

APPENDIX I

INTERVIEW SCHEDULE

(ENGLISH)

SECTION 1: BACKGROUND INFORMATION		
Sr. No.	<u>A- Personal information about the respondent</u>	
1	Full Name	
2	Age	
3	Gender	Male/Female
4	Marital Status	\
5	Education Level	\
6	Location of stay	
7	Type of House	Owned/ Rented
		Others, please specify _____
8	Migration History (for migrants)	
9	Reason for Migration	Better Lifestyle
		Desire to earn more
		Lack of employment opportunities
		Others, please specify _____
Sr. No.	<u>B- Family Related Information</u>	
1	Is your family staying with you?	Yes/No
2	Family type	Nuclear/ Joint
3	No. of family members	

4	No. of earning members in the family		
5	Is any other family member employed in the diamond polishing industry?	Yes/No	
Sr. No.	<u>C- Work Related Information</u>		
1	Work Experience (in years)		
2	No. of years in the current workplace		
3	How did you get work here?	Self/ Reference	
		Others, please specify_____	
4	Work Type	Table Work	
		Girdle Rounding	
		Talia Bottom Work	
		Athpel Work	
		Mathala Work	
	SECTION 2: PROBLEMS FACED BY THE WORKERS		
	<u>A: Physiological Problems</u>		
Sr. No.	1. Chronic Diseases (In the last 1 year have you developed any of the following diseases which can be attributed to the present job)	Yes	No
1	Hypertension		
2	Cholesterol		
3	Kidney Problem		
4	Heart Diseases		
5	Diabetes		

6	Others, please specify _____		
Sr. No.	2. Respiratory Problems (In the last 1 year have you developed any of the following respiratory problem which can be attributed to the present job)	Yes	No
1	Frequent respiratory infection		
2	Allergy to pollution		
3	Loss of Smell		
4	Chest Tightness		
5	Chronic Cough		
6	Shortness of breath		
7	Asthma		
8	Others, please specify _____		
Sr. No.	3. Musculoskeletal Problems (In the last 1 year have you developed any of the following musculoskeletal problem which can be attributed to the present job)	Yes	No
1	Weakness		
2	Fatigue		
3	Swollen Legs		
4	Numbness in Legs		
5	Numbness in Right Hand		
6	Numbness in Left Hand		
7	Numbness in Fingers		

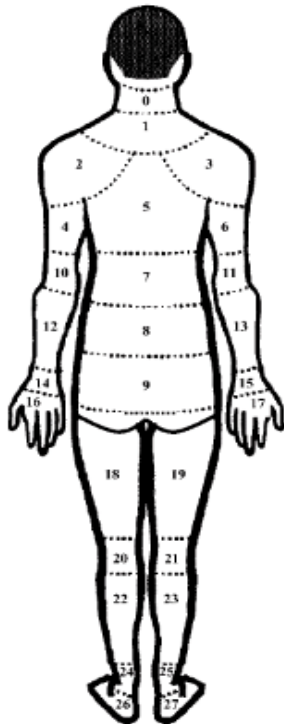
8	Pain in Gripping		
9	Bent back		
10	Joint pain		
11	Others, please specify _____		
Sr. No.	4. Other Problems (In the last 1 year have you developed any of the following problems which can be attributed to the present job)	Yes	No
	Eye/Ear/Skin/Others		
1	Eye irritation		
2	Tired Eyes		
3	Watery eyes		
4	Problem seeing near objects		
5	Problem seeing far objects		
6	Ear irritation		
7	Ear pulsation		
8	Hearing Loss		
9	Skin rashes		
10	Itchy skin		
11	Severe headache		
12	Loss of taste		
13	Loss of Hunger		
14	Tendency to overeat		
15	Insomnia		
16	Others, please specify _____		

	<u>B: Psychosocial Problems</u>		
Sr. No.	1. Social Factors at Work	Agree	Disagree
1	Poor relationship with employer		
2	Poor relationship with co -worker		
3	Poor communication between staff and management		
4	Poor communication between co-workers		
5	Feel harassed/bullied at work		
6	Feel dis-respected at work		
7	Face discrimination		
8	Sense a risk of violence at workplace		
9	Do not feel an integral part of the organisation		
10	Grievances not handled effectively		
11	Work hours are not flexible		
12	Do not get enough holidays		
13	Do not get leaves when required		
14	Do not receive medical aid when needed		
15	Do not get time to socialize		
16	Do not get time for family		

17	Addicted to tobacco		
18	Addicted to alcohol		
19	Not motivated to come to work		
Sr. No.	2. Work Organisation	Agree	Disagree
1	Feel overburdened		
2	Feel the work is monotonous		
3	Time not enough to complete tasks		
4	Not enough rest breaks		
5	Work is physically demanding		
6	Requires a lot of mental effort		
7	Targets are difficult to achieve		
8	Not enough job specific training given		
9	Skills not utilized fully		
10	Too much performance pressure		
11	Discipline is over harsh		
12	Too much supervision		
13	Not paid enough		
14	Lack of good facilities		
15	No job security		
16	Do not feel appreciated for the work		
17	Emotionally exhausted		

18	Feel frustrated		
19	Tired after waking up in the morning		
20	Feel tense during the day		
21	Lost enthusiasm in work		
22	Incapable of resolving problems at work		
23	Incapable of reaching goals		
24	Incapable of contributing towards the organisation		
25	Do not feel confident about work		
Sr. No.	3. Work Environment	Agree	Disagree
1	Equipments not suitable		
2	Temperature not comfortable		
3	Inadequate ventilation		
4	It gets suffocating inside		
5	Presence of unpleasant odour		
6	It is dusty indoors		
7	Light is insufficient		
8	Noise is unbearable		
9	Noise is irritating		
10	Room color is uncomfortable		
11	Seat is uncomfortable		
12	Machines not inspected regularly		
13	Damaged machines are not repaired immediately		

	SECTION 3: OCCUPATIONAL HEALTH HAZARDS
	<u>A- Ergonomic Hazard</u> a. Perceived Musculoskeletal Pain



No	Location	Grade of complaints			
		A	B	C	D
0	Pain/stiff in the upper neck				
1	Pain in the lower neck				
2	Pain in the left shoulder				
3	Pain in the right shoulder				
4	Pain in the left upper arm				
5	Pain in the back				
6	Pain in the right upper arm				
7	Pain in the waist				
8	Pain in the buttock				
9	Pain in the bottom				
10	Pain in the left elbow				
11	Pain in the right elbow				
12	Pain in the left lower arm				
13	Pain in the right lower arm				
14	Pain in the left wrist				
15	Pain in the right wrist				
16	Pain in the left hand				
17	Pain in the right hand				
18	Pain in the left thigh				
19	Pain in the right thigh				
20	Pain in the left knee				
21	Pain in the right knee				
22	Pain in the left calf				
23	Pain in the right calf				
24	Pain in the left ankle				
25	Pain in the right ankle				
26	Pain in the left foot				
27	Pain in the right foot				

NORDIC BODY MAP

OBSERVATION SHEET

RULA Employee Assessment Worksheet

A. Arm and Wrist Analysis

Step 1: Locate Upper Arm Position:



Step 1a: Adjust...

If shoulder is raised: +1

If upper arm is abducted: +1

If arm is supported or person is leaning: -1

Step 2: Locate Lower Arm Position:



Step 2a: Adjust...

If either arm is working across midline or out to side of body: Add +1

Step 3: Locate Wrist Position:



Step 3a: Adjust...

If wrist is bent from midline: Add +1

Step 4: Wrist Twist:

If wrist is twisted in mid-range: +1

If wrist is at or near end of range: +2

Step 5: Look-up Posture Score in Table A:

Using values from steps 1-4 above, locate score in Table A

Step 6: Add Muscle Use Score

If posture mainly static (i.e. held >1 minute),
Or if action repeated occurs 4X per minute: +1

Step 7: Add Force/Load Score

If load < 4.4 lbs. (intermittent): +0

If load 4.4 to 22 lbs. (intermittent): +1

If load 4.4 to 22 lbs. (static or repeated): +2

If more than 22 lbs. or repeated or shocks: +3

Step 8: Find Row in Table C

Add values from steps 5-7 to obtain
Wrist and Arm Score. Find row in Table C.

Task Name:

Date:

Scores

Table A		Wrist Score							
Upper Arm	Lower Arm	Wrist Twist		Wrist Twist		Wrist Twist		Wrist Twist	
		1	2	1	2	1	2	1	2
1	1	1	2	2	2	3	3	3	3
	2	2	2	2	2	3	3	3	3
	3	2	3	3	3	3	4	4	4
2	1	2	3	3	3	3	4	4	4
	2	2	3	3	3	3	4	4	4
	3	3	4	4	4	4	5	5	5
3	1	3	3	4	4	4	4	5	5
	2	3	4	4	4	4	4	5	5
	3	4	4	4	4	4	5	5	5
4	1	4	4	4	4	4	5	5	5
	2	4	4	4	4	4	5	5	5
	3	4	4	4	5	5	5	6	6
5	1	5	5	5	5	5	6	6	7
	2	5	6	6	6	6	7	7	7
	3	6	6	6	7	7	7	7	8
6	1	7	7	7	7	7	8	8	9
	2	8	8	8	8	8	9	9	9
	3	9	9	9	9	9	9	9	9

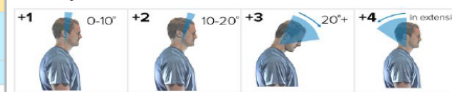
Table C		Neck, Trunk, Leg Score					
Wrist / Arm Score		1	2	3	4	5	6 7+
		1	2	3	4	5	6 7+
1	1	1	2	3	3	4	5 5
	2	2	2	3	4	4	5 5
	3	3	3	3	4	4	5 6
	4	3	3	3	4	5	6 6
	5	4	4	4	5	6	7 7
	6	4	4	5	6	6	7 7
	7	5	5	6	6	7	7 7
	8+	5	5	6	7	7	7 7

Scoring: (final score from Table C)
1-2 = acceptable posture
3-4 = further investigation, change may be needed
5-6 = further investigation, change soon
7 = investigate and implement change

RULA Score

B. Neck, Trunk and Leg Analysis

Step 9: Locate Neck Position:



Step 9a: Adjust...

If neck is twisted: +1

If neck is side bending: +1

Step 10: Locate Trunk Position:



Step 10a: Adjust...

If trunk is twisted: +1

If trunk is side bending: +1

Step 11: Legs:

If legs and feet are supported: +1

If not: +2

Table B: Trunk Posture Score		Neck Posture Score					
Neck Posture Score		Legs		Legs		Legs	
		1	2	1	2	1	2
1	1	1	3	2	3	3	4
	2	2	3	2	3	4	5
	3	3	3	3	4	4	5
	4	5	5	6	6	7	7
	5	7	7	7	7	8	8
	6	8	8	8	8	8	8

Step 12: Look-up Posture Score in Table B:

Using values from steps 9-11 above,
locate score in Table B

Step 13: Add Muscle Use Score

If posture mainly static (i.e. held >1 minute),

Or if action repeated occurs 4X per minute: +1

Step 14: Add Force/Load Score

If load < 4.4 lbs. (intermittent): +0

If load 4.4 to 22 lbs. (intermittent): +1

If load 4.4 to 22 lbs. (static or repeated): +2

If more than 22 lbs. or repeated or shocks: +3

Step 15: Find Column in Table C

Add values from steps 12-14 to obtain

Neck, Trunk and Leg Score. Find Column in Table C.

based on RULA: a survey method for the investigation of work-related upper limb disorders, McAtamney & Corlett, Applied Ergonomics 1993, 24(2), 91-99

a. Postural Load Requirement of Job Tasks on Neck, Trunk and Upper Extremities (RULA Scale)

B- Physical Environment Hazard

a. Measurement of Temperature

Indoor Temperature (°C)			
1st Reading	2nd Reading	3rd Reading	Average

b. Measurement of Humidity

Humidity Level (%)			
1st Reading	2nd Reading	3rd Reading	Average

c. Measurement of Light

Measurement of lighting	1st Reading	2nd Reading	3rd Reading	Average
Light at the machine				
General lighting				

d. Measurement of Noise

Noise Recorded (db)			
1st Reading	2nd Reading	3rd Reading	Average

INTERVIEW SCHEDULE

(Gujarati)

ભાગ 1: પૃષ્ઠભૂમિ માહિતી		
ક્રમ નં.	A- પ્રતિવાદી વિશે વ્યક્તિગત માહિતી	
1	પૂરું નામ	
2	ઉંમર	
3	લિંગ	પુરુષ/સ્ત્રી
4	વૈવાહિક સ્થિતિ	
5	શિક્ષણ નું સ્તર	
6	રોકાણનું સ્થળ	
7	ઘરનો પ્રકાર	માલિકી/ભાડે
		અન્ય, કૃપા કરીને સ્પષ્ટ કરો_____
8	સ્થળાંતરનો ઇતિહાસ (સ્થળાંતર કરનારાઓ માટે)	
9	સ્થળાંતર માટેનું કારણ	વધુ સારી જીવનશૈલી
		વધુ કમાવાની ઈચ્છા
		રોજગારીની તકોનો અભાવ
		અન્ય, કૃપા કરીને સ્પષ્ટ કરો_____

ક્રમ નં.	<u>B- કુટુંબ સંબંધિત માહિતી</u>	
1	શું તમારો પરિવાર તમારી સાથે રહે છે?	હા/નાં
2	કૌટુંબિક પ્રકાર	વિભક્ત/સંયુક્ત
3	પરિવારના સભ્યોની સંખ્યા	
4	કુટુંબમાં કમાતા સભ્યોની સંખ્યા	
5	શું પરિવારના અન્ય કોઈ સભ્ય ડાયમંડ પોલિશિંગ ઉદ્યોગમાં નોકરી કરે છે?	હા/નાં
ક્રમ નં.	<u>C- કાર્ય સંબંધિત માહિતી</u>	
1	કામનો અનુભવ (વર્ષોમાં)	
2	વર્તમાન કાર્યસ્થળમાં તમે કેટલા વર્ષોથી કામ કરો છો	
3	તમને અહીં કામ કેવી રીતે મળ્યું?	સ્વ/સંદર્ભ
		અન્ય, કૃપા કરીને સ્પષ્ટ કરો_____
4	કાર્યનો પ્રકાર	ટેબલ વર્ક
		ગરડલ રાઉન્ડીંગ

		તાલિયા વર્ક	
		એથપેલ વર્ક	
		મથાલા વર્ક	
	ભાગ 2: કામદારો દ્વારા સામનો કરવામાં આવતી સમસ્યાઓ		
	<u>A: શારીરિક સમસ્યાઓ</u>		
ક્રમ નં.	1. ક્રોનિક રોગો (છેલ્લા 7 વર્ષમાં તમને નીચેનામાંથી કોઈ રોગ થયો છે જે હાલની નોકરીને કારણે છે)	હા	નાં
1	હાયપરટેન્શન		
2	કોલેસ્ટ્રોલ		
3	કિડનીની સમસ્યા		
4	હૃદયના રોગો		
5	ડાયાબિટીસ		
6	અન્ય, કૃપા કરીને સ્પષ્ટ કરો _____		
ક્રમ નં.	2. શ્વાસ સંબંધી સમસ્યાઓ (છેલ્લા 7 વર્ષમાં તમને નીચેનામાંથી શ્વાસન સંબંધી કોઈ સમસ્યા થઈ છે જે હાલની નોકરીને કારણે છે)	હા	નાં

1	વારંવાર શ્વસન ચેપ		
2	પ્રદૂષણ થી એલર્જી		
3	સૂંઘવામાં મુશ્કેલી		
4	છાતીમાં ચુસ્તતા		
5	કોનિક ઉધરસ		
6	હાંફ ચઢવી		
7	અસ્થમા		
8	અન્ય, કૃપા કરીને સ્પષ્ટ કરો _____		
ક્રમ નં.	3. મસ્ક્યુલોસ્કેલેટલ સમસ્યાઓ (છેલ્લા 7 વર્ષમાં તમને નીચેનામાંથી કોઈપણ મસ્ક્યુલોસ્કેલેટલ સમસ્યા વિકસાવી છે જે હાલની નોકરીને કારણે છે)	હા	નાં
1	નબળાઈ		
2	થાક		
3	સોજો પગ		
4	પગમાં નિષ્ક્રિયતા આવે છે		
5	જમણા હાથમાં નિષ્ક્રિયતા આવે છે		
6	ડાબા હાથમાં નિષ્ક્રિયતા આવે છે		
7	આંગળીઓમાં નિષ્ક્રિયતા આવે છે		

8	પકડમાં દુખાવો		
9	પીઠ વળેલી છે		
10	સાંધામાં દુખાવો		
11	અન્ય, કૃપા કરીને સ્પષ્ટ કરો _____		
ક્રમ નં.	4. અન્ય સમસ્યાઓ (છેલ્લા 7 વર્ષમાં તમને નીચેનામાંથી કોઈપણ સમસ્યાઓ વિકસાવી છે જે હાલની નોકરીને કારણે છે)	હા	નાં
	આંખ/કાન/ત્વચા/અન્ય		
1	આંખમાં બળતરા		
2	થાકેલી આંખો		
3	ભીની આંખો		
4	નજીકની વસ્તુઓ જોવામાં સમસ્યા		
5	દૂરની વસ્તુઓ જોવામાં સમસ્યા		
6	કાનમાં બળતરા		
7	કાનની ધબકારા		
8	બહેરાશ		
9	ત્વચા પર ચકામા		
10	ખંજવાળ ત્વચા		

11	ગંભીર માથાનો દુખાવો		
12	સ્વાદ ચાખવામાં મુશ્કેલી		
13	ઓછી ભૂખ		
14	અતિશય ખાવાનું વલણ		
15	અનિદ્રા		
16	અન્ય, કૃપા કરીને સ્પષ્ટ કરો _____		
	B: મનો-સામાજિક સમસ્યાઓ		
ક્રમ નં.	1. કાર્યસ્થળ પર સામાજિક પરિબળો	સંમત	અસંમત
1	એમ્પ્લોયર સાથે ખરાબ સંબંધ		
2	સહકાર્યકર સાથે ખરાબ સંબંધ		
3	સ્ટાફ અને મેનેજમેન્ટ વચ્ચે નબળો સંચાર		
4	સહકાર્યકરો વચ્ચે નબળા સંચાર		
5	કામ પર પજવણી/ધમકાવવું અનુભવો		
6	કાર્યક્ષેત્રમાં અપમાન અનુભવશો		
7	ભેદભાવનો સામનો કરવો		
8	કાર્યસ્થળ પર હિંસાનું જોખમ અનુભવો		
9	સંસ્થાનો અભિન્ન ભાગ ન અનુભવો		

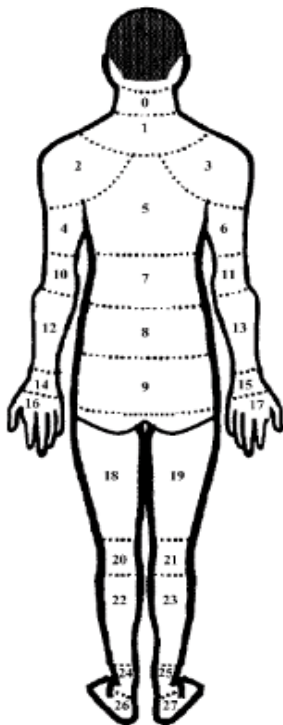
10	ફરિયાદોનો અસરકારક રીતે નિકાલ થતો નથી		
11	કામના કલાકો પરિવર્તનશીલ નથી		
12	પૂરતી રજાઓ મળતી નથી		
13	જ્યારે જરૂર પડે ત્યારે રજાઓ મળતી નથી		
14	જ્યારે જરૂર પડે ત્યારે તબીબી સહાય મળતી નથી		
15	સામાજિકતા માટે સમય ન મળે		
16	પરિવાર માટે સમય નથી મળતો		
17	તમાકુનું વ્યસની		
18	દારૂનું વ્યસની		
19	કામ પર આવવા માટે પ્રેરિત નથી		
ક્રમ નં.	2. કાર્ય સંગઠન	સંમત	અસંમત
1	વધારે બોજ અનુભવો		
2	કામ એકવિધ લાગે છે		
3	કાર્યો પૂર્ણ કરવા માટે પૂરતો સમય નથી		
4	પર્યાપ્ત આરામ વિરામ નથી		

5	કામ શારીરિક રીતે સખત હોવું		
6	ઘણી માનસિક મહેનતની જરૂર છે		
7	લક્ષ્યો હાંસલ કરવા મુશ્કેલ છે		
8	નોકરી માટે પૂરતી તાલીમ આપવામાં આવી નથી		
9	કૌશલ્યોનો સંપૂર્ણ ઉપયોગ થયો નથી		
10	કામગીરીનું ખૂબ દબાણ		
11	શિસ્ત ખૂબ કડક છે		
12	ખૂબ દેખરેખ રાખવામાં આવે છે		
13	પૂરતા પ્રમાણમાં ચૂકવણી કરવામાં આવતી નથી		
14	સારી સુવિધાઓનો અભાવ		
15	નોકરીની સુરક્ષા નથી		
16	કામ માટે પ્રશંસા ન મળે		
17	ભાવનાત્મક રીતે થાકેલા		
18	નિરાશા અનુભવો		
19	સવારે થાક લાગે છે		
20	દિવસભર તણાવ અનુભવો		
21	કામ પ્રત્યેનો ઉત્સાહ ગુમાવવો		

22	કામ પર સમસ્યાઓ હલ કરવામાં અસમર્થ		
23	લક્ષ્ય સુધી પહોંચવામાં અસમર્થ		
24	સંસ્થામાં યોગદાન આપવામાં અસમર્થ છે		
25	કામ પ્રત્યે આત્મવિશ્વાસ અનુભવતા નથી		
ક્રમ નં.	3. કાર્ય વાતાવરણ	સંમત	અસંમત
1	સાધન કાર્ય માટે યોગ્ય નથી		
2	તાપમાન આરામદાયક નથી		
3	અપૂરતું વેન્ટિલેશન હોવું		
4	અંદર ગૂંચળામણ		
5	અપ્રિય ગંધની હાજરી		
6	અંદર ધૂળ		
7	અપૂરતી લાઈટિંગ		
8	અવાજ અસહ્ય બની જાય છે		
9	ઘોંઘાટીયા હોવું		
10	રૂમનો રંગ આરામદાયક નથી		
11	બેઠક આરામદાયક નથી		
12	મશીનોની નિયમિત તપાસ થતી નથી		
13	ક્ષતિગ્રસ્ત મશીનો તાત્કાલિક રીપેર કરવામાં		

	આવતા નથી		
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	ભાગ ૩: વ્યવસાયિક આરોગ્ય જોખમો
	<p>A: અર્ગનોમિક હેઝાર્ડ</p> <p>a. મસ્ક્યુલોસ્કેલેટલ દર્દ</p>



No	Location	Grade of complaints			
0	Pain/stiff in the upper neck	A	B	C	D
1	Pain in the lower neck				
2	Pain in the left shoulder				
3	Pain in the right shoulder				
4	Pain in the left upper arm				
5	Pain in the back				
6	Pain in the right upper arm				
7	Pain in the waist				
8	Pain in the buttock				
9	Pain in the bottom				
10	Pain in the left elbow				
11	Pain in the right elbow				
12	Pain in the left lower arm				
13	Pain in the right lower arm				
14	Pain in the left wrist				
15	Pain in the right wrist				
16	Pain in the left hand				
17	Pain in the right hand				
18	Pain in the left thigh				
19	Pain in the right thigh				
20	Pain in the left knee				
21	Pain in the right knee				
22	Pain in the left calf				
23	Pain in the right calf				
24	Pain in the left ankle				
25	Pain in the right ankle				
26	Pain in the left foot				
27	Pain in the right foot				

નોર્ડિક બોડી મેપ

INTERVIEW SCHEDULE

(Hindi)

भाग 1: पृष्ठभूमि जानकारी		
क्रमांक	A- प्रतिवादी के बारे में सामान्य जानकारी	
1	पूरा नाम	
2	आयु	
3	लिंग	पुरुष/ महिला
4	वैवाहिक स्थिति	
5	शिक्षा का स्तर	
6	वर्तमान प्रवास का स्थान	
7	घर का प्रकार	स्वामित्व/किराए पर लिया हुआ
		अन्य, कृपया निर्दिष्ट करें _____
8	प्रवासन इतिहास (प्रवासियों के लिए)	
9	प्रवास का कारण	बेहतर जीवनशैली
		अधिक कमाने की चाहत
		रोजगार के अवसरों का अभाव
		अन्य, कृपया निर्दिष्ट करें _____
क्रमांक	B- परिवार से सम्बंधित जानकारी	

1	क्या आपका परिवार आपके साथ रह रहा है?	हां/ नहीं
2	पारिवारिक प्रकार	एकल/संयुक्त
3	परिवार के सदस्यों की संख्या	
4	परिवार में कमाने वाले सदस्यों की संख्या	
5	क्या परिवार का कोई अन्य सदस्य हीरा पॉलिश उद्योग में कार्यरत है?	हां/ नहीं
क्रमांक	<u>C- कार्य संबंधी जानकारी</u>	
1	कार्य अनुभव (वर्षों में)	
2	वर्तमान कार्यस्थल पर वर्षों की संख्या	
3	आपको यहां काम कैसे मिला?	स्वयं/संदर्भ
		अन्य, कृपया निर्दिष्ट करें_____
4	कार्य	टेबल कार्य
		करधनी की गोलाई
		तालिया कार्य
		एथपेल कार्य
		मथाला कार्य

	भाग 2: श्रमिकों द्वारा सामना की जाने वाली समस्याएं		
	<u>A: शारीरिक समस्याएं</u>		
क्रमांक	1. क्रॉनिक रोग (पिछले 1 वर्ष में क्या आपको निम्नलिखित में से कोई बीमारी हुई है जिसका कारण वर्तमान नौकरी हो सकती है)	हां	नहीं
1	उच्च रक्तचाप		
2	कोलेस्ट्रॉल		
3	किडनी रोग		
4	दिल के रोग		
5	मधुमेह		
6	अन्य, कृपया निर्दिष्ट करें _____		
क्रमांक	2. श्वास - प्रणाली की समस्याएं (पिछले 1 वर्ष में क्या आपको निम्नलिखित में से कोई श्वसन संबंधी समस्या हुई है जिसका कारण वर्तमान नौकरी हो सकती है)	हां	नहीं
1	बार-बार श्वसन तंत्र में संक्रमण होना		
2	प्रदूषण से एलर्जी		
3	सूंघने की क्षमता का खत्म होना		
4	सीने में जकड़न का अनुभव हो		

5	पुरानी खांसी		
6	सांस लेने में कठिनाई		
7	अस्थमा		
8	अन्य, कृपया निर्दिष्ट करें _____		
क्रमांक	3. मस्क्युलोस्केलेटल समस्याएं (पिछले 1 वर्ष में क्या आपको निम्नलिखित में से कोई मस्क्युलोस्केलेटल समस्या विकसित हुई है जिसका कारण वर्तमान नौकरी हो सकती है)	हां	नहीं
1	कमजोरी		
2	थकान		
3	पैरों में सूजन		
4	पैरों में सुन्नता		
5	दाहिने हाथ में सुन्नता		
6	बाएं हाथ में सुन्नता		
7	उंगलियों में सुन्नता		
8	पकड़ने में दर्द		
9	पीठ का झुकना		

10	जोड़ों का दर्द		
11	अन्य, कृपया निर्दिष्ट करें_____		
क्रमांक	4. अन्य समस्याएँ (पिछले 1 वर्ष में क्या आपको निम्नलिखित में से कोई समस्या उत्पन्न हुई है जिसका कारण वर्तमान नौकरी हो सकती है)	हां	नहीं
	आंख/कान/त्वचा/अन्य		
1	आंख में जलन		
2	आंखों में थकान		
3	आँखों से पानी आना		
4	निकट की वस्तुओं को देखने में समस्या होना		
5	दूर की वस्तुओं को देखने में समस्या होना		
6	कान में जलन		
7	कान का फड़कना		
8	बहरापन		
9	त्वचा के चकत्ते		
10	त्वचा में खुजली		
11	भयंकर सरदर्द		

12	स्वाद की कोई अनुभूति ना होना		
13	भूख न लगना		
14	अधिक खाने की प्रवृत्ति		
15	नींद न आना		
16	अन्य, कृपया निर्दिष्ट करें _____		
	<u>B: मनो-सामाजिक समस्याएं</u>		
क्रमांक	1. कार्य पर सामाजिक कारक	सहमत	असहमत
1	नियोक्ता के साथ खराब संबंध		
2	सहकर्मी के साथ खराब संबंध		
3	स्टाफ और प्रबंधन के बीच खराब संचार		
4	सहकर्मियों के बीच खराब संचार		
5	कार्यस्थल पर उत्पीड़ित/तंग महसूस करना		
6	कार्यस्थल पर अपमानित महसूस करना		
7	भेदभाव का सामना करना		
8	कार्यस्थल पर हिंसा का खतरा महसूस करना		
9	संगठन का अभिन्न अंग महसूस न करना		

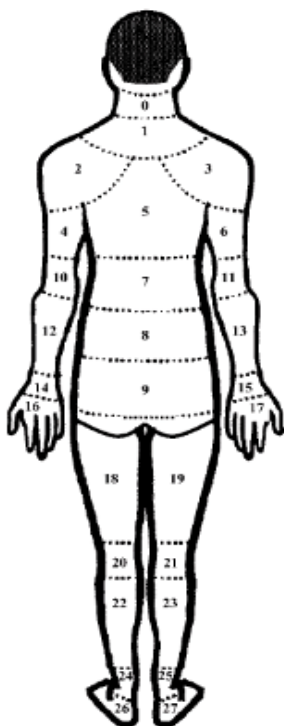
10	शिकायतों का निपटारा प्रभावी ढंग से ना किया जाना		
11	काम के घंटे लचीले ना होना		
12	पर्याप्त छुट्टियाँ नहीं मिलना		
13	आवश्यकता पड़ने पर छुट्टियाँ नहीं मिलना		
14	आवश्यकता पड़ने पर चिकित्सा सहायता नहीं मिलना		
15	समाज में मेलजोल का समय नहीं मिलना		
16	परिवार के लिए समय नहीं मिल पाना		
17	तम्बाकू का आदी होना		
18	शराब का आदी होना		
19	काम पर आने के लिए प्रेरित ना होना		
क्रमांक	2. कार्य संगठन	सहमत	असहमत
1	अत्यधिक बोझ महसूस करना		
2	कार्य में नीरसता महसूस करना		
3	कार्यों को पूरा करने के लिए समय पर्याप्त नहीं होना		

4	पर्याप्त विश्राम अवकाश नहीं मिलना		
5	काम शारीरिक रूप से कठिन होना		
6	बहुत अधिक मानसिक प्रयास की आवश्यकता होना		
7	लक्ष्य हासिल करना कठिन होना		
8	पर्याप्त कार्य विशेष प्रशिक्षण नहीं दिया जाना		
9	कौशल का पूर्ण उपयोग नहीं कर पाना		
10	प्रदर्शन का बहुत अधिक दबाव होना		
11	अनुशासन अति कठोर होना		
12	बहुत ज्यादा निगरानी होना		
13	पर्याप्त वेतन नहीं दिया जाना		
14	अच्छी सुविधाओं का अभाव होना		
15	नौकरी की कोई सुरक्षा नहीं मिलना		
16	काम के लिए सराहना नहीं मिलना		
17	भावनात्मक रूप से थक जाना		
18	निराशा महसूस करना		
19	सुबह उठकर थका हुआ महसूस करना		
20	दिन भर तनाव महसूस होना		
21	काम में उत्साह खो जाना		
22	कार्यस्थल पर समस्याओं का समाधान		

	करने में असमर्थ होना		
23	लक्ष्य तक पहुंचने में असमर्थ होना		
24	संगठन के प्रति योगदान देने में असमर्थ होना		
25	काम को लेकर आत्मविश्वास महसूस न करना		
क्रमांक	3. कार्यस्थल का माहौल	सहमत	असहमत
1	उपकरण कार्य करने के लिए उपयुक्त नहीं होना		
2	तापमान आरामदायक नहीं होना		
3	अपर्याप्त वेंटिलेशन होना		
4	अंदर ही अंदर घुटन होना		
5	अप्रिय गंध की उपस्थिति होना		
6	अंदर धूल भरजाना		
7	रोशनी अपर्याप्त होना		
8	शोर असहनीय होना		
9	शोर परेशान करने वाला होना		
10	कमरे का रंग असुविधाजनक होना		
11	सीट असुविधाजनक होना		
12	मशीनों का नियमित निरीक्षण ना किया		

	जाना		
13	खराब मशीनों की तुरंत मरम्मत ना किया जाना		

	भाग 3: व्यावसायिक स्वास्थ्य खतरे
	<p>A: एर्गोनोमिक खतरा</p> <p>a. मांसपेशियों में दर्द महसूस होना</p>



No	Location	Grade of complaints			
0	Pain/stiff in the upper neck	A	B	C	D
1	Pain in the lower neck				
2	Pain in the left shoulder				
3	Pain in the right shoulder				
4	Pain in the left upper arm				
5	Pain in the back				
6	Pain in the right upper arm				
7	Pain in the waist				
8	Pain in the buttock				
9	Pain in the bottom				
10	Pain in the left elbow				
11	Pain in the right elbow				
12	Pain in the left lower arm				
13	Pain in the right lower arm				
14	Pain in the left wrist				
15	Pain in the right wrist				
16	Pain in the left hand				
17	Pain in the right hand				
18	Pain in the left thigh				
19	Pain in the right thigh				
20	Pain in the left knee				
21	Pain in the right knee				
22	Pain in the left calf				
23	Pain in the right calf				
24	Pain in the left ankle				
25	Pain in the right ankle				
26	Pain in the left foot				
27	Pain in the right foot				

नॉर्डिक बॉडी मैप

APPENDIX 2

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Name of Ph.D. Supervisor Dr.Sarjoo Himanshu Patel

Published Articles/Papers in Journals

Sr No.	Author(s)	Paper Title	Journal Name & ISSN & Volume No.	Published Year	DOI	Index in Scopus/UGC CARE/Clarivate	Document Submitted?
1	Smita and Patel, S.	Enhancing Employability Skills of the Senior Secondary Pass out Girls	Journal Name: The Indian Journal of Home Science , ISSN: 0970 2733, Volume No.: 35	1-7-2023		In Scopus: No, In UGC CARE: Yes, In Clarivate: No	Submitted
2	Patel, S.	Indoor Air Pollution: Pollutants Released during Cooking	Journal Name: The Indian Journal of Home Science , ISSN: 0970 2733, Volume No.: 35	1-1-2023		In Scopus: No, In UGC CARE: Yes, In Clarivate: No	Submitted
3	Sarjoo Patel, Vashima Veerkumar and Smita	Difficulties Experienced in managing Mental Stress by the Laboratory Technicians working in testing Laboratories during COVID 19	Journal Name: Utkal-Historical Research Journal, ISSN: 0976- 2132, Volume No.: 36	1-1-2023		In Scopus: No, In UGC CARE: Yes, In Clarivate: No	Submitted
4	Khyati Trivedi and Sarjoo Patel	Development of Residential Kitchen Garden in a small space	Journal Name: Utkal-Historical Research Journal, ISSN: 0976- 2132, Volume No.: 36	1-1-2023		In Scopus: No, In UGC CARE: Yes, In Clarivate: No	Submitted
5	Desai, N. and Patel, S.	DESIGNING MULTIPURPOSE FURNITURE FOR LIVING ROOM OF SMALL HOUSES	Journal Name: International Journal of Early Childhood Special Education, ISSN: 1308 5581, Volume No.: 14	1-7-2022		In Scopus: No, In UGC CARE: Yes, In Clarivate: No	Submitted
6	Sarjoo Patel and Astha Garg	Documentary Development: Assessment of Satisfaction and Visiting Intentions of the Viewers	Journal Name: Stochastic Modeling & Applications, ISSN: 0972 3641, Volume No.: 26	1-7-2022		In Scopus: No, In UGC CARE: Yes, In Clarivate: No	Submitted
7	Trivedi, K. and Patel, S.	EXTENT OF PROBLEMS EXPERIENCED BY HOMEMAKERS REGARDING THEIR OWN KITCHEN GARDENS IN VADODARA CITY	Journal Name: The Indian Journal of HOME SCIENCE, ISSN: 0970 2733, Volume No.: 34	1-7-2022		In Scopus: No, In UGC CARE: Yes, In Clarivate: No	Submitted
8	Sarjoo Patel and Kavita Shah	Eco-friendly products: Assessing and Enhancing the awareness of the Homemakers	Journal Name: Stochastic Modeling & Applications, ISSN: 0972 3641, Volume No.: 26	1-6-2022		In Scopus: No, In UGC CARE: Yes, In Clarivate: No	Submitted
9	Agarwal, R. and Patel, S.	Assessing the work environment of Surat diamond polishing industry	Journal Name: Stochastic Modeling & Applications, ISSN: 0972 3641, Volume No.: 26	1-6-2022		In Scopus: No, In UGC CARE: Yes, In Clarivate: No	Submitted

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APPENDIX 3

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ASSESSING THE WORK ENVIRONMENT OF SURAT DIAMOND POLISHING INDUSTRY

RUCHIKA AGARWAL AND DR. SARJOO PATEL

ABSTRACT

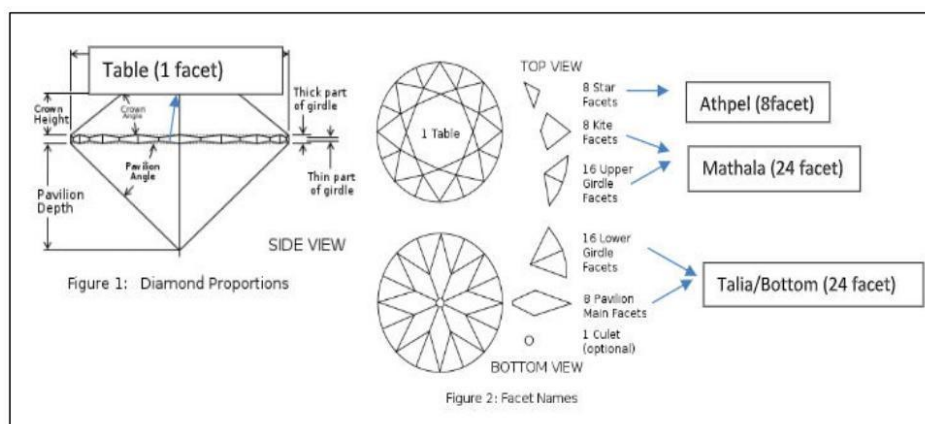
Surat is the chief centre for the world's largest diamond cutting and polishing industry which makes India a leading producer of finished diamonds. Ironically, although India does not have its own significant diamond reserves it is still a leading exporter of finished diamonds leaving its competitors-Israel and Belgium far behind. The process of converting rough diamond stones into sparkling gems involves a series of systematic steps that requires an eye for detail and skills of its workers. Surat's diamond industry provides employment to large number of people. Most of these industries are unorganised in nature and very few are organised that provide better facilities to its employees. For the present study 30 workers from a small polishing unit of Surat was selected using the purposive convenience sampling method. 6 workers from each of the five major tasks involved in polishing of diamonds were selected, namely, 'tablework' or polishing of the topmost single facet, 'girdle rounding', 'talia' or 'bottom work' or polishing of 24 facets of pavilion, 'athpel' or polishing of top 8 facets of crown and 'mathala' or polishing of top 24 facets of crown. An interview schedule with structured questions was developed and administered to collect information regarding the background information of the workers and also to find out their perception about the work environment of these small units. Apart from this, three instruments namely the Digital Lux meter, Digital Sound meter and Thermal Hydrometer were also used to assess the environment. Results obtained from the survey indicated that although the diamond polishing industry is largely a non-polluting industry with no involvement of chemicals and other hazardous substances, but still there is scope for a lot of improvement in its work environment. Positive changes made in the work environment will definitely contribute to the welfare of the workers working in the industry and will improve their productivity.

Keywords: Diamond, Polishing, Environment, Industry

INTRODUCTION

Surat, located in Gujarat is one of the fastest developing cities of India. As per Swachh Survekshan 2020, this city, formerly known as Suryapur, is the second-cleanest city in the country (Shukla Y, 2020). This region has witnessed remarkable expansion over the past couple of decades, making it the economic and commercial hub of the South Gujarat Region. It has become one of Gujarat's top industrial cities, home to the diamond, jari, textile, chemical, and fertiliser industries, the first three of which are the major players (Chaudhry, 2002). Even though majority of the other states in India take pride in their traditional textile crafts, they cannot contend against Surat's popular manmade fibre and cloth, which is sold in huge quantities across the world. However, the diamond cutting and polishing industry of Surat is quite distinct and unique. Because of the fame and allure of this trade, the city is also known as the "Diamond City" of India. It is here where the country's as well as the world's maximum diamonds are cut and polished. Infact, it is reported that 92 percent of the diamonds in the world are processed here. The proximity to sources of rough diamonds, such as Africa, and also the easy availability and affordability of labour contribute for this.

The diamond industry's value chain consists of three processes. First, the mining, and sorting of rough diamonds. The second step is diamond cutting and polishing, while the creation and retail sale of jewellery is the third step in the process.¹

**Fig 1: Structure of Round Brilliant Cut Diamond**(Source: <https://www.jewelry-secrets.com>)

In India, rough stones are imported from countries that mine them and then are sent to the cutting and polishing units. Cutting and polishing of these stones is a very complex operation that is performed by skilled individuals. It is partially automated and partially manual. First, a computer software program is used to mark the rough stones. This process involves calculating the optimum approach to cut the rough stone in order to get the most valuable results. Once the stone has been marked, it is sent for laser cutting, a computerized procedure that requires little human supervision. The diamond is then given to the polishing unit once it has been cut. A typical diamond consists of 58 facets. The top or crown of the diamond has 33 facets while the bottom or pavilion consists of 25 facets. The top and bottom are separated by a girdle.

The sparkle of the stone is the result of the work of highly skilled individuals who polish these facets of the diamonds received from the cutting section. An eye for detail and trained movement of hands on the spinning wheel gives the stone its desired shine. The polishing process is divided into five steps. The first is called the 'tablework' where in the table or top of the diamond is polished. Here the worker sits on the floor and rubs the top of the diamond held by a hand device called 'angoor', on a spinning wheel that rotates at a speed of 2000 rpm. The second step involves rounding the girdle of the stone with the help of a computerized machine. Once the diamond is given the desirable shape at the girdle it is fitted on a holder and sent for polishing the 'talia' or 24 facets at the bottom. This step is also called 'bottom work'. Next, the 8 facets on top of the stone is polished and this process is called 'athpel'. The last step involves polishing the remaining 24 facets of the crown called the 'mathala'. Lastly the diamond is again sent for tablework to give the top its final shiny appearance.

The availability of low-cost, highly skilled labour is one driver in India's booming diamond sector². It is very likely that the workers' backgrounds have had a significant role in the industry's success. The workforce is fairly simple and has minimal formal education. Despite having little formal education, many employees have excellent managerial and organisational abilities (Rao I, 2009). Today, women are working in the diamond polishing industry as well.

Every individual has the right to a safe, healthy, and comfortable workspace, yet this is a fact that many people frequently overlook, particularly in a nation like India where unemployment and illiteracy are high and occupational health issues frequently take a backseat. According to Meena (2018), there is a great deal of variation in how various industries operate in India, thus it is futile to have a standard operating procedure to protect occupational health and safety. He also claimed that most industries have been disobeying appropriate OHS practises.

The review of literature highlighted that a number of studies were conducted in India as well as outside, to understand the work environment and the impact that it can have on the worker's health and productivity (Parimalam P. et al 2007, Manjunatha R et al 2011, Padmini and Venmathi 2012, Azuik, E. C. et al 2017, Al-Zboon, K. K., & Forton, O. T. 2019, Yu, W., et al 2013, M Kifle et al, 2014). Many studies have also been done on the Indian diamond industry wherein the stress of the workers, job satisfaction of the workers and financial aspects have been studied (Kutty, M. N., 1991, Engelshoven, 1999, Yadav et.al., 2019), however the environment of the workplace has not been assessed in any of the studies.

OBJECTIVES

- To find out the background information of workers working in the diamond industry
- To assess the work environment of the diamond polishing units in Surat

DELIMITATIONS

- The study was limited to Surat city only
- The study was limited to the working conditions of a polishing unit
- The study was limited to those workers doing 'tablework', 'rounding of girdle', 'talial', 'athpel' and 'mathala' work

METHODOLOGY

The research design of the present study is descriptive in nature. A sample size of 30 workers working in the diamond polishing industry was selected by purposive convenience sampling method. An interview schedule with structured questions was prepared and administered to the respondents. Six workers working in each of the five activities for diamond polishing unit namely the 'tablework' or polishing of the topmost single facet, 'girdle rounding', 'talial' or 'bottom work' or polishing of 24 facets of pavilion, 'athpel' or polishing of top 8 facets of crown and 'mathala' or polishing of top 24 facets of crown were interviewed. The obtained data was tabulated and analyzed by using MS Excel software. Descriptive statistics was used to express the results. Three instruments namely the 'Digital Luxmeter', 'Digital Sound Meter' and 'Thermal Hygrometer' were used to assess the indoor light, noise levels, temperature and humidity of the polishing units. For each of the environmental aspect, three readings were taken and the average of the readings was compared to the ideal environmental conditions.

RESULTS AND DISCUSSION

The information for the present study was collected in two sections. In Section A, the interview schedule was used to collect data under four subheads- personal information, family information, work related information and perception of work environment by the workers. In Section B, the three instruments- Digital Luxmeter, Digital Sound meter and Thermal Hygrometer were used to assess the indoor environment of the polishing unit

Section A - Interview

The interview schedule was used to gather information under 4 heads which are discussed as below:

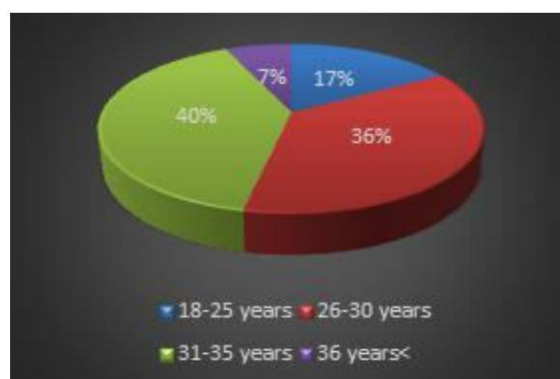
1. Personal Information of the Respondents**1.1 Age**

Fig 2: Age of the Respondents

It was observed that 40% of the respondents belonged to 31-35 years category, followed by 36% of those who belonged to the 26-30 years category. However 17% of the respondents were from the 18-25 years age group and only 7% were above the age of 36 years. Thus it was observed that those belonging to the young age group were mainly employed in the diamond polishing industry. This could be because of the high physical demands of this work.

1.2 Gender

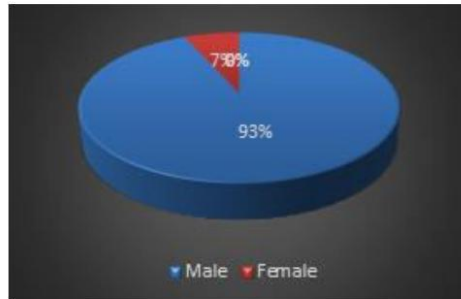


Fig 3: Gender of the Respondents

93% of the respondents were males while only 7% were female. Although the diamond cutting and polishing industry of Surat is a male dominated industry, but slowly and gradually women are also finding employment opportunities in this area.

1.3 Educational Qualification

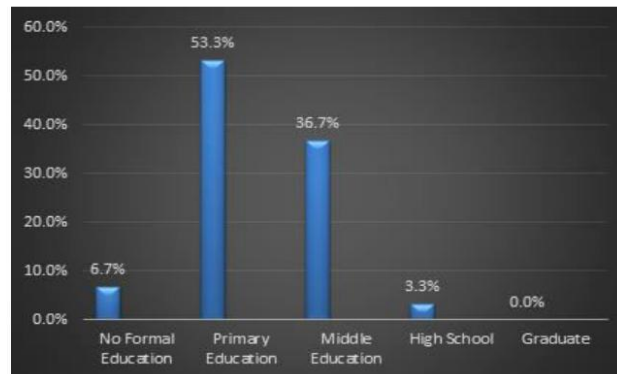


Fig 4: Educational Background of the Respondents

An enquiry made into the educational qualification revealed that 53.3% of the respondents had received primary education while 36.7% of them had completed middle school education. Only 3.3% respondent had completed high school and 6.7% of them had received no formal education. None of the respondents were graduates. Thus the collected data revealed that the workers working in the polishing sector are not highly educated but they possess the skills required to work in the industry.

1.4 Type of House

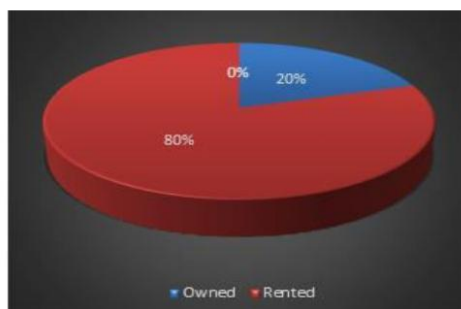


Fig 5: Type of House

80% of the respondents had rented homes while only 20% of them had homes of their own.

2. Information About the Family

2.1 Type of Family

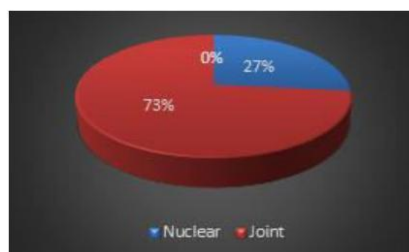


Fig 6: Type of Family

73% of the respondents lived in a joint family while only 27% had nuclear families.

2.2 Earning members in the family

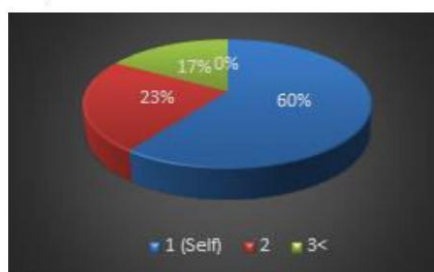


Fig 7: No. of Earning Family Members

It was observed that 60% of the respondents were the sole earning members of their family while 23% had two members and 17% had 3 or more members contributing to the family's income.

2.3 Income

The mean monthly income of the respondents was 21000/- while the mean monthly income of the family was 28000/-. The mean monthly savings of the respondents family was 5000/-.

2.4 Other Family Member Employed in the Industry

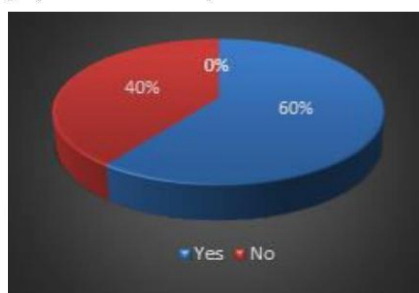


Fig 8: No. of Respondents having another family member employed in the Diamond Industry

60% of the respondents had another member of the family employed in the diamond industry as compared to the remaining 40%.

3. Work Related Information

The respondents had spent an average of 8 years in the industry. For 73% of them the present place of work was their first job. All the 30 respondents spent 10 hours at their workplace with one break of 45 minutes in

between. They were employed in one of the five activities that is done to polish diamonds. The average time to complete each of the step was 4 minutes for each stone.

4. Perception of the Work Environment By the Workers

73.3% of the workers felt that the temperature was not comfortable while 26.7% of them felt vice versa. None of the workers reported of the place having unpleasant odour. According to them the place was well ventilated, not dusty and had adequate light. They reported that safe distance was maintained from the machine and the machine was serviced as and when required. There was enough space for movement. But the workers revealed that no emergency safety procedure training was given to them.

The information provided by the workers revealed that clean water and sanitary facilities were made available to them but there were no separate rest rooms or lunch rooms. There was no first aid kit in place and nor were there fire safety equipments installed. Since they were all contractual employees, they were not provided with insurance coverage.

Section B – Assessment of the Indoor Environment

1. Indoor Light Levels

The polishing units majorly rely on artificial light as they are located in closed rooms with minimum supply of natural light. Polishing of diamonds involves a lot of detail and precision work and therefore task lighting is provided on each of the polishing machines. A Digital Lux Meter was used to measure the amount of light at three different locations inside the diamond polishing unit. It was observed that the lighting was inadequate at the entrance as well as at the machine, while the general lighting of the place was sufficient.

Observation Table 1

Sr. No.	Area of Study	Light Intensity Measured (Lux)				Recommended Standard (Lux) ³
		1 st Reading	2 nd Reading	3 rd Reading	Average	
1	Near the entrance	62	65	70	65.7	100
2	Near the machine	500	523	520	514.3	1000
3	General Lighting	275	280	273	276	250

2. Indoor Noise Levels

The Digital Sound Meter was placed near the machine and three readings were recorded at an interval of five minutes. The workers were working for 10 hours per day and 6 days a week in the polishing unit and it was revealed that they were well within the noise permissible standards specified by OSHA.

Observation Table 2

Noise Recorded (db)				Permissible Standard
1 st Reading	2 nd Reading	3 rd Reading	Average	
86db	86.7db	89.3db	87.33db	85db-90db (for 8 hours per day) (Source: OSHA, 2019) ⁴

3. Indoor Temperature

The researcher recorded three readings on the Thermo Hygrometer to measure the indoor temperature between 1:00 pm to 3:00 pm when it was middle of the shift that used to start at 9:00 am and end at 7:00 pm. The mean indoor temperature of the polishing unit was 30.03°C. Although many large and organised cutting and polishing units have air conditioning facility inside their units, but for small players this would mean an additional cost. It is a known fact that working in comfortable temperatures contributes to better health and productivity at work.

Observation Table 3

Indoor Temperature (°C)			
1 st Reading	2 nd Reading	3 rd Reading	Mean
30.1°C	29.8°C	30.2°C	30.03°C

4. Indoor Humidity

The researcher recorded three readings on the Thermal Hygrometer for the presence of humidity between 1:00 pm to 3:00 pm when it was middle of the shift that used to start at 9:00 am and end at 7:00 pm. The mean humidity percentage was 41.33% which falls in the range of comfortable relative humidity which is 25% - 60%.

Observation Table 4

Humidity Level (%)			
1 st Reading	2 nd Reading	3 rd Reading	Mean
40%	41%	43%	41.33%

CONCLUSION

The diamond polishing industry of Surat mainly sources the youth for its manpower supply. This is because the polishing work requires high level of concentration and focus and is also physically exhausting as it requires the worker to sit for long durations causing strain in different parts of the body. The study also revealed that the industry is a male dominated one but slowly women are also finding job opportunities in this sector. The skills required for working in the industry can be learnt through training and experience and thus migrants from nearby villages shift base to Surat to earn a living since there are limited employment opportunities in small villages. The study also showed that practical skills like precision, focus and calmness were more important than theoretical skills, the workers were mainly those who had dropped out of studies due to financial constraints and had joined this industry. Most of the workers were the sole bread earners of their families and had many people to take care of since a culture of staying in joint family was observed among the respondents.

The workers perceived the working environment like light, noise, temperature and humidity to be comfortable for them. However the recording from the Digital Lux meter revealed that the lighting conditions were not enough for their work. This detailed work that involves constantly checking the diamond facet through an eye piece can cause a lot of eye strain if proper light is not provided. Thus the polishing unit owners must provide adequate lighting facilities in their units.

The thermal hygrometer recorded comfortable relative humidity percentage but the indoor temperature was a little above the comfortable temperature range. Higher temperatures can lower the efficiency and productivity of the workers and may also lead to errors. Thus installing air conditioners or coolers would help in maintaining adequate temperature.

The sound levels were well within the range of the permissible standards. The low levels of sound which is produced by the spinning of the wheel and the stone rubbing against it, does not harm the workers working in the industry.

Thus, although the diamond industry is a non-polluting industry, there are certain environmental concerns that the unit owners must look into. In India, these concerns are often neglected as providing a comfortable environment to the workers would mean additional cost to the owners. Awareness must be created in this aspect as a comfortable environment would mean better productivity, better concentration and better results. Thus reducing errors and resulting in profits in the long run.

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APPENDIX 4

