

APPENDIX - 2

ANTHROPOMETRIC AND REACH MEASUREMENT AND EXISTING
CONDITION OF KITCHEN AND STORAGE
A QUESTIONNAIRE

The purpose of this study is to find out the existing condition of kitchen and storage and problems/difficulties encountered with kitchen and storage design, in the households of Dharwad City. Study also aims at framing of guideline standards based on anthropometric measurements of women for designing of kitchen and storage area.

This questionnaire seeks your valuable opinion and co-operation concerning with existing kitchen and storage condition and anthropometric measurements. This will help to ascertain the required kitchen and storage area for women of Northern Karnataka State.

I would be extremely grateful to you if you would kindly extend your co-operation and give frank and honest valuable opinions in responding to this questionnaire. Please follow the direction carefully and answer all questions.

Thanking You,

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PART-1

BACKGROUND INFORMATION

General Instruction :

The following statements refers to your background information you are requested to go through the following questions/statements and give your responses either by stating or by putting a tick (✓) mark in the answer sheet provided. Please make sure not to leave any question unanswered.

Name ----- Sl.No. ----- Date -----

Address ----- Telephone Number -----

1.0 Age in completed years

2.0 Marital Status -

- 2.1 Married
- 2.2 Unmarried
- 2.3 Widow
- 2.4 Divorce

3.0 Religion :

4.0 Caste -

- 4.1 Shedule caste
- 4.2 Shedule tribe
- 4.3 Backward class
- 4.4 General
- 4.5 Specify if any other

5.0 Type of family -

- 5.1 Nuclear
- 5.2 Joint

6.0 Place you come from (Native place)

- 6.1 City / Town / Village
- 6.2 District
- 6.3 State

7.0 Number of Children

- 7.1 Male
- 7.2 Female

8.0 Number of female members between the age group
18-50 (including self)

Their age in completed years

- 8.1 Age
- 8.2 Age
- 8.3 Age
- 8.4 Age
- 8.5 Age
- 8.6 Age

9.0 Your educational level

10.0 Educational level of husband/head

11.0 Your occupation

12.0 Occupation of husband/head

13.0 Total family income per month

14.0 Food habits

- 14.1 Vegetarian
- 14.2 Non-vegetarian

15.0 If non-vegetarian, frequency

PART-2

HOUSING DATA

Below are a series of questions/statements about your existing housing condition, kitchen and storage design and problems or difficulties you are facing with your kitchen and storage design. Please go through each of the question/statement and indicate your answer by putting a tick (✓) in the answer sheet provided. Please make sure not ^{to} leave any question unanswered.

1.0 Are you living in a rented/own house ?

- 1.1 Own
- 1.2 Rented

2.0 If you are living in own house, please answer the following :

2.1 Did you give your specifications and suggestions for the kitchen work counter and storage shelves while building your house ?

- 2.1.1 Yes
- 2.1.2 No

2.2 If no, who decided the cooking counter height, depth and storage shelf height and depth while constructing your house

- 2.2.1 Husband
- 2.2.2 Contractor/Builder
- 2.2.3 Architect
- 2.2.4 If, any other specify

3.0 If you are staying in a rented house how much rent are you paying every month ?

3.1 Rs. per month

4.0 To which type does your house belong ?

- 4.1 Independent house
- 4.2 Twin house
- 4.3 Upstairs house
- 4.4 Flat

5.0 Which type of kitchen do you have in your house ?

- 5.1 Independent kitchen
- 5.2 Kitchen combined with storage shelves
- 5.3 Kitchen combined with dining hall
- 5.4 Kitchen combined with storage shelves and dining hall

6.0 Do you face any of the following problems related to design of kitchen and storage

- 6.01 Kitchen size is small and work space is restricted
- 6.02 Front/Back clearance space around work place and storage area is not sufficient. As a result body dashes against furniture or wall
- 6.03 Length of the work counter is small and no sufficient space to keep the necessary things while working
- 6.04 Height of the work counter is high and cause shoulder pain while working/cooking
- 6.05 Height of the work counter is low and causes back pain while working/cooking
- 6.06 Depth of the work counter is more and requires body bending while reaching items placed close to the wall
- 6.07 Work counter is narrow and clutters space and requires searching for needed items while working/cooking
- 6.08 Height of the top storage shelf is beyond the maximum reach, that it requires lifting of heels

- 6.09 Height of the top storage shelf is high, that it requires a stool to reach
- 6.10 The shelves constructed below the work counter requires bending of the body to reach the things/articles stored in them
- 6.11 The shelves constructed below the work counter requires squatting on the floor to reach the things/articles stored in them
- 6.12 The shelves constructed below the work counter require bending and squatting on the floor to reach the things/articles stored in them
- 6.13 Depth of the shelves constructed below the work counter is more and things or articles in them are difficult to reach. It requires forward bending of body
- 6.14 Shelves constructed above the work counter are high that, it requires lifting of heels
- 6.15 Shelves constructed above the work counter are high that, it requires a stool
- 6.16 Sink height is high from the floor level and cause shoulder pain while washing the utensils
- 6.17 Sink height is low and causes shoulder and back pain while washing the utensils
- 6.18 No sufficient day light and requires artificial light while working in the kitchen
- 6.19 No good ventilation and causes fatigue while working in the kitchen

7.0 The following statements are related to existing condition of the kitchen and storage design in your house. Indicate whether it is adequate/suitable by stating Yes or No.

7.01 Kitchen size is adequate

- 7.1.1 Yes
- 7.1.2 No

7.02 Space around the storage shelves and work counter is adequate and free for bending the body and squatting while working and using the facility

- 7.2.1 Yes
- 7.2.2 No

7.03 Height of the work counter is at a suitable height

- 7.3.1 Yes
- 7.3.2 No

7.04 Depth of the work counter is adequate to store the necessary things and work comfortably

- 7.4.1 Yes
- 7.4.2 No

7.05 Length of the work counter is sufficient

- 7.5.1 Yes
- 7.5.2 No

7.06 Height of the top storage shelf is within your maximum reach (Stretching your hand without raising your heel)

- 7.6.1 Yes
- 7.6.2 No

7.07 Height of the lowest shelf is within your normal reach (Reaching the shelf without stretching the arm or bending the elbow)

- 7.7.1 Yes
- 7.7.2 NO

- 7.08 Depth of the shelves is suitable to store the articles within the eye level
- 7.8.1 Yes
 - 7.8.2 No
- 7.09 Depth of the top shelves is within the maximum reach. Articles stored in single row/double row can be reached conveniently with maximum reach
- 7.9.1 Yes
 - 7.9.2 No
- 7.10 Shelves above the counter are within the maximum reach
- 7.10.1 Yes
 - 7.10.2 No
 - 7.10.3 Not applicable
- 7.11 Shelves below the work counter are within the bending of the body
- 7.11.1 Yes
 - 7.11.2 No
- 7.12 Location of light switch is within the convenient maximum reach
- 7.12.1 Yes
 - 7.12.2 No
- 7.13 Location of light switch is in a safe place (Away from cooking area/stove)
- 7.13.1 Yes
 - 7.13.2 No
- 7.14 Kitchen is designed for adequate day light
- 7.14.1 Yes
 - 7.14.2 No
- 7.15 Storage area is designed for adequate day light
- 7.15.1 Yes
 - 7.15.2 No

7.16 Kitchen is planned with good ventilation

7.16.1 Yes

7.16.2 No

7.17 Sink height is suitable to your height

7.17.1 Yes

7.17.2 No

7.18 Overall kitchen design is satisfactory

7.18.1 Yes

7.18.2 No

7.19 Design of storage shelves is satisfactory

7.19.1 Yes

7.19.2 No

8.0 DO you think work counter measurement and storage shelf measurement should be built to suit the user's body measurement

8.1 Yes

8.2 No

9.0 From the experience of working in your kitchen, do you want to give any suggestions for improvement in kitchen design

9.1 Yes

9.2 No

10.0 If yes, please list them

10.1

10.2

10.3

10.4

PART-3**ANTHROPOMETRIC AND REACH MEASUREMENTS****1.0 VERTICAL MEASUREMENTS IN CENTIMETER**

- 1.1 Total height (V-floor)
- 1.2 Total arm length (R.Da - L.Da)
- 1.3 Right arm length (A - Da)
- 1.4 Elbow height while standing (Ra - floor)
- 1.5 Elbow height while sitting (Ra - floor)
- 1.6 Length of right upper arm while standing (A - Ra)
- 1.7 Length of right forearm while standing (Ra - Sty)
- 1.8 Length of right hand (Sty - Da)
- 1.9 Total right leg height while standing (Ili - floor)
- 1.10 Right lower leg height while standing (Ti - floor)
- 1.11 Sitting height (on stool) (V - St. Surface)
- 1.12 Stool height (floor - st. surface)
- 1.13 Eye height (In.can - floor)
- 1.14 Eye height while sitting
- 1.15 Right hand functional reach
- 1.16 Right hand functional reach (folded inside)

2.0 CIRCUMFERENCE MEASUREMENTS IN CENTIMETER

- 2.1 Bust circumference
- 2.2 Upperarm circumference while standing
- 2.3 Forearm circumference while standing
- 2.4 Waist circumference while standing
- 2.5 Abdomen circumference while standing
- 2.6 Hip circumference while standing

3.0 MEASUREMENT OF REACHES IN CENTIMETER

- 3.01 Maximum vertical reach while standing close to the wall
 - 3.1.1 For two handed
 - 3.1.2 Total reach

- 3.02 Normal vertical reach while standing 15 cm away from wall
 - 3.2.1 For two handed
 - 3.2.2 Total reach
- 3.03 Maximum vertical reach while standing 15 cm away from wall
 - 3.3.1 For two handed
 - 3.3.2 Total reach
- 3.04 Normal vertical reach while standing 30 cm away from wall
 - 3.4.1 For two handed
 - 3.4.2 Total reach
- 3.05 Maximum vertical reach while standing 30 cm away from wall
 - 3.5.1 For two handed
 - 3.5.2 Total reach
- 3.06 Upward vertical reach for right and while standing 15 cm away from wall
- 3.07 Downward vertical reach for right hand while standing 15 cm away from wall
- 3.08 Top shelf height without obstacle and close to the shelf
- 3.09 Top shelf depth without obstacle and close to the shelf
- 3.10 Lower shelf height without obstacle and close to the shelf
- 3.11 Lower shelf depth without obstacle and close to the shelf
- 3.12 Top shelf height with obstacle
- 3.13 Top shelf depth with obstacle
- 3.14 Eye level shelf height

- 3.15 Horizontal normal reach at table height close to the elbow height
 - 3.15.1 Two handed
- 3.16 Horizontal maximum reach at table height close to the elbow height
 - 3.16.1 Two handed
- 3.17 Horizontal maximum reach for right hand at table height close to the elbow height
- 3.18 Horizontal normal reach at table height at 5 cm below the elbow height
 - 3.18.1 Two handed
- 3.19 Horizontal maximum reach at table height 5 cm below the elbow height
 - 3.19.1 Two handed
- 3.20 Horizontal maximum reach for right hand at table height 5 cm below the elbow height
- 3.21 Horizontal normal reach at table height 10 cm below the elbow height
 - 3.21.1 Two handed
- 3.22 Horizontal maximum reach at table height 10 cm below the elbow height
 - 3.22.1 Two handed
- 3.23 Horizontal maximum reach for right hand at table height 10 cm below the elbow height

PART-4

KITCHEN CONDITION

The following information of work counter, storage shelves measurements in the kitchen and storage area recorded by the researcher

NOTE : All measurements recorded in centimeter.

1.0 WORK COUNTER

- 1.1 Height of the work counter in the kitchen
(From floor - counter top edge)
- 1.2 Depth of the work counter
(From edge of the counter surface - wall)
- 1.3 Total length of the work counter
(From one end to the other end of the counter surface)
- 1.4 Type of kitchen based on the shape of the work counter
 - 1.4.1 'L' shaped kitchen
 - 1.4.2 'U' shaped kitchen
 - 1.4.3 Two wall kitchen
 - 1.4.4 One wall kitchen
- 1.5 Height of the cooking appliance
 - 1.5.1 Electric stove
 - 1.5.2 Gas stove without stand
 - 1.5.3 Gas stove with stand
- 1.6 Type of work counter surface
 - 1.6.1 Ordinary stone surface
 - 1.6.2 Granite stone surface
 - 1.6.3 Cement surface
 - 1.6.4 Red oxide surface
 - 1.6.5 Ceramic tile surface
 - 1.6.6 Any other

2.0 STORAGE SHELVES

2.1 Type of shelf

- 2.1.1 Built-in open shelf
- 2.1.2 Built-in cupboard
- 2.1.3 Built-in wall cabinet
- 2.1.4 Metal or wooden rack

2.2 Location of storage shelves in the kitchen/store room

- 2.2.1 Above the work counter
- 2.2.2 Below the work counter
- 2.2.3 Away from the work counter
- 2.2.4 To the side of the work counter
- 2.2.5 Away from kitchen (separate store room)

2.3 Shelves above the work counter

- 2.3.1 Total height of the shelf
(From counter surface - top edge of the frame)
- 2.3.2 Height of the top shelf
(From counter surface - edge of the shelf)
- 2.3.3 Depth of the top shelf
(From edge of the shelf - wall)
- 2.3.4 Height of the middle shelf-1
(From counter surface - edge of the shelf)
- 2.3.5 Depth of the middle shelf-1
(From edge of the shelf - wall)
- 2.3.6 Height of the middle shelf-2
- 2.3.7 Depth of the middle shelf-2
- 2.3.8 Height of the bottom shelf
(From counter surface - edge of the shelf)

- 2.3.9 Depth of the bottom shelf
(From edge of the shelf - wall)

2.4 Shelves below the work counter

- 2.4.1 Total height of the shelf
(From floor - top edge of the shelf)
- 2.4.2 Height of the top shelf
(From floor edge - edge of the shelf)
- 2.4.3 Depth of the top shelf
(From edge of the shelf - wall)
- 2.4.4 Height of the middle shelf - 1
(From floor - edge of the shelf)
- 2.4.5 Depth of the middle shelf - 1
(From edge of the shelf - wall)
- 2.4.6 Height of the middle shelf - 2
- 2.4.7 Depth of the middle shelf - 2
- 2.4.8 Height of the bottom shelf
(From floor - edge of the shelf)
- 2.4.9 Depth of the bottom shelf
(From edge of the shelf - wall)

2.5 Shelves away from/beside the work counter

- 2.5.1 Total height of the storage shelf
(From floor - top edge of the frame)
- 2.5.2 Height of the top shelf
(From floor - edge of the shelf)
- 2.5.3 Depth of the top shelf
(From edge of the shelf - wall)
- 2.5.4 Height of the middle shelf - 1
(From floor - edge of the shelf)
- 2.5.5 Depth of the middle shelf - 1
(From edge of the shelf - wall)

- 2.5.6 Height of the middle shelf - 2
- 2.5.7 Depth of the middle shelf - 2
- 2.5.8 Height of the bottom shelf
(From floor - edge of the shelf)
- 2.5.9 Depth of the bottom shelf
(From edge of the shelf - wall)

2.6 Shelves away from kitchen

- 2.6.1 Total height of the storage shelf
(From floor - top edge of the shelf)
- 2.6.2 Height of the top shelf
(From floor - edge of the shelf)
- 2.6.3 Depth of the top shelf
(From edge of the shelf - wall)
- 2.6.4 Height of the middle shelf - 1
(From floor - edge of the shelf)
- 2.6.5 Depth of the middle shelf - 1
(From edge of the shelf - wall)
- 2.6.6 Height of the middle shelf - 2
(From floor - edge of the shelf)
- 2.6.7 Depth of the middle shelf - 2
(From edge of the shelf - wall)
- 2.6.8 Height of the bottom shelf
(From floor - edge of the shelf)
- 2.6.9 Depth of the bottom shelf
(From edge of the shelf - wall)

2.7 Movable shelf (metal or wooden shelf)

- 2.7.1 Total height of the shelf
(From floor - top of the shelf)
- 2.7.2 Height of the top shelf
(From floor - edge of the shelf)

- 2.7.3 Depth of the top shelf
(From edge of the shelf - wall)
- 2.7.4 Height of the middle shelf - 1
(From floor - edge of the shelf)
- 2.7.5 Depth of the shelf - 1
(From edge of the shelf - wall)
- 2.7.6 Height of the middle shelf - 2
(From floor - edge of the shelf)
- 2.7.7 Depth of the middle shelf - 2
(From edge of the shelf - wall)
- 2.7.8 Height of bottom shelf
(From floor - edge of the shelf)
- 2.7.9 Depth of the bottom shelf
(From edge of the shelf - wall)

3.0 LOCATION OF ELECTRICAL SWITCHES

- 3.1 Kitchen light switch
 - 3.1.1 Right side of the door
 - 3.1.2 Left side of the door
 - 3.1.3 Above the work counter
 - 3.1.4 Outside the kitchen door
 - 3.1.5 Behind the kitchen door
- 3.2 Height of the light switch
 - 3.2.1 From floor to switch
 - 3.2.2 From counter surface
- 3.3 Height of the electric stove plug point
(From counter surface - switch)
- 3.4 Size of the kitchen
 - 3.4.1 Length
 - 3.4.2 Breadth
- 3.5 Number of windows in the kitchen
- 3.6 Size of the window/s
 - 3.6.1 Height/Length
 - 3.6.2 Breadth
 - 3.6.3 Height/Length
 - 3.6.4 Breadth