaire was designed to deal with each of this segment. Also, a detailed interview was conducted with one trader to further understand how trade operations were carried out. Insightful findings from the study revealed that apart from “voice calls”, WhatsApp, mobile money transfer (MMT) and the calculator were the frequently used features. Benefits associated with these features include transportation cost cut down, establishing and maintaining trade relationship and profit margin increase. All these benefits culminate into convenience, effective communication and cost reduction paybacks. The outcomes of this study implied that the knowledge gap, born out of the assumption that all mobile phone users utilize all its features, would be reduced to the barest minimal. Thus, mobile phone manufacturers, content programmers and service providers ought to pay particular attention to the findings and come out with more user-friendly products that can easily facilitate trading activities for the benefit of the micro trader.

**Keywords:** Benefit, Convenience, Feature, Localization, Micro-trade, M-commerce, Personalization

## 1. INTRODUCTION

The phenomenal evolution of digital technologies has resulted in fast emergence of all manner of mobile devices ranging from feature phones, smart phones to tablets. The capability of these mobile phones is driven by the numerous features found on them. These mobile features have widespread applicability across all aspects of life including micro-trading. The growing significance of mobile phone usage in micro-trade manifests itself in the creation of virtual marketing and virtual delivery of goods and related services. For instance, the use of mobile phone for the distribution of market commodity can improve the performance of the market woman [1] to serve the consumer better [2]. There is also increasing evidence to suggest that the use of mobile phone in business can promote healthy competition among traders [3] for the benefit of their customers. The minimization of spatial and time constraints by the mobile phone attributes is yet another benefit that the micro trader can derive in his day-to-day transactions [4]. The prevailing practice of micro traders in the use of the mobile phone to do business has certainly some implications on the design of mobile technology [5], on the modelling of products by the service provider and on formulation of regulations by the communication regulator.

Thus, considering mobile technology as a social phenomenon whose literature is relatively limited within the Ghanaian context, we aim at exploring the mobile phone features micro traders use and the corresponding benefits that are accrued to them in order to provide insightful information for industry players to improve operational efficiency.

## 2. REVIEW OF RELATED LITERATURE ON MOBILE PHONE AND MICRO TRADE

The increasing penetration of mobile technologies in many developing African countries is a concrete evidence of the potential it has to transform these economies [6], [7], [8]. The growth of these technologies can create a set of business opportunities in these resource-poor environments [9], [10], [11]. Thus, in taking steps to exploit the potential benefits of mobile phone in micro trade, there is the need to understand the rudiments of micro trade with mobile phone. A Micro trade, supported by mobile phone, is viewed by Tarasewich et al. [12] as any economic activity with a commercial transaction that is communicated through a wireless device. From another perspective, it is seen as buying-selling activity that employs the use of mobile phones and personal data assistants (PDAs) [13]. From the preceding definitions, one would be inclined to conclude that there is only a thin dichotomy between mobile phone aided micro-trading and the general concept of mobile commerce (M-commerce). Thus, both concepts are often used interchangeably. Henceforth, in this study they both mean one and the same thing as long as both embrace any transactional process in which buyers and sellers exchange goods and services of value through the use of mobile devices.

### 2.1 FEATURES AND BENEFITS OF M-COMMERCE

Customers usually derive enormous satisfaction or benefit from a market that is supported by communication service much more than the traditional markets [14]. Thus, it is expected that m-commerce would provide distinct services

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- *Ismail M. Zakaria, ICT Department, Wa Polytechnic, Wa, Ghana.  
E-mail: [imouktar@yahoo.com](mailto:imouktar@yahoo.com)*
  - *Iddrisu Ibrahim, ICT Department, Tamale Technical University, Tamale, Ghana.*
  - *E-mail: [kunfaoases@gmail.com](mailto:kunfaoases@gmail.com)*

and opportunities to bring value added benefits to customers more than what the traditional commerce can offer [15]. According to Keen and Mackintosh [16], m-commerce fundamentally aims at providing value to the customer. However, from the customer view point, the mere emergence of the numerous mobile services alone cannot

achieve this objective. There is therefore the need to understand the basic characteristics and the features of m-commerce that bring benefit to the customer. Based on the review of current literature, Table 2.1 outlines the features and their corresponding benefits of m-commerce.

**Table 2.1 Feature and Benefit Model for M-Commerce**

FEATURE	BENEFIT
Localization	Convenient, cost
Personalization	Communication and convenience
Flexibility	Cost
Mobility	Accessibility and convenience.

**2.1.1 LOCALIZATION:** The use of software application maps like the Global Position System (GPS) enables service providers offer special services to their customers relative to their location or position [13]. Such services and products are conveniently packaged to suit the customer's location (including the market woman). This mostly saves cost by cutting long and uncertain journeys short [17]. Indeed, consumers are always either commuting and moving or traveling over long distances in order to meet their needs and wants. M-commerce however, makes it possible for consumers to get the goods and services they need without traveling far through the provision of location services [13].

**2.1.2 PERSONALIZATION:** Kim et al. [18], conceptualize personalization to mean a communication process between sellers and buyers that seems to brand information in accordance with the consumers buying pattern, needs and preference. According to Robins [19] consumers expect mobile services that are rendered to them which personalize their needs. i.e. in general, sellers must tailor information to suit the expectation of their customers. This will eventually improve the customers perception about the seller as well as quickening the search process of assorted goods and services which otherwise would have been time consuming [20]. Thus, communication and convenience are the eminent benefits which are associated with personalization.

**2.1.3 FLEXIBILITY AND MOBILITY:** Flexibility regarding user's location and time of the day seems to be the second top most benefit in m-commerce from consumer point of view [21]. This again enhances communication effectiveness and cost saving benefits. For instance, the consumer is able to conveniently access his needed goods and services through the mobility of m-commerce irrespective of time and location. Mobility is therefore a fundamental feature of m-commerce [22]. Similarly, Strong and Old [23] were able to establish empirically in their study that getting internet access anytime anywhere forms the basis or motivation for which a consumer will use the mobile service. Thus, mobility does not only bring about flexibility but also improves consumer accessibility and convenience. From the above discussion, most of the features mentioned are interwoven in terms of meaning. But no matter how they are conceptualized, the benefits of these features are centered around the 3Cs (communication, cost and convenience). Communication is

a means by which sellers get in touch with customers [24]. Communication is a process of sending message from one market point to another. This facilitates transactions in m-commerce through the use of precise information. An effective communication channel among market operators eschews cost [25]. Producers on one hand save cost as they eliminate less efficient distribution outlets by dealing directly with the customers and suppliers. This reduces cost of production significantly to produce reasonably priced and affordable goods and services. On the other hand, consumers avoid extra cost as they get what and how much they need through no any intermediary but the producer himself [26]. Convenience means accessing the needed information regardless of time and location without any hassling. This makes both producers and consumers use time effectively to increase productivity [27]. Other research findings like Henry et al. [28] and Tarasewich et al. [12] described scan based technology and reusability (of digital products and services) respectively as features that enhance convenience. The inclusion of an alternative input device like voice recognition innovation will enhance customer usability tremendously. The benefits derived from m-commerce features result in better decision making from customer point of view and enhance suppliers or producer ability to positively respond to customer's delivery due-date. In summary, the benefits of m-commerce such as cost, convenience and communication are intertwined resulting in reduction in the cost of trading. A customer or firm normally adopts m-commerce in order to save cost of any kind in operation [27]. This is all what cost as m-commerce benefit is about. According to Wu and Wang [29], cost-benefit can form the basis for considering factors like perceived usefulness and ease of use in M-commerce adoption. For example, receiving or sending information timely can help avoid loss of sales by sending goods and services from where they are lying idle to a market where they are needed and demanded most at reasonable prices. Secondly, reduction in transportation cost is also eminent when mobile phone in trading activities is used effectively. This is supported by a field data in a study conducted by Frempong et al. [30] where 67.2% of the respondents (in the small and medium enterprises in Ghana) admitted that the use of mobile phone reduced their transportation cost. According to Samuel et al. [31], the operators of 'spaza' shops in Tanzania relied on mobile phone to place orders and contact their suppliers vis a vis a situation where they have to close their shops and travel all the way to their suppliers for the consignment. Clearly, the method

employed by these shop owners was certainly cost effective.

**3. METHODOLOGY**

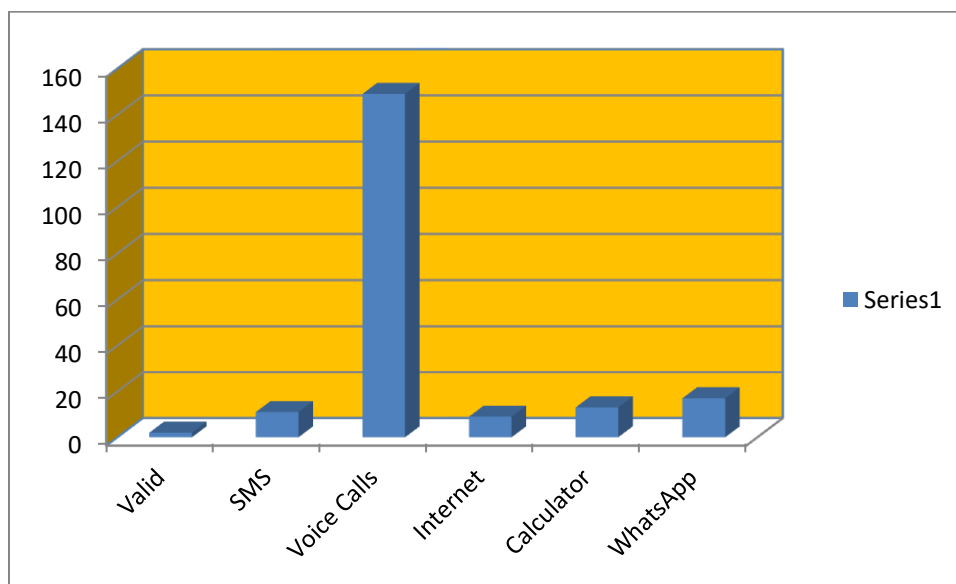
Both quantitative and qualitative research methods were used in order to get different perspectives of the study. The quantitative approach was further divided into General trade activities, Pre-trade activities, During trade and Post-trade activities so as to answer the fundamental research questions. In all, 207 self-designed questionnaires were used to capture data from the field. Out of this number, 201 were returned giving a recovery rate of 97.10%. A detailed interview, called case study, was conducted with one customer to get a deeper understanding of micro trading.

**4. ANALYSIS OF DATA**

**Table 4.1: RespondentEduLevel**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	2.5	2.5	2.5
Basic	46	22.9	22.9	25.4
Second Cycle	45	22.4	22.4	47.8
Technical/Vocational	25	12.4	12.4	60.2
Tertiary	36	17.9	17.9	78.1
No Formal	44	21.9	21.9	100.0
Total	201	100.0	100.0	

Table 4.1 is a frequency table showing the educational background of respondents. Fig 1



**Fig 1** is a chart showing how frequent mobile phone features were used.

Fig 1 revealed that generally the most frequently used mobile phone feature is the voice calls. This evidence was supported by the fact that there was no high literacy level requirement before one could make a voice call as shown in table 1 that majority (22.9 % , the highest in that category) of the 201 traders were basic school leavers.

According to the chart, the next mobile phone feature gaining popularity was “ WhatsApp” followed by “calculator”, “SMS” and “internet” trailing the graph. What this implies is that success is assured when doing business with these traders via voice calls and WhatsApp.

**Table 4.2 :PhoneBenefit**

	Frequency	Percent	Valid Percent	Cumulative Percent
	7	3.5	3.5	3.5
Valid Exchange of Business Information	41	20.4	20.4	23.9
Maintain Trade Partner Relation	31	15.4	15.4	39.3
Both Options	122	60.7	60.7	100.0
Total	201	100.0	100.0	

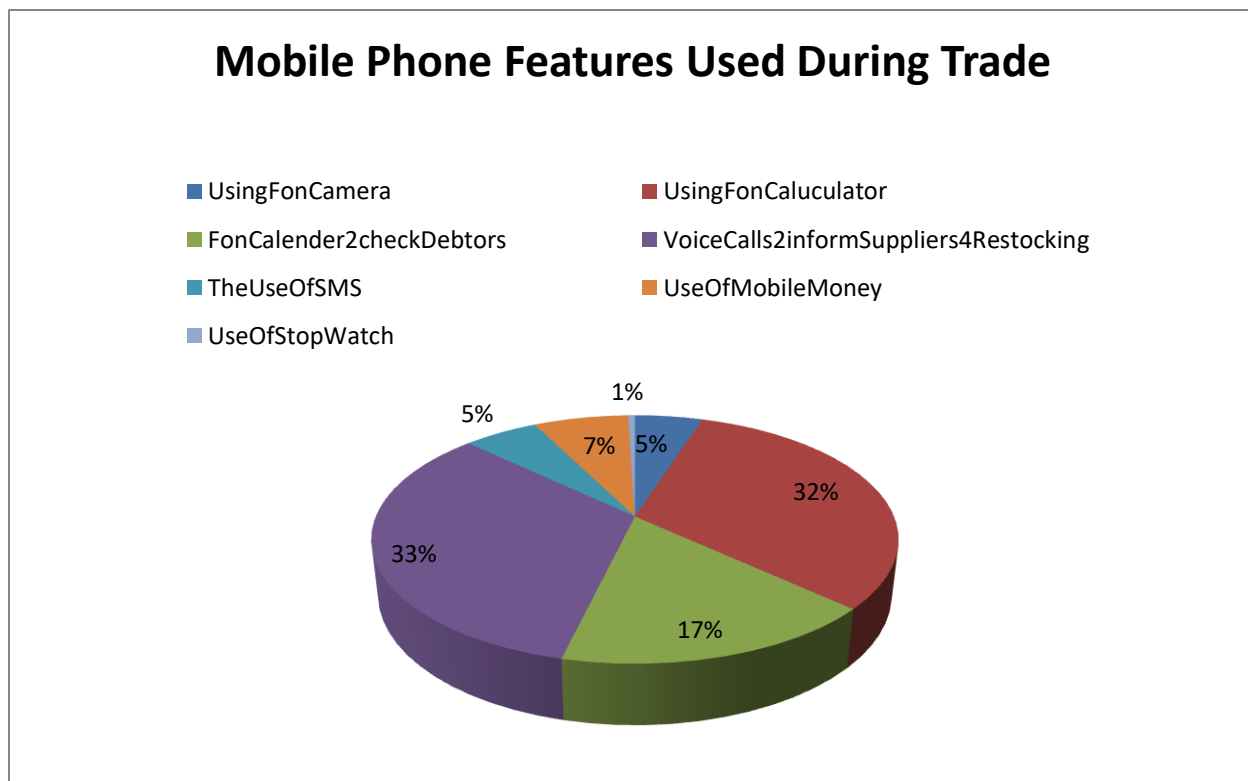
Table 4.2 is a table showing different type of mobile phone benefits to traders.

Table 4.2 is a dataset gathered from the survey. From this table, the respondents were in three groups regarding the sort of benefit they derived from the use of mobile phone. 20.4% said they used the mobile phone for the exchange of business information, 15.4% said they used it to maintain trade relationship between them and their trading partners. But majority of the respondents (60.7%) said they used it for both purposes (i.e. to maintain trade relationship and for exchange of business information). All these responses are consistent with empirical findings from previous studies that established the fact that the use of mobile phone by both seller and buyer improves customer care to the benefit of traders [2] and [3].

**PRE-TRADE:** Features of mobile phone and their benefits collated for pre-trade activities. The mean score of response on overall voice call (as a mobile phone feature) was 4.52 on a five-point Likert scale, with 1 being strongly

Disagree, 2 being Disagree, 3 being Undecided, 4 being Agree and 5 being Strongly agree. Clearly this average score is higher than the neutral (undecided) mark of 3, which implies that the respondents most favorably used mobile phone feature is the voice call during pre-trade activities. One of the objectives of this study was to find the benefits traders derive from the mobile phone features they frequently used. To achieve this, a number of suggested benefits were posed to them to choose from. It was revealed that the following three benefits were the most prominent, arranged in order of merit: "Cut down transportation cost", "Operation cost Reduction" and "Pre-Trade phone convenience" respectively. This finding was consistent with Samuel et al. [31], where the convenience of mobile phone made shop owners eschew transportation cost (between them and their suppliers) and increased operational hours of transactions.

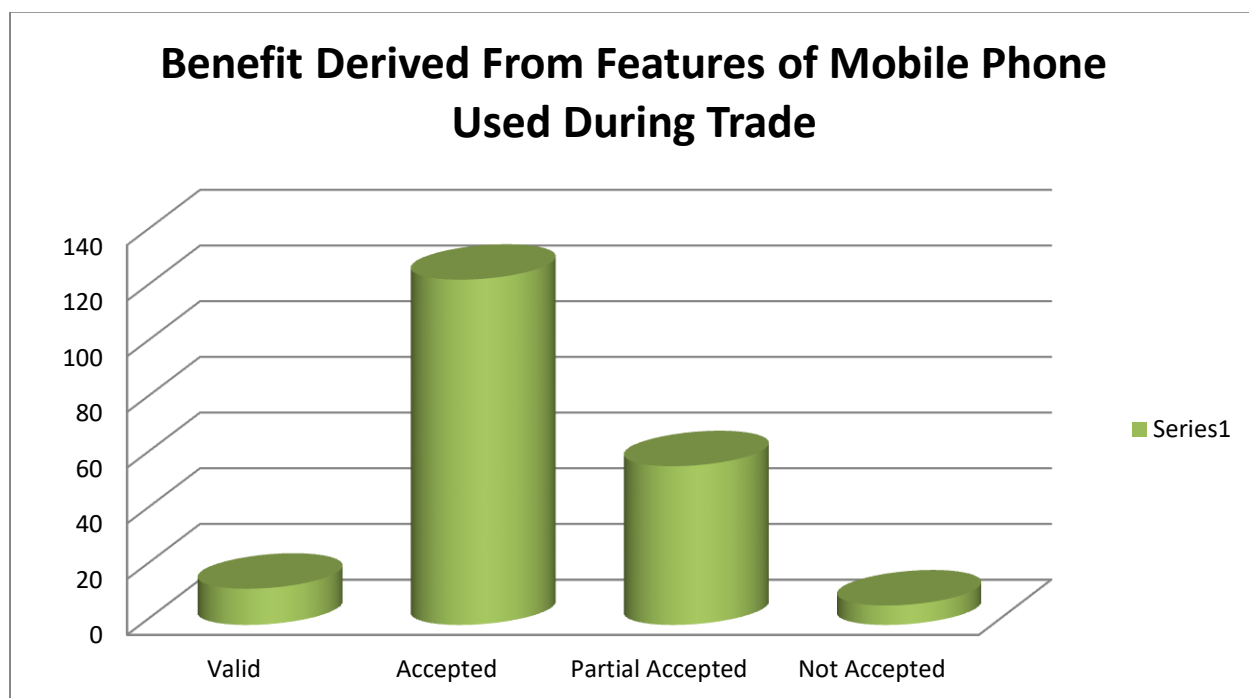
**DURING TRADE**



**Fig 2:** a chart showing how various features of the mobile phone were used during trade.

It has been observed from the survey data (Fig 2) that the highest percentage (33%) of the 201 respondents used the “voice call” feature to communicate with their suppliers for product restocking. This was so because of the respondents’ low literacy rate (sufficient enough to use the “voice call” feature) as seen in table 1 above. From the pie chart result, the second most commonly used feature of the mobile phone is the “calculator”. This can be attributed to the fact that, some serious and conscious micro traders would always want to know the difference between their receipts and payments. Beside, majority of them would like to use it in the middle of transaction so as to complement their mental inadequacy in terms of basic arithmetic. In order to facilitate their debt monitoring skills, a chunk (17%)

of the respondents adopted the use of the mobile phone calendar. Being a relatively new product of the mobile service provider, that demanded leaving your business unattended to for some time, the mobile money feature is not all that noticeable (14% of the respondents engaged it) during trade. As many of the market activities did not involve “timing” trade activities, only 1% of the respondents made good use of the mobile phone “stopwatch”. In determination of the corresponding benefits of the above mentioned mobile phone features used during trade, the respondents were asked how the features they frequently used during trade facilitate coordination among trading partners. Thus, the following empirical result was found.

**Fig 3:** a chart showing benefit derived from mobile phone features used during trade.

124 of the 201 respondents accepted “facilitate coordination among trading partners” as a benefit they enjoyed, 57 respondents partially accepted and only 7 respondents did not accept. This finding suggested that the type of trade being practiced here is one with backward (i. e. group of suppliers) and forward (i.e. group of customers) strategies as found in the case study involving the cassava whole seller below.

### POST TRADE RESULTS

When the traders were asked to state the mobile phone features they frequently used immediately after the close of market, responses skewed towards the Mobile Money Transfer (MMT), the mobile phone calculator and the mobile phone flash light in that order. The high outcome of the MMT showed that the market women believed that this was the quickest way of making payments to their suppliers for the next consignment to start the next day’s business on time as micro-trading is a perpetual and uninterrupted economic activity. The comparative low outcome of the use

of mobile phone calculator is a true reflection of their low level of education. The market business, except on some rare occasions, would normally come to an end at sunset. Thus, the use of the mobile phone flash light would not be so much felt. For the corresponding benefits of these mobile phone features, “the ease of sending money to trade partners through MMT” and “ the convenience of mobilizing trade agents from all corners of the market to render account through voice call” dominated the trend. This finding explained why MMT was a dominant post trade mobile phone feature and “voice call” featured prominently in pre-trade and during trade market activities.

**CASE STUDY:** The Cassava Wholesaler Madam Ceesi who is a fresh cassava wholesaler at the Madina market in Accra has been trading in this perishable commodity for the past ten years. Madam Ceesi, a middle school form four leaver used to visit her rural suppliers (farmers) at Adorsu (Eastern region, 56km away from Accra) twice a week –



every Tuesday and Friday. Each of these days is an eve of the Madina market day which falls on every Wednesday and Saturday. Some of her major customers include restaurant (locally called chop bar) operators, retailers and final consumers. Before Madam Ceesi adopted a mobile phone (Nokia 3310) some years ago, the communication between her and the farmers was frequently hindered by distance and time. "Informing a supplier to hold on as your old stock was not yet cleared by the customers, was a difficult thing to do", she said. Under such circumstances, Ceesi was forced to sell the existing stock cheaply in order to make a way for the incoming stock. This certainly increased her cost of operation and profit margins would ultimately fall. However, after acquiring a handset and advised her supplier to also get one, the above stated problem now became a thing of the past. But she had to first experiment with her husband cell phone to exploit and evaluate the outcome of this technology before actually buying one for herself. "Now, I am not only taking control over the management of my inventory but also able to order commodity at the comfort of my home – or shop at the market without physically visiting the farmer", opined by Madam Ceesi. Her level of basic education coupled with the simplicity of Nokia 3310 enabled her use functions like text messaging, "flashing"(i.e. to prompt the customer or the supplier without actually calling the person) and the calculator effectively beside the normal voice call. There was also a communication between her and the other trading partners who furnish her with sufficient information for better and quicker decision making. For example, if the price of other farmers was known to her in advance, she could bargain very well for a reasonable producer price from the rural entrepreneurs. Furthermore, the fatigable journey to Adorsu (twice a week) was now reduced to once a week or sometimes she would not even go at all, as long as she could communicate with the farmers telling them all that she needed via the cell phone. In the event when she was not able to go, Master Kofi, a truck driver would carry the money meant for a consignment to the farmer. This suggested that all the parties rely heavily on the mutual trust built along the supply chain over the long period of trading. This was consistent with what master Kofi said when interviewed:

"We always carry people's money to and fro the village based on the confidence and belief the village farmers and the market women repose in us and for that matter our clients always give us more job".

Communication through the mobile phone has made trading transparent by eliminating mistrust as traders could easily cross-check information from one another. Thus, Madam Ceesi felt that she had made a good investment in buying the phone. However, the lack of coverage beyond Adorsu where she could get her commodity much cheaper to buy, affected communication and eventually denying her the opportunity of enhancing trading activities with mobile phone. For instance, she sometimes had to incur additional transportation cost (which could have been avoided if telecom infrastructure was laid over the entire district) traveling beyond Adorsu to make up her supply inadequacy. She lamented that she would have opted to buy mobile phones for her key suppliers free of charge if areas beyond

Adorsu were connected to the national telecommunication grid.

### 5.1 DISCUSSION OF CASE

Benefits Obtained From Case Study: - Cost, Communication and Convenience Madam Ceesi certainly derived some sort of benefits from the phone usage which is in terms of cost, communication and convenience. For example, sometimes instead of traveling to the producer, she would rather use the cell phone to place an order. Clearly, this phone call will save some transportation cost, and risk like accident as argued by Jagun et al. [17]. Convenience:- The anytime – anywhere feature of the mobile phone had brought her some relief as she could now get access to her customers and suppliers regardless of time and distance. This fostered and strengthened the relationship among trading partners to nurture trust and confidence in their transactions [32]. Communication is also enhanced between Madam Ceesi and her trading partners. Thus, she stated that:

"Whilst at Adorsu, my customers often call to say, for example, buy me four bags instead of the two I said earlier or buy me some palm nuts in addition to the cassava – what a powerful communication tool!".

Madam Ceesi confessed that this is the biggest benefit trading with mobile phone has ever brought to her – the immediacy and actuality. According to her, there was no way she could have been able to utilize such an opportunity. Another operational cost saving benefit she enjoyed was the ability to avoid locked – up capital through prudent inventory management. That is, she would accept new goods if and only if old stock was finished. Ceesi was also able to make some strides. She, for example, recounted how a customer could call to request for more fresh cassava than earlier demanded for while she was away to buy from the producer. Some restaurant operators could even ask her to supply them with a complementary good like palm nut for soup. And eventually the palm nut became her second selling commodity. Thus, such free and quick flow of information has increased her volume of transaction and could eventually improve her revenue and profit margins. In effect, this study has evidently shown that mobile phone technology deployed in trade did ensure the free flow of information in the value-chain process for the actors to enhance their decision making ability [33] and [34], and provide operational benefit, relational benefit and strategic benefit [35] to micro-traders in particular and customers in general.

### 6 RECOMMENDATION

The application of the result of this study can help boost trade to the benefit of the entire country. It was therefore recommended that government agencies responsible for communication should create a conducive atmosphere for the communication service practitioners to work more effectively. This would pave way for all industry players and their agencies to make most appropriate mobile phone innovation available for the micro trader to adopt easily.

## 7 CONCLUSION

Despite the respondents' relative low level of education, the study revealed that these micro traders could use such features of the mobile phone as WhatsApp, calculator and MMT beside the most popular feature "voice call". Thus, this stand to reason that education is not the only contributing factor to be considered when adopting technology like the mobile phone for use. Perceived usefulness and technical support, as empirically shown by Zakaria et al., [36], influence the user positively in technology adoption. Be it in the general trade activity, pre-trade activity, During trade and Post-trade activity, almost all the benefits enjoyed by the trader were largely associated with convenience, comfort and cost cut-down. It was equal worth noting when Madam Ceesi explained how the use of these mobile phone features help increase her profit margin. Thus, efficient use of these mobile phone features, in a resourced-poor environment, makes the life of an ordinary micro trader better.

## 8 LIMITATION AND FUTURE RESEARCH DIRECTION

According to the survey results, the traders either have no tertiary education or have relatively low level of education and also the study was limited to only Madina market in Accra. In this regard, a future research direction can look at the section of the population with a relatively higher level of education across the country from different perspectives.

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