
ABSTRACT

This study assessed the status of the welding industry in Biliran Province. Findings of the study highlighted in detail the characteristics of the welding shops, their owners, problems encountered, future plans, and their service status through the years. Facilities of the welding shops were moderately available (OWM=3.3); and supplies and materials were available (OWM=3.4). Shop personnel were sufficient (OWM=3.5); and location of shops was generally much accessible. Working capital of majority of the welding shops ranged from 15 thousand pesos to 50 thousand; labor wage rates from 40 pesos to 300, depending on the type of work; license requirements were strictly observed by all but without accreditation or linkage. Majority of the welding shop owners aged between 46 and 55; all of them male and married. Majority of them were vocational graduates; several finished a college degree while a few completed high school only. While a few had a certificate of competency from NMYC or TESDA, the majority were simply welders by experience. None had any additional specialized training. Most critical to all the welding shops was the problem of brown out; lack of materials in hardware stores and distance from the source of materials were a felt problem to majority of the shops. The welding shop owners were more of less unified in their future plans: to become a contractor in a big project in the government; to expand the existing shop; to procure a service vehicle; to accept welding jobs outside the province; and to engage in automotive repair. The service status of the shops rose from a provider of mere welding jobs to a builder of vehicle bodies and residential steel gates and window grills.

KEYWORDS: Biliran Province; Status of Welding Shops; Welding Industry.

INTRODUCTION

Welding dates back to the earliest days of metal working, and continues to be widely applied today due to its cost effectiveness, reliability, and safety. When compared with other joining methods, such as riveting and bolting, welded structures tend to be stronger, light-weight, and cheaper to produce [1].

People are the greatest resource of every country and the most effective agents and managers of change. Unless the people are equipped with essential knowledge, skills and the right attitudes, these capabilities can never become a reality. To become agents and managers of change, the people must be prepared or educated. They must be equipped with critical knowledge and skills, and the right attitudes and values not only to functions and live well in the society, but also to be creative, productive and useful citizens of our country [3].

At this point in time Biliran Province is now on her transition period compare in the past. Business are like mushroom that sprout in any part of the province. People are motivated to start a business its because of the advance of science and technology. One of the progressive aspects in running a business is the operation of a welding shop. This can be operated by women and men. In fact during the time of President Fidel V. Ramos, a Filipino woman excels in welding held in Singapore during the ASEAN Skills Olympic [4].

Processes and process variants comprise the family of welding technologies, and include methods for welding metals, polymers, and ceramics, as well as emerging composite and engineered materials. These various technologies allow a great deal of flexibility in the design of components to be welded. It also encourages designing for optimal cost-effectiveness in productivity and product performance [5].

Welding and joining technologies pervade commercial and defense manufacturing and are a significant source of value-added in the manufacturing process. Occurring late in the manufacturing stream, the joining process is typically the final step in assembly and plays the major role in ensuring structural performance. Additionally, the emergence of near-net-shape processes to produce sub-components has raised the importance of assembly processes as the next are for increased production efficiency. The role of welding and joining in the repair and life extension of manufactured products is even more critical since these processes are frequently used to repair structures and components that were not originally welded. Throughout history, man devoted most of his time to work. In fact, man is known or identified in society by the kind of work he does and how well he does it. As defined in the dictionary, work is an activity which a person exerts physical and for a person does to earn a living constitutes his life work. In economic terms, its functions are good to produce goods and services and to provide income for the worker and his family. In addition, work particularly in welding shop can also contribute to human development and fulfillment by providing a means for personal expressions and positive experiences [6].

Since in the world of work is largely dependent on the education and training of the individual, technology education like metal working is a very important component of the total educational program. This is so because welding is used extensively in the manufacture of form equipment, home appliances, computer components, mining equipment and earth-moving equipment. Railways equipment, farmers, boilers, air conditioning units and hundreds of other product also make use of welding to fasten parts together. However, unemployment is a serious social problem of developing as well as the highly industrialized countries. In the Philippines, for instance, the fast increasing population, the large number of out-of-school youth and drop-outs, the mismatch of education and man power demand contribute to unemployment and underemployment problems [7].

In reality, these social problems do not necessarily that the lack of job opportunities but also indicate wide of technical skills and competences. Current estimates show most about 65 percent of the unemployment are avoid of salable skills or have not undergone any form of vocational education and training. Obviously, this implies the very critical need for a relevant specialized skill through metal working [8].

Toward this end, the foregoing information is a clear manifestation to make Biliran Province as the welding industry. Based on the abovementioned statements, a call to equip welding shops throughout the Biliran, Province is imperative in order to eradicate if not to minimize unemployment. It is along this context, that the researcher opted to conduct this study to determine the welding shops profile, the accessibility for the establishment of welding industry in Biliran Province.

OBJECTIVES OF THE STUDY

The primary purpose of this study was to look into the status of the welding industry in Biliran Province.

Specifically, this study aimed to answer the following:

1. Characterize the present status of the welding shops in Biliran Province in terms of: adequacy of facilities; availability of tools and equipment; availability of supplies and materials; sufficiency of shop personnel; accessibility of location; Capital; Labor; TESDA Accreditation; license to operate; linkages;
2. Characterize the personal profile of the owners of the welding shops in terms of: age; sex; civil status; educational attainment; TESDA Certification Holder; Training and Seminars Attended;
3. Highlight the problems encountered by the owners of the welding shops in Biliran Province.
4. Delineate the future plans of the welding shop owners in the Province.
5. Highlight the service status of the welding shope in the Province.

Framework of the Study

This study takes hold of the following theoretical and conceptual framework as its main and strong foundation in the due course of its proceedings.

Theoretical. Theories of learning and theories of instruction were made as theoretical bases of this study. Theory of Piaget's is the cognitive development emphasizes the study of learning behavior thus one tends to observe the worker in the machine shop develop his skill work on his own. Make mistakes, correct, discover and improve his techniques and skills on his own desire in the process of working the trade. Skinner's operant conditioning theory refers to idea

that an organism tries to do something to get reward. This is concretely applied in the welding shops, where the welder expresses in assembling the parts of the objects by part until the whole thing is successfully accomplished. What is considered a reward is the payment of labor from the customer to the worker. Bower and Hilgard's [2] practice and drill theory, when practice and drill exercise are constantly repeated the correct practices tend to become perfect. Experiences in the welding shop can be effective in developing manipulative skills in the welding works.

The theories mentioned are very applicable in developing the skills in the welding fields. Welding shops should initiate modern technology to be used in the machine or welding shops.

Conceptual. This study is focused on the welders/owners profile and welding shops profile, Adequacy of facilities, Availability of supplies and materials, Availability of tools and equipment, Accessibility of location and Sufficiency of shop personnel. The processes of the study are the Fabrication. Production and structural design using the methods and applications of welding thus consumers expect the quality of work. The output of this study is the consumers expect the quality of work. The output of this study is the consumers' feedback and demand this will help develop the welding industry in the Province of Biliran.

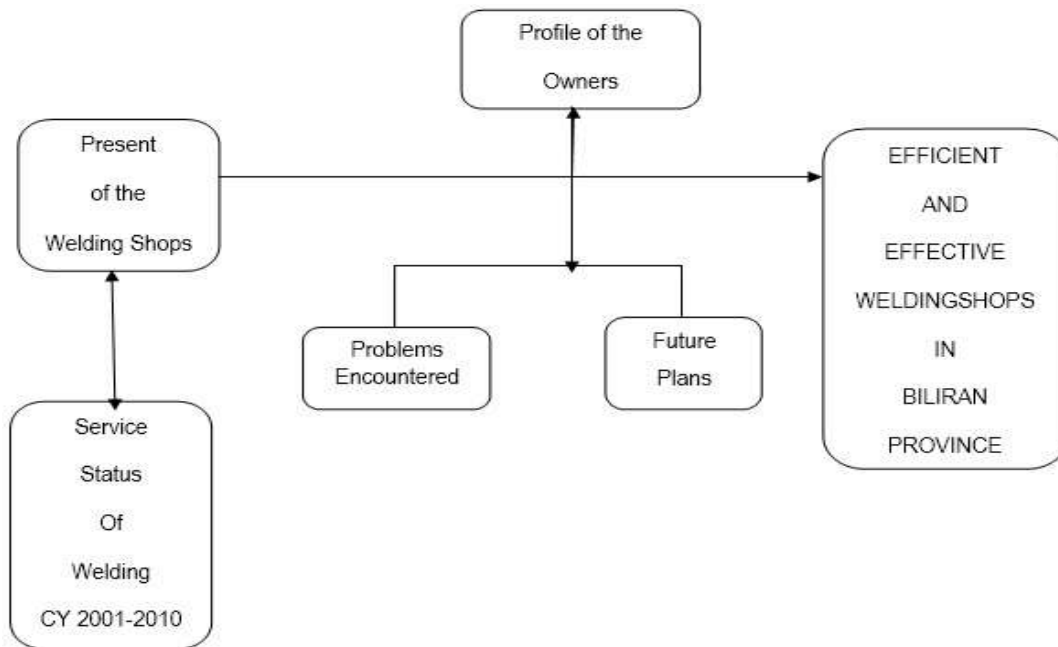


Figure 1. Conceptual Framework of the Study

METHODOLOGY

This study utilized the descriptive method of research with a survey questionnaire and interview as the main data gathering technique. This was a fact finding research with gathered data based on the existing conditions when the study was conducted. To reinforce the data gathered from the survey, qualitative approaches were employed. This study was conducted in different municipality in the Province of Biliran. The respondents of this study were the welder, assistant welder, proprietor or owner of welding shops in the province of Biliran. The research data were categorized according to the variables of the study. The statistical treatment differed for one variable to another. A detailed description of how The research used the following statistical tools: The descriptive statistics such as the frequency, percentage computation and weighted mean were used in the study.

RESULT AND DISCUSSION

The chapter presents the result and discussion of the gathered from the research instrument which was based on the objectives of the study. Data were presented as follows: profile of the respondents, profile of the present status of the welding shops, problems encountered by the owner, future plans and shops practices from ten years ago to the present.

Present Status of the Welding Shops in Biliran The profile of the present status of the welding shops in Biliran Province is presented in Table 1 to 8.

Adequacy of Facilities. Of the 23 facilities found in the welding shops, the AC Power Supply was adjudged much adequate (WM=4.4) by the shop owners themselves; while the AC Generator, Automobile Service, Welding Clothes/Jacket, Welding Gloves, Steel Toe Shoes/Boots, Headgear/Helmet registered *slightly adequate* (WMs Holder ranging from 2.15 2.4) The Building/Welding Shop, fire Extinguisher, Welding Holder, Welding Electrodes, Acetylene Hoses, Acetylene Regulator, Welding Torch Tip, Check Valve, Goggles, Oxygen Cylinders, Acetylene Cylinders, and Welding Masks registered adequate (WMs ranging from 3.55 to 4.1); while Welding Rack, Ladder, and Waste Metal Storage were *moderately adequate* (WMs from 2.6 to 2.8) In totality the set of facilities found in the welding shops was adjudged only

Table1. Adequacy of Facilities

Variables	5	4	3	2	1	WM	Remarks
1. Facilities							
Building/welding shop	5	11	2	1	1	3.9	Adequate
AC Power Supply	6	11	1	1	1	4.4	Much Adequate
AC Generator	2	4	1	1	12	2.15	Slightly Adequate
Automobile service	2	5	2	4	7	2.55	Slightly Adequate
Fire extinguisher	4	14	0	0	2	3.9	Adequate
Welding Holder	6	12	0	2	0	4.1	Adequate
Welding Electrodes	6	12	0	0	2	4.0	Adequate
Acetylene hoses	3	15	0	0	2	3.85	Adequate
Acetylene regulator	3	15	0	0	2	3.85	Adequate
Welding torch tip	5	12	1	0	2	3.9	Adequate
Cutting torch tip	4	12	2	0	2	3.8	Adequate
Check valve	2	13	2	0	3	3.55	Adequate
Goggles	3	15	0	1	1	3.9	Adequate
Oxygen cylinders	3	14	0	1	2	3.75	Adequate
Acetylene cylinders	3	14	0	1	2	3.75	Adequate
Welding masks	3	15	0	2	0	3.95	Adequate
Welding clothes/jacket	3	1	1	6	9	2.15	Slightly Adequate
Welding gloves	2	4	2	7	5	2.25	Slightly Adequate
Steel toe shoes/boots	1	4	1	9	6	2.4	Slightly Adequate
Headgear/Helmet	2	2	1	7	8	2.15	Slightly Adequate
Welding rack	1	5	5	3	6	2.6	Moderately Adequate
Ladder	2	3	6	5	4	2.7	Moderately Adequate
Waste metal storage	0	6	6	6	2	2.7	Moderately Adequate
Average Weighed						3.32	Moderately Adequate

Moderately adequate with a weighed mean 3.32. This would imply that the facilities of the welding shops in Biliran were not so stable. However, of the 20 equipment and tools listed in Table 2, Welding Machine, Oxy Acetylene, Electric drill, Bench Vise, Drill Press

Table 2. Availability of Equipment and Tools

Variables	5	4	3	2	1	WM	Remarks
2. Equipment and Tools							
Welding machine	7	11	0	2	0	4.15	Available
Oxy acetylene	5	11	0	1	3	3.7	Available
Electric drill	8	9	1	1	1	4.1	Available
Bench vise	6	10	1	1	2	3.85	Available
Drill press	5	7	3	1	4	3.4	Available
Portable grinder	5	13	0	1	1	4.0	Available
Bench grinder	5	13	0	1	1	4.0	Available
Set of hammers	4	6	2	7	1	3.25	Available
Set of screw drivers (flat)	3	4	3	10	0	3.0	Moderately Available
Set of screw drivers (Philips)	3	5	10	2	0	3.05	Moderately Available
Set of back wrenches	2	5	3	9	1	2.9	Moderately Available
Socket wrench	2	5	3	9	1	2.9	Moderately Available
Mechanical pliers	1	5	3	10	1	2.75	Moderately Available
Insulated pliers	1	6	3	10	0	2.9	Moderately Available
Set of chisels	2	5	3	9	1	2.9	Moderately Available
Hacksaw	3	11	0	5	1	3.5	Moderately Available
Heavy steel cutter	3	7	1	4	6	2.95	Moderately Available
Files	2	9	1	5	3	3.1	Moderately Available
Steel bender	2	5	2	7	4	2.7	Moderately Available
Set of punchers	2	4	3	9	2	2.75	Moderately Available
Average Weighted Mean						3.3	Moderately Available

Portable Grinder, Bench Grinder, and Set of Hammers, with weighted means ranging from 3.25 to 4.15 were *available* while Set of Screw Drivers (flat and Philips), Set of Back Wrenches, Socket Wrench, Mechanical Pliers, Insulated Pliers, Set of Chisels, Hacksaw, Heavy Steel Cutter, files, Steel Bender, and Set of Punchers were also *available* but only *moderately*. Thus the welding shops can be said to be *moderately* equipped in this regard.

Availability of supplies and Materials. Table 3 presents the list of supplies and materials and their level of availability in the welding shops. As shown in the table, readily *available* (WMs ranging from 3.4 to 3.95) supplies and materials

Table 3. Availability of Supplies and Materials

Variables	5	4	3	2	1	WM	Remarks
3. Supplies and Materials							
Arc welding electrode 1/16"	3	11	4	2	0	3.75	Available
Arc welding electrode 3/32"	2	12	4	0	2	3.6	Available
Arc welding electrode 1/8"	2	11	5	0	2	3.55	Available

Arc welding electrode 5/32"	1	12	5	0	2	3.5	Available
Arc welding electrode 3/16"	1	13	4	0	2	3.55	Available
Arc welding electrode ¼ "	1	9	7	1	2	3.3	Moderately Available
Arc welding electrode 5/16"	1	10	6	1	2	3.35	Moderately Available
Arc welding electrode bronze	2	9	6	1	2	3.4	Available
Mild steel welding electrode	0	7	6	1	6	2.7	Moderately Available
High tensile steel electrode	0	6	3	2	9	2.3	Slightly Available
Hard facing electrode	0	4	4	2	10	2.1	Slightly Available
Stainless steel welding electrode	0	6	4	2	8	2.4	Slightly Available
Cast iron welding electrode	0	4	3	5	8	2.15	Slightly Available
Gas welding cord	2	14	1	1	2	3.65	Available
Steel bars round	2	14	2	1	1	3.75	Available
Steel bars flat	3	14	1	1	1	3.85	Available
Steel bars square	4	13	1	2	0	3.95	Available
Steel angle bars	4	13	1	2	0	3.95	Available
Steel plates	4	11	2	2	1	3.78	Available
G.I. Pipes	4	11	3	2	0	3.85	Available
G.I. Plates	4	11	3	1	1	3.8	Available
Primer paints	4	11	3	2	0	3.85	Available
Gloss paints	4	11	3	0	2	3.75	Available
Average Weighted Mean						3.4	Available

were Arc Welding Electrode (1/16", 3/32", 1/8", 5/32", 3/16"). Arc Welding electrode Bronze, Gas Welding Cord, Steel Bars (round, flat, square), Steel Angle Bars, Steel Plates, G.I. Pipes, G.I. Plates, Primer Paints, and Gloss Paints, On the other hand, just *slightly available* (WMs ranging from 2.1 to 2.4) were High Tensile Steel Electrode, Hard Facing Electrode, Stainless Steel Welding Electrode, and Cast Iron Welding Electrode; and *moderately available* (WMs ranging from 2.7 to 3.35) were Arc Welding Electrode ¼", Hard Facing Electrode, and Cast Iron Welding Electrode. The overall weighted mean registered 3.4 which is an clear indication that supplies and materials in the welding shops were readily *available*.

Shop personnel. The welder and proprietor had weighted means of 3.65 and 3.75, respectively, which were equivalent to the rating of *available*. This would imply that in Biliran Province skilled workers were available.

Table 4. Sufficiency of Shop Personnel

Variables	5	4	3	2	1	WM	Remarks
4. Shop Personnel							
Welder	4	8	6	1	1	3.65	Sufficient
Assistant Welder	2	7	7	1	3	3.2	Moderately Sufficient
Proprietor/owner	3	11	4	2	0	3.75	Sufficient
Average Weighted Mean						3.53	Sufficient

In location, the measures subjected for evaluation were rated much accessible with an average weighted mean of 4.1. This means that welding shops were located in places close to roads where transportation was accessible readily available.

Table 5. Accessibility/Location of Shop

Variables	5	4	3	2	1	WM	Remarks
5. Shop Location							
Along the road	7	8	4	1	0	4.45	Much Accessible
Along the high way	6	10	3	1	0	4.05	Much Accessible
Interior area	5	10	4	1	0	3.95	Much Accessible
Commercial area	8	7	2	3	0	4.0	Much Accessible

Average Weighted Mean	4.1	Much Accessible
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Capital. As shown in Table 6, nine (9) or 45 percent had a capital of 15,000-44,999 and only two (2) or 10 percent had a capital of 135,000-164,999. This shows that majority of the shops were small, with meager capitalization.

Table 6. Capital

Variables	f	%
6. Capital		
135,000 – 164,999	2	10
105,000 – 134,999	1	5
74,000 – 104,999	3	15
45,000 – 74,999	5	25
15,000 – 44,999	9	45
TOTAL	20	100

Labor. All welder owners had a uniform wage rate for the services of the welder, steel man and spot welding operator. This is shown in Table 7. This finding would imply that competition in the industry did not exist in Biliran Province.

Table 7. Labor Wage Rates

Variables	f	%
Cost for welder (P 250 – P 300)	20	100
Cost of steel man (P 150 – P 180)	20	100
Cost of spot welding (P 40 – P 60)	20	100

Accreditation and License. Table 8 shows the status of accreditation and license of the welding shops. As reflected in the table, all of the shops were licensed to operate in terms of BIR Business Tax., Municipal Business Permit, and DTI Registration.

Table 8. Accreditation and License

Variables	f	%
2.8 TESDA Accreditation	0	0
2.9 Linkages	0	0
3.0 License to operate		
3.1 BIR Business Tax (P1,500)	20	100
3.2 Municipal Business Permit (P1,000)	20	100
3.3 DTI Registration (P300)	20	100

None of the shops, however, were accredited by TESDA; nor they had linkages with other business establishments.

Profile of the Welding shop Owners

The respondents considered in this study included all welder owners in Biliran Province. Data gathered regarding they are presented in Table 9.

Table 9. Profile of Welding Shop Owners

Variables	f	%
Age		
70 years old & above	0	0
62 – 69 years old	1	5
54 – 61 years old	3	15
46 – 53 years old	4	55
38 – 45 years old	3	15

30 – 37 years old	2	10
29 years old & below	0	0
TOTAL	20	100
Sex		
Male	20	100
Female	0	0
TOTAL	20	100
Civil Status		
Single	0	0
Married	20	100
Widow/er	0	0
Separated	0	0
TOTAL	20	100
Highest Educational Attainment		
College Graduate	3	15
Vocational Graduate	10	50
High School Graduate	6	30
Elementary Graduate	1	5
No Schooling	0	0
TOTAL	20	100
TESDA Certificate Holder		
NMYC Certified	3	15
TESDA	2	10
Experience	15	75
No Certificate	0	0
TOTAL	20	100
Training and Seminar Attended		
International	0	0
National	0	0
Provincial	0	0
Local	0	0
No training or seminar	0	0
TOTAL	20	100

As shown in the table, there were 20 welder owners in Biliran Province. Out of them, 11 to 55 percent belonged to age category of 46-53; and they were male and married.

The educational attainment, ten (10) or 50 percent were vocational graduates, six (6) or 30 percent were high school graduate and only one (1) to five (5) percent elementary graduate. This means that majority of welder operators were vocational graduates.

Among the 20 welder owners, only two (2) or 10 percent were TESDA certificate holders and majority were based on experience which was 15 to 75 percent and nobody attended any trainings and seminars to upgrade themselves in the new methods and techniques in welding.

Problems Encountered by the Welding Shop Owners

This is shown in Table 10. As presented in Table 3, brown out was the major problem of all the welding shop owners. The second was lack of materials and transportation in purchasing the materials and the third was lacking of service vehicles and lack of customers.

Table 10. Problems Encountered in Welding Shops

Problems Encountered	f	%
Lack of Materials in the hardware	13	65
Transportation in purchasing the materials	13	65
Lack of service vehicles	7	35
Brown out	20	100
Helper not reporting regularly	7	35
Lack of customer	7	35

Beginnings of Some Welding Shops

The case of Welding Shop 1. Mr. P from Almeria revealed that he graduated at CSAT, Cebu City from a course in BSIE in 1983. He was employed in one of the largest garage shops in the City. The operations were fabrications of steel gate, windows, grills and even acute body building. He reminisced: "I was promoted as a supervisor in that steel shop from a plain worker/welder". After 15 years in that shop he decided to return home in order to establish his own shop of the same operations. He started sometime in 1996 with only one welding machine in a temporary shelter for his equipment. He visited some houses in Almeria and Kawayan, Biliran, to consult residents if they wanted a gate made of steel, put grills in their window and many others. He experienced difficulty in finding customers since he was not known yet: but gradually, years later he was able to promote his business until he was able to purchase additional equipments of welding machine. Today he is happy to have already many work contracts.

The case of welding Shop 2. Mr. O related that at the very start he worked as a boy/helper in a vulcanizing shop at the age of 12. That was at Naval Trading which was owned by a Chinese businessman called Jokling. The shop existed since 1975. It had a generator and a welding machine and accepted welding jobs. It also accepted vulcanizing. Mr O was the operator of these machine until he attained a level of expertise in welding operation as well as in wheel alignment of motorcycle and bicycle. "I learned a lot of annotation from Jokling's shop until the shop was phased out since its lease contract on the lot they rented expired." Then he was assigned and concentrated on wheel alignment since the son of Jokling owned a bicycle store. Since that time planned to establish his own shop because he wanted higher income for the fact that he was already married. The problem was that he had no capital. What he did, he said, "I borrowed money from my friends; P10,000.00 with the agreement to pay back the money at P1,000 monthly without interest provided that I will not collect payment if he asks me to work on his motorcycle." That was in 2001. With the P10,000, Mr. O. then purchased materials and built a temporary shelter and a compressor for vulcanizing. He only leased the area near the municipal hall of Naval. With feelings of full satisfaction he noted that he earned everyday almost P1,000 from vulcanizing and wheel alignment. "I have many customers everyday," he recalls. Two years later he was able to purchase a second-hand welding machine, offered him by his friend amounting to only P3,000.00. Today he accepts welding, wheel alignment, and vulcanizing.

The case of Welding Shop 3. Welder/owner Mr. R. has this to say: Prior to establishing his welding shop in Caibiran, he was in Manila in 1994, working as a helper/boy in one of the automotive shops there. "I only got knowledge in welding through observation; then I started to work extra and practiced the welding operation until I became a regular welder in the shop". The said shop also accepts body building of automobile. He had 3 years experience then until returned home and established a welding shop of his own. He bought one welding machine, including its accessories for P2,500. In the year 1999 he returned home since he found no other way to raise his income, he informed his friends that he had a welding machine so that he would be known by those who had welding works.

The case of Welding Shop 4. Welder/owner Mr. L. of Biliran, claimed that he inherited his shop from his father since 2001. When his father then established the welding shop in 1991 upon his retirement from government service, he accepted only minor welding works with on and off customers. Mr. L. revealed that during his time, the welding shop grew and he finally purchased an oxyacetylene machine and accepted general garage shop works, such as welding, body building, automotive repair, since he is graduate from the Vocational High School of Arts and Trade. He acquired knowledge in welding through observation since auto mechanics is related.

Future Plans of the Welding Shop Owners

The data were gathered through a semi-structured interview with the welder owners in Biliran Province. The findings are presented in Table 11.

Table11. Future Plans of the Welding Shop Owners

Future Plans	f	%
1. To become a contractor I a big project in the government	20	100
2. To expand their existing shop into a wider area	20	100
3. To procure a service vehicle from savings or loan	20	100
4. To accept welding jobs outside the province	20	100
5. To engage in other shop work such as automotive repair	20	100

As shown the table, all of the welding shop owners had the same future plans. The signifies that they have more or less the same vision of their business development for the future.

Service Status of Welding Shops through the Years

Table 12 presents the service status of welding shops in Biliran Province through the span of ten years; that is, from CY 2001 to CY 2010. As shown in the table, the service found in shops starting CY 2001 to the present is *General Welding*, and this service found common ground among 11.4 percent of the 20 shops through the years. *Minor Welding* was a common service from CY 2001 till CY 2006, which was practiced by 38.6 percent of the shop owners through those years; while *Transient Welding* was exercised by 4.5 percent of the shop owners from CY 2001 till CY 2007. After about five years of service, a shift to a more specialized service was seen. From CY 2004 to the present came *Lathe Machine* services which was observed by 2.3 percent of the shop owners through these years. Then followed *Vehicle Body Building* which started in CY 2005, practiced by 9.1 percent of the shop owners even up to the present *Fabrication of steel Gate, Steel windows, and Window Grills* has been now the specialty of the shop owners since CY 2006; and this is now practiced by 34.1 percent of the shop owners.

Table12. Service Status of Welding Shops in Biliran, CY 2000-2010

Welding Service	Year of Service										No. of Shop Servers	%
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
Minor	yes	yes	yes	yes	yes	yes					17	38.6
Transient	yes	yes	yes	yes	yes	yes	yes				2	4.5
General	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	5	11.4
Lathe Machine				yes	yes	yes	yes	yes	yes	yes	1	2.3
Vehicle body bldg					yes	yes	yes	yes	yes	yes	4	9.1
Steel Gate, Window, grills						yes	yes	yes	yes	yes	15	34.1
Total Responses											44	100.0

The findings indicate that there has been a positive development of welding shops in Biliran through the past ten years in terms of service. The trend reveals a gradual shift from general services to more specialized ones. This would imply that the influx of electrification and modern technology has contributed to the growth, improvement, and enhancement of the service of the welding shops.

Based on the findings of the study, the following conclusions were drawn. First, facilities of the welding shops are moderately available; and supplies and materials are available. Second, shop personnel are sufficient; and location of shops is generally much accessible. Third, working capital of majority of the welding shops ranges from 15 thousand pesos to 50 thousand; labor wage rates from 40 pesos to 300, depending on the type of work; license requirements are strictly observed by all but without accreditation or linkages. Fourth, majority of the welding shop owners are aged between 46 and 55; all of them male and married. Majority of them are vocational graduates; several are college degree holders while a few are graduates from high school only. While a few have a certificate of competency from NMYC or TESDA, majority are simply welders by experience. None have any additional specialized training. Fifth, most critical to all the welding shops is the problem of brown out; lack of materials in hardware stores and distance from the source of materials are a felt problem majority of the shops. The welding shop owners are more or less unified in their future plans: to become a contractor in a big project in the government; to expand the existing shop; to procure a service vehicle; to accept welding jobs outside the province; and to engage in automotive repair. Lastly, services of the shops range from providing mere welding jobs to building vehicle bodies and residential steel gates and window grills.

RECOMMENDATIONS

The following recommendations are offered based on the findings and conclusions of the study. The welder owners should continue, intensify, and sustain their services to meet the demands of the welding industry of Biliran Province. In like manner, the welder owners should find ways and means to attend seminars and trainings and to encourage their workers to do so in order to upgrade their skills in the new methods and techniques in welding. Also, the welder owners should find means to increase capitalization. Researchers are encouraged to conduct similar studies in other provinces or regions in order to compare and differentiate the practices of welding shops across areas and to capture the edge of running a welding shop with success and greater sustainability, and a follow-up study of the impact of welding shops on the livelihood and industry of people and nations.

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