

# The Assessment of the Blacksmithing Industry in Ghana (A Case Study of Suame Magazine, Kumasi)

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## Abstract

The blacksmithing industry has been in existence for a long time, it offers employment to many people in Ghana. The industry plays a major role in the socio-economic development of the country through the servicing of vehicles, carpentry, household, agricultural implements etc. In spite of its contribution to the society, it has not made much impact to national development due to some challenges. This study assesses the performance of the blacksmithing industry of Suame Magazine in Kumasi, Ghana with respect to its designs, methods of production and nature of services provided. The descriptive method under the qualitative method of research which uses observation and interview was adopted to analyze and interpret data gathered. A simple random sampling technique was used to solicit for information and a structured interview and observation was used as data collection instruments. The study confirmed the industry's positive contribution to socio-economic development of the country. It was however revealed that the quality of their product design was not only low, but almost non-existent and the industry still depended on old methods of production, thus affecting it. Possible recommendations include; linking the industry with academic institutions like KNUST and Polytechnics to help assist it upgrade its methods of production, provision of financial assistance by financial institutions and NGOs in the form of credit facilities which could help the industry contribute its quota effectively to national development.

**Keywords:** Blacksmithing, designs, products, forging, fabrication, apprentice

## 1. Introduction

According to Blandford, (1998) one of the longest established crafts known to civilized man which has held its place of importance through all changes of thousands of years while civilization have come and grown is blacksmithing. He states that blacksmithing was born when Stone Age man first succeeded in separating metal from ore and making something from it. In his view, the first evident of smiting by hammering iron was found in Egypt and it dated 1350BC. Nsiah (1993) argues that blacksmithing is one of the oldest metal craft in the Ashanti region to be specific Suame magazine among all the metal crafts. To him the craft has been cherished in the Ashanti region in time past, since it contributed greatly to the strength and stability of the Ashanti kingdom in times of the war and security in food production. He states further that the blacksmith was highly esteemed and regarded in society because of the nature of his work. He produced weapons for war such as gun powder, swords, spears, shields, bow and arrows and implements like hoes, rice and cocoa sickles, cutlasses, "gong-gongs" etc. the craft started as a traditional family business, until those who found making of vehicle spare parts, counter bars etc., as a trade with good prospects started engaging in blacksmithing as full time job. However in spite of the good prospects the trade seems to have the industry is still lagging behind because little achievement has been made in terms of the quality of designs, methods of production and final finishing of their products.

In its broadest sense a blacksmith is a style of decorating wrought iron in which the fashioning of the products are carried out at welding heat. (David and Bernhard, 2002). Parkinson (2003) states that a blacksmith is someone who uses fire to transform unprocessed material into object of utility and beauty giving life to inert metal, to be specific iron. He enumerates some items produced by the blacksmith as axes, adzes, hoes, sickles, plough blades, and a variety of utensils such as kettles, pots, ladles as well as other farming implements.

Sackey and Amoakohene (1996) are also of the view that metal work, of which blacksmithing and engineering forms part deals with shaping forging and forming artifacts in metal. They further states that the working of metals contributes greatly to the wellbeing of individuals because a lot of everyday life objects made from metals such as household items, agricultural implements, vehicle parts, machines and machine parts are produced by the blacksmith. To them without the blacksmith, our modern world would not exist. It is clear from the above that the blacksmith mostly work with black metal (i.e. iron) bringing life and shine to these black metals for their

fellow traders to use in their work as well as things for farming and household utilities. It is clear from the above that the blacksmith mostly work with black metal (i.e. iron) bringing life and shine to these black metals for their fellow traders to use in their work as well as things for farming and household utilities. Even though the blacksmithing industry of Suame magazine is playing a vital role in the socio-economic development of the nation, it has not been able to contribute its quota effectively to national development, therefore there is the need to assess the industry well to see how best it can be helped so that the industry can offer better services to its numerous consumers and the nation at large. Best (1981) defines assessment as “a fact finding activity that describes the status or condition that exist at a particular time.” In his view assessment merely describes a situation that prevails without value judgment. Thus, it is not designed to determine the effectiveness of a particular process or programme, but it merely estimates the degree of achievement of a large number of individuals who have been exposed to a great variety of educational and environmental influences. Gosling and Edwards (1994:5) also asserts that “assessment is the process of identifying and understanding a problem and planning a series of actions to deal with it”. In their opinion, the end result of every assessment is to have clear aims and realistic plan of activities designed to achieve a set of clear aims and objectives. The Chambers 21<sup>st</sup> Century Dictionary (1996) also defines assessment as the act of judging the quality of something, especially pupils or students’ work, but in this study assessment will deal with judging the performance of the blacksmithing industry of Suame magazine in the Ashanti region of Ghana. Thus inferring from what others have said it can be deduced therefore that assessment gives more insight into things or throws more light into why things happen the way it does and what can be done to effect certain changes to make that thing better and more useful.

Gosling and Edwards (1994) further adds to the discussion of assessment by stating the aims of assessment as: establishing the extent to which the subject understudy has met demands of the general public, ensuring that the subject understudy can offer better services to the general public and lastly as allowing for identification of new areas where the group requires additional support. This is exactly what the focus of this study will be, because the blacksmithing industry of Suame magazine is not exempted from the transformation process which is taking place all over the world as a result of technological advancement.

While developing countries like India, China and Hong Kong are making greater strides and effort in improving their industrial sectors, the Ghanaian economy is still lagging behind and the blacksmithing industry in Ghana to be specific Suame magazine is not an exception. However the research team believes that there are other viable ventures that the industry could embark on as an addition to the services it is already rendering to societal growth. For instance bee keeping, snail and grass cutter farming have gained grounds in the economy of late so the industry could produce equipment such as wax press, honey comb cutter, snail and grass cutter farming tools and equipment, equipment and machines for canning perishable goods such as mangoes, oranges, tomatoes etc. to meet growing demand. Because proper assessment has not been conducted into the industry, their potentials have not been fully realized and this has and is still impacting negatively on the industry’s performance. Also due to the rise in the size of the Ghanaian population, there are greater demands for products from the industry; therefore the aim of this study is to assess the blacksmithing industry of Suame magazine and suggest possible solutions for the way forward.

## **2.0 Research Methodology**

### **2.1 Research Design**

Empirical evidence shows that the validity and reliability of easy information depends largely on the strategies used in collecting data gathered (Copper, 1985). There are two basic methods of research designs that one can use to carry out a study, these are quantitative which relies on numbers to describe data and the qualitative which resort to the use of words, interviews, recordings, videotapes, personal comments etc. in describing a phenomenon. For the purpose of this research study the descriptive method under the qualitative research method was used. The strategy included the use of a formal interview (structured interview) which helped the researchers to obtain first-hand information from the respondents (Best, 1981)

### **2.2 Population for the Study**

Suame magazine lies on the side and bottom of a hill to the east of the main road to the northern regions of Ghana and to the west creek known as “Nkrandan”. The area is 1.80 kilometers long with an average of 320 meters. Although the land is zoned for administrative purpose, plots within the zones are not well demarcated due to the haphazard siting of temporal structures by squatters. Artisans in the area consist of blacksmiths and mechanics. For the purpose of spatial planning and administration of the land, the various magazines in the Kumasi metropolis have been categorized into two sites these are the old and new sites and these have divided

been further divided into 24 zones and Suame magazine which is the target group for the study covers zones 1-7, 11, 12, 13, 18, and 19. The inconsistency in numbering is as a result of the rapid emergence of other magazines in the city of Kumasi (Obeng, 2000). The total population of blacksmiths in the Suame magazine according to statistical data collected from the Head office of the Ghana National Association of Garages (GNAG) by the researcher shows that as at 2008, the total number of blacksmiths stood at 480, so it is estimated that as at now (2014) the total number would be around 970. Out of the target population eighty (80) interviewees mainly masters were selected using the simple random sampling technique. To make the data more authentic 10 mechanics, three officers from the head office and some sellers and final users of the end products from the industry were also interviewed using the same simple random sampling technique.

### **2.3 Sample and Sampling**

There are two main types of sampling techniques used in in sampling views, these are; probability sampling which has been categorized further into simple and stratified sampling and non-probability sampling which consist of quota, purposive and accidental sampling. However for the purpose of this study the simple random sampling technique where the population for the study is homogeneous in nature with each member of the population having an equal chance of being selected for a study was used to sample views from the eighty respondents (Nkpa, 1997).

### **2.4 Data Collection Instruments**

An interview and observation was more appropriate for this study than other instruments because most of the interviewees could not read and write. For the purpose of this study the standardized interview technique where questions are formulated beforehand and asked verbally in a face-to-face manner and in a specific set of order was used to gather the needed information. An interview guide was prepared and used to solicit for views from the respondents. (William, 2001). Direct and close observation at the workshops was also done by the research team to gather more information, which the interview guide could not cater for to buttress the information gathered.

Nkpa (1997) argues that information provided by respondents in questionnaire and interviews can be inaccurate, prestige, biased or fake. In contrast, the use of observation in collecting data makes it possible to obtain first-hand information about the group under study. In his view, observation is more preferred when studying children, illiterates, traits that cannot be tested with pen and paper and phenomenon, which must be looked at. It may be used alone or to supplement information collected using other methods. In the case of this research study, it was used to supplement data gathered. To be able to confirm and buttress the information gathered from the blacksmiths some mechanics were also interviewed. The selection of the people was also done randomly.

An observation was critically done by the research team and whiles they were working their production methods, tools and equipment including how the final products were finished was also observed and well noted. This helped the researchers to offer some advice to the smiths on how they could improve production methods as well as their general well-being. Some took the advice but others resisted it given an excuse that it had been the norm or tradition passed on from their generation to generation as such needed to be preserved.

The observation also helped the researchers to clear certain doubts and false information given by some smiths.

### **3.0 Analysis and Interpretation of Data**

The data collected was carefully assembled, analyzed, interpreted, conclusions were drawn from them and possible recommendations have been suggested. The information consisted of tables and essays as seen in chapter four. Pictures were also taken to support the information gathered.

The interview guide was self-administered using eighty (80) respondents from the blacksmithing industry of Suame magazine and some selected mechanics, some selected officers from the Suame magazine headquarters, as well as some sellers and customers of products made by the blacksmiths.

### **3.1 Results and Discussion**

The data in table 1 depicts that all the interviewees were males, that is eighty (80) representing 100%. This could mean that females were not and are still not accepted or entertained into the industry probably because of the nature of the work. Most of the job executed required lifting heavy materials, tools and equipment, which demanded more energy as such it would not be advisable for women to enroll/engage in the trade, there could also be the probability that some females though interested in the trade had not been encouraged and accepted into the trade by masters due to the difficult task invoked in getting things done or it could be because of the assumption many people hold that blacksmithing is a job for males.

As far as the level of education is concerned, table 2 revealed that seven eight (78) interviewees answered the question. Out of the seven eight (78) 100%, thirty eight representing 48.7% were middle school leavers, twenty (20) representing 25.6% had no formal education, ten (10) representing 12.8% were JSS school leavers, four (4) representing 5.1% were technical school leavers two (2) each representing 7.8% were 'O' level school leavers, SSS school leavers and polytechnic graduates respectively. None of the interviewees had attended university and two people were unwilling to answer the question. There is the probability that the two people who refused to answer the question might have had little education as such they were feeling shy to answer the question. For those who did not have any formal education comments made by most of them suggested that financial constraints were a contributory factor to their plight. The table clearly shows that majority of the interviewees were middle school leavers. However interactions with the people revealed that most of them could not read or write and this made it quiet uncertain to believe their claims that they had had some form of education. Some of them might have had some form of education but dropped out of school probably because they were not academically good or because of financial constraints.

Table 3 indicates shop ownership. The table clearly shows that fifty four (54) of the respondents representing 67.5% of the shops were owned by individuals, twenty two (22) representing 27.5% were jointly owned, however four (4) of the respondents representing 5% refused to answer the question. Utterances made by three (3) people out of the four (4) who refused to answer the question indicated that they were afraid that should they mention who owned the shops they could be easily identified and taxed accordingly in the near future. From the analysis it could be deduced that the turnover from the jointly owned shops could be high compared to the individual shops since they could pull more resources together and should there be any form of assistance such as a loan facility, the jointly owned shops could stand the better chance of enjoying such a facility. Besides, should they receive any form of assistance it could not be monopolized by one person thus the likelihood that any form of assistance received by the group was going to be put to good use. On the contrary, shops owned by individuals were likely to misuse assistance in the form of a loan facility since nobody monitors their activities as in the case of jointly owned shops where each member serves as a check on the other.

Table 4 depicts that out of the eighty (80) interviewees representing 100%, forty eight (48) representing 57.5% had been in business for not less than 10 years, twenty eight (28) representing 35% had been in business for 5-9 years while the remaining six (6) representing 7.5% had been in business for less than five (5) years. This implied that, there were more matured and experienced people in the industry than young and less experienced ones yet still their impact to productivity has not been much felt in the country as compared with the mechanical industry. It could be that the industry has not been given the needed attention in national development policies, as a result the industry is constrained as such they are unable to contribute their quota effectively to productivity and national development. Observation revealed that because of their conservative mind-set to change, though they had been in business for a long time they still depended on the use of obsolete tools and equipment as well as old methods of production instead of keeping pace with technologically advanced methods of production, hence impeding their total output.

Table 5 indicates the category of the blacksmiths and their activities. According to information given by the interviewees, the industry has been divided into three (3) categories consisting of lathe blacksmiths who concentrated solely on the drilling of holes and the removal of broken bolts in cars, as well as replacing broken bolts with new ones they fabricated themselves or sometimes they used already manufactured ones. The second group consisted of those who made household and local implements such as hoes, cutlasses, sick that are used in harvesting cocoa, rice and palm etc., "dawuro", "firikiyiwa", saws, ploughs etc., while the last group engaged in heavy duty activities such as changing of single truck axles to double track axles and vice versa, trailer springs, car frames, car spare parts and counter bars. From the table, there was an indication that majority of the interviewees; forty two (42) representing 52.5% engaged in the production of heavy duty items/products, followed by those who dealt with household and local implements, that is twenty two (22) representing 27.7% and lastly the lathe producers who were in the minority; that is, sixteen (16) representing 20%. The table reveals that majority of the smiths are into heavy duty blacksmithing activities like changing single axle trucks to double axel trucks and fabrication of counter bars.

As shown in table 6, fifty four (54) of the respondents representing 67.5% use locally manufactured tools and equipment in fabricating items, twenty two (22) representing 27.5 use locally manufactured as well as industrial tools and equipment for production while the remaining four (4) representing 5% resort to the use of industrial tools and equipment. An indication that majority of the respondents still relied on the use of old techniques and methods of production which goes to support the researcher claim as to why the industry has not and is still making the needed impact to national development. Again a close observation and interaction with the people

revealed that, they still preferred the use of old and stereotyped methods of production. In his words, one interviewee commented that “adwuma no ye nananomnaedigya yen enonti se neanaomuo ye omuoadwuma no saana ye be ye no” literally meaning that the trade had been handed down to them by their forefathers as such they ought to use the same techniques and methods of production in working as was done by them. This also indicates that they were not willing to adapt to changes that will lead to a higher turnover.

From table 7, forty (40) out of the eighty (80) respondents representing 50% self-financed their business activities through their own accumulated savings (susu). Fourteen (14) each representing 17.5% financed their trading activities through their own accumulated savings through and support from family members as well as through their own accumulated savings and assistance from financial institutions respectively while the remaining twelve (12) representing 15% financed their trading activities from all the three sources. An indication that majority of the respondents depended mainly on their own little savings to keep their business going, a situation which has the tendency of negatively affecting the smooth running of the industry.

From the analysis in table 8 out of the eighty (80) people interviewed thirty eight (38) of the respondents representing 47.5% complained that the raw materials were very expensive as a result it affected them greatly. Thirty two (32) forming 40% said the raw materials were not readily available. Deducing from the analysis the researchers are of the view that probably the raw materials were accessible but because of its expensive nature the smiths were not in a position to buy the right quantities they needed to work with, thus to some extent still limiting the smooth running of their business activities. A personal interaction the researchers had with the respondents revealed that almost all the raw materials they were working with were imported, (in their own language “home use” or “second hand” ) which came with high taxes hence adding up to the cost of the raw materials as such their inability to buy more to work with.

As indicated by figures in table 9, sixty eight (68) of the respondents representing 85% forming the majority said they preferred the services of apprentice to that of qualified personnel while the remaining twelve (12) representing 15% said in addition to apprentice they had also engaged the services of some qualified personnel. From the answers given, there was clear indication that probably engaging the services of apprentice was economical and much preferred in terms of the cost involved besides most of the interviews did not earn much for services they rendered to their customers left alone part with extra money to pay for services of qualified personnel. It can be argued that, the quality standards of products from the smiths will be compromised as majority of the smiths within the study area engaged the services of apprentices who were still receiving training as such lacked the requisite knowledge and skills to come out with quality products.

Results presented in table 10 shows that seventy six (76) of the respondents representing 95% forming the majority said they produced without working drawings, while the remaining four (4) of the respondents representing 5% the use of idea development and professional artist respectively. From the analysis it could be deduced that their inability to plan and design their products before fabrication could be a contributory factor as to why most of their products were crude and not attractive enough. These problems posed a big challenge to the industry in terms of its quality, utility and selling prices. Again their inability to plan and design their products could be a clear indication that even if they had the needed resources at their disposal, they could still not have been able to come out with any better products because of their conservative mind set to changing demands of the Ghanaian society and the world at large.

In response to the question on whether they attend refresher courses from time to time, as indicated in table 10 all the eighty (80) respondents representing 100% responded no to the question an indication as to why most of the products from the industry had not seen any major improvement because the blacksmiths have not been attending refresher courses to upgrade their knowledge and skills to meet the needed standard of society.

The figures in table 12 depicts that almost all the respondents faces two or more challenges with the most prominent one having to do with lack of finance to enhance the smooth running of their business activities. All the eighty (80) respondents representing 100% complained of lack of capital and credit facilities to acquire the needed equipment, tools and materials to enhance their working activities. Seventy five (75) of the respondents representing 94% complained that they lacked the requisite tools and equipment to assist them work more effectively. Seventy two (72) representing 90% expressed their worry on the issue of high income tax coupled with the cut throat utility bills they have been battling with. Sixty five (65) of the respondents representing 81% also had issues concerning low and irregular income because they mostly fabricated items based on demand by their customers. With regard to the issue of ready market for their products fifty five (55) of the respondents representing 69% complained of lack of ready market for their products. An indication that probably most people preferred the cheap imported products to that of the locally manufactured ones.

With regards to the multiple responses on the way forward, from table 13 all the eighty (80) respondents representing 100% were of the view that if they were given the needed support it could help the industry to produce to meet the growing demand by their clients and boost economic growth in the long run.

Sixty five (65) of the respondents were of the view that if regular trade fairs and shows were organized for them at cheaper cost to them to enable them participate fully to create awareness of their products could be of great help to the industry. Again twenty (20) of the respondents representing 25% also admitted that the organization of periodic refresher courses for the blacksmiths could go a long way to assist the industry to improve their knowledge and skills so that they can contribute their quota effectively to the economic growth of the nation and the world at large.

As indicated by figures in table 14, four (4) of the respondents representing 40% rated the performance of the blacksmithing industry as good, six (6) of the respondents representing 60% rated the performance of the industry as very good and fair respectively, however nobody rated the industry's performance as excellent. The evidence suggests that though the blacksmithing industry has been rendering a lot of services to the mechanical industry and the general public, there was still room for more improvement. Upon further interaction with some mechanics by the research team the interviewees expressed their views that, most of the blacksmiths lacked the requisite tools and equipment to work with which has been hampering the smoothing running of the activities. For instance an issue was raised that most of the blacksmiths were not having monkey jacks for heavy duty vehicles because of its expensive nature as such they resorted to the use of small jacks when they were working on these vehicles which served as a big threat to their lives since the small jacks could easily break and injure them. Another issue raised by the mechanics was the issue of electric drills. They stated that the blacksmiths lacked electric drills which facilitated easy and fast drilling of holes, removing of broken bolts and nuts and as well as fixing of bushings in vehicles as such they relied on manpower which required more energy and time. This evidence goes to buttress the reason why the blacksmithing industry is not making the needed impact to societal growth. This therefore calls for proper assessment of the industry and the needed assistance given to the industry so that their relevance could be greatly felt.

#### **4.0 Summary of Findings**

The study revealed the following:

The study confirmed the positive contributions of the industry to socio- economic development of the country

The study however revealed that:

The quality of the product design of the blacksmithing industry was not only low but very poor. For instances out of the 80 (100%) interviewees, seventy six (95%) admitted the fact that they fabricated their items without designing which at times affected the effective functionability of some of the products from the industry.

Secondly the industry has not been exposed to modern techniques of production

The industry's lack the requisite tools and equipment in enhancing job execution has led to poor finishing of the final products.

Another problem though not part of the main objective of the study was lack of spacious accommodation for effective work and rapid expansion.

#### **4.1 Conclusion**

In line with the government's policy of poverty alleviation in the country, the issue of assessing the performance of the blacksmithing industry has become imperative due to the role it plays through the servicing of the vehicles, manufacture of motor vehicle spare parts, carpentry and agricultural tools and implements, to mention but a few, which contribute immensely to the socio-economic livelihood of the nation.

However their impact to national development has not been greatly felt because the industry has not been given its rightful position in national development policies. As a result, the industry is constrained in number of ways. This however poses a great challenge to the industry in terms of the quality of the products, their utility as well as costing and pricing of the products due to the inferior finishing of the final product. Assessing the performance of the industry is therefore seen as a step in the right direction, since it has brought into lime light the challenges the industry has been facing so that the government and all key players like financial institutions and NGOs involved in seeing to the better performance of the industry will give it the needed audience and help to address some of the problems faced by the industry so that they could offer better services to the general public and the nations as a whole.

The study has therefore been considering how best the assistance could be offered to the industry on issues relating to the acquisition of the requisite technologies and financial assistance that could help the industry perform better in the local and international scene respectively.

However just assessing the industry's performance is not a problem in itself, but translating the findings into practical results is what really needs to be done. There is therefore the need to assess the industry from time to time, in order to help upgrade the level of performance and where necessary, offer the needed assistance to help the industry amplify its relevance to nation development.

#### 4.2 Recommendations

Based on the findings and lessons learnt from the study, the following recommendations have been suggested to enhance the effective running and performance of the industry;

There is the need to organize refresher courses for the industry from time to time and resource persons with the requisite knowledge and skills in blacksmithing invited to educate the blacksmiths. This will help to upgrade and update the skills and techniques of the industry.

In view of the contribution the blacksmithing industry to socio-economic development of the country, it would be imperative for the government, financial institutions, NGOs and policy makers to come up with interventions such as technologically advanced tools and equipment as well as credit facilities to purchase the needed inputs that can help enhance and refine the products from the industry. This will make the industry competitive enough in the local and international scene. It is the belief of the research team that if the key players like the government, financial institutions, GNAG and NGOs would contribute immensely in assisting the enterprise to continuously upgrade their technologies by having access to low interest credit facilities,, relevant information and technology (ICT) as well as the availability of quality engineering skills and materials for quality finished end products, the importation of certain items which require low simple technologies from outside the country could have been curtailed and hence save revenue for national development. In other words, if the appropriate growth poles are put in place to help the industry, it will help unearth the full potentials of the industry, and their impact would be greatly felt.

Again the authorities in charge of the growth of the industry like GNAG, could liaise with academic institutions like KNUST and the Polytechnics to help upgrade the knowledge and skills of the industry in product design and production processes so as hat the industry can compete with the world standards.

It is suggested that the government should factor the blacksmithing industry in national policies, especially those who produce small arms. These blacksmiths could be registered and given the mandate to produce certain items like short guns and pistols. The research team belief that if they are given the needed recognition it will also help limit/reduce the importation of these products.

Lastly, on the issue of spacious accommodation the researchers would recommend that, if possible a permanent place should be allotted to all Small, Medium and Micro-Enterprise including the blacksmithing industry. This will allay any fear of an impromptu ejection by land owners from their make shift workshops. This could serve as a motivation for masters to extend their arms to accept new entrants into the industry and reduce unemployment in the country. In a nutshell if the issue of accommodation is resolved, it could help the industry, to contribute their quota effectively to national growth and development.

**Table 1: Sex of respondents**

<b>Sex</b>	<b>No of Interviewees</b>	<b>Percentage (%)</b>
Males	80	100
Females	-	-
<b>Total</b>	<b>80</b>	<b>100</b>

**Table 2: Level of education**

Level	No of Interviewees	Percentage (%)
Middle school leavers	38	48.7
'O' level school leavers	2	2.6
'A' level school leavers	-	-
JSS school leavers	10	12.8
SSS school leavers	2	2.6
Technical school leavers	4	5.1
Polytechnic graduates	2	2.6
University graduates	-	-
No formal education	20	25.6
<b>Total</b>	<b>78</b>	<b>100</b>

**Table 3: Ownership of shop**

Ownership	No of Interviewees	Percentage (%)
Individual ownership	54	67.5
Group ownership	22	27.5
No answer	4	5
<b>Total</b>	<b>80</b>	<b>100</b>

**Table 4: Number of years spent in business/establishment**

Years	No of Interviewees	Percentage (%)
1-4	6	7.5
5-9	28	35
10 and above	48	57.5
<b>Total</b>	<b>80</b>	<b>100</b>

**Table 5: Category of blacksmiths**

Categories	No of Interviewees	Percentage (%)
Lathe blacksmiths	16	20
Household and local implements blacksmiths	22	27.5
Heavy duty blacksmiths	42	52.5
<b>Total</b>	<b>80</b>	<b>100</b>

**Table 6: Tools and equipment**

<b>Tools and equipment</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Locally manufactured tools and equipment	54	67.5
Industrial tools and equipment	4	5
Locally manufactured and industrial tools and equipment	22	27.5
<b>Total</b>	<b>80</b>	<b>100</b>

**Table 7: Sources of financing business activities**

<b>Sources of finance</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Own accumulated savings through 'susu' only	40	50
Own accumulated savings through 'susu' and support from family members/friends	14	17.5
Own accumulated savings through 'susu' and assistance from financial institutions	14	17.5
Own accumulated savings through 'susu', support from family members and financial institutions	12	15
<b>Total</b>	<b>80</b>	<b>100</b>

**Table 8: Respondents responses on acquisition of raw materials**

<b>Raw materials</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Raw materials are not readily available	10	12.5
Raw materials are very expensive so enough cannot be bought at time	38	47.5
All the two reasons are applicable	32	40
<b>Total</b>	<b>80</b>	<b>100</b>

**Table 9: Respondents responses on their working staff status**

<b>Status</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Qualified employees</b>	12	15
<b>Apprentice/s</b>	68	85
<b>Total</b>	<b>80</b>	<b>100</b>

**Table 10: Respondents responses on how designs were derived**

Responses	Frequency	Percentage (%)
Use of idea development	2	2.5
Employ the services of professional artist	2	2.5
Fabrication of items without designing	76	95
<b>Total</b>	<b>80</b>	<b>100</b>

**Table 11: Respondents responses on whether they attend refresher courses from time to time**

Responses	Frequency	Percentage (%)
Yes	-	-
No	80	100
<b>Total</b>	<b>80</b>	<b>100</b>

**Table12: Multiple responses on challenges associated with the blacksmithing trade**

Challenges	Frequency	Percentage (%)
Low and irregular income	65	81
Lack of capital and credit facilities to acquire the needed equipment, tools and materials	80	100
High income tax and high utility bills	72	90
Lack of market as a result of their products competing with cheap imported products.	55	69
Lack of the requisite tools and equipment to enhance their working activities.	75	94

**Table13: Multiple responses on the way forward**

Responses	Frequency	Percentage (%)
Financial assistance in the form of loans and credit facilities	80	100
Regular refreshers courses to be done to help upgrade knowledge and skills of the smiths.	20	25
Regular organization of trade fairs for the smiths to create public awareness of their products.	65	81

**Table 14: Responses on the blacksmithing industry's rate of performance by 10 selected mechanics**

Responses	Frequency	Percentage (%)
Excellent	-	-
Very good	3	30
Good	4	40
Average	3	30
Fair	-	-
<b>Total</b>		<b>100</b>

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