Furniture Sector in Punjab

Sector Skills Study

September 2015

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Acknowledgement

Innovative Development Strategies (Pvt.) Ltd. acknowledges the kind cooperation of the respondents of the Furniture Sector in Punjab, Pakistan. IDS would also like to gratefully acknowledge the entire team at Punjab Skills Development Fund, all the sector experts and the Training Service Providers interviewed.

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Acronyms

BA	Bachelor of Art
BSc	Bachelor of Science
CAC	Computer Assisted Control
CAD	Computer-Aided Design
CAM	Computer Assisted Manufacturing
CCA	Computer Certificate Application
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CNC	Computer Numerical Controlled
CSPro	Census and Survey Processing system
DFID	Department for International Development
FM	Frequency Modulation
GIZ	German Corporation for International Cooperation
GoPb	Government of the Punjab
HEC	Higher Education Commission
HRD	Human Resource Development
ID	Identification
IDS	Innovative Development Strategies
KII	Key Informant Interviews
KPK	Khyber Pakhtunkhwa
KPOs	Key Punch Operators
KVTC	Karachi Vocational Training Centre
MA	Master of Art
MBA	Master of Business Administration
MBBS	Bachelor of Medicine, Bachelor of Surgery
MIS	Management Information Systems
MPhil	Master of Philosophy
MSc	Master of Science
MU	Manufacturing Unit
NCA	National College of Arts
NED	Nadirshaw Eduljee Dinshaw (University of Engineering and Technology)
NGO	Non-Governmental Organization
PhD	Doctor of Philosophy
PIFD	Pakistan Institute of Fashion and Designs
PKR	Pakistani Rupees
PSDF	Punjab Skills Development Fund
PSU	Primary Sampling Unit
TDAP	Trade Development Authority of Pakistan
SECP	Securities and Exchange Commission of Pakistan
SMEDA	Small and Medium Size Enterprise Development Authority
SMEs	Small and Medium Size Enterprises
SSU	Secondary Sampling Unit
STEVTA	Sindh Technical Education and Vocational Training Authority
SWOC	Strengths, Weaknesses, Opportunities, and Challenges
TEVTA	Technical Education and Vocational Training Authority
ToRs	Terms of Reference
TSP	Training Service Provider
TV	Television
TVET	Technical and Vocational Education Training
UAE	United Arab Emirates
UC	Union Council

UK	United Kingdom
UNIDO	United Nations Industrial Development Organization
USA	United States of America
VTI	Vocational Training Institute
WWSC	Wood Working Service Centre

Geographical Clusters

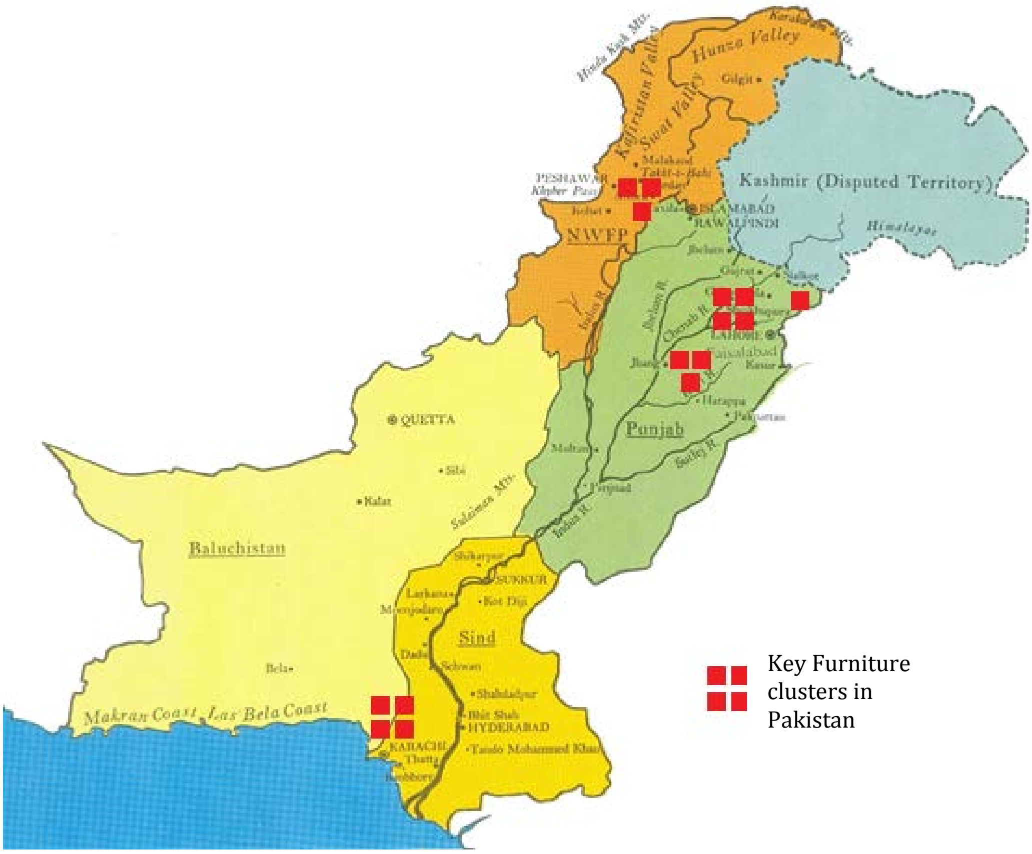

Figure 1: Key Furniture Clusters in Pakistan

Executive Summary

Introduction

Punjab Skill Development Fund (PSDF) is a not-for-profit establishment that works towards building skills in specific trades that generate employability for the people of Punjab. PSDF was set up by the Government of the Punjab in collaboration with Department for International Development (DFID), United Kingdom. The organisation covers districts in southern, central and northern Punjab, with well-established industrial and agricultural clusters.

PSDF has commissioned sector-specific studies that explore the demand for skills and offer a comprehensive view of skills needs of entire value chains in different industrial and agricultural sectors. Research consultants interview/survey respective business establishments and associations, sector experts and training service providers to deliver sector skills studies that inform the design of PSDF's future vocational skills training schemes.

Innovative Development Strategies (IDS) was tasked with the responsibility of conducting the Furniture Sector Skills Study in April 2015. The main objective of this study was to identify the demand and supply of skills, skills needs and the existing gaps between the skills demand and supply, in the furniture sector of Punjab.

Specifically, the study looks at the following:

Assessment of	Current and future skill levels in the furniture sector
Identification of	Trades in demand Training courses currently available and required to meet demand Training delivery options Skills delivery gaps Contributions of other stakeholders Key actions and practice for Technical and Vocational Education Training (TVET) policy
Development of	Medium to long-term targets for human resource development (HRD)
To strengthen the skill potential of workers in the sector	

For the purposes of developing the research instruments for the study, IDS first developed a conceptual framework to facilitate the consolidation of the research findings. This framework took into account the most appropriate skills indicators in order to better understand the existing gaps as well as the demand and supply of skills in the furniture sector of Punjab.

Research Design

For the Furniture Sector Skills study, the research design was primarily descriptive and it consisted of gathering information from three different sources: formal and informal furniture manufacturing establishments, Sector Experts and the Training Service Providers (TSPs). A mixed methods approach was used according to the conceptual framework developed.

Sampling for choosing the respondents of the quantitative survey was done using the Multi-stage Cluster technique[1]. Geographically, this constituted areas in Punjab that adequately represent leading industrial players in the furniture manufacture industry. The major furniture producing areas in Punjab identified for the study were: Chiniot, Lahore and Gujrat. The survey was administered to a sample of 274 formal (registered) and 176 informal (unregistered) establishments within these three geographical clusters, making the total sample size to be 450 industrial establishments. As an auxiliary activity, a sample of 29 formal (registered) and 11 informal (unregistered) furniture manufacturing establishment was surveyed in order to gain a picture of skills demands in Karachi as well (List at Annex C).

Each of the listings for Sector Experts and TSPs were developed through the snowball sampling technique or the Chain sampling technique[2].

1 Cluster Sampling is a sampling technique wherein the population under study is divided into smaller clusters, and a sample of one or more these clusters is chosen. In a multi-stage clustering sampling process, the clustering technique is applied over several stages: the population is divided into major clusters in the first stage and a sample selected. Selected clusters are then sub-divided into further clusters and a sub-sample is selected in the second stage, and so on. Multi-stage clustering helps achieve greater efficiency in survey administration and can create a more representative sample relative to a simple cluster sample.

2 The snowball or chain sampling technique entails choosing a small sample of initial subjects, who then identify further subjects from among their acquaintances. These further subjects may then be asked to identify further subjects until the desired sample size is achieved.

Industry Snapshot

The leading furniture-making clusters of Pakistan are Chiniot, Gujrat, Lahore and Karachi. Karachi leads in terms of exports, followed closely by Lahore

Existing challenges in terms of gaps in human resources and skill requirements

Challenges in Labour Skills Demand	
Labour	▪ Lack of supervisory skills required for production operations. General lack of skills at preparing Bills of Materials at supervisor level. ▪ Less than optimal engagement of appropriate skills of qualified craft workers in the production of furniture ▪ Lack of utilization of modern equipment such as computer numerically controlled machines. ▪ Lack of skills required for setting-up, programming and maintenance of machinery. ▪ Lack of experience of latest gluing techniques, latest finishing and polishing materials, and application of modern hardware materials like sliders, concealed hinges etc. ▪ Lack of skills in pattern making . ▪ Lack of concept of managing to deliver the assigned job Just in Time. Lack of availability of skilled labour in Gujranwala, Rawalpindi, Karachi and Lahore
Lack of standards and certification	▪ Labour is not aware of efficient production techniques ▪ Supervisory level skills to improve labor efficiency are also lacking ▪ Lack of quality controls, checks and standardisation according to international requirements.
Manufacturing techniques	
Technology	▪ Modern machinery training is virtually non-existent, thus impeding the use of sensible effective equipment[3].
Marketing techniques	▪ Designs are similar and copied across the furniture shops. ▪ Lack of marketing and design information for merchandising and export promotion has held back innovative selling.
Government Policies/Regulatory environment	
Human Resource Developments	▪ Inadequate retailing skills ▪ Lack of proper logistic management and investment. ▪ Lack of cooperation at intra and inter cluster level.
Challenges in Labor Skills Supply	
Non standardization in training curriculum and standards	
Challenges in setting up training infrastructure	
Lack of knowledge of career path amongst youth	
Lack of proper work methodology amongst employees	
Lack of awareness of furniture sector's potential as a career option	
Availability and retention of manpower	

Source: Derived from Multiple Sources[4]

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3 (Warenstein)

4 http://www.tradecapacitypakistan.com/new/pdf/itc/SS1.pdf
http://www.unido.org/fileadmin/user_media/UNIDO_Worldwide/Offices/UNIDO_Offices/Pakistan/Wooden_Furniture_Manufacturing_Unit.pdf
http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Growing%20Demand%20of%20U.S.%20Wood%20Products%20in%20Pakistan_Islamabad_Pakistan_1-27-2014.pdf
http://lahoredispatch.com/brief-synopsis-pakistans-furniture-industry-185
http://furniturekingdom.blogspot.com/2009/06/swot-analysis-of-pakistani-furniture.html

Main Findings from the Quantitative Survey

Firms and Owners Profile

- **Firms Size:** Firms part of furniture sector were generally very small in terms of number of workers employed: median firm size in the sector was four; over 90% of the sampled firms employ fewer than 10 persons and 54% employ fewer than 5.
- **Products and Clients:** Most firms manufactured their own products (93%) and 99% of firms made wooden furniture. Only 2% of firms sold imported furniture in addition to locally-made products. The primary customers for the firms were domestic households. 93% of the firms reported household furniture to be their highest selling product.
- **Legal Status:** About 96% of the firms were sole proprietorships.
- **Education and Training among Owners:**
  - Most owners and managers had no exposure to formal training themselves (99.6% had no training). Owners and manager also had low levels of education: over half (54%) had only primary level education.
  - The most commonly cited reason for the lack of formal training among owners themselves was that skills were learned "on-the-job" and/or via "learning-by-doing". However, 34% of respondents thought it as unproductive and time consuming whereas 30% also felt that nothing new would be learned from formal training.
  - Given the low levels of education among owners and the lack of exposure to formal training, it is possible and perhaps likely that these decision-makers in firms may not be able to assess skills needs and the value of formal training accurately.
  - This low level of education is also likely to affect perceptions of what level of education is required among their workers. When asked, what level of education was required for various occupations in the sector, in general, primary to middle level schooling was thought sufficient by surveyed owners/managers. There were no observations of technical diploma being a requirement for any skill or occupation in the sector.

Workforce Characteristics

- **Size of the Workforce:** In all, the 450 firms in our sample were found to be employing a total of 2,862 people. About 14% of this workforce was employed temporarily (i.e. hired on temporary contracts on a casual or seasonal basis). The rest were permanent employees.
- **Job-Titles/Occupations/Trades in the Sector:** An inventory of the complete range of job-titles/trades/occupations in the sectors revealed that "bed-frame makers" made up about 20% of the total workforce. Furthermore, "bed-frame makers", together with "chair-makers", "furniture fitters", and "carving machine operators", made up about half of the entire workforce.
- **Education and Training of the Workforce:**
  - Education levels were low among the workforce: 44% of the workers had no formal education. However, regional disparities were found: interestingly, Gujrat had a much higher percentage of educated workers. In Chiniot and Lahore, over half of the worker population was uneducated; in Gujrat only 17 percent were uneducated.[5]
  - Comparisons across occupations revealed that furniture fitters and carving machine operators tend to be educated (educated workers in these occupation outnumber uneducated workers).

5 "Educated" here refers to having received any formal education; where as "uneducated" refers to those individuals who have had no formal education whatsoever.

  - Owners were asked about the level of education they thought was required for each type of occupation/trade, and their answers were compared with the actual level of education workers employed by the firm had attained. It was found that 46% of workers had education levels less than what their manager/owner felt was required for the job. This suggests that any training interventions aimed towards existing workers in the industry may have to incorporate elements of basic education (literacy and numeracy).
  - Formal skills-training was fairly uncommon with only 2% of workers having received it. However, 43% of workers were reported to have received informal training, on-the-job training or in the form of guidance from supervisors.
- **Perceived Skill Level:** However, when respondents (managers and owners) were asked to declare their workers as either: "highly skilled", "semi-skilled", or "low skilled", 87% of workers were declared "highly skilled". The level of skills of workers is covered in depth in the Skills Analysis section.

Skills Analysis

- **Experience:**
  - A vast majority of firms (97%) cited prior experience as an essential requirement for hiring workers. Within these, in about 57% of cases, work experience of 1 to 4 years was considered essential, and in 42% of cases experience of 5 to 10 years was required.
  - It may be the case that experience acts as substitute for formal training and certification: in the absence of these, instead of demanding formally trained workers, firms demand workers who have learned on-the-job elsewhere. These workers having had informal on-the-job training are then considered "skilled" in owners' views.
- **Current Vacancies:** A total of 75 firms (or 17%) reported having vacancies at the time of the survey. Vacancies for assemblers or fitters of furniture were most frequently reported by firms, followed by bed-frame makers, and carving machine operators. A total of at least 114 vacancies were reported by firms across the 14 trades identified,
- **Current "Skills Shortages":**
  - A deficit of skills can occur as a "skill shortage". This is measured as the occurrence of "skill shortage vacancies" where "skill shortage vacancy" is defined as one that occurs when an employer cannot find applicants with the right skills, qualifications or experience to do the job
  - Vacancies that were most frequently considered hard-to-fill due to a shortage of skilled workers were for bed-frame makers (24% of all skill-shortage vacancies were for bed-frame makers). Other skill shortages were for furniture fitters (16% of skill-shortage vacancies), table-makers (14 %), furniture polishers (12%), and sofa-frame/chair-makers (12%).
  - The other major reason for vacancies being hard-to-fill was that while skilled workers were available, they were demanding high salaries. (Other reasons such as issues with location of firm, working hours, absence of benefits were cited only by a small number of respondents).
- **Projected skills needs:**
  - Based on the demand projections, an additional sum of 142,964 employees will be required in the furniture sector in Punjab in the coming 6 years (2016-2021). Details of majorly demanded trades are:
    - Bed frame makers 30,628
    - Sofa/ chair makers 21,658
    - Furniture fitters 18,265
    - Carving machine operators 14,361
  - According to the findings of the report bed-frame makers were high in demand which was further accentuated due to the existing shortage of skilled manpower for the trade.
  - Other skills that were in high demand and also expected to persist in the future were table-makers, chair-makers and furniture fitters.

- **Skill Gaps:** Based on the analysis of declared ratings of the importance of various aspects/skills to company performance and the level of proficiency among workers in those aspects, the largest perceived gaps were in the area of managerial skills rather than technical skills associated with furniture making.
  - It was evident that currently firms see a deficit in proficiency in such areas as product pricing, cost reduction strategies, management and finance and quality control. These were found to be problem areas for 60 to 70% of firms (firms that had gaps) and the size of the gaps was generally rated as medium to large.
  - Perceived gaps in technical skills related to the making of furniture were low relative to management skills. Among technical skills related to direct furniture making, lumber grading, wood identification and basic properties of woods, perceived skill gaps were found in 20 to 30% of firms. The size of the skills gaps was generally rated to be small to medium.
  - Other technical skills such as business planning, quality and process control, inventory control, product distribution dealing with changing raw materials were problematic areas in over 50% of firms, and the perceived size of the skills gap was also large.

The Demand for Training in General

- The sector relied to a large degree on informal training via on-the-job training or learning-by-doing and had a strong preference for the same.
- While a quarter of firms reported being interested in providing their workers with off-site trainings, when given other options there was a strong preference for on-the-job training: none of the firms picked off-site training as a preferred option when other options were presented.. Furthermore, 72% of firms were willing to give at most one day off to workers for the purpose of training.
- Respondents were asked for the reasons behind not training their employees. The results were as follows:
  - Of the total number of responses, the most frequently cited reason (49% of responses) was that employees were already trained.
  - Of the remaining responses, 44% of responses cited that training was either unimportant, unproductive and time consuming, or that employees could learn on their own.
  - Lack of training facilities was not a frequently cited reason (only 0.7% of responses chose this as a reason). This suggests that initiatives that provide opportunities and facilities for training may not be sufficient; the value of training will have to be demonstrated for there to be successful.

Human Resource Management

- With regards to human resource management, firms were asked how they would respond to a decrease in demand in the market for their goods. The most common response was that employers would reduce the number of wage earners. Surprisingly, the least-preferred options were: reducing the benefits paid out to workers or reducing salaries. This shows that most employers are concerned about the psychological impact of reducing rewards given out to their employees.
- Other common responses included diversifying activities, abandoning activities and improving the quality of products.
- When asked about the characteristics preferred in new employees, most employers gave importance to skill and experience overall. Barely 2% of the respondents stated that they would be willing to hire a highly skilled employee with 10 years of experience regardless of his behavior or attitude. When behavior and attitude was taken into account, 30% of the respondents claimed to be willing to hire such an employee.

- If an employee was also educated along with being highly skilled and 10 years of experience, his attitude did not prove to be detrimental since 18.2% were willing to hire such a candidate.
- The most preferred option overall was that of an educated, semi-skilled candidate with 5 years of experience, regardless of behavior or attitude.

Findings from Quantitative Survey of the Karachi Cluster

In addition to the primary survey of the three clusters described above, a further survey was also conducted in Karachi. A sample of 40 furniture manufacturing establishment was surveyed in order to gain a picture of skills demands in Karachi as well.

Owner and Firm Profile

The survey in Karachi suggests that firm owners and managers in that cluster have fairly high levels of education. Among the respondents, 27.5% had higher secondary (matriculation), 17.5% had Bachelor level qualifications and further 5% had either a diploma or a Master's degree. Only a small percentage (5%) had no formal education.

A large percentage of firms in Karachi were new or very recently established: 18% had been operating for less than a year and a further 35% for 1 to 10 years. This may be of significance as new firms may be less likely to rely on traditional methods and may be more receptive to training initiatives.

Workforce Training Status

Most establishments in Karachi reported having trained their employees through informal means (on-the-job training provided by more senior workers or supervisors). Respondents reported that these informal modes of training were used because they believed new things could be learnt most quickly by this mode of training. As informal training was highly prevalent and deemed adequate, respondents reported that formal training was not conducted due to the reason that employees were already trained (in their view).

Workforce Turnover

Workforce turnover (attrition) was reported by 58% percent of firms. Of the firms that experienced employee turnover, 43.5% reported turnover of furniture upholsterers, and 34.8% reported turnover of bed-frame makers.

Projected Skills Needs

In Karachi, the sample of 40 firms expects their number of workers to grow by 47 in the next 12 months, and by 415 over the next 5 years. The expected demand for wood furniture designers was highest with 31 designers expected to be hired over the next five years. The expected demand for all other skills/trades (such as furniture upholsters, finishers, polishers, fitters, bed-framer makers, chair makers etc.) ranged from 18 to 24 new workers required over the next 5 years in the 40 surveyed firms.

Findings from the Sector Experts

Profile

A total of 44 Sector Experts were interviewed by IDS. 23% of the experts interviewed were owners of the furniture manufacturing establishments; 31% were Managers (Human Resource Managers/General Managers); 23% were Directors; 15% were either CEOs or CFOs; and only 8% were Consultants or Proprietors.

General observations

The biggest strength of this dwindling industry is the high demand for furniture in general. With the demand factor sustaining it, the sector experts were hopeful that a change could be brought about if the private sector showed unity and was helped by the government to pro-actively take steps towards potential economic growth in the industry.

Most Important Trades/Skills

All the sector experts interviewed were of the opinion that all skills and trades were equally important and relevant to the Furniture Sector. However, some pointed out more specifically that excellent export quality craftsman skills are highly necessary and pertinent.

The sector experts also pointed out the skills that are most in demand in the furniture sector. Skills like log saw operation, drying kiln operation, upholstery, polishing and carving were considered most in demand. Other skills include: workers with skills who can manage their on-the-floor jobs, cabinet making skills, assembly and finishing, skills to apply the available technology/machines on the job, fitting and most importantly, knowledge about different types of wood.

Skills Shortages and Gaps

The skills not found in the furniture sector in Pakistan include entrepreneurial skills for understanding the export requirements for furniture, and skills pertaining to supervisory roles and the roles of foremen. Other skills that were seen to be missing were those related to appropriate tool-selection and furniture design. A dearth of trained trainers was also perceived by sector experts.

Skills Requiring Training

There are several training needs of the industry that are not being met currently. These include trainings on the application of new polishing sealing and finishing materials – all of which are not easily understood by both the owner and the worker.

Role of Women

Most sector experts were of the opinion that women were most likely to be recruited to perform the work of sales, designing, hand carving, upholstery, finishing, polishing (all except spirit based polishes), inlay, interior décor, marketing and management roles and production planning. Women were not included in work involving spirit based polishes primarily because of the intoxicating effects of these materials.

Effectiveness of TSPs

According to most of the sector experts, the training institutes in Pakistan are not doing a satisfactory job of training relevant to the furniture industry. There is currently a significant communications disconnect between the sector experts and TSPs. Sector experts were of the opinion that government and government run TSPs are disconnected from the dynamics and current needs of the sector, and continue to run outdated courses. . When asked about the leading TSPs in the Furniture Sector, all the sector experts included names like Wood Working Service Centre (WWSC) Gujrat, National College of Arts (NCA), Pakistan Institute of Fashion and Design (PIFD) and Pak German Wood Working Service Center Peshawar. A few had no idea about any of the institutes and some stated that only informal modes of training were in place in the sector.

Findings from TSPs

For the purposes of this study, a total of up to 39 TSPs were to be interviewed. Due to limited number of TSPs in this sector, IDS was only able to identify and interview 29 TSPs (these are listed in Annex B). Of these, 10 were informal TSPs while the rest 19 are formal TSPs. For the purposes of this study, Formal TSPs were defined as the registered establishments providing training and following a planned curriculum for the respective course; the informal TSPs were individuals who have been delivering trainings as a separate entity.

Formal TSPs

Profile

Some of the major TSPs that cater to the furniture sector include TEVTA's Wood Working Service Centres (WWSC) (located in Gujrat, Rawalpindi and Kot Addu), and Pak-German WWSC Peshawar that have been working in the sector since the 1960s. TSPs in the furniture sector typically provide diploma and certificate courses that are typically 3 to 6 months long.

A few degree-awarding institutes (universities) have entered the field and have begun offering courses related to furniture design and manufacture. These include PIFD, NCA, and Institute of Education Research at the University of the Punjab.

Courses and Available Training Capacity

The most common courses offered were for: carpentry, woodworking, polishing and finishing, and machine process for wood.

The capacity of the two largest Certificate / Diploma awarding institutes was not competitive in comparison with the size and employment potential of this sector. The progress in technology, both in machinery and materials was not reflected in their courses and their lab floors. This suggests that current capacity may be inadequate for wide-scale initiatives for training in the sector.

In total, the interviewed TSPs reported total annual enrolment capacity of approximately 2,018 individuals (as an aggregate of different furniture courses and of different durations), with trainee trainer ratio of 21.21.

Relevance and Quality of Courses Offered

It was felt that the TSPs were either following syllabi that were outdated and not entirely relevant to the technological and operational changes that have taken place in the past decade. The current training facilities and curricula were initially developed in the 1960s. While these have been updated over the years, the reviews have been infrequent and different syllabi have been followed by the various TSPs. Before TEVTA was established, private TSPs developed their own syllabi while government-run TSPs have in the past followed different boards of technical education or ministries. With the creation of TEVTA as the single governing body of all Diploma/Certificate awarding technical training institutes in the Punjab, a uniform syllabus may now be possible that is kept up-to-date.

Capacity of the TSPs to develop and adapt curricula

The capacity among TSPs to develop and adapt curricula themselves was presently lacking as most TSPs did not have processes in place for formal assessments for curriculum development, training needs assessments, or the development of annual plans.

Available Capacity of the TSPs to Train Trainers

Although there was perceived to be sufficient demand for Training of Trainers, the TSPs did not conduct these trainings as a communication gap existed between the few TSPs and the private sector. There were no arrangements between the TSPs and the large furniture firms to cater to their training needs

Capacity to Establish Linkages with Employers

Linkages between TSPs and employers were generally lacking. One of the reasons for this was that TSPs were absent from major furniture manufacturing centres (for example, Gujrat and Chiniot each had only one TSP). TSPs were located in cities where the private sector is not very large, i.e. Gujjar Khan, Layyah, Kot Addu, and Multan. Hence, linkages were weak.

Examples of working linkages were found only in Karachi, where there were instances of agreements between TSPs and large private furniture sellers like Habitt and Interwood. Discounts were offered and availed when these organizations registered their staff for trainings in big groups.

Moreover TSPs lack the ability and capacity to guide the trainees for the career placement which again hinders the employability of trainees.

Skills Needs Identified by TSPs

As per the TSPs, the existing workforce in the furniture sector lacked familiarity with theoretical aspects of furniture-making, which was needed. TSPs also were of the opinion that various skills related to more modern methods and hardware were lacking such as: use of CNC (Computer Numerical Controlled) machines, designing on AutoCAD (software for Computer-aided Design), modern finishing/polishing materials and techniques, installing modern hardware like concealed hinges, sliders and latches etc., architectural furniture making, preparation of Bills of Materials.

They also identified skills that are likely to be required in the coming decade: operating high tech machines for production automation, finishing according to international standards, application of water based paints and polishing including latest hardware, preparation of Bills of Materials / Bills of Quantity, and innovative designing among others.

Findings from Informal TSPs

The study identified informal TSPs that cater to the furniture sector. These were typically individual *"Ustaads"* (masters) or workshops that hired apprentices. Among the few workers who received training (other than informal on-the-job training), it was common to receive training at informal TSPs such as these. This is common practice in Chiniot in particular where pupils are hired as apprentices where they observe the work and perform menial tasks like handing things to the *Ustaad*. After 3 – 4 years of apprenticeship, the pupil was believed to have acquired a skill. This method of training has the advantage of allowing pupils to learn at their own pace however, theoretical concepts are not touched upon, leaving the students with little to no information about the significance of the tasks being performed.

Introduction

Background

Punjab Skills Development Fund (PSDF) is a Section 42, not-for-profit establishment set up under the Companies Ordinance 1984 by the Government of the Punjab (GoPb) in partnership with Department for International Development (DFID), United Kingdom[6]. The organisation covers districts in southern, central and northern Punjab, which include Bahawalpur, Bahalwalnagar, Muzaffargarh, Lodhran, Lahore, Sargodha, Gujranwala, Faisalabad, Chiniot, Sheikhupura, Rahim Yar Khan, Vehari, Khanewal, and Narowal and is now set for Punjab-wide expansion. These districts possess well-established industrial and agricultural clusters.

PSDF has been involved in building a market for skills in specific trades with the aim of generating employability for the people of Punjab. PSDF aims to address human resource needs (of skilled workers and technicians) in employment-intensive industrial and agricultural sectors.

Furniture Sector Skills Study

PSDF has commissioned sector specific studies that explore the demand for skills and offer a comprehensive view of skills needs within the entire value chains in different industrial and agricultural sectors. Research consultants are commissioned to conduct surveys and interviews of businesses within these sectors, to provide ector skills studies to inform PSDF's future vocational skills training schemes.

The main purpose of a sector skills study is to combine qualitative and quantitative evidence to provide an in-depth skills-related picture of the sector. This has been achieved in this case by generating a profile of the furniture sector of Punjab . The requirements of the workforce, the skills demanded and the skills supplied, have all been catered to through the use of the Quantitative survey. This study provides a separate section on conclusions and recommendations, taking into account the implications for human resource development of the sector, and will contribute to PSDF's goal of raising skills levels to provide impetus for enterprise development and producing more and better-skilled workers in the province.

Innovative Development Strategies (IDS) was tasked with the responsibility of conducting the Furniture Sector Skills Study in April 2015. The main objective of this study was to identify the demand and supply of skills, skills[7] needs and the existing gaps between the skills demand and supply. It was also responsible for conducting thorough research within the furniture sector based on the information obtained from the Sector Experts and the Training Service Providers (TSPs).

6 http://psdf.org.pk/our-company/

7 The skills in this study are defined as knowledge and experience to carry out certain intellectual and (or) physical activities in a specific business area where experience is a consequence of formal, informal and non-formal learning and work in a specific job.

Figure 2: Main methodological elements used in the study

Specifically, the study looks at the following:

Assessment of	Current and future skill[8] levels in the furniture sector
Identification of	Trades in demand
	Training courses required
	Training delivery options
	Skills delivery gaps
	Contributions of other stakeholders
	Key actions and practice for TVET policy
Development of	Medium to long-term targets for Human Resource Development (HRD)
To strengthen the skill potential of workers in the sector	

Conceptual Framework

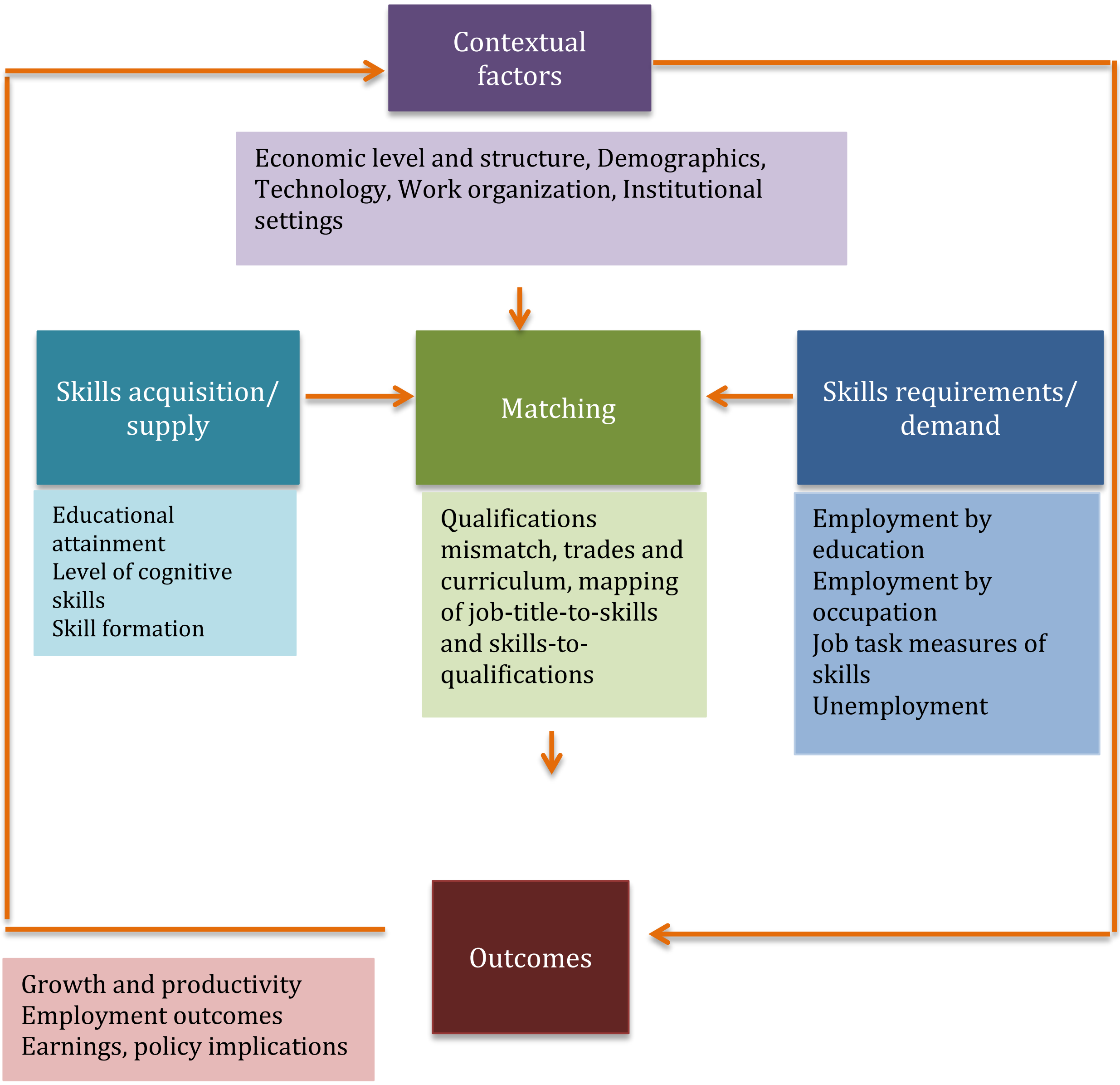
For the purposes of developing the research instruments for the study, IDS first developed a conceptual framework to facilitate the consolidation of the research findings. This framework took into account the most appropriate skills indicators in order to better understand the existing gaps as well as the demand and supply of skills in the furniture sector of Punjab. These indicators were used in the development of the three questionnaires after the pilot study and will prove useful for the formulation of skill development policies at the organizational and the national level in the Furniture Sector. The framework consists of a set of inter-related domains of initial indicators. These included:

Figure 3: Initial indicators domain

Conceptual Framework Mapping

The following mapping of the conceptual framework shows the relationship between the contextual factors and the outcomes, in the context of the Furniture Industry. In order to achieve certain outcomes of the study, a matching of the skills demanded and the skills supplied needed to be taken into account. The matching then needed to be inclusive of qualifications mapping, job-title-to-skills mapping and skills-to-qualification mapping. The conceptual framework was intended to facilitate the structuring of the questionnaires to obtain all relevant information with regards to the Furniture Industry.

8 Future skills are perceived as qualitatively and quantitatively expressed lack of skills (the non-compliance of qualification to the requirements of the workplace and the lack of the employees with relevant qualifications)**Invalid source specified.**.



Research Design

For the Furniture Sector Skills Study, the research design was primarily descriptive and consisted of gathering information from three different sources: The formal and informal furniture manufacturing establishments, Sector Experts and the Training Service Providers. A mixed methods approach[9] was used according to the conceptual framework developed. Both quantitative and qualitative techniques of data collection were employed to gather sound information with regards to the Furniture Sector. The analysis was done based on the requirements of the ToRs and the key research questions. The following diagram illustrates the research design of the study:

9 **Mixed methods research** is more specific in that it includes the mixing of qualitative and quantitative data, methods, methodologies, and/or paradigms in a research study or set of related studies.

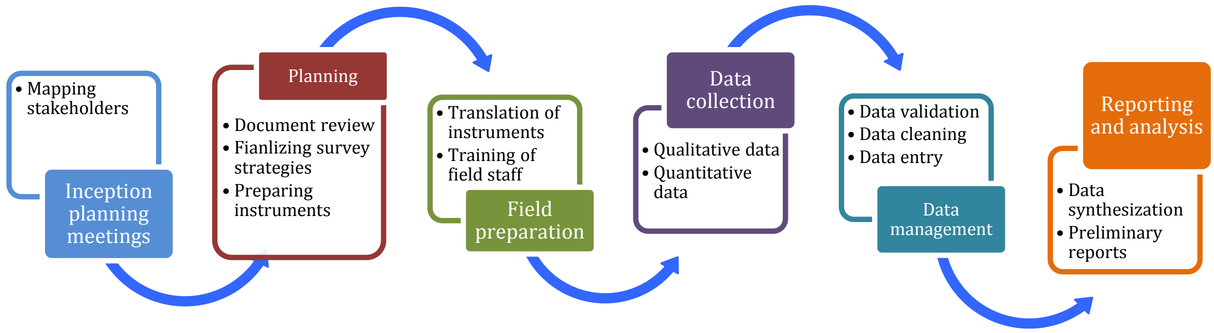


Figure 4: Research design

Data Processing and Management

Tools Finalization

The instruments used for the collection of data were developed by IDS in consultation with PSDF. After thoroughly reviewing the information from the secondary research, and a few initial meetings with the Sector Experts, TSPs and some furniture manufacturing establishments, and having detailed discussions, IDS, along with the help of the research team at PSDF, finalized the questionnaires and interview guides and prepared them for execution in the field.

Database Development

For the purpose of data entry, a data entry programme was developed in the computer based survey data entry and management programme called CSPro. This programme had in-built checks that safeguarded the data against internal and external errors, such as programming that prevents the entry of values outside of specified ranges, preventing entry of values that are inconsistent with skip patterns of the questionnaire, among various others Furthermore, IDS developed a coding strategy that assigned respondents with a unique code for data entry. Each interviewer, supervisor and data entry person were also assigned unique codes which were recorded for all the questionnaires.

With regards to the qualitative questionnaires, the "scissors and sort" technique[10] was used to organize and analyse information. Wherever possible, a descriptive analysis was also collected to present data collected from the respondents of the qualitative instruments. This technique allowed IDS to systematically describe how different themes are distributed across informants.

Data Collection

Data was collected via survey of establishments, sector expert interviews and interviews with TSPs as well as existing secondary data between August and September. In Lahore, furniture association elections were being conducted, hence the data collection got delayed. The sampling strategies for all the respondents are given below:

Sampling Strategy for the Administration of the Quantitative Survey

According to the ToRs of the project, a total of 120 formal and 150 informal establishments were to be surveyed by IDS. However, given the nature of the study, a total of four clusters were

10 In the analysis of qualitative data, information in text or transcript form is organizing by simply cutting and pasting text and reorganizing it under various categories relevant to research questions.

identified namely Lahore, Chiniot, Gujrat including Karachi. These constituted the formal and the informal furniture manufacturing units.

Although a listing exercise was conducted to include all available formal and informal furniture manufacturing establishments, this list was not exhaustive, hence less representative of the population. At the time of sampling, it was assumed that the actual existing numbers of furniture manufacturing units is much more than that anticipated in the listing exercise. Sampling for choosing the respondents of the quantitative survey was done using the Multi-stage Cluster Technique[11]. Geographically, this constituted areas in Punjab and other identified clusters in Pakistan, and was assumed to have relatively adequate representation of the leading industrial players in the furniture manufacture industry. (Please see Annex D for more detail on Sampling).

Survey Administration

The survey was administered to a sample of 274 formal (registered) and 176 informal (unregistered) establishments in the three geographical clusters, making the total sample size to be 450. A sample of 29 formal (registered) and 11 informal (unregistered) furniture manufacturing establishment was surveyed in order to gain a picture of skills demands in Karachi as well, the findings of which were incorporated as a separate chapter in the report (List at Annex C). Formal establishments were defined as the organizations that were registered with Chambers of Commerce, other business associations, the Securities and Exchange Commission of Pakistan (SECP), any networking groups and registrations at the provincial and the district levels. Informal establishments were those that were not registered with any of the former. Survey tools were administered separately to formal and informal furniture manufacturing establishments, Sector Experts and TSPs, in order to generate reliable and valid data from all possible sources relevant to the Furniture Industry.

Of the total establishments sampled, Chiniot had the most number of informal furniture manufacturing establishments (92%). Only 8% of the sampled establishments were formal. In Lahore, only 10.7% of the sample was informal, while the rest was formal. Of the formal establishments, it can be seen that 85.3% of the organizations were registered with networking groups[12]. In Gujrat, 14.7% of the sampled establishments were informal. Of the formal establishments, 70% were registered with related business associations, 10% with Chamber of Commerce and 4.7% were registered at the Provincial and District levels. None of the sampled organizations were registered with the SECP in Chiniot and Gujrat and only 4% were registered with it in Lahore.

The following figure illustrates the percentages of the formal and informal establishments in all the three clusters:

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11 Cluster Sampling is a sampling technique wherein the population under study is divided into smaller clusters, and a sample of one or more these clusters is chosen. In multi-stage cluster sampling, the clustering technique is applied over several stages: the population is divided into major clusters in the first stage and a sample selected. Selected clusters are then sub-divided into further clusters and a sub-sample is selected in the second stage, and so on. Multi-stage clustering helps achieve greater efficiency in survey execution and creates a more representative sample relative to a simple cluster sample.

12 These are socio-economic business activities by which groups of like-minded business people recognize, create or act upon business activities. In terms of the Furniture Sector, this refers to informal group settings within the Furniture Clusters in Pakistan.

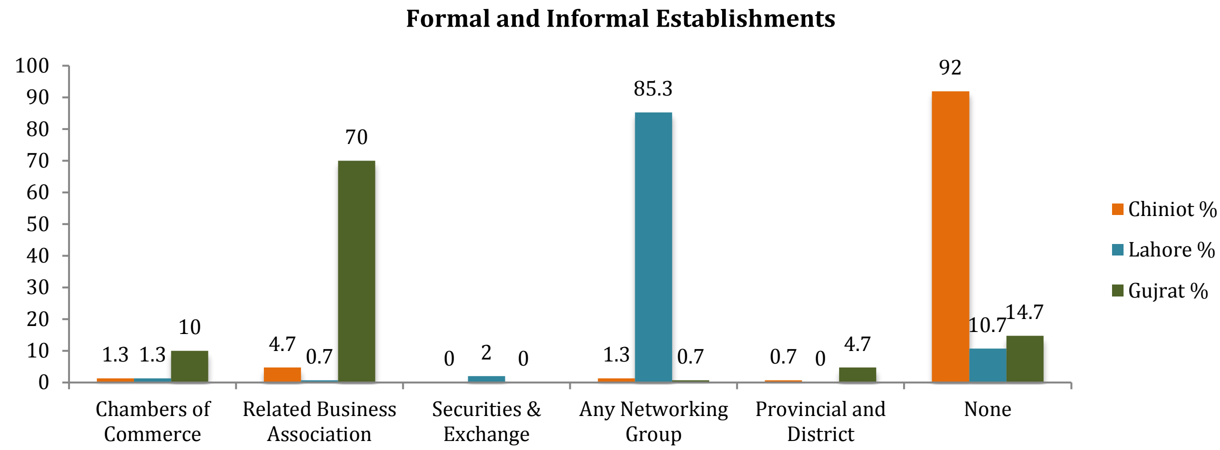

Figure 5: Distribution of Establishments based on registration status

Sampling Strategy for the Selection of Sector Experts and the TSPs

Sector Experts were identified through the snowball sampling technique or the chain sampling technique.

The snowball or chain sampling technique begins with the identification of a few initial subjects (sector experts in this case). The initial subjects are then asked to identify further subjects (Sector Experts) from among their acquaintances who may be included in the sample. This process is continued until desired sample size is achieved. In this study, this process resulted in a final sample size of 44 Sector Experts. This sampling technique proved to be very effective because of the lack of an exhaustive list of furniture manufacturing associations in Pakistan.

Similarly, for interviews with the TSPs, IDS identified an initial TSP (Woodworking Service Center Gujrat), and based on its recommendations, interviewed 29 more TSPs (19 formal TSPs and 10 informal TSPs), due to the lack of a database of such institutions. This respondent-driven way of sampling allowed IDS to make asymptotically unbiased estimates with regards to the information needed for the study.

Key Informant Interviews (KIIs)

KIIs were conducted of the Sector Experts and the TSPs. Each interview lasted from 45 minutes to 1.5 hours. Valuable information was collected from the respondents which led to a coherent collection of systematic data.

Data Entry

Data entry for the study was done in the field. Desk Editors and Key Punch Operators (KPOs) worked alongside the Management Information Systems (MIS) Manager and Deputy Manager to supervise all data entry and cleaning processes and assess the performance of each individual on the team. KPOs were hired from IDS's existing roster, and were given one day training where they received an overview of the questionnaires and the database. To ensure the efficiency of the data entry process, IDS also minimized the lag between data collection and entry by using the fastest courier service and utilizing all data entry stations simultaneously. Starting with a lag of a week from data collection, data entry was completed a week after the completion of the survey.

Data Analysis (Findings from the Secondary research)

Industry Snapshot

Key clusters in Pakistan

The leading furniture-making clusters of Pakistan are Peshawar, Chiniot, Gujrat, Lahore and Karachi. Karachi leads in terms of exports, followed closely by Lahore and Peshawar (Business Recorder). Furniture items produced in Sindh and parts of Punjab are more cottage industry based and for domestic use only.

For the purposes of this study, IDS identified the three main areas namely Lahore, Gujrat and Chiniot to be the main Furniture Clusters. These comprise both formal and informal furniture manufacturing establishments, dealing in both Household and Office Furniture.

Value chain of the Furniture industry[13]

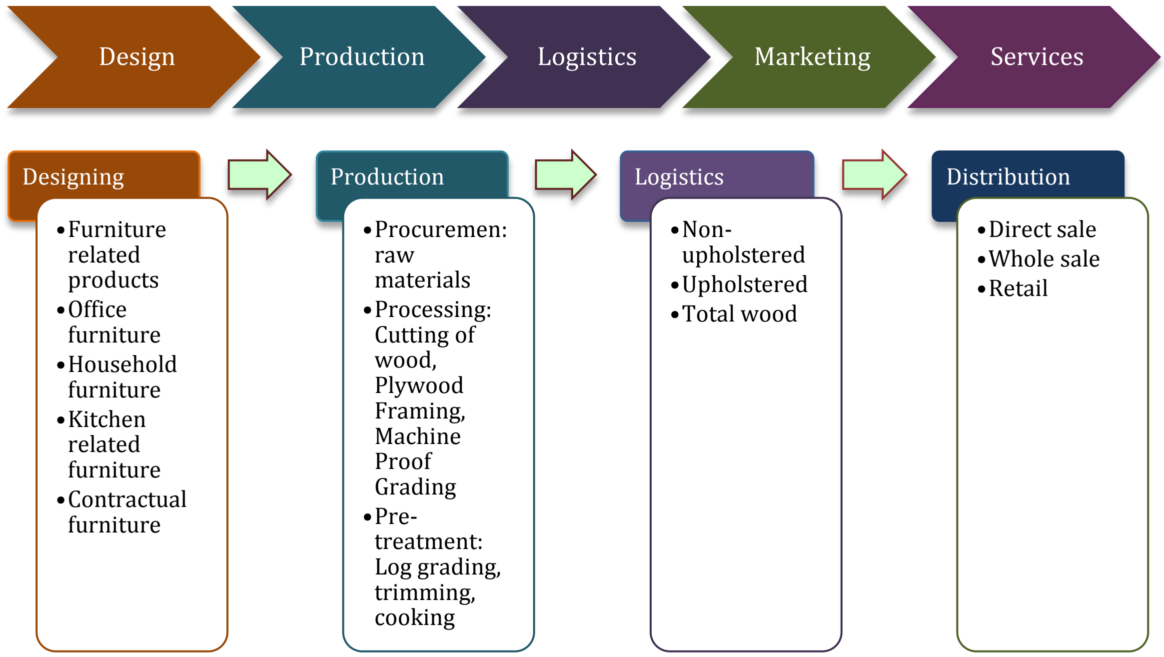

Figure 6: Value Chain of the Furniture Industry in Pakistan

Wooden Furniture value chain involves all the steps in the value addition process of the manufacturing and distribution of furniture from raw material to the end user. These value additions are a physical representation of the various processes involved in producing goods (and services), culminating with the delivered product. It is based on the idea of value-added at every stage of production i.e. designing, production, logistics and distribution (marketing and sales).

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13 Adapted from: https://www.unido.org/fileadmin/user_media/Publications/Pub_free/Upgrading_strategies_in_global_furniture_value_chains.pdf and http://nsdcindia.org/sites/default/files/files/Furniture-Furnishing.pdf

Production Process[14]

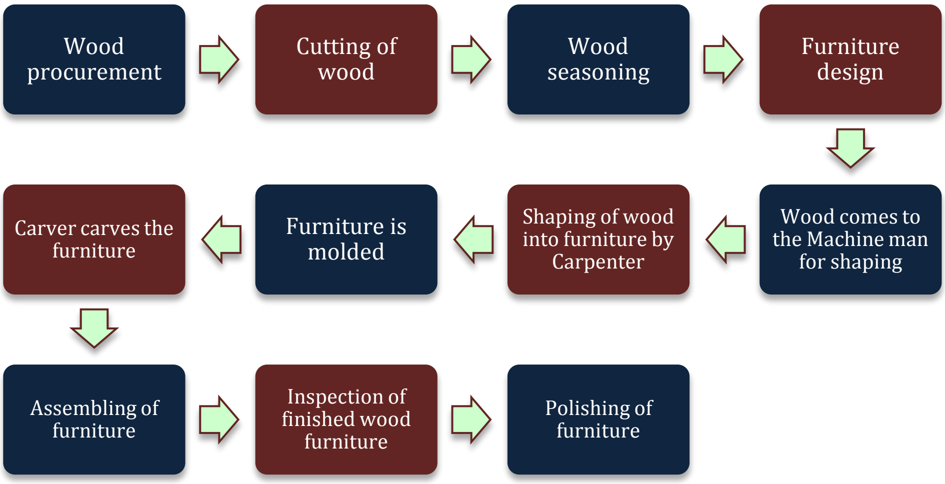

Figure 7: Production Process of furniture in Pakistan

The above diagram describes the entire process of furniture production, starting with raw materials through the final marketing and distribution to consumers[15]. Whereas materials used in furniture production include wood, metal, glass, plastic and reed. The most common material used by Pakistan furniture manufacturers is wood.

The entire finished product depends on the quality of wood. Detailed technical know-how about the quality of wood and the use of seasoned / dry wood plays a vital role in the manufacturing of quality furniture. The introduction of new technology and the assembling of products from components allows for an extended division of labour, using intensive resources. Forest reserves like Changa Manga, Pakhowal, Kundian, Chicha Watni, Bahawalpur and other forests are potential sources (SMEDA).

This production process can be categorized into three main categories of activities[16]:

- Back end: Activities that are at the factory level;
- Mid segment: Activities related to supply chain management and logistics;
- Front end: Activities relating to the distribution, sales and services of furniture.

Industry size, growth and trends

The furniture industry in Pakistan is divided into two main types: cottage and small-scale industries. According to the Trade Development Authority of Pakistan (TDAP), there are about 700 registered units in the country. These units are operating on the basis of single shift/300 days per annum (Business Recorder). The relative importance of small and

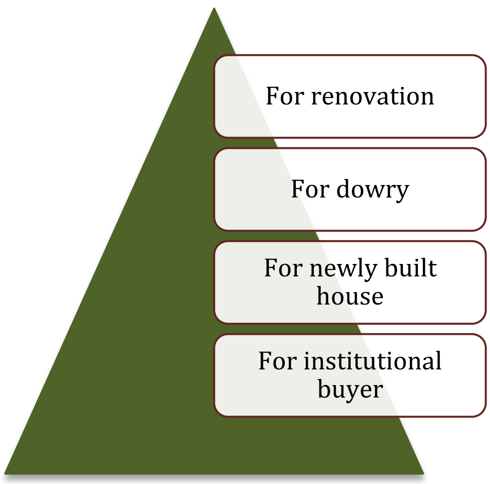

Figure 8: Demand for furniture

14 Adapted from: (SMEDA (2014). Pre-Feasibility Study: Wooden Manufacturing Unit)

15 https://www.unido.org/fileadmin/user_media/Publications/Pub_free/Upgrading_strategies_in_global_furniture_value_chains.pdf

16 http://nsdcindia.org/sites/default/files/files/Furniture-Furnishing.pdf

medium-sized enterprises (SMEs) is high in furniture, and is satisfying domestic demand (UNIDO). The four main styles are antique, Mughal, modern (Italian), and oriental (SMEDA).

Demand for furniture in Pakistan

The demand for wooden furniture in the domestic market is consistent throughout the year, however, it significantly increases during the period of October to March due to ‘wedding season’ (SMEDA).

Furniture imports and exports

The domestic demand for home and office furniture is growing at an annual rate of 25% in Pakistan[17]. Furniture production, mostly accounted for by wood-based furniture, as opposed to soft upholstered seating, was worth approximately $160 million at ex-factory prices indicating an average of $2660 per industry productive unit and $2000 per worker in 2006, but may have declined (Rayner). In terms of furniture exports, there has been a change of 31.35% in 2014-15 (it was $ 1718000) from 2013-14 (it was 1308000) [18].

	Import Value	Export value
	$ Million	$ Million
2005-06	10.282	10.743
2006-07	14.851	10.575
2007-08	16.721	11.025
2008-09	11.210	8.427
2009-10	12.951	7.743
2010-11	-	6.595
2011-12	-	6.466
2012-13	-	6.948
2013-14	-	7.356
2014-15	-	7.337

Table 1: Furniture imports and exports in Pakistan (Pakistan Bureau of Statistics, 2015)

Furniture is imported into Pakistan from China, Germany, Italy, Thailand and Korea (SMEDA). Majority of the furniture workshops are small in size and use manual-intensive production methods. Competitive edge is derived from high-skilled carving of traditional designs. Pakistan competes with countries like China, India, Vietnam and Malaysia. Especially China and Vietnam are concentrating their industries into larger bases and reap the benefits of mass production to the extent possible (UNIDO).

Furniture Major Buyer Countries

Pakistan’s major buyers of wooden furniture are the UK, the USA, Sri Lanka and Gulf countries like the UAE, Saudi Arabia, Oman and Kuwait. The United States buys mostly bedroom furniture. UK and the Gulf countries import kitchen and office furniture. For example, the British retail chain Harrods sells Pakistani furniture at its outlets (SMEDA).

17 http://www.furnitureasia.com.pk/wood_sector.htm
18 www.commerce.gov.pk/wp-content/.../July_September_2014_15.pptx

Comparison of Pakistan with Leading Countries in Furniture Sector

Total world trade in furniture in 2006 was estimated to be around $23.2 billion, of which the share of wooden furniture was 77%, followed by metal furniture at 17% and plastic furniture at 6%. Italy was the world's biggest exporter of furniture followed by Germany and Canada. United States was the biggest importer of wooden furniture followed by Germany and France (Rayner).

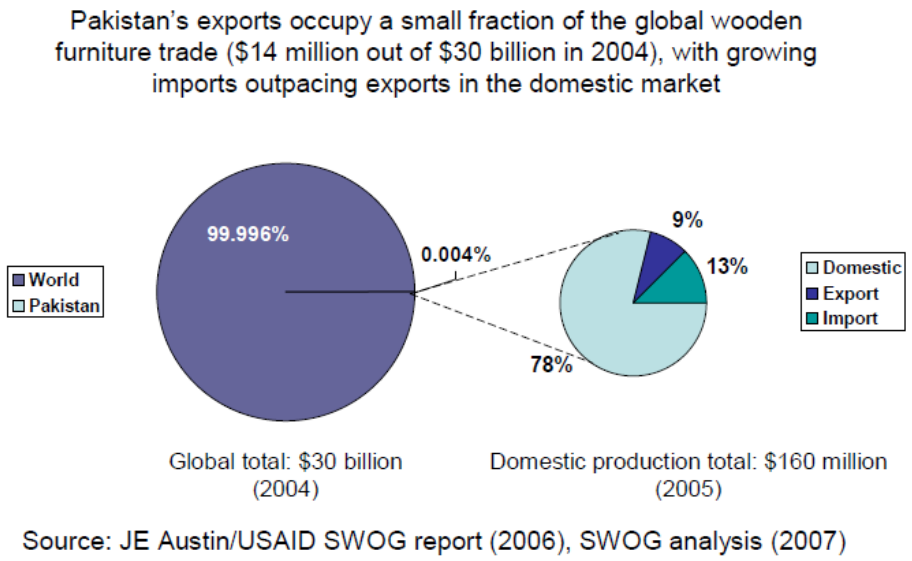

Figure 9: Furniture Sector volume - World and Pakistan

The industry in Pakistan has historically done well in term of exports until 2007 when exports kept increasing by 10 percent annually (Furniture Pakistan).However, exports of furniture have gone down since 2007 due to political and economic turmoil coupled with losses incurred by power load shedding. The exports, as explained earlier, now range between $6.4 million to $11.02 million per annum, and this does not reflect even a fraction of the actual potential of Pakistan's furniture industry.

Existing Challenges in Terms of Gaps in Human Resources and Skill Requirements

The sector has a relatively low-tech value chain. This implies good craft skills, low modern market skills, inappropriate/inadequate material supply, poor infrastructure, poor design, poor quality and lack of kiln-dried wood. There is a high percentage of wastage in the sector due to poor packaging, logistics, sawing and the absence of modern technology (Furniture Pakistan). There are several other reasons for this industry's current drawback, as shown in the tables and the diagram below.

Challenges in Labour Skills Demand	
Labour	▪ Lack of supervisory skills required for production operations. General lack of skills at preparing Bills of Materials at supervisor level. ▪ Less than optimal engagement of appropriate skills of qualified craft workers in the production of furniture ▪ Lack of utilisation of modern equipment such as computer numerically controlled machines. ▪ Lack of skills required for setting-up, programming and maintenance of machinery. ▪ Lack of experience of latest gluing techniques, latest finishing and polishing materials, and application of modern hardware materials like sliders, concealed hinges etc. ▪ Lack of skills in pattern making ▪ Lack of concept of managing to deliver the assigned job Just in Time. Lack of availability of skilled labour in Gujranwala, Rawalpindi, Karachi and Lahore
Lack of standards and certification	▪ Labour is not aware of efficient production techniques ▪ Supervisor level skills to improve labor efficiency are also lacking ▪ Lack of quality controls, checks and standardisation according to international requirements.
Manufacturing techniques	
Technology	▪ Modern machinery training is virtually non-existent, thus impeding the use of sensible effective equipment[19].
Marketing techniques	▪ Designs are similar and copied across the furniture shops. ▪ Lack of marketing and design information for merchandising and export promotion has held back innovative selling.
Government Policies/Regulatory environment	
Human Resource Developments	▪ Inadequate retailing skills ▪ Lack of proper logistic management and investment. ▪ Lack of cooperation at intra and inter cluster level.
Challenges in Labor Skills Supply	
Non standardization in training curriculum and standards	
Challenges in setting up training infrastructure	
Lack of knowledge of career path amongst youth	
Lack of proper work methodology amongst employees	
Lack of awareness of furniture sector's potential as a career option	
Availability and retention of manpower	

Table 2: Challenges faced on the supply and demand sides
Source: Derived from Multiple Sources[20]

19 (Warenstein)
20 http://www.tradecapacitypakistan.com/new/pdf/itc/SS1.pdf

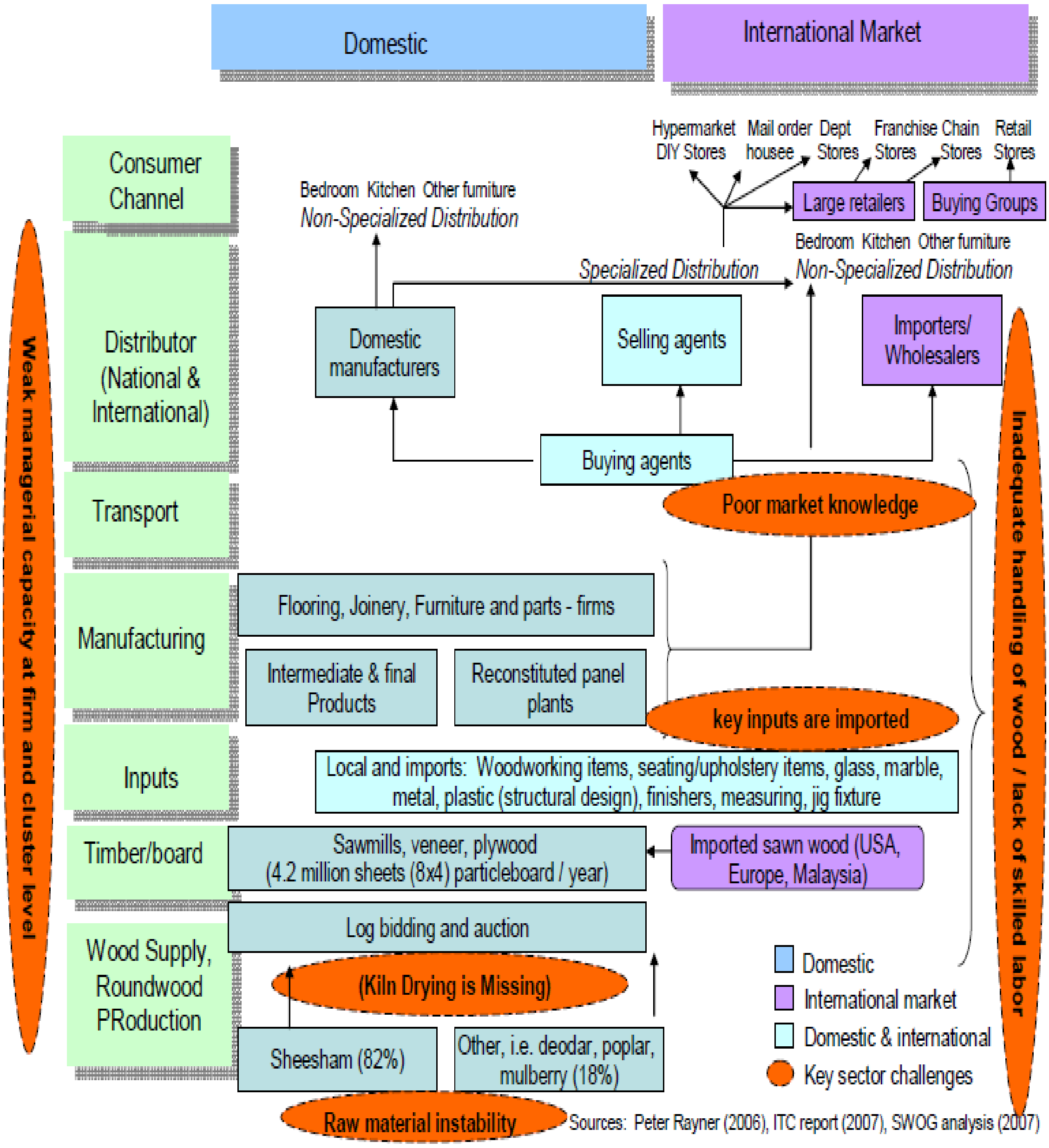

Figure 10: Key challenges in Pakistan's Value Chain (Adapted from: SMEDA, 2011)

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http://www.unido.org/fileadmin/user_media/UNIDO_Worldwide/Offices/UNIDO_Offices/Pakistan/Wooden_Furniture_Manufacturing_Unit.pdf
http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Growing%20Demand%20of%20U.S.%20Wood%20Products%20in%20Pakistan_Islamabad_Pakistan_1-27-2014.pdf
http://lahoredispatch.com/brief-synopsis-pakistans-furniture-industry-185
http://furniturekingdom.blogspot.com/2009/06/swot-analysis-of-pakistani-furniture.html

Types of Skills Needed

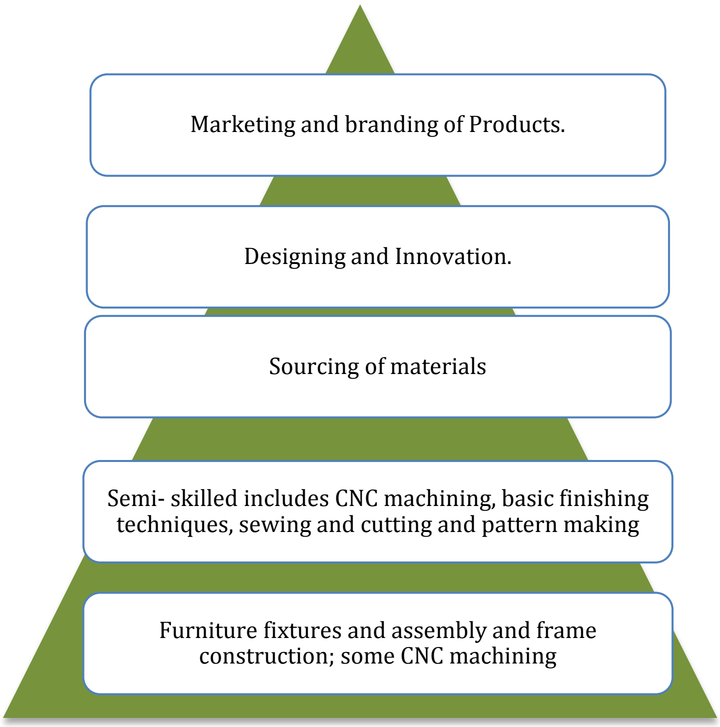

Figure 11: Types of skills needed

Key Trends and Growth Drivers

Demand side factors	Disposable income	Purchase represents a major investment by consumers in household and Office furniture
	Demographic factors	Such as birth rates, marriage rates, life expectancy and household size Degree of social and geographic mobility of the population Increase in the average size of new houses
	Consumer confidence New housing and non-residential buildings	
Supply side factors	Lack of availability of qualified craft workers	Skills to construct finished items of furniture out of solid wood Production of specialized items for niche markets
	Transfer of inter-generational skills is low	This is due to attitudinal changes, low return on wages and salaries.
	Low availability of craftsmanship skills	Incompetent skills are available in the market. Workers usually use obsolete methods to work
	Cost ineffectiveness	Higher cost is associated with better quality skilled workers, which usually increases the price of the furniture.
	Labour intensive work	

Table 3: Key growth drivers of Furniture demand and supply

Trends in the Furniture Sector Requiring More Man Power with Specific Skills

Branding	No promoted exports, especially of craft based wood product, should be allowed on a Government backed basis until a quality campaign has been installed and a marketing process instituted that offers documentary and supportive evidence of 'world-class' furniture facilities. This means the instituting of sound productive methods, kilns, sustainable wood sources, basic furniture making methods, product standards and quality criteria **(Rayner)**.
Importance on Design and Designing	New designs and styles can build brand equity for the business. Creation of new designs and styles is vital for setting new trends as the market is quite competitive (SMEDA).
The implication for placing importance on branding and designing of furniture is to magnify the kinds of furniture produced within Pakistan and to make it more favorable for consumers abroad and within. If consumers are aware of the quality with which a certain piece of furniture has been produced, using the latest designs, it will encourage them to buy it with confidence.	

Table 4: Concepts required in the furniture sector in Pakistan

Furniture Consumer Segments and Types of Furniture

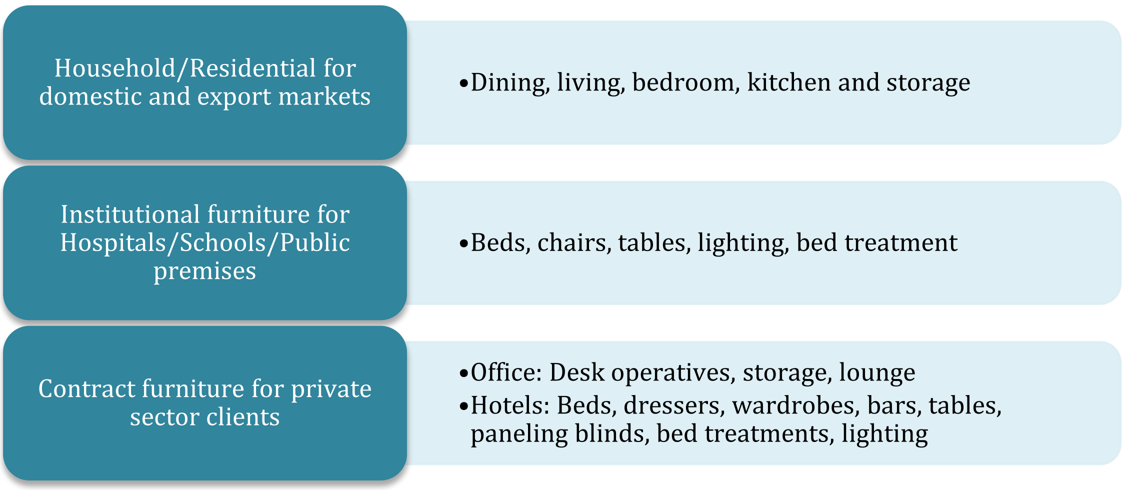

Figure 12: Furniture consumer types

Two types of markets are based in Pakistan: Formal and Informal[21]. 95% of the office furniture manufacturing units are formal, while the rest belong to the informal category.

As determined by the pre-test survey, the cluster in Lahore consists of units manufacturing household furniture. This segment is the largest in the country, comprising 70% of total furniture market and can be segmented into four categories, based on their clientele. The most expensive unit of purchase is bed sets.

The four segments are:

Segment	Buying power	Formal/informal
Segment A	Rs. 150,000 to 200,000	Manufacturers belong to 100% formal category
Segment B	Rs. 75,000 to 150,000	20% belong to formal category
Segment C	Rs. 50,000 to 75,000	Informal
Segment D	Below Rs. 50,000	Informal

Table 5: Furniture Segments

21 Formal and Informal markets are identified as the registered and unregistered businesses respectively.

Furniture Product Categories

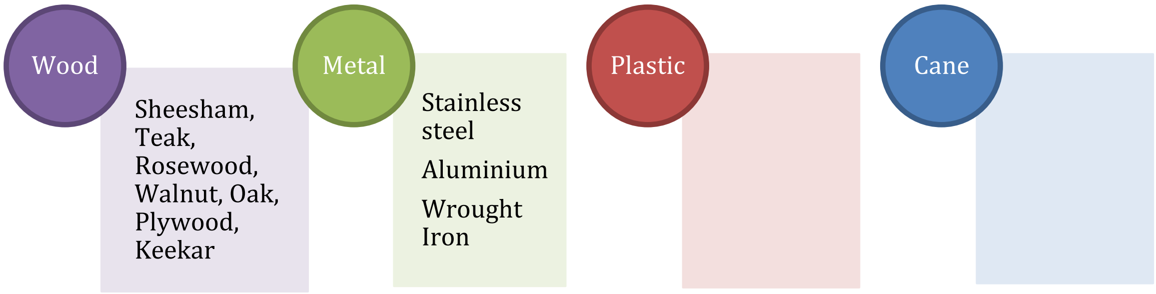

Figure 13: Furniture product categories

Workforce of an Organization

This can be broadly grouped into three of the following categories based on the level of experience:

- Manages a Team
- Works Independently
- Needs Supervision

Workforce can either be skilled, semi-skilled or unskilled. Skilled workers are mostly those who manage a team, semi-skilled workers are those who work independently and unskilled people are those who need supervision.

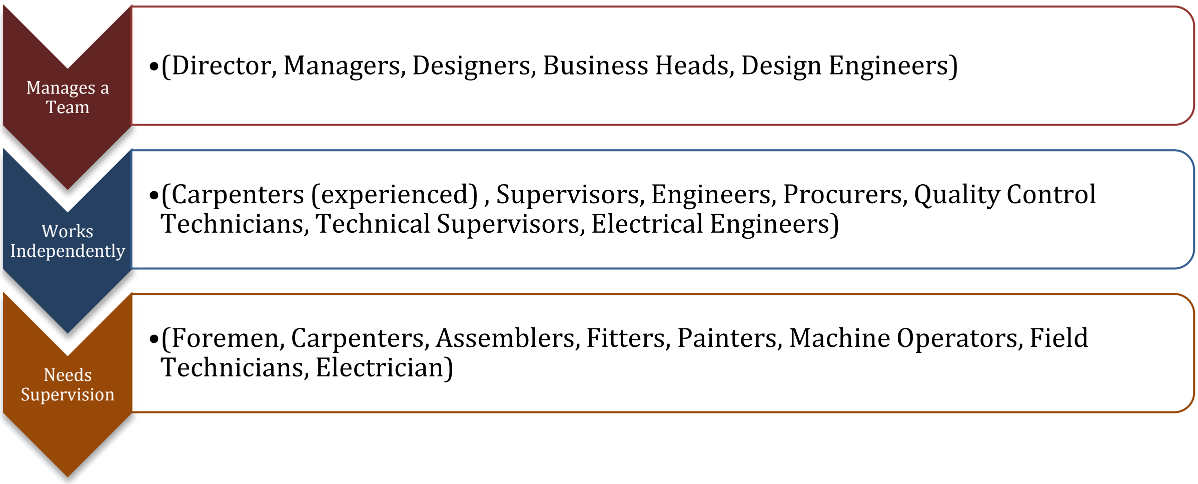

Figure 14: Hierarchy of skill levels

Functional Distribution of Key Job Roles and Key Skills Required22

Function	Key job roles	Key skills required
Designing	Designers for Furniture	Ability to create innovative designs Knowledge of new trends Levels of competition Capability of production Handling of machinery, tools and equipment Knowledge of consumer demand
Production	Purchaser of raw materials Managers involved In production, Carpenters, Engineers, Assemblers, Polishers, Finishers, Technicians for quality checks, Operators of machines, Supervisors	Understanding of costs of raw materials, storage capacities and procurement avenues Quantitative skills for raw material procurement Financial skills for costs and budgeting of raw materials Understanding of the production process Capability of quality work Ability to handle machines Knowledge of transmission of designs from machines to furniture Understanding of technical aspects in furniture production
Logistics	Designers, Technicians, Assemblers, Polishers	Knowledge of upholstery Understanding of designs Ability to handle machines
Distribution	Sales and Marketing executives, repair and maintenance personnel,	Understanding of the furniture clusters Effective communication skills Knowledge of market competition Understanding of the marketing and pricing strategies Ability to handle tools and machinery for fitting Understanding of designs Ability to respond to customer queries

Table 6: Distribution of key skills needed according to job roles

22 Adapted from: http://nsdcindia.org/sites/default/files/files/Furniture-Furnishing.pdf

Level	Skills required	Key skill gap
Entry level	Understanding of the production process Ability to handle machines and tools and equipment Understanding of furniture designs Competency in understanding of the furniture market	Measurement of wood – calculation of *sootars* Writing the measurements Sawing wood/planks in the correct angles Little or no understanding of key production techniques Little ability to understand designs Lack of technical know-how Scraping/smoothing/glossing surface with minimum abrasion Proper use of *Randa* Carving files Gripping and hammering of the tools Proper application of the hammer as required by the strength and texture of wood Proper selection of nails as per requirement of strength, thickness and affordability Ability to sharpen the saw teeth, scraper, and carving file, giving the edges the proper angles Selection and in-laying of upholstery materials Use of polishing tools
Middle level	Understanding of the production process Effective communication skills Management skills Understanding of quality products Financial skills	Upgrading assembly line working techniques Efficient use of manpower Selection of wood, related glues and fixing agents Selection of lacquers/polishes Lack of knowledge about curing time on glues/fixing materials/polishes Lack of understanding of the production process Low capacity to handle designing Little knowledge of quality measures Little understanding of cost effectiveness Lack of technical knowledge Ineffective communication skills Low co-ordination between staff Low motivation to do well on the job Little to no understanding of handling machines and equipment
Top level	Understanding of the production process Strong knowledge of the market trends and new technologies in the industry Strong knowledge and understanding of the various National and International standards relating to the process Strong analytical and cost estimation skills Excellent communication skills	Lack of strong knowledge of the market trends Lack of know-how of international trends Lack of know-how of latest technology being used Lack of application of latest technology Lack of standardization of furniture manufacturing under International Standards
For women	At the entry level	Soft skills, Polishing, finishing, upholstery, packaging, use of pneumatic scrapers

Table 7: Key skill gaps at different levels (Multiple sources: Derived from Secondary Research)[23]

23 http://www.fspublishers.org/published_papers/63168_..pdf
https://thiscostblood.wordpress.com/tag/furniture-sector-of-pakistan/
http://www.jstor.org/stable/41260726?seq=1#page_scan_tab_contents

Major Findings from the Quantitative Survey

As stated earlier, the quantitative survey was administered to a total of 450 furniture manufacturing establishments in Lahore, Gujrat and Chiniot. These organizations were surveyed to assess skills shortages and gaps currently existing in the sector as a whole, and the state of skills training that is presently available. The findings from this survey are given below:

Sector Status (Formal/Informal)

As stated earlier, of the sample of 450 firms, 274 were registered with either government departments or business associations/networking groups. The remaining 176 were entirely informal in that they were not involved in any sort of formal registration.

Firm and Owner Profile

Legal Status

It can be seen from figure 15, that 96% of the firms were sole proprietorships and were small in scale. Of the sampled firms, 3% were formed in partnerships, while only 1% were private limited companies.

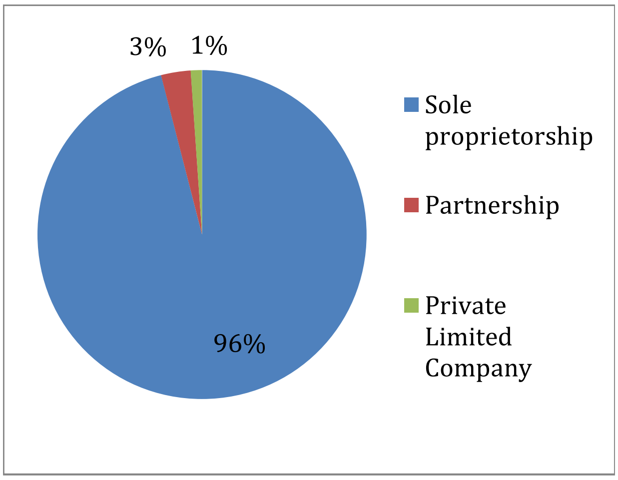

Figure 15: Legal Status of Firms

Owners' Profile

For the quantitative survey, the respondents were either owners or managers of the sampled firms (specifically 82% were owners; 18% were managers) as evident from Table 8. It was found that most of the owners and managers were themselves untrained; 99% had received no training themselves (Table 10). The most commonly cited reason reported for the lack of training was that skills were learned on-the-job and/or via learning-by-doing instead (Table 11). However, a significant portion of respondents also did not see the value of training; they thought it as unproductive and time consuming or felt that nothing new would be learned from formal training.

Respondents	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Owner/Director	77.3	96.7	72.7	82.2	370
Manager/Supervisor	22.7	3.3	27.3	17.8	80
N	150	150	150	100.0	450

Table 8: Survey respondents

Note: In tables in this section, percentage totals may not add to 100 due to rounding errors.

Furthermore, education levels among owners and managers were also generally low as depicted in Table 9: more than half had only primary level education. The frequency of training was also extremely low with only 0.4% of owners and managers having had any training themselves (see Table 10).

Education Level	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Primary	55.3	60.0	48.0	54.4	245
Middle	27.3	18.7	24.0	23.3	105
Secondary	13.3	12.0	20.0	15.1	68
Higher Secondary	2.0	6.7	2.7	3.8	17
Bachelor	2.0	2.7	4.0	2.9	13
Master	0.0	0.0	1.3	0.4	2
N	150	150	150	100.0	450

Table 9: Level of education of respondents

	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Yes	0.7	0.7	0.0	0.4	2
No	99.3	99.3	100.0	99.6	448
N	150	150	150	100.0	450

Table 10: Incidence of training among respondents (Owners/Directors/Managers/Supervisors)

Reasons for not Acquiring Training	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
More expensive	23.5	48.3	6.0	25.9	116
Formal training is a unproductive and time consuming	22.8	65.1	14.7	34.2	153
On the job training	72.5	43.6	46.7	54.2	243
No new things in formal training can be learnt	22.8	43.6	22.0	29.5	132
New things can be learnt in informal training	48.3	36.2	60.7	48.4	217
Inherited business	2.7	11.4	8.0	7.4	33
Inherited skills	36.9	17.5	24.0	26.1	117
There is no institute	2.0	0.0	0.7	0.9	4
Business and skills inherited	0.7	0.0	0.7	0.5	2
No proper formal institute	2.0	0.7	0.0	0.9	4
N(Responses)	349	397	275	227.9	1021
N(Cases)	149	149	150	100.0	448

Table 11: Reasons for not acquiring training

Among owners, 52% had been associated with their firms for more than 10 years, and the majority of firms (74%) had been in operation for over 5 years (Table 12 & 13 below).

Years of Operation	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Less than 1 year	1.3	3.3	6.0	3.6	16
1 to 5 years	14.7	15.3	37.3	22.4	101
6 to 10 years	20.7	25.3	17.3	21.1	95
11 to 15 years	14.0	28.7	11.3	18.0	81
15 to 20 years	6.0	16.0	7.3	9.8	44
20 years and above	43.3	11.3	20.7	25.1	113
N	150	150	150	100.0	450

Table 12: Years of operation

No. of Years	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
1 up to 10	38.7	38.7	66.7	48.0	216
10 up to 20	37.3	47.3	19.3	34.7	156
20 up to 30	13.3	11.3	6.0	10.2	46
30 up to 40	9.3	2.0	5.3	5.6	25
40 up to 50	1.3	0.7	2.7	1.6	7
N	150	150	150	100.0	450

Table 13: Responses to "For how many years have you been associated with this establishment?"

Selling and Manufacturing Activities

Firms in the sector largely manufacture their own products, most of which are wood-based. Overall, 96.9% of the sampled firms sold local furniture, while only 2.4% sold both local and imported furniture. None of the firms sampled in Lahore and Gujrat sold imported furniture. 2% of the sample in Chiniot sold imported furniture (Table 14 below).

The primary customers of the Furniture industry are the domestic households. 93% of the firms reported household furniture to be their highest selling product. Specifically, 93% of firms solely sell furniture that is manufactured in-house, and 99% of the furniture that they manufacture is wooden (Table 15, 16 & 17 below).

Furniture Types	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Imported	2	0	0	0.7	3
Local	97.3	94.7	98.7	96.9	436
Both	0.7	5.3	1.3	2.4	11
N	150	150	150	100	450

Table 14: What type of Furniture does your establishment sell?

Type of Furniture Products	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Wooden	98.7	99.3	99.3	99.1	446
Iron	4.0	1.3	4.7	3.3	15
Synthetic Wood	28.7	92.7	26.7	49.3	222
Plastic	0.0	0.0	0.0	0.0	0
N(Responses)	197	290	196	151.8	683
N(Cases)	150	150	150	100.0	450

Table 15: What type of furniture products do you manufacture?

	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Yes	2.0	12.7	6.7	7.1	32
No	98.0	87.3	93.3	92.9	418
N	150	150	150	100.0	450

Table 16: Do you purchase readymade furniture for your showrooms?

Category of Furniture	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Office furniture	15.3	10.0	8.0	11.1	50
Household/Individual furniture	94.0	94.7	90.0	92.9	418
Architectural furniture	12.0	6.7	6.7	8.4	38
School furniture	10.0	8.0	6.0	8.0	36
Hospital furniture	2.7	4.7	0.0	2.4	11
N(Responses)	201	186	166	122.9	553
N(Cases)	150	150	150	100.0	450

Table 17: Which category of your furniture sells the most?

Workforce Characteristics

Size of Firm in Terms of Employment

With regards to the size and structure of the existing workforce employed by these firms, in all, the sample of 450 firms was found to be employing a total of 2,862 people at the time of the survey. This implies an average firm size of 6.4 individuals. However, the median firm size was 4 as several larger firms were present in the sample. The largest firm in the sample employed 200 people.

Number of Employees	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	N	%
Less than 5	49.3	46.0	66.7	243	54.0
5 to 9	42.0	44.7	22.7	164	36.4
10 to 19	7.3	8.0	2.7	27	6.0
20 to 29	0.7	-	3.3	6	1.3
30 to 39	-	-	1.3	2	0.4
40 to 49	-	0.7	1.3	3	0.7
50 to 100	0.7	-	2.0	4	0.9
100 or more	-	0.7	-	1	0.2
Total	100.0	100.0	100.0	450	100.0

Table 18: Distribution of firms by number of persons currently employed

As can be seen from the Table 18, 54% of the total number of firms sampled employed fewer than 5 employees and were very small in scale. Overall, only 1 firm employed more than 100 people (Chen One Stores Furniture), while 36% employed 5 to 9 employees.

Temporary vs. Permanent Employment

Some portion of this total employment was, however, temporary/seasonal. Table 19 shows the break-up of total employment into permanent and temporary workers. Overall, about 14% of the workforce was temporarily employed (workers hired on temporary contracts on a casual or seasonal basis). The incidence of temporary employment was much higher in Lahore, close to 29% of the workforce was hired on a temporary-basis. In comparison, the portion of temporary workers was only 6% in Chiniot and 7% in Gujrat even though total numbers hired were about the same in all three clusters.

Employees	Chiniot		Lahore		Gujrat		Overall	
	Total	%	Total	%	Total	%	Total	%
Permanent employees	826	94.5	732	71.3	894	92.9	2452	85.7
Temporary employees	48	5.5	294	28.7	68	7.1	410	14.3
Total employees	874	100.0	1026	100.0	962	100.0	2862	100.0

Table 19: Permanent and temporary employment

Employee Turnover Rate

About 30% of the firms experienced employee turnover in the 12 months before the survey as shown in Table 20. That is, out of 450 firms, 139 firms saw permanent employees leave the establishment in the previous year. These 139 firms lost a total 287 employees between them. Thus, among firms that did experience employee attrition, an average 2.1 employees left the firm within a single year – this is large given that a median firm employs 4 people. An analysis of the employees who left and their reasons for leaving revealed workers that were most frequently lost were "bed-frame makers" (Table 21 below). However, in the previous section we saw that bed-frame makers were the largest in number as well. The most commonly cited reason for leaving was that a better opportunity was found elsewhere or that pay was too low at the current establishment.

	Chiniot	Lahore	Gujrat	Overall	
	%	**%**	**%**	%	N
Firms that lost employees	23.3	35.3	34.0	30.9	139
Firms that did not lose employees	76.7	64.7	66.0	69.1	311
N (Cases)	150	150	150	100.0	450

Table 20: Percentage of firms experiencing employee turnover in the last 12 months

Trades	Chiniot	Lahore	Gujrat	Overall	
				%	N
Wood sawyer	0	3	7	3.5	10
Precision woodworking sawyer	0	5	0	1.7	5
Wood furniture designer	0	1	1	0.7	2
Wood working lathe operator	0	4	1	1.7	5
Furniture manufacturing with hand tools	1	0	0	0.3	1
Carving machine operator	21	11	5	12.9	37
Furniture fitter/ Assembler (Joiner)	19	0	8	9.4	27
Furniture finisher	4	0	0	1.4	4
Furniture polisher/ Painter	3	16	11	10.5	30
Furniture upholsterer	2	7	0	3.1	9
Cabinet maker	0	23	9	11.1	32
Door maker	0	1	1	0.7	2
Table maker	0	4	2	2.1	6
Sofa/Chair maker	1	13	19	11.5	33
Bed frame maker	2	32	48	28.6	82
Showcase maker	0	0	2	0.7	2
Total	53	120	114	100.0	287

Table 21: Employees who left their firm in the last 12 months (in 139 establishments)

Working Hours

Employee Status	N	Mean	Std. Dev.	Min	Max
Full-time employees	450	9.6	1.5	6	14
Part-time employees	16	2.8	1.0	2	4
Employees on over-time	76	2.5	0.8	1	4

Table 22: Average number of hours worked in a day

Working Hours	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
6 up to 9	10.0	27.3	62.7	33.3	150
9 up to 12	60.0	60.0	32.7	50.9	229
12 up to 15	30.0	12.7	4.7	15.8	71
N (Cases)	150	150	150	100.0	450

Table 23: Working hours of full time workers

On average, workers in the sector worked long hours close to 10 hours a day. Working hours exceeded 12 per day in close to 16% of firms. Longer working hours were seen more frequently in Chiniot than the other clusters (Table 22 & 23 above).

Average Wages

Average monthly salaries for skilled-workers ranged from Rs. 8,000 per month, up to Rs. 25,000 per month. The results indicate that higher paid skills include door-making, and bed-frame making. Wood final making stands out as the highest in the figure 16, but only a single observation of this occurs in the sample. Sawyers, shapers and levelers, and workers involved in the seasoning[24] of wood were the lower paid workers in the range. Salaries were somewhat higher in Gujrat (where overall mean pay is Rs. 18,957) and in Lahore (Rs. 15,350), relative to Chiniot (Rs. 12,605).

24 Seasoning refers to the drying and treatment of planks etc.

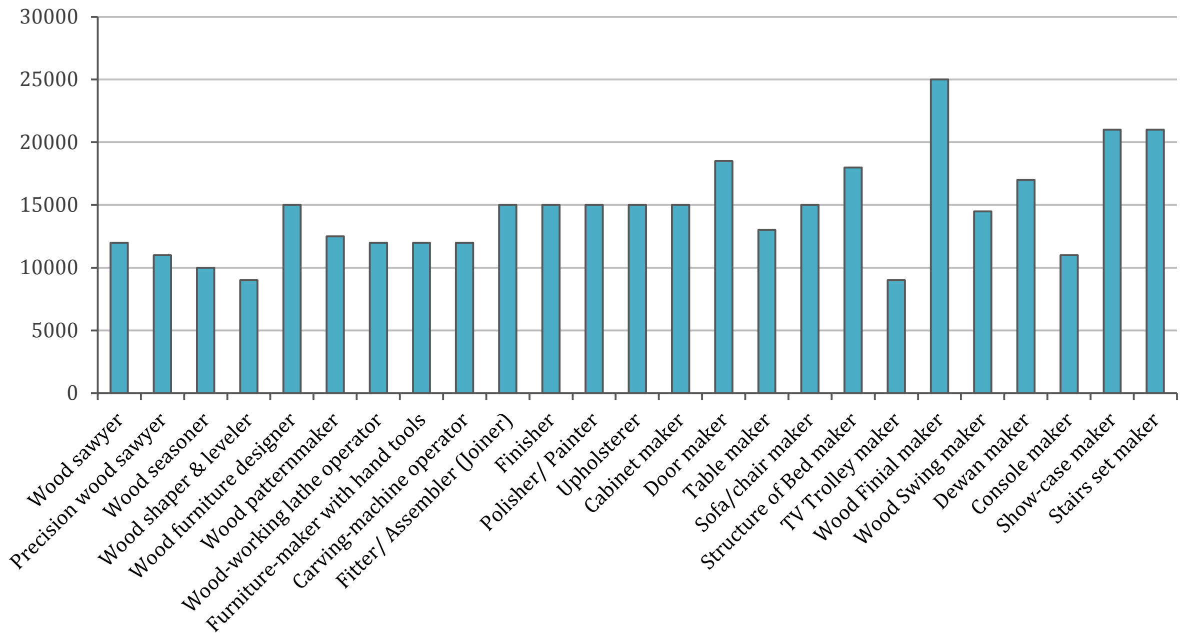

Figure 16: Median monthly salaries (in Rupees) for permanent, skilled workers - by type of trade

Cluster	Obs	Mean	Std. Dev.	Min	Max
Chiniot	563	12,605	2,661	5,000	25,000
Lahore	500	15,350	3,743	1,000	28,000
Gujrat	449	18,957	4,117	1,800	30,000

Table 24: Mean salaries (in Rupees) of permanent, skilled workers by cluster

Workers, who were deemed less experienced or skilled, earned on average Rs. 3,000 less per month than their more experienced counterparts. Workers hired on a casual/temporary basis were paid, on average, Rs. 4,364 less per month than permanent employees. The complete range of salaries/wage rates, by cluster and by trade is reported in the following Table 25.

Trades	Chiniot	Lahore	Gujrat	Overall
	Median	**Median**	**Median**	**Median**
Wood sawyer	10,000	12,000	18,000	12,000
Precision woodworking sawyer	12,000	10,000	13,500	11,000
Wood seasoner	10,000	0	0	10,000
Wood shaper & leveler	10,500	5,000	0	90,00
Wood furniture designer	15,000	18,000	16,500	15,000
Wood patternmaker	11,500	15,250	0	12,500
Wood working lathe operator	12,000	12,000	15,000	12,000
Furniture manufacturing with hand tools	12,000	10,000	20,000	12,000
Carving machine operator	12,000	12,250	20,000	12,000
Furniture fitter/ Assembler (Joiner)	15,000	13,500	18,000	15,000
Furniture finisher	10,500	13,000	18,000	15,000
Furniture polisher/ Painter	11,000	15,000	22,500	15,000
Furniture upholsterer	11,000	15,000	24,000	15,000
Cabinet maker	11,000	15,000	19,000	15,000

Trades	Chiniot	Lahore	Gujrat	Overall
	Median	**Median**	**Median**	**Median**
Door maker	11,000	17,500	21,000	18,500
Table maker	11,750	15,000	16,000	13,000
Sofa/Chair maker	12,000	16,000	18,000	15,000
Structure of bed maker	14,000	18,000	18,000	18,000
TV trolley maker	9,000	0	0	9,000
Wood finial maker	25,000	0	0	25,000
Wood swing maker	14,500	0	0	14,500
Dewan maker	17,000	0	0	17,000
Console maker	11,000	0	0	11,000
Show-case maker	0	0	21,000	21,000
Stairs-set maker	0	0	21,000	21,000
N (Cases)	150	150	150	450

Table 25: Average level of wages (in Rupees) per month for skilled, permanent workers

Job Titles/Trades in the Sector

The complete inventory of employees, by their job title / trade / occupation, is presented in the table 26 below. It is organized to show occupations in order of size of workforce. It shows that a fifth of workers in the sector were those specializing in the making of bed-frames. Makers of sofas and chairs were the second most common type of employee in the sector, followed by assemblers, carving machine operators, and makers of tables.

The job titles illustrate that workers in the sector either specialize in the manufacture of particular items of furniture (for example beds, doors, chairs etc.), or in functions related to the preparation of wood (wood sawing, seasoning, scaling, leveling etc.) or functions related to finishing (polishing, painting, upholstering etc.). Job titles in the sector merely follow from these specializations ("bed frame maker", "sofa maker", and so forth). Other jobs in the sector included furniture design, though only 16 designers were found in the sample of 2,862 workers. The table 26 also shows, for each occupation, how many firms employed workers of that occupation. For example, the 604 bed-frame makers were employed in 303 (67.3%) of the firms in the sample. The remainder of firms, 147, did not employ bed-framer makers. (Note that a total of 1,642 "occupation-firms" " occur in the sample. For instance, a firm that comprises bed-frame makers and polishers only is equivalent to two "occupation-firms". Similarly a firm that employs chair-makers, upholsterers and polishers is equivalent to three "occupation-firms". Some of the analysis in the sections that follow is based on the sample of "occupation-firms").

Job Titles	Chiniot	Lahore	Gujrat	Overall			
	N	**N**	**N**	**N**	**%**	**No. of Firms**	**% of Firms**
Bed frame maker	130	267	207	604	21.1	303	67.3
Sofa/Chair maker	91	217	126	434	15.2	205	45.6
Furniture fitter/ Assembler (Joiner)	198	35	122	355	12.4	228	50.7
Carving machine operator	160	61	53	274	9.6	138	30.7
Table maker	67	96	58	221	7.7	152	33.8
Furniture polisher/ Painter	19	122	69	210	7.3	100	22.2
Wood sawyer	70	49	87	206	7.2	170	37.8

Job Titles	Chiniot	Lahore	Gujrat	Overall			
	N	N	N	N	%	No. of Firms	% of Firms
Cabinet maker	11	47	77	135	4.7	92	20.4
Furniture upholsterer	13	59	45	117	4.1	57	12.7
Wood working lathe operator	34	20	11	65	2.3	47	10.4
Furniture finisher	10	10	44	64	2.2	32	7.1
Precision woodworking sawyer	28	18	2	48	1.7	35	7.8
Showcase maker	0	0	43	43	1.5	28	6.2
Door maker	3	10	9	22	0.8	17	3.8
Furniture manufacturing with hand tools	13	1	6	20	0.7	11	2.4
Wood furniture designer	11	3	2	16	0.6	13	2.9
Wood shaper & leveler	7	3	0	10	0.3	3	0.7
Wood patternmaker	1	8	0	9	0.3	3	0.7
TV trolley maker	2	0	0	2	0.1	1	0.2
Wood swing maker	2	0	0	2	0.1	2	0.4
Wood seasoner	1	0	0	1	0	1	0.2
Stairs set maker	0	0	1	1	0	1	0.2
Wood finial maker	1	0	0	1	0	1	0.2
Console maker	1	0	0	1	0	1	0.2
Deewan maker	1	0	0	1	0	1	0.2
N (Responses)	874	1026	962	2862	100	1642	
N(Cases)	150	150	150	450		450	

Table 26: Number of employees in each occupation

Current Qualification and Training Status of Employed Workforce

Much of the workforce in the sector was uneducated as shown in Table 27 below: 44% of the workers had no formal education. However regional disparities were found. Interestingly, Gujrat had a much higher percentage of educated workers. While over half of the worker population in Chiniot and Lahore was uneducated, in Gujrat only 17% were uneducated. In Gujrat, 44% of workers had primary education, 30% had middle-school level education, and the remaining 8% had higher levels of education.

In addition, to the low levels of basic education, the prevalence of technical education was also extremely low: only one individual in the entire sample of workers possessed a technical diploma. These two findings coupled together suggest that space for training initiatives in the sector is ample and that human resource development is an area of critical need in the sector.

Levels of Education	Chiniot		Lahore		Gujrat		Overall	
	N	%	N	%	N	%	N	%
Uneducated	451	51.6	637	62.1	165	17.2	1253	43.8
Primary	292	33.4	238	23.2	427	44.4	957	33.4
Middle	88	10.1	115	11.2	291	30.2	494	17.3
Matriculate	31	3.5	32	3.1	64	6.7	127	4.4

Levels of Education	Chiniot		Lahore		Gujrat		Overall	
	N	%	N	%	N	%	N	%
Intermediate	6	0.7	2	0.2	12	1.2	20	0.7
Graduate	3	0.3	1	0.1	3	0.3	7	0.2
Technical Diploma	0	0.0	1	0.1	0	0.0	1	0
Short Skills Course	3	0.3	0	0.0	0	0.0	3	0.1
Total	874	100.0	1026	100.0	962	100.0	2862	100

Table 27: Number of workers by level of education

A comparison was done between the numbers of educated workers with numbers who were uneducated within 12 of the most frequently occurring jobs/occupations (Figure 17 below). Among bed-frame makers, educated workers outnumbered uneducated workers by a fairly large margin. This is also true among cabinet makers, assemblers, and to a lesser degree among carving machine operators. In all other trades, workers are generally equally likely to have some education as they are to not have any education.

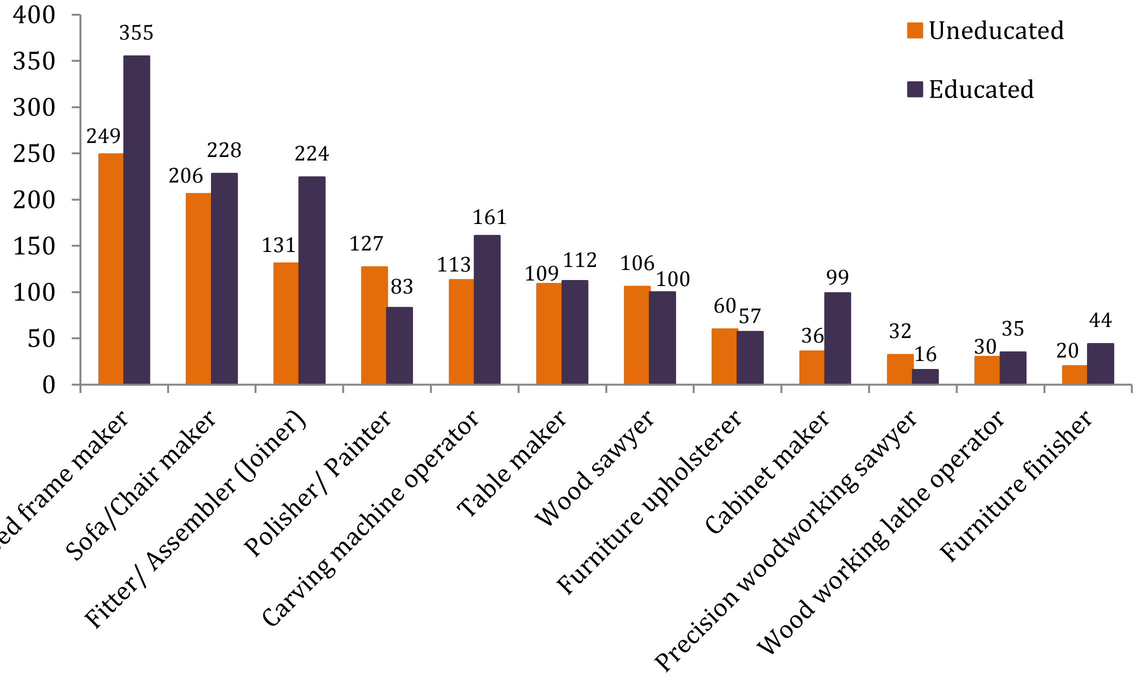

Figure 17: Number of educated vs. uneducated workers in the 12 most frequently occurring jobs

Respondents (managers/owners) were asked the level of education they thought was required for each type of trade in their firm. These responses were then compared with the actual level of education the workers currently in those positions had attained. It was found that 46% of the workers had acquired education less than what their manager/owner of firm felt was required for the job (Table 28 below).

Most of those workers, whose education levels did not match with what managers wanted, were found to be uneducated (Table 29 below). However, it can be seen that even workers who had primary or middle level education, often had education levels less than what managers thought was required.

	Chiniot		Lahore		Gujrat		Overall	
Workers that:	N	%	N	%	N	%	N	%
Have insufficient education	378	43.3	534	52.1	405	42.1	1,317	46.0
Have sufficient education	333	38.1	291	28.4	258	26.8	882	30.8
Have more than sufficient education	163	18.7	201	19.6	299	31.1	663	23.2
Total	874	100.0	1,026	100.0	962	100.0	2,862	100.0

Table 28: Managers/Owners perception of workers' current education

Level of Education	Insufficient*	Sufficient**	More than sufficient***	Total
	N	N	N	N
Illiterate	816	437	0	1,253
Primary	392	313	252	957
Middle	108	86	300	494
Matriculate or higher	1	45	108	154
Technical Diploma, Short Skills Course	0	1	3	4
Total	1,317	882	663	2,862

Table 29: Workers level of education vs perceived sufficiency of education

Notes:

* *Number of workers whose level of education is less than what manager thinks is required for that occupation*

** *Number of workers whose level of education matches with what manager thinks is required for that occupation*

*** *Number of workers whose level of education is greater than what manager thinks is required for that occupation*

However, when respondents (managers and owners) were asked to classify their workers as either "highly skilled", "semi-skilled", or "low skilled",[25] 87% of workers in Table 30 were classified as "highly skilled" (despite the fact that 46% did not meet perceived education requirements). Formal training was fairly uncommon with only 2% of workers having received it (Table 31 below). However, 43% of workers were reported to have received informal training on-the-job or in the form of guidance from supervisors. Thus, it may be the case that insufficiently educated workers receive training on-the-job to counteract the lack of formal education, and are then deemed to be of high skill despite having low education.

Perceived Skills	Chiniot	Lahore	Gujrat	Overall	
	N	N	N	N	%
Highly skilled	751	873	862	2,486	86.9
Semi-skilled	101	125	98	324	11.3
Low skilled	22	28	2	52	1.8
Total	874	1,026	962	2,862	100

25 For the purposes of the survey, the following definitions were set. "Unskilled" workers were defined as those performing occupations that involve (primarily) only simple and routine physical or manual tasks. "Skilled" workers were defined as those whose occupation includes operating machinery, manual tools, complex technical and practical tasks, complex problem-solving and decision-making for which factual, technical and procedural knowledge. Based on these definitions, respondents were asked to classify their workers as either "low-skilled", "semi-skilled", or "highly-skilled".

Table 30: Perceived levels of skills of workers

Training Types	Chiniot		Lahore		Gujrat		Overall	
	N	%	N	%	N	%	**N**	**%**
Formal training	15	1.7	24	2.3	17	1.8	56	2.0
From private TSPs	2	0.2	1	0.1	0	0.0	3	0.1
From TEVTA/Govt. TSPs	1	0.1	0	0.0	0	0.0	1	0.0
From NGOs	2	0.2	0	0.0	0	0.0	2	0.1
Other source of formal training	10	1.1	23	2.2	17	1.8	50	1.7
Informal training	523	59.8	532	51.9	186	19.3	1,241	43.4
On-the-job training	259	29.6	497	48.4	120	12.5	876	30.6
Help from supervisor	245	28.0	23	2.2	62	6.4	330	11.5
Other source of informal training	19	2.2	12	1.2	4	0.4	35	1.2
No training received	336	38.4	470	45.8	759	78.9	1,565	54.7
Total	874	100.0	1026	100.0	962	100.0	2,862	100.0

Table 31: Workers who have received training (formal and informal)

The following table 32 looks at the current prevalence of formal and informal training among workers by occupation/trade. Among bed-frame makers, who are the most in number, 48 percent had received some form of training. That is, 52 percent had no training at all. The prevalence of training was similar for sofa/chair-makers (49%), furniture fitters (45%), and table-makers (43%). Carving machine operators were most likely to have trained with 62 percent having received any training, though it still noteworthy that the remaining 38 percent were performing their roles having received no training at all.

Among makers of furniture, cabinet makers were least likely to be trained (only 24% were trained) presumably because cabinet-making is seen as a relatively simpler job. Polishers and painters, and furniture finishers were also most often un-trained, despite this being seen as an area of weakness by owners who feel knowledge of this area is lacking.

Job Titles/Trades	Total Workforce	Formally Trained	Informally Trained	Total Trained	
		N	**N**	**N**	**% of workforce trained**
Bed frame maker	604	17	275	292	48.3
Sofa/Chair maker	434	6	205	211	48.6
Furniture fitter/ Assembler (Joiner)	355	7	153	160	45.1
Table maker	221	4	92	96	43.4
Carving machine operator	274	1	169	170	62.0
Furniture polisher/ Painter	210	1	64	65	31.0
Wood sawyer	206	12	73	85	41.3
Cabinet maker	135	3	29	32	23.7
Furniture upholsterer	117	1	39	40	34.2

Job Titles/Trades	Total Workforce	Formally Trained	Informally Trained	Total Trained	
		N	N	N	% of workforce trained
Wood working lathe operator	65	0	35	35	53.8
Furniture finisher	64	0	18	18	28.1
Precision woodworking sawyer	48	0	19	19	39.6
Showcase maker	43	0	18	18	41.9
Door maker	22	1	13	14	63.6
Furniture manuf. with hand tools	20	1	7	8	40.0
Wood furniture designer	16	1	10	11	68.8
Wood shaper & leveler	10	0	9	9	90.0
Wood patternmaker	9	0	8	8	88.9
Wood seasoner	1	0	1	1	100.0
TV Trolley maker	2	1	1	2	100.0
Wood Finial maker	1	0	1	1	100.0
Wood Swing maker	2	0	1	1	50.0
Devan maker	1	0	1	1	100.0
Console maker	1	0	0	0	0.0
Stairs Set maker	1	0	0	0	0.0
Total	2862	56	1241	1297	

Table 32: Workers who have received training by skill/occupation

Respondents were asked for the reason behind not training their employees in Table 33 below. Of the total number of responses, the reason "our employees are already trained" was the most frequently chosen (of total responses 49% chose this reason). The remainder of responses were split largely between responses that saw training as unimportant, felt training was unproductive and time consuming, and that employees could learn on their own (together these three made up 44% of responses). Lack of training facilities was not a frequently cited reason (only 0.7% of responses chose this as a reason). This suggests that initiatives that provide opportunities and facilities for training may not be sufficient; the value of training will have to be demonstrated for there to uptake of training initiatives.

Reasons for not Training	Chiniot		Lahore		Gujrat		Overall	
	N	%	N	%	N	%	N	%
Training is not important	23	11.8	228	23.2	16	3	267	16.2
Unproductive and time consuming	21	10.8	155	15.8	15	3	191	11.6
New employees can learn on their own	32	16.4	114	11.6	119	25	265	16.1
Supervisor/trainer does not have enough time to train effectively	6	3.1	101	10.3	3	1	110	6.7
Our employees are already trained	111	56.9	379	38.6	313	66	803	48.8
Lack of training facilities	2	1.0	4	0.4	5	1	11	0.7
N (Responses)	195	100	981	100	471	100	1647	100

Table 33: Reasons for not training workers

Job Requirements – Experience

While education levels and training rates were low, the vast majority of firms require experience when hiring workers as shown in Table 34 (experience was required in 97% of cases). Within these, in about 57% of cases work experience of 1 to 4 years was required, and in 42% of cases experience of 5 to 10 years was required (Table 35 below). It may be the case that experience acts as substitute for formal training and certification. In the absence of these, instead of demanding formally trained workers, firms demand workers who have learned on-the-job elsewhere.

	Chiniot		Lahore		Gujrat		Overall	
	N	%	N	%	N	%	N	%
Yes	581	96.8	542	98.2	482	98.4	1,605	97.8
No	19	3.2	10	1.8	8	1.6	37	2.3
Total	600	100	552	100	490	100	1,642	100

Table 34: Is work experience required at the time of recruitment?

Years of Work Experience	Chiniot		Lahore		Gujrat		Overall	
	N	%	N	%	N	%	N	%
1 up to 4	369	63.5	238	43.9	322	66.8	929	57.9
5 up to 10	211	36.3	301	55.5	153	31.7	665	41.4
11 up to 20	1	0.2	3	0.6	3	0.6	7	0.4
20 up to 30					4	0.8	4	0.3
Total	581	100	542	100	482	100	1,605	100

Table 35: If yes, then how much work experience is required?

Skills Analysis

Occupation/Job Title-to-Skills Mapping

In the following Table 36, an analysis of the specific skills required in some of the most frequently occurring trades/occupations is presented (all existing trades in the sector are covered in Annex F).

In the case of bed-makers and sofa/chair makers, specific “sub-skills” were generally not identified by respondents. In the case of carving machine operators, the use of hand-tools was identified as a required sub-skill. Furniture fitters are expected to have skills in carving, assembling, joining, gluing and nailing. Precision woodworking sawyers are mostly only expected to have skills in the operation, setting and adjusting of machine for others.

Trade	Skills	Skill required for trade
		% of "yes" responses
Structure of Bed maker		
	Structure of bed maker	*98.2*
Sofa/chair maker		
	Sofa /chair maker	*99.1*
Carving machine operator		
	Setting and adjusting various kinds of machines for operation by others	*0.9*
	Dowel nailing	*0.5*

Trade	Skills	Skill required for trade
		% of "yes" responses
	Cutting using hand tools	*97.1*
Furniture fitter/ Assembler (Joiner)		
	Carving	*20.9*
	Assembling all articles together	*19.8*
	Joining	*20.6*
	Gluing	*20.3*
	Nailing	*18.2*
Precision woodworking sawyer		
	Making of basic wood planks	*0.2*
	Setting and adjusting various kinds of machines for operation by others	*99.5*

Table 36: Skills required in each occupation (based on respondents' perceptions) over the next 5 years

Current Vacancies

A total of 75 firms (or 17%) reported having vacancies at the time of the survey. The following figure 18 shows firms reporting having vacancies within each occupation category. Vacancies for assemblers or fitters of furniture were most frequently reported by firms, followed by bed-frame makers, and carving machine operators. Most of these vacancies were in Lahore and Chiniot (Table 37 below).

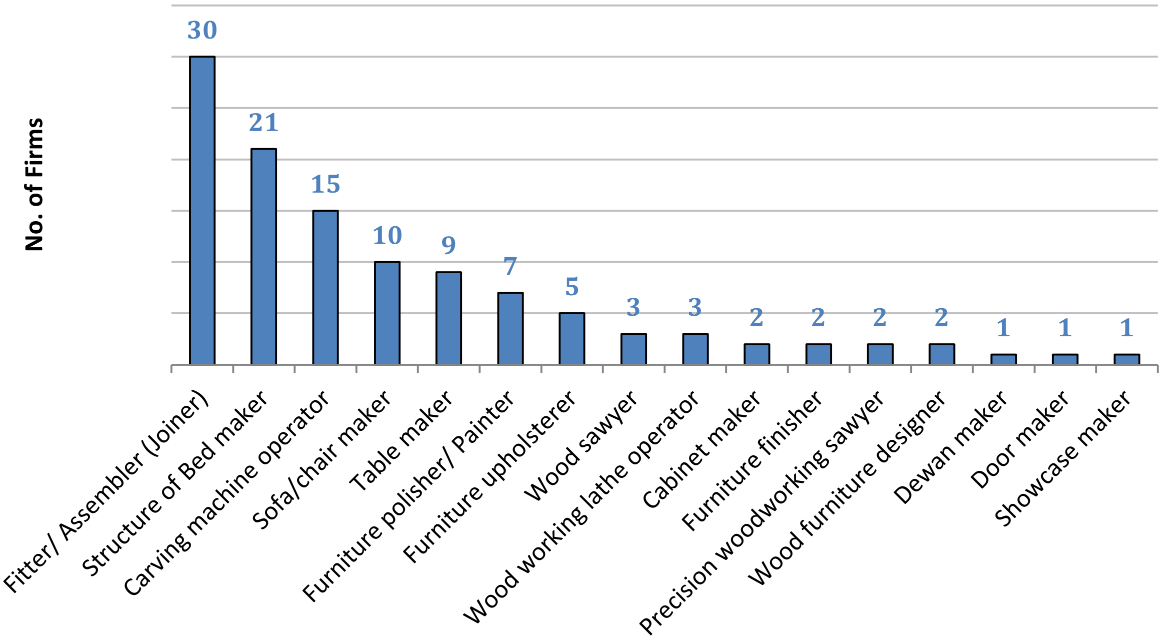

Figure 18: Number of firms reporting vacancies within each occupation

Trades	Number of Firms			
	Chiniot	Lahore	Gujrat	Total
Cabinet maker	1	0	1	2
Carving machine operator	13	1	1	15
Dewan maker	1	0	0	1
Door maker	1	0	0	1
Furniture finisher	1	1	0	2
Fitter/ Assembler (Joiner)	28	1	1	30
Furniture polisher/ Painter	1	5	1	7
Furniture upholsterer	2	3	0	5
Precision woodworking sawyer	1	1	0	2
Showcase maker	0	0	1	1
Sofa/chair maker	3	6	1	10
Structure of Bed maker	4	13	4	21
Table maker	1	7	1	9
Wood furniture designer	1	1	0	2
Wood sawyer	1	0	2	3
Wood working lathe operator	2	1	0	3
Total	61	40	13	114

Table 37: Firms that have vacancies by cluster

Current Skills Shortages

A deficit of skills can occur as either a “skill shortage” or a “skills gap”. To measure “skills shortages”, we look at the incidence of “skill shortage vacancies”. A “skill shortage vacancy” is defined as ***one that occurs when an employer cannot find applicants with the right skills, qualifications or experience to do the job.***

To identify skills shortages in the sector, firms were asked if the vacancies in their firms were hard-to-fill in their view. Out of 114 cases of vacant “firm-occupations”, 95 were considered hard-to-fill (Table 38 below). Of the 95 hard-to-fill cases, 50 were considered hard-to-fill due to unavailability of appropriately skilled workers (Table 39 below). Thus, these “skill shortage vacancies” were 44% of the total 114 cases of vacancies, (For hard-to-fill vacancies other than skill shortage vacancy, the most frequently cited reason for these vacancies being hard-to-fill was that skilled workers, while available, were demanding high salaries). And nearly a quarter (24%) of these skill-shortage vacancies was for bed-frame makers. Skills shortage vacancies were also found for furniture fitters, table-makers, chair-makers, upholsterers, polishers and painters, and to a lesser degree for carving machine operators, sawyers, furniture designers, and lathe operators.

Trades	No. of vacancies	No. of hard-to-fill vacancies	Skills shortage vacancies*	
	N	N	N	%
Cabinet maker	2	1	0	0
Carving machine operator	15	10	3	6
Dewan maker	1	1	0	0
Door maker	1	1	0	0
Furniture finisher	2	1	0	0
Furniture fitter/ Assembler (Joiner)	30	29	8	16
Furniture polisher/ Painter	7	6	6	12
Furniture upholsterer	5	5	4	8
Precision woodworking sawyer	2	1	0	0
Showcase maker	1	1	0	0
Sofa/chair maker	10	9	6	12
Stair Set maker	0	0	0	0
Structure of Bed maker	21	17	12	24
Table maker	9	8	7	14
Wood furniture designer	2	1	1	2
Wood sawyer	3	1	1	2
Wood working lathe operator	3	3	2	4
Total	**114**	**95**	**50**	**100**

Table 38: Incidence of skills shortages

Note: * Firms reporting vacancies that are hard-to-fill due to unavailability of skilled workers

Reasons for Hard to Fill Vacancies	N	%
Non-availability of skilled/experienced worker (skill-shortage)	50	52.6
Skilled/experienced workers demand high salary	38	40.0
Skilled worker is not willing to work at this location	2	2.1
Better salary packages in other cities for the skilled workers	1	1.1
For non-resident workers accommodation is expensive	3	3.2
Demand extra benefits like leave or free accommodation	1	1.1
Total Hard-to-fill vacancies	**95**	**100.0**

Table 39: Break-up of hard-to-fill vacancies by reason

Skills Gaps

A "skills gap" is defined to exist ***when an employer thinks a worker does not have enough skills to perform their job with full proficiency***. To assess the incidence and extent of skills gaps, respondents were asked to rate their employees' knowledge or proficiency in certain areas/skills and to rate the importance of that area/skill to their firm's success and performance. Employees' knowledge or proficiency in each area/skill was rated on a scale of 1 to 5 with 1 reflecting lowest level of proficiency, and 5 reflecting high proficiency. The importance of each area/skill to company's performance was similarly rated on a scale of 1 to 5, with 1 reflecting low importance and 5 reflecting high importance of skill in company's performance.

The "skills gap" was then measured as the difference between the two ratings. The gap can therefore range from negative 4 - a large negative gap - (when employee proficiency in a skill is rated 1 while the skill's importance is rated 5), to positive 4 - a large positive gap - (when employee proficiency in a skill is rated 5 while skill's importance is rated 1). In the following tables and charts, the results were reported. In tables, negative scores have been classified as "skills gap", a score of zero is classified as "No skills gap", and positive scores (where proficiency exceeds what is required or needed) are classified as "positive skills gap". In the figures, the negative scores, or skills gaps have been disaggregated by size: a score of negative 1 is a "Size 1 gap" where employees are only slightly less proficient in the particular skill relative to the importance of that skill. A score of negative 4 is classified as a large or "Size 4 gap" where the proficiency of employees is very less relative to the importance of that skill.

Gaps in Management Skills

An analysis of existing level of skills related to management has been done in the following Table 40. The most frequently occurring skills gap was in the area of "plant management and finance"; 70% of the firms were found to have a skills gap in this area. Product pricing, cost reduction, quality control, and certification were the next most frequently occurring skills gaps.

	% of firms with:			
Management Skills	Skills Gap	No Skills Gap	Positive Skills Gap	Total
Plant management and finance	70.0	21.1	8.9	100.0
Product pricing	67.3	25.6	7.1	100.0
Cost reduction	64.7	27.6	7.8	100.0
Total quality management	63.3	27.1	9.6	100.0
Product certification	63.1	29.8	7.1	100.0
Competitive positioning	59.8	31.8	8.4	100.0
New product development	56.2	39.6	4.2	100.0
Sales abilities	56.0	36.4	7.6	100.0
Finding market information	52.9	43.1	4.0	100.0
Regulation laws	49.3	36.9	13.8	100.0
Motivation of personnel	35.6	48.7	15.8	100.0
Safety regulations	29.3	54.7	16.0	100.0

Table 40: Percentage of firms with gaps in management skills

In the following figure 19, these gaps in management skills are disaggregated by their size. Plant management and finance was not only the most frequently occurring skills gap, but also had the largest portion of (size 4) gaps. That is, both frequency of gaps and the extent of the gaps were relatively large in the area of firm management and finance.

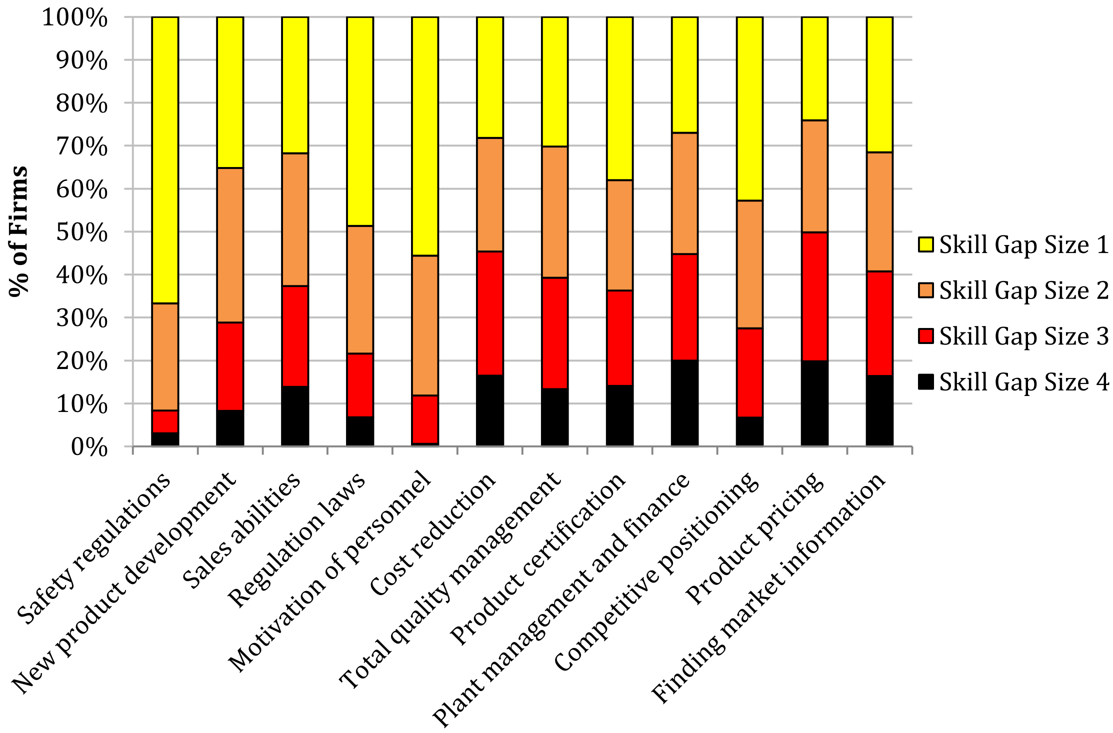

Figure 19: Size of gaps in management skills

Gaps in Technical Skills

In the following table 41, skills gaps in technical areas related to the processing of wood are provided. Relative to management skills, skills gaps in these areas were less frequent. The most frequently occurring skills gap was in the area of lumber grading with 32% of firms having a gap in this field. Knowledge of wood properties and skills in wood identification also had gaps in about 30% of the firms. The disaggregation of skills gaps by size of the gap, in the following figure 20, reveals that the size of the gap was generally small ("size 1" gaps form the largest portion of all skills gaps).

	% of Firms with:			
Technical Skills	**Skills Gap**	**No Skills Gap**	**Positive Skills Gap**	**Total**
Lumber grading	32.0	59.6	8.4	100.0
Basic wood properties	30.4	59.6	10.0	100.0
Wood identification	30.0	53.8	16.2	100.0
Wood finishing	26.9	51.1	22.0	100.0
Effect of moisture on wood	23.6	64.4	12.0	100.0
Wood machining processes	20.4	50.0	29.6	100.0
Sawing/cutting technology	20.0	52.9	27.1	100.0
Drying	18.7	65.1	16.2	100.0
Sanding/abrasives	18.0	53.3	28.7	100.0
Wood gluing	17.1	53.6	29.3	100.0
Gluing/Jointing	14.0	56.4	29.6	100.0
Finishing and coating	13.8	56.9	29.3	100.0

Table 41: Gaps in technical skills - Part 1

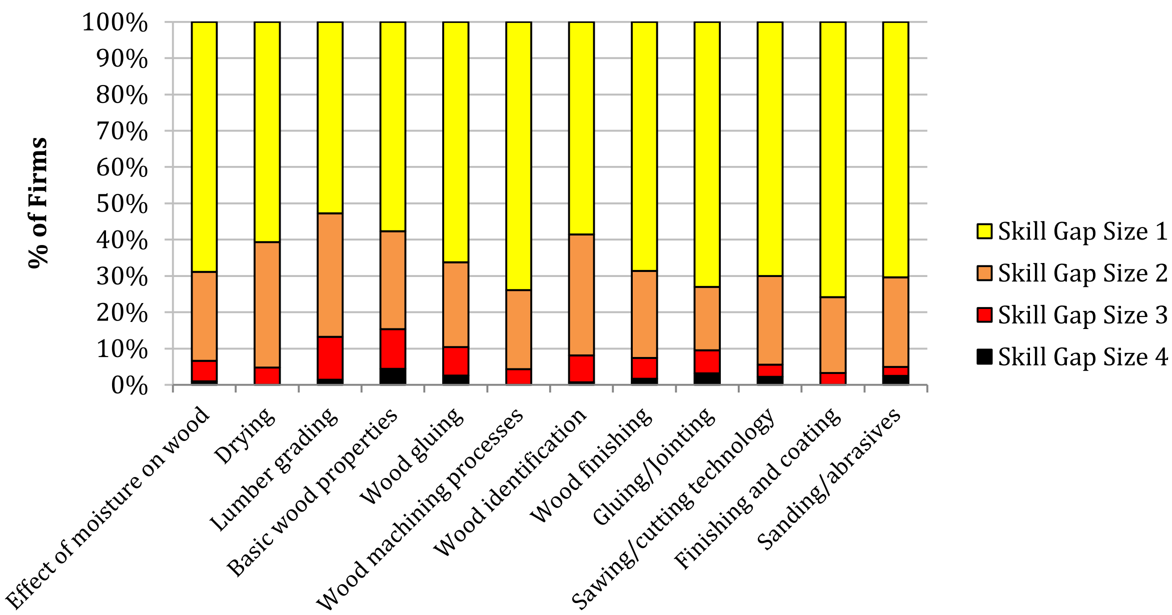

Figure 20: Size of skills gaps in technical areas - Part 1

In the following Table 42, an analysis of more general technical skills has been done. The incidence of skills gaps in these areas is generally high. 74% of the firms had a skills gap in the area of "developing business plans". Skills in "quality and process control" were deficient in 62% of firms. Inventory control, product distribution and skills dealing with changing raw materials were the next most frequently deficient areas. The disaggregation of these skills gaps by size in the following figure 21 reveals that "developing business plans" is an extremely weak area, relative to others. Along with having the highest frequency of gaps, the size of the gaps is generally large: size 4 and size 3 gaps form the bulk of all skills gaps in the area.

	% of Firms with:			
Technical Skills	**Skills Gap**	**No Skills Gap**	**Positive Skills Gap**	**Total**
Developing business plans	74.4	19.3	6.2	100.0
Quality and Process control	61.8	26.7	11.6	100.0
Inventory control/ Production scheduling	58.7	28.4	12.9	100.0
Product distribution	55.3	32.4	12.2	100.0
Dealing with changing raw materials	54.2	33.6	12.2	100.0
Exporting economics	53.6	40.2	6.2	100.0
Basic problem solving skills	40.7	43.6	15.8	100.0
Product improvement	34.4	50.9	14.7	100.0
Utilizing composite products	33.6	52.2	14.2	100.0
Computer education (CAC/CNC/CAM/CAD)	29.3	57.1	13.6	100.0
Plant maintenance	29.1	57.3	13.6	100.0

Table 42: Gaps in technical skills - Part 2

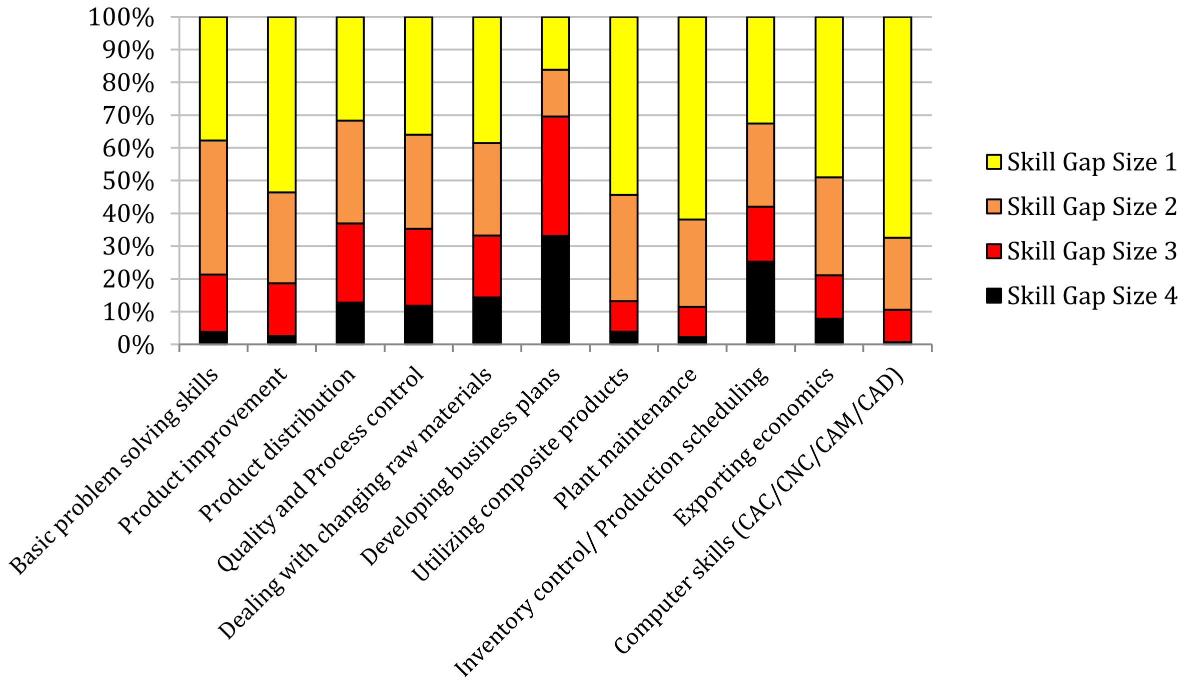

Figure 21: Size of skills gaps in technical areas - Part 2

Multitasking

Finally, we also touch upon the issue of multi-tasking: when one worker is required to perform multiple tasks. This can be indicative of both skills shortages and skills gaps, when this is practised due to a lack of manpower or lack of skilled manpower. In the Tables 43 & 44 below, we see that in 91% of firms, 1 up to 10 workers was performing multiple tasks. Firms were asked to pick reasons for why multi-tasking was practised. Out of all responses, 24% cited a lack of skilled manpower (Table 44 below).

Tasks	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
0 up to 1	0.7	1.3	6	2.7	12
1 up to 10	97.3	92.7	84.7	91.6	412
10 up to 20	1.3	4.7	3.3	3.1	14
More than 20	0.7	1.4	6.1	2.6	12
N	150	150	150	100	450

Table 43: Number of firms in which workers were performing multiple tasks

Reasons for Multitasking	N	%
Lack of skilled manpower	194	24.1
I have faith only in the experienced workers	228	28.3
To save the cost	381	47.3
Compulsory for business	2	0.3
N (Responses)	805	100
N (Cases)	438	

Table 44: Reasons for multi-tasking

Core/Life Skills

Life skills such as communication, numeracy, literacy were also taken into account. Table 45 reports the results of asking respondents what they look for when hiring new employees. Respondents could choose as many options as they liked. Of the total number of choices made, “numeracy skills” was the most frequently chosen, followed by “problem solving” and “communication skills”.

Core/Life Skills	Overall	
	N	%
Communication skills	238	17.5
Numeracy skills	410	30.2
Literacy skills	169	12.4
Problem solving skills	328	24.2
Management skills	162	11.9
Experience	35	2.6
Trained worker	14	1.0
Relationship	1	0.1
Professional skills	1	0.1
N (Responses)	1,358	100.0
N (Cases)	450	

Table 45: Required core skills

Projected Skills Needs

Firms were asked if they planned to increase the number of employees over the next 12 months. Overall 214 new employees were expected to be hired. In the table 46 below these numbers are disaggregated by occupation and cluster. The largest number is for “bed-frame maker”, 55 new workers were expected to be hired in the next 12 months. Other occupations with relatively large numbers required in the next 12 months were: “furniture fitters”, “carving machine operators” and “chair makers”. Between 30 and 40 new workers were expected to be hired of each.

Trades	Chiniot	Lahore	Gujrat	Overall	
				%	N
Wood working lathe operator	0	0	1	0.5	1
Carving machine operator	21	9	5	16.4	35
Furniture fitter/ Assembler (Joiner)	28	3	7	17.8	38
Furniture finisher	0	0	1	0.5	1
Furniture polisher/ Painter	0	9	9	8.4	18
Furniture upholsterer	2	3	3	3.7	8
Cabinet maker	0	1	6	3.3	7
Door maker	1	1	0	0.9	2
Table maker	0	7	0	3.3	7
Sofa/ chair maker	4	20	8	15.0	32
Structure of bed maker	6	31	18	25.7	55
Wood finial maker	6	0	0	2.8	6
Wood swing maker	1	0	0	0.5	1
Dewan maker	1	0	0	0.5	1

Trades	Chiniot	Lahore	Gujrat	Overall	
				%	N
Showcase maker	0	0	2	0.9	2
N (Responses)	70	84	60	100.0	214
N (Cases)	150	150	150	100.0	450

Table 46: Number of workers planned to be hired in the next 12 months

As shown in Table 47 below, occupation data of different occupations was collected from 450 furniture establishments. The overall demand for these occupations has been reported at 2,580 individuals for the year 2014, whilst this demand increases, at a rate of 10.9 percent, to 2,862 individuals for the year 2015. Similarly, the expected demand for 2016 is 3,076 individuals, which is an increase of 7.9 percent from the previous year. Hence, at an average percentage increase of 9.2 percent, the overall demand for the next four years is calculated at 3,359 (Year 2017), 3,368 (Year 2018), 4,005 (Year 2019), 4,374 (Year 2020) and 4,776 (Year 2021) individuals respectively.

Furthermore, the sectoral aggregate demand for the years 2016 to 2021, based on 2,766[26] furniture establishments in Punjab is calculated as 1[i]42,964 individuals.

26 Punjab Development Statisitics 2013

Job Titles/ Trades	No. of Employees (Year 2014)	No. of Employees (Year 2015)	Expected No. of Employees in (Years):						Expected No. of Employees Required (Years 2016 - 2021)	Sectoral Aggregate Demand for Years (2016-2021)
			2016	2017	2018	2019	2020	2021		
Bed frame maker	522	604	659	720	786	858	937	1023	4983	30629
Cabinet maker	103	135	142	155	169	185	202	220	1074	6600
Carving machine operator	237	274	309	337	368	402	439	480	2336	14361
Console maker	1	1	1	1	1	1	1	2	8	46
Devan maker	1	1	2	2	2	3	3	3	15	93
Door maker	20	22	24	26	29	31	34	37	181	1115
Furniture finisher	60	64	65	71	78	85	92	101	491	3021
Furniture fitter/ Assembler (Joiner)	328	355	393	429	469	512	559	610	2972	18266
Furniture manufacturing with hand tools	19	20	20	22	24	26	28	31	151	930
Furniture polisher/ Painter	180	210	228	249	272	297	324	354	1724	10597
Furniture upholsterer	108	117	125	137	149	163	178	194	945	5810
Precision woodworking sawyer	43	48	48	52	57	63	68	75	363	2231
Showcase maker	41	43	45	49	54	59	64	70	340	2091
Sofa/ Chair maker	401	434	466	509	556	607	663	724	3524	21658
Stairs set maker	1	1	1	1	1	1	1	2	8	46
Table maker	215	221	228	249	272	297	324	354	1724	10597
TV trolley maker	2	2	2	2	2	3	3	3	15	93
Wood final maker	1	1	7	8	8	9	10	11	53	325
Wood furniture designer	14	16	16	17	19	21	23	25	121	744
Wood patternmaker	9	9	9	10	11	12	13	14	68	418
Wood sawyer	196	206	206	225	246	268	293	320	1558	9574
Wood seasoner	1	1	1	1	1	1	1	2	8	46
Wood shaper & leveler	10	10	10	11	12	13	14	16	76	465
Wood swing maker	2	2	3	3	4	4	4	5	23	139
Wood working lathe operator	65	65	66	72	79	86	94	102	499	3068
Totals	2580	2862	3076	3359	3668	4005	4374	4776	23259	142964
Growth Rate		10.9%	7.5%	9.20%	9.20%	9.20%	9.20%	9.20%	-	

Table 47: Projected number of workers required by occupation, in the next six years

* Note: Sectoral demand calculation is based on 2766 Furniture Entities Operating in Punjab. The number of employees required in 450 establishments in the next 6 years was inflated to 2766 establishments proportionately across the trades identified

Interest in Formal Training

Of the total workforce, 45% had received some form of training. Of this, only 2% of workers were formally trained, and only 5 firms in the sample of 450 reported using formal channels (vocational training by TEVTA, or private TSPs). However, when asked, a quarter of firms did express an interest in sending employees for training off-the-job (Table 48 below). But while an interest in off-the-job training was expressed, when presented with other options for methods of training, there was a strong preference for on-the-job training (Table 49 below). This could be due to no costs associated with it, other than maybe the cost of an external trainer (if a firm decides to acquire one). It can be seen that given other options, no firms preferred off-site training.

	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Yes	62.7	4.0	8.0	24.9	112
No	37.3	96.0	92.0	75.1	338
N	150	150	150	100.0	450

Table 48: Responses to "Will you be interested in sending your employee for off-the-job trainings"?

Training Methods	Chiniot		Lahore		Gujrat		Overall	
	N	%	N	%	N	%	**N**	**%**
On-the-job training	149	82.3	138	86.3	141	89.2	**428**	**85.8**
Videos/articles	0	0.0	1	0.6	1	0.6	**2**	**0.4**
Counselling/Mentoring	14	7.7	8	5.0	4	2.5	**26**	**5.2**
National conferences	1	0.6	1	0.6	2	1.3	**4**	**0.8**
Training Manuals	17	9.4	11	6.9	9	5.7	**18**	**3.6**
Short courses	0	0.0	0	0.0	1	0.6	**1**	**0.2**
Off-site training	0	0.0	0	0.0	0	0.0	**0**	**0.0**
Only Hire Experienced Labour	0	0.0	1	0.6	0	0.0	**20**	**4.0**
N (Responses)	181	100.0	160	100	158	100.0	**499**	**100.0**
N (Cases)	150		150		150		**450**	

Table 49: Preferred training methods

Further questions of willingness to send workers for training revealed that 46%of firms were interested in having their workers trained if training was provided for free (Table 52 below). About 4% of firms were also willing to pay for training (Table 50 below). However, 72% of firms reported that they were willing to give only one day off to workers for the purpose of training (Table 51 below).

	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Yes	5.3	2.0	3.3	3.6	16
No	94.7	98.0	96.7	96.4	434
N	150	150	150	100.0	450

Table 50: Responses to “Would you be willing to pay for training?”

No. of Days	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
0 up to 1	36.7	91.3	87.3	71.8	323
1 up to 10	2.0	5.3	9.3	5.6	25
10 up to 20	17.3	2.0	2.0	7.1	32
20 up to 30	12.0	0.0	0.7	4.2	19
30 up to 40	15.3	0.7	0.7	5.6	25
40 up to 50	8.0	0.0	0.0	2.7	12
50 up to 60	3.3	0.0	0.0	1.1	5
60 up to 70	4.0	0.0	0.0	1.3	6
70 and Above	1.3	0.7	0.0	0.7	3
N	150	150	150	100.0	450

Table 51: Responses to "How much time would you allow your employees to take for these trainings?"

	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Yes	62.7	46.7	29.3	46.2	208
No	37.3	53.3	70.7	53.8	242
N	150	150	150	100.0	450

Table 52: Responses to "If your employees are given the opportunity for free training, will you be interested in getting them trained?"

Firms were asked whether they thought certain entities were appropriate for conducting trainings. Industry experts received the most positive responses, followed by technical institutes (Table 53 below).

Training Entities	Yes		No		Total	
	N	%	N	%	N	%
Consultants	107	23.8	343	76.2	450	100.0
Equipment manufacturers	79	17.6	371	82.4	450	100.0
Industry experts	343	76.2	107	23.8	450	100.0
Universities	69	15.3	381	84.7	450	100.0
Vocational-technical institutes	206	45.8	244	54.2	450	100.0
Total	804	35.7	1,446	64.3	2,250	100.0

Table 53: Entities considered appropriate to conduct trainings

Employers' Capacity to Train Individuals

All firms in the sample did report that they trained their employees (Table 54 below). Occupations where workers were most likely to have been trained by their firm include carving machine operators (71% of firms that hire them train them). Furniture designers, wood working lathe operators and precision woodworking sawyers, among others, are also likely to be trained by the firms that hire them. Among the methods of training that firms use to train these employees, on-the-job training by next most senior employee is the most common method.

Trades	Yes		No		Total
	N	%	N	%	N
Bed frame maker	133	43.9	170	56.1	303
Furniture fitter/ Assembler	125	54.8	103	45.2	228
Carving machine operator	98	71.0	40	29.0	138
Sofa/chair maker	88	42.9	117	57.1	205
Table maker	66	43.4	86	56.6	152
Wood sawyer	62	36.5	108	63.5	170
Wood working lathe operator	30	63.8	17	36.2	47
Cabinet maker	24	26.1	68	73.9	92
Precision woodworking	20	57.1	15	42.9	35
Furniture polisher/ Painter	19	19.0	81	81.0	100
Furniture upholsterer	15	26.3	42	73.7	57
Furniture finisher	12	37.5	20	62.5	32
Show-case maker	11	39.3	17	60.7	28
Wood furniture design	9	69.2	4	30.8	13
Furniture manuf. W. hand tools	8	72.7	3	27.3	11
Door maker	5	29.4	12	70.6	17
Wood shaper & leveler	3	100.0	0	0.0	3
Wood patternmaker	2	66.7	1	33.3	3
Wood seasoner	1	100.0	0	0.0	1
TV Trolley maker	1	100.0	0	0.0	1
Wood Finial maker	1	100.0	0	0.0	1
Wood Swing maker	1	50.0	1	50.0	2
Deewan maker	1	100.0	0	0.0	1
Console maker	0	0.0	1	100.0	1
Stairs Set maker	0	0.0	1	100.0	1
Total	735	44.8	907	55.2	1,642

Table 54: Responses to "Do you train your employees by occupation?"

It can be seen that other than a preference for on-the-job training (Table 55 below), the second most frequently cited reason for using informal methods was that firms felt nothing new was taught in formal training. Note that formal training being expensive or that formal training is too time-consuming were generally <u>not</u> cited as reasons for avoiding formal training: these made up only 8 percent and 10 percent of responses, respectively (Table 56 below).

Modes of Informal Training	N	%
On-the-job training by next senior	548	75.0
Mentoring/counseling by supervisor	176	24.1
Organized training by in-house management	7	1.0
Total	731	100.0

Table 55: Mode of informal training

Reasons for Informal Training	Chiniot		Lahore		Gujrat		Overall	
	%	N	%	N	%	N	**%**	**N**
Formal training is more expensive	8.7	39	10.6	15	1.4	2	**7.7**	**56**
Formal training is unproductive and time consuming	12.7	57	10.6	15	2.9	4	**10.4**	**76**
We have on-the-job training	55.5	249	25.4	36	38.6	54	46.4	339
No new skills in formal training are learnt	15.6	70	28.9	41	37.1	52	**22.3**	**163**
New skills in informal training are learnt	0.2	1	14.8	21	14.3	20	**5.7**	**42**
Inherited business	7.1	32	8.5	12	5.7	8	**7.1**	**52**
Inherited Skills	0.2	1	1.4	2	0.0	0	**0.4**	**3**
Total	100	449	100	142	100	140	**100**	**731**

Table 56: Reasons for using informal training

Availability of Training Service Providers

While only 5 instances of formal training acquired were reported (Table 57 below), 92 firms said they were aware of TSPs located in their area. Of these firms, 49 were able to provide the names of 59 training services providers, however, of these only 7 were names of institutes while the remaining were names of individuals or workshops that provide training informally.

Cluster	Trade	Course	Duration (Weeks)	No. of Trainees	Opinion	Trainer
CHINIOT	Bed maker	WOOD QUALITIES	1	4	Effective	No name
LAHORE	Bed maker	BED MAKING	15	3	Effective	M.SHABEER
LAHORE	Bed maker	BED MAKING	20	2	Satisfactory	M.FAISAL
LAHORE	Carving	CARVING	15	2	Satisfactory	AYUB KHAN
LAHORE	Carving	CARVING	10	4	Effective	FATEH KHAN

Table 57: Inventory of training courses previously acquired

Number of Training Center(s)	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	N	%
Not aware of any training center		42.0		63	14.0
No training center	100.0	52.0	44.7	295	65.6
1 training center		4.7	28.0	49	10.9
2 training centers		1.3	25.3	40	8.9
3 training centers			1.3	2	0.4
4 training centers			0.7	1	0.2
Total	100.0	100.0	100.0	450	100.0

Table 58: Number of training centers in the area

Awareness of PSDF

Out of the 450 firms in the sample in Table 59 below, only 4 firms were aware of the PSDF and its objectives and activities.

	Chiniot	Lahore	Gujrat	Overall

	%	%	%	%	N
Yes	1.3	0.0	1.3	0.9	4
No	98.7	100.0	98.7	99.1	446
N	150	150	150	100.0	450

Table 59: Awareness of PSDF

Human Resource and Other Issues

As far as human resource development is concerned, respondents were asked how they would respond in case of a decrease in demand for their products. The most common response was that the employers would reduce the number of employees (Table 60 below). Surprisingly, the least-preferred options were to reduce the benefits paid out to workers or to reduce their salaries. This shows that most employers are concerned about the psychological impact of reducing rewards given out to their employees. They would rather reduce the number of employees to save costs. Other common responses included diversifying activities, abandoning activities and improving the quality of products.

Strategies	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
Reduce the number of wage earners	22.0	66.0	41.3	43.1	194
Reduce salaries	17.3	25.3	20.0	20.9	94
Reduce benefits paid out to workers	28.7	1.3	8.7	12.9	58
Diversify your activities	61.3	16.7	34.7	37.6	169
Abandon your activity	33.3	34.0	52.0	39.8	179
Improve quality of products	32.0	48.7	25.3	35.3	159
Aggressively market the products	32.7	34.0	17.3	28.0	126
N(Responses)	341	339	299	217.6	979
N(Cases)	150	150	150	100.0	450

Table 60: In case of a decrease in demand, what strategy will you adopt?

Employee Types	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	%	N
At least having 10 years of experience, highly-skilled, behavior and attitude doesn't matter	2.0	2.7	1.3	2.0	9
At least having 10 years of experience, highly-skilled, behavior and attitude matters	4.7	55.3	30.0	30.0	135
Educated, highly-skilled, 10 years of experience, attitude and behavior matters	0.7	0.0	2.0	0.9	4
Educated, highly-skilled, 10 years of experience, attitude and behavior does not matter	4.0	9.3	41.3	18.2	82
Educated, semi-skilled, 5 years of experience, attitude and behavior matters	20.7	3.3	2.0	8.7	39
Educated, semi-skilled, 5 years of experience, attitude and behavior does not matter	54.0	19.3	23.3	32.2	145
2 or 3 Years' Experience	14.0	10.0	0.0	8.0	36
N	150	150	150	100.0	450

Table 61: Which of the following would you prefer as a new employee?

When inquired about the characteristics preferred in new employees, most employers gave importance to skill and experience overall (Table 61 above). Barely 2% of the respondents stated that they would be willing to hire a highly skilled employee with 10 years of experience regardless of his behavior or attitude. When behavior and attitude was taken into account, 30%

of the respondents claimed to be willing to hire such an employee. If an employee was also educated along with being highly skilled and had 10 years of experience, his attitude did not prove to be detrimental since 18.2% were willing to hire such a candidate. It is also important to note that combinations involving employees that were highly skilled and experience were most popular in Gujrat. The most preferred option overall was that of an educated, semi-skilled candidate with 5 years of experience, regardless of behavior or attitude.

Areas that Women can be Trained and Employed in

Respondents were asked the trades they thought women could be employed in. Respondents could choose as many skills as they liked. Chiniot was found to be most favourable towards women's participation where 183 responses were received (Table 62 below). In comparison, only 34 and 10 responses were received from Lahore and Gujrat respectively.

Of the total number of responses, carving machine operator was by a large margin the most frequent response: close to 40% of the responses. Upholstery was the second most frequently chosen skill for women.

Trades	Chiniot	Lahore	Gujrat	Overall	
	%	%	%	N	%
Wood furniture designer	16.4	5.9	-	32	14.1
Wood patternmaker	1.1	-	-	2	0.9
Furniture manuf. with hand tools	0.6	-	-	1	0.4
Carving machine operator	41.0	41.2	10.0	90	39.7
Furniture fitter/ Assembler (Joiner)	1.6	-	10.0	4	1.8
Furniture finisher	8.7	2.9	10.0	18	7.9
Furniture polisher/ Painter	12.0	23.5	20.0	32	14.1
Furniture upholsterer	15.3	23.5	50.0	41	18.1
Door maker	0.6	-	-	1	0.4
Sofa/Chair maker	0.6	-	-	1	0.4
Decorate furniture with copper inlay	1.6	-	-	1	0.4
Decorate furniture with wood floral inlay	0.6	-	-	3	1.3
Cabinet Maker	-	2.9	-	1	0.4
Total	100	100	100	227	100
N (Responses)	183	34	10	227	

Table 62: Perception of what types of trades, woman can perform

Findings from Karachi Cluster

In addition to Lahore, Gujrat and Chiniot, quantitative survey of 40 randomly selected establishments was also conducted in Karachi. The survey provides a good indicative picture of furniture skills demand in Karachi cluster. The major findings from this survey are reported in this section. (Qualitative surveys of sector experts and TSPs were also conducted in Karachi. Findings from these have been incorporated in subsequent sections).

Sector Status (Formal/Informal)

Of the firms surveyed in Karachi, 7.25% reported being affiliated with a business association as shown in Table 63. The remaining 27.5% were entirely informal as they had no association with any government or private networking group or business association.

Affiliation with Networking Groups	Karachi	
	%	N
Part of Related Business Associations	72.5	29
None/ Informal	27.5	11
Total	100.0	40

Table 63: Firm status (Formal/Informal)

Firm and Owner Profile

The respondents for the quantitative survey were either owners (in 62.5% of cases) or managers/supervisors in the firm (37.5% of cases). See Table 64. Education levels among respondents from Karachi were relatively high as seen in Table 65. Only a small percent (5%) had no formal education. While a significant portion (25%) had only primary level education; 27.5% had higher secondary (matriculation), 17.5% had Bachelor level qualifications and further 5% had either a diploma or a Master's degree. Thus, a large portion of owners and managers in Karachi were fairly well qualified.

Respondent	Karachi	
	%	N
Owner/Director	62.5	25
Manager/Supervisor	37.5	15
Total	100.0	40

Table 64: Survey respondents

Education Level	Karachi	
	%	N
No formal education	5.0	2
Primary	25.0	10
Middle	10.0	4
Secondary	10.0	4
Higher Secondary	27.5	11
Bachelor	17.5	7
Master	2.5	1
Diploma	2.5	1
Total	100.0	40

Table 65: Level of education of respondents

Table 66 reports the distribution of firms by years of operation. It shows that the majority of firms in Karachi were relatively new, having been in operation for less than 10 years (though a significant portion, 37.5%, of older firms also exists). Furthermore, a significant portion of firms in Karachi were only very recently established: 17.5% had been operating for less than a year, and a further 10% had been in operation for less than 5 years. This may be of significance as new firms are less likely to rely on traditional methods and may be more receptive to training initiatives.

Years of Operation	Karachi	
	%	N
Less than 1 year	17.5	7
1 to 5 years	10.0	4
6 to 10 years	25.0	10
11 to 15 years	2.5	1
15 to 20 years	7.5	3
20 years and above	37.5	15
Total	100.0	40

Table 66: Years of operation of firms

Workforce training status

Most establishments in Karachi reported having trained their employees through informal means. The modes of informal training cited most often were on-the-job training provided by the next most senior worker, or mentoring/counseling by a supervisor (See Table 67). Respondents reported that the reason for using these informal modes of training was that new things could be learnt most quickly by this mode of training (in their view).

Mode of Informal Training	Karachi	
	%	N
On-the-job training by next senior	79.0	15
Mentoring/ Counseling by Supervisor	21.0	4
Total	100.0	19

Table 67: Modes of informal training

As informal training (described above) was highly prevalent, when respondents were asked for reasons why employees were not trained, Table 68 shows that training was seen as being unimportant or unproductive and time consuming in only 14.8% of cases. The most cited reason for not training was that employees were already trained (78% of responses cited this reason). A further 8% of responses felt that employee could learn on their own. Hence, the lack of formal training was largely due to the fact that informal training was viewed as adequate.

Reasons for not training employees	Karachi	
	%	N
Training is not important	11.0	29
Unproductive and time consuming	3.8	10
New employees can learn on their own	7.6	20
Our employees are already trained	77.7	205
Total	100.0	264

Table 68: Reasons for not training employees (by trade) – multiple response

Workforce turnover

In Karachi, 23 firms (or 57.5% of sampled firms) saw permanent employees leave the establishment in the 12 months prior to being surveyed. Of the firms that experienced employee turnover (attrition), 43.5% reported turnover of furniture upholsterers, and 34.8% reported turnover of bed-frame makers. The remaining 21.7% saw turnover of furniture setters/assemblers or workers involved in the manufacture of furniture with hand-tools. See Table 69.

Occupation	Karachi	
	%	N
Furniture upholsterers	43.5	10
Structure of bed maker	34.8	8
Furniture manufacturing with hand tools	13.0	3
Furniture setter /Assembler (Joiner)	8.7	2
Total	100.0	23

Table 69: Firms reporting employee turnover (attrition) in the last 12 months, by occupation/trade

On the other hand, 6 firms enumerated in Karachi cluster reported to have increased their workforce by 13 employees in the three months prior to the survey as shown in Table 70 below (Carving machine operator, furniture manufacturing with hand tools, furniture polisher/ painter were most frequently hired in the last 3 months prior to the survey). This proportion increases when a longer 12 month period is considered: 30 of the sampled firms had hired new workers over the last year. Of these, 13.3% reported having hired furniture polishers/painters. The remainder had hired a wide range of workers as shown in Table 70.

Occupation	Karachi	
	%	N
Bed frame maker	15.4	2
Carving machine operator	23.1	3
Furniture fitter/ Assembler (Joiner)	15.4	2
Furniture manufacturing with hand tools	23.1	3
Furniture polisher/ Painter	23.1	3
Total	100.0	13

Table 70: Firms reporting hiring new workers within the last 3 months, by occupation/ trade

Occupation	Karachi	
	%	N
Cabinet maker	6.7	2
Carving machine operator	6.7	2
Door maker	6.7	2
Furniture finisher	10.0	3
Furniture fitter/ Assembler (Joiner)	6.7	2
Furniture manufacturing with hand tools	10.0	3
Furniture polisher/ Painter	13.33	4
Furniture upholster	6.7	2
Sofa/Chair maker	6.7	2
Structure of bed Maker	6.7	2
Table maker	6.7	2
Wood sawyer	6.7	2
Wood working lather operator	6.7	2
Total	100.0	30

Table 71: Firms reporting increase in the workforce in the last 12 months, by occupation/trade

Projected Skills Needs

In Karachi, the sample of 40 firms expects their number of workers to grow by 47 in the next 12 months, and by 415 over the next 5 years. This growth is expected to be fairly evenly distributed over the various trades listed in Table 72: for each trade 18 to 24 new workers will be required in the sample firms over the next five years. Only, the demand for wood furniture designers stands out with 31 new workers expected to be hired over the next five years.

Occupation/Trade	Employees Required in the next 12 months	Employees Required in the next 5 years
	N	N
Cabinet maker	3	22
Carving machine operator	2	20
Door maker	2	21
Furniture finisher	5	21
Furniture fitter/ Assembler (Joiner)	3	24
Furniture manufacturing with hand tools	3	10
Furniture polisher/ Painter	5	24
Furniture upholster	5	24
Precision woodworking sawyer	2	19
Sofa/Chair maker	3	22
Structure of bed maker	5	24
Table maker	2	22
TV trolley maker	0	20
Wood furniture designer	2	31
Wood pattern maker	0	19
Wood sawyer	2	18
Wood seasoning plant operator	0	18
Wood shaper and leveler	0	19
Wood treatment worker	0	18
Wood working lather operator	3	19
Total	47	415

Table 72: Number of workers planned to be hired in the future

Major Findings from the Sector Experts

Sector Experts – Profile

As per the ToRs, a total of 39 sector experts were to be interviewed to gain insight into the skills demand and supply in

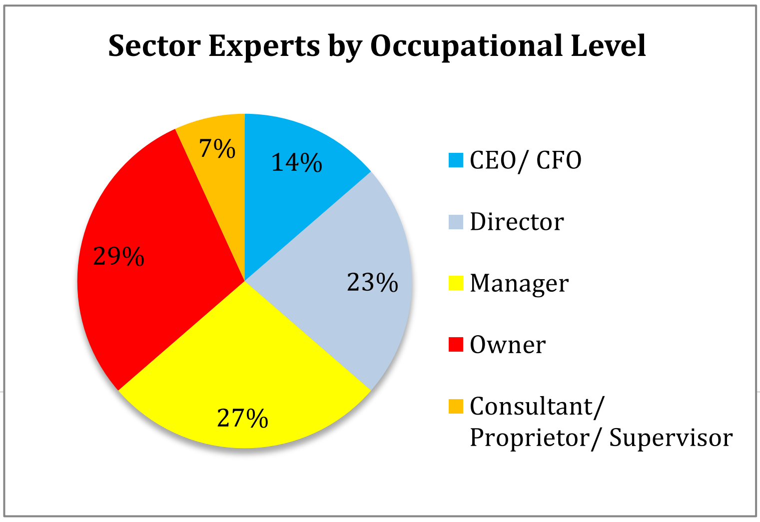

Figure 22: Sector Experts - Profile

the Pakistan Furniture Industry. For this study, IDS interviewed a total of 44 sector experts. Sector experts were individuals identified on the basis of their experience within the furniture industry in Pakistan, and in some cases, the size of their enterprises was also taken into account. These sector experts were identified through Snowball Sampling Technique[27] and belonged to different firms. This figure shows the overall breakdown of the occupation levels of the sector experts interviewed. As can be seen, 23% of the experts interviewed were Owners of the furniture manufacturing establishments; 31% were Managers (Human Resource Managers/General Managers); 23% were Directors; 15% were either CEOs or CFOs of furniture manufacturing establishments; and only 8% were Consultants or Proprietors[28]. The majority of the sector experts interviewed did not belong to any member associations; however, some were members of the Pakistan Furniture Council and the All Pakistan Furniture Manufacturing Association.

General Observations

The general tone of the conversations with the sector experts showed that even though the furniture industry was in a decline, it was salvaged by the fact that the demand for furniture had never died; and does not seem to do so anywhere in the near future. The biggest strength of this dwindling industry is the high demand, especially that of Chinioti Furniture; the wood quality, the designs, the finishing is unique.With the demand factor sustaining this industry, the sector experts were hopeful that a change could be brought about if the private sector showed unity and was helped by the government to pro-actively take steps towards potential economic growth in the industry. This is further illustrated by the fact that initially, there were only 8 Furniture showrooms in Chiniot, now the number has exceeded 3000. Another strength pointed out by most experts is the *'nafees' (fine or intricate)* and *'paayedaar' (long-lasting)* work of the craftsmen. Pakistan is capable of, and regularly produces, durable furniture with intricate designs. However, logistical constraints come in the way of completely actualising this potential. Despite these hurdles, most experts acknowledged that the quality of the furniture produced in this industry is still better than what most of the world produces.

In the last five years, the furniture sector performance has been satisfactory. Prices, overall, have increased, new trendy designs are now being offered and skills of workers are being enhanced.

Most Important Trades/Skills

All the sector experts interviewed were of the opinion that all skills and trades were equally important and relevant to the Furniture Sector. However, some pointed out more specifically that excellent export quality craftsman skills are highly necessary and pertinent. Most of the sector experts were of the opinion that all the skills in the Furniture Industry are in demand since all of these tasks are inter-related and a finished wooden product would not be complete without even one of them. The numbers of workers vary according to production orders, but everyone works in a team. In a conventional setting, working with conventional hand tools is required; while when working on machines, a factory or assembly line format is preferred. However, mostly, the skills set is a combination of all carpentry skills, either by hand tools or machine operated. It is not easy for manufacturers to find skilled workers / foremen who can handle the machine operations, and its repair / maintenance simultaneously. Considering the

27 The snowball or chain sampling technique entails choosing a small sample of initial subjects, who then identify further subjects from among their acquaintances. These further subjects may then be asked to identify further subjects until the desired sample size is achieved.

28 Sector experts were individuals other than the ones participated in the quantitative questionnaire.

future requirements of furniture demands in straight line manufacturing[29] it is important to address this issue.

Skills like log saw operation, designing, drying kiln operation, upholstery, polishing and carving are separately in demand. Other skills include: workers with skills who can manage their on-the-floor jobs, cabinet making skills, assembly and finishing, skills to apply the available technology/machines on the job, fitting and most importantly, knowledge about different types of wood. Skills least in demand include cutting and planing of wood.

Skills Shortages and Gaps

The existing skills in Pakistan do not match the skills required for the use of modern machinery and new finishing materials. If alternate, cheaper and readily available substitutes of raw materials are used, then the skill level will decline since excellent craftsmanship skills will not be needed to make the furniture from low quality wood. If high technology is incorporated, the skills required for that kind of furniture manufacturing are not prevalent. Most of the sector experts stated that there will be little or no effect of the new developments on the existing level of skills.

The skills not found in the furniture sector in Pakistan include entrepreneurial skills for understanding the export requirements for furniture, skills relevant to senior supervisors/foremen, skills relevant to the selection of good quality tools, trained trainers, and skills in designing among others. Some sector experts were of the opinion that lack of diligence among workers is also lack of a good skill. The hesitation on the part of the younger generation to join this profession is also a hindrance in the sector's overall development.

Most of the Sector Experts were of the opinion that there is a huge dearth of trained labor force in the Furniture Sector. Currently, most of the workforce in the industry works here for the lack of better options of livelihood. According to experts, this could be due to the lack of respect associated with this work in Pakistan.

The vast majority of new entrants in the industry are not furniture experts, and hence, do not set quality benchmarks. Using low quality raw materials, low skilled labour, they make and sell furniture at relatively low prices, affordable to the buyers. This gives the local furniture manufacturers an edge against the expensive imported furniture.

Skills Requiring Training

There are several training needs of the industry that are not being met currently. These include the application of new polishing, sealing, and finishing materials – all of which are not easily understood by both the owner and the worker. There exists a huge gap in the outreach of TSPs, resulting in in-house trainings being conducted informally. The training institutes have limited capacity to train apprentices, the courses are not updated regularly, there are no proper syllabi used for teaching, and sometimes the trainers are not trained very well themselves.

[29] Straight line or assembly line manufacturing refers to the manufacturing process/format used on modern factory floors where products are constructed/assembled using division of labour such that semi-finished products move in a line from work-station to work-station.

> *"The majority of the workforce has not visited the training centres as yet, since they think that these institutes are not affordable. Moreover, the Ustaad tells the workers that attending these courses is a waste of time and money and they will be better off learning from him."*
> – Sector Expert

Formal and informal training is required in all trades in the furniture industry. However, formal training from accredited training institutes would be preferred to informal modes of training. Draftsmen for furniture, using AutoCAD, with skills of measuring "*Sootar* to mm" are extremely important and require formal training. Other areas that require training include: machine operations and maintenance skills for all machinery used in this sector, designing and craftsmanship, polishing and finishing (materials and machinery), manufacturing of doors, cabinet making, upholstery, carving and fitting, marketing skills, sales techniques, polishing and shaping.

Emerging Trends in Technology and Operations

In general, the sector experts were of the opinion that in the 1960s and 1970s, handcrafted furniture of Pakistan was highly valued and prized by international buyers. "Old English Style" and "Oriental Style" furniture was highly in demand in Europe and Western Countries. With changing trends, the demand for furniture shifted from handcrafted to machine-made. In Pakistan, generally the type of furniture preferred varies in different areas. Overall, the furniture preferred is more durable compared to its Western counterparts since the latter is designed for people more prone to changing their furniture often; usually when shifting from one place to another (Furniture Pakistan, 2007).

Implications of Emerging Trends on Associated Skills

The performance of the furniture industry has grown in size and volume in terms of increasing number of showrooms being opened by new entrants. This indicates that the demand for furniture has increased and hence the production has also increased. However, this does not imply that a certain quality of furniture is still being produced. The furniture market only seems to be interested in mass production of furniture with little or no regard to quality. This could be primarily due to a lack of trained highly skilled workers in the sector.

Despite a gradual move towards machine-made furniture, currently, most furniture in Pakistan is still handcrafted. Crafting by hand gives the Pakistani manufacturers an edge since it allows incorporation of intricate designs if handled with expert draftsmanship. There exists a certain level of demand for the adoption of new trends and practice in the furniture industry. Whether the demand is being met is not known for certain, due to the shortages and the cost of raw materials, technology-creating trends not prevalent in Pakistan earlier, and small factory sizes, where economies of scale cannot be practised. Little or no research and development for the furniture sector is also posing a hindrance to the adoption of latest technology. Machines and machine supervisors are not available. Lacquer chambers and booths are not available. It is difficult to purchase new machinery, and when machinery is imported, the local workers here are unable to operate the machines effectively. New trends are also difficult to adopt because of the cost cutting and compromise on quality by the informal sector.

With regards to the new trends being incorporated in the furniture sector, there is a lack of opportunity to establish large scale manufacturing industries due to low quality wood and related materials, lack of formally trained supervisory level staff and formally trained workforce. This results in little or no trends becoming a part of the industry. Only a few big players in this sector can afford to incorporate the new trends in terms of technology and operations. On the operations side, sector experts saw challenges in the development of labour: they felt labourers were averse to acquiring special skills, particularly the repair of machines, and dealing with this reluctance was not possible for smaller firms. So this can only be dealt with by big players who can afford to get an appropriate number of their supervisory level of workers trained, along with the technical backup of the machinery by the machine manufacturer.

However, internet and technology has brought innovation in the sector. Customers visit carpenters with designs taken off of the internet and those designs are then copied. This, on the one hand, implies lack of innovation, but, on the other hand, illustrates the capability of the local carpenters.

Reasons for Low Exports

Most sector experts admitted that the Furniture Manufacturing associations were too embroiled in their own local problems of a diminishing industry to focus on exports. Although, there does exist a little international demand of the Pakistani furniture, the inability by the local manufacturers to meet this demand, makes exports stand at the level they are. A second reason for low exports arises from the incapacity of the Government Officials at Customs to unpack and re-pack the furniture without damaging it. Some sector experts were also of the opinion that exports took an even deeper plunge given the country's image in the world. International buyers need guarantees and assurance of quality that matches international standards, and require the entire furniture stock to be available for inspection at their convenience. One of the most important factors to consider is the increase in imports of raw materials due to the shortage of wood in Pakistan. While sales and demand for furniture have gone up, the costs have also increased.

Role of Women

Most sector experts were of the opinion that women are most likely to be recruited to perform the work of sales, designing, hand carving, upholstery, finishing, polishing (all except spirit based polishes as women are considered unaccustomed or unsuitable for spirit-based work as these require additional safety measures), inlay, interior décor, marketing and management roles and production planning, as well as customer representation or designing work.

Some experts stated that women could work in the sector but social taboo keeps them from achieving their potential in this sector. Women usually prepare *"Jaali" (mesh work),* "*Chinioti Mooray" (stools), "Peeray" (traditional wooden chairs)* and other traditional household furniture items while sitting at home. The male members of the households then go to the markets to sell these items at different prices.

> *Females can work more effectively on carving but the problem is the social acceptability of their employment*" – Sector Expert

Regulation[30] of the Sector

Every expert unanimously claimed that the sector is not regulated at all by an external body.

30 Regulation refers to any form of compliance or legal norm to maintain conduct, in this case, the conduct of the Furniture Manufacturing sector

Organizing Training for Trainers

When these sector experts were asked if they would like to offer or organise trainings for trainers, the majority of the experts stated that they would not do so in their personal capacity. However, they were willing to contribute their time and knowledge if they are hired as consultants and paid for it. Some suggested they could give concrete inputs in syllabi design and could advise the authorities on the types of courses that should be offered.

Effectiveness of TSPs

According to most of the sector experts, the training institutes in Pakistan are not doing a satisfactory job of effective training relevant to the furniture industry. Leading institutions of Pakistan are offering furniture design courses but without properly trained instructor. Quality courses are being dropped out. For instance, in the case of the Punjab University Department of Fine Arts, an excellent woodworking course was dropped out 35 years ago. Some sector experts claimed that no "qualified" personnel from the training institutes had ever applied for jobs at their factories, so it was hard to say whether the institutes are producing graduates or not.

There are three major furniture clusters in Pakistan. However, the training institutes are not present in all of these clusters. And even if they are present in some areas, there is little to no awareness about them to the workforce in the furniture Industry. Some experts suggested that the training institutes required capacity enhancement, trained trainers, and most importantly, originality and innovation in their designing courses. The WWSC and Pak German Technical Institute in Peshawar were doing a relatively satisfactory job in meeting the industry's needs. It is pertinent to note here that the training institutes will not be able to contribute much to the sector if the professional tradesmen do not want to employ a well-skilled workforce and were bent upon hiring unskilled labourers, thinking that the informal modes of training would be sufficient to hone their skills. Some experts also thought that the informal modes of training might be better than the current formal ones.

Most sector experts do not have active ties with training centres since the former believes that the latter is not doing a satisfactory job. Communication between the two parties involved is an essential first step.

When asked about the main leading TSPs in the Furniture Sector, all the sector experts included names like WWSC, NCA, PIFD, and Pak German Institute. A few had no idea about any of the institutes and some stated that only informal modes of training were in place in the sector. Most of the sector experts had no idea as to how these Institutes were different; some stated that they are all the same. WWSC in Gujrat was stated to have a kiln/drying oven and being the only setup that resembles a TSP in the industry. PIFD was stated to have sophisticated and reasonably better-versed graduates in terms of furniture designing, woodworking machinery functions and also possessing managerial skills. None of the experts had any knowledge about the curriculum that these institutes were offering.

Courses Offered by TSPs: Relevance and Quality

Most sector experts had little or no knowledge about the courses being offered by the institutes. This is due to the fact that there are very few training centres operational. And those that are present do not seem to be doing a satisfactory job in general. A major updating of courses is required, especially in the courses related to modern high-tech machinery, new glues and joining materials and new polishes, quality certification concepts, controlled wastage, straight line manufacturing, cabinet making courses and safety procedures. The courses being offered are relevant for conventional woodworking industry. The institutes lack a proper mechanized system to streamline the placements of their graduates or they do not produce as many graduates.

Some experts also stated that the institutions might be doing a better job than the government training centres. For instance, the PIFD (Pakistan Institute of Fashion Design) now has some woodworking machines at their campus where the graduates are given the basic orientation of how these machines operate. Hence, their graduates are reasonably well versed on the use of these machines. But PIFD is not mandated to teach the Foreman/Supervisory courses. PIFD graduation is of a much higher level, and is meant for higher-level jobs and not for the Apprentice / Foreman / Supervisor level.

Existing Training modes

Most of the Sector Experts had no idea about any existing possible training delivery modes that could require funding. Some gave suggestions on how the trainers can go to workers instead of the workers coming to them for training, using Government support and other incentives to lure the Trainers and the workers alike. Videos including practical demonstrations for furniture manufacturing are a good mode that could be used to improve the skill levels of the workers. There should be technical videos in Urdu and Punjabi languages.

Challenges Facing the Industry

Most Sector Experts acknowledged that the industry's strengths have declined in the present day situation. The limited availability of raw materials and a general electricity dearth that has plagued the country have made it extremely difficult to produce top-quality furniture at a significant pace.

The impact of large scale manufacturing by China has had an immense impact on the world furniture market as well. International market demands a "sleek, smart and modern look" which occupies lesser space and is cheaper to produce. However, recently, the quality of Pakistani furniture has also lowered due to the unavailability of quality wood.

To capitalize on the comparative advantage to increase exports, Sector experts were of the opinion that there needs to be a focus on new designs, wood availability and skills of expert carpenters. Other challenges facing this industry include: electricity and power outages, scarcity of raw materials, lack of skilled labor in terms of understanding the complexity or woodworking issues, high taxes on import of hardwares and materials, lack of procurement of technology, and most importantly, lack of innovative designs.

Addressing the Callenges at the Enterprise, Industry and National level

National	Declare it a separate Industry Increase the forest cover in Pakistan to avoid wood depletion Provision of seasoned raw material in the market Incentivise exports Ban tree felling and start import of wood Introduce kiln drying in every hub of furniture making Operation / maintenance skills of high tech woodworking machinery must be taught in Diploma course as a subject Decrease the frequency of power outages
Industry	Provision of incentives to allow new labour to join the Industry Increased collaborations between the Furniture Associations More awareness about the trainings that TSPs offer Standardised licensed Quality Certification, categorized as A, B, C so as the buyer knows what quality he is buying. Provision of financing facilities

Enterprise	Decrease professional dishonesty Provide in-house training Innovation in new designs Networking with foreign markets Information and use of new technologies Information about emerging product trends and consumer preferences Educating the buyer on quality furniture and quality of wood and workmanship

Awareness about PSDF

The majority of the sector experts were not aware of Punjab Skills Development Fund. However, a few had heard the name but not what it did. Except for one Sector Expert (Mrs. Ghazala Rehman, CEO of InDesign), everybody stated that they had never worked with PSDF.

Future Directions

The future of the furniture industry did not seem very bright to most of the sector experts, due to low availability of raw materials and lack of professional new entrants in the industry. In terms of technology, there are new machines and materials, but Pakistan does not possess the capacity to deal with these new trends.

Some of experts stated they were optimistic about the future of the industry since it is likely that the new entrepreneurs will adopt new approaches and machinery due to the changing demands of the industry. The sector, however, holds immense employment potential, with skilled workers obtaining jobs in little or no time. These employment opportunities may increase when safety measures are enhanced and sector specific policies are introduced by the Government at a national level.

Marketing and Entrepreneurship

Most establishments seemed to be happy with conventional ‘word of mouth’ marketing. There was a positive correlation between the size of an establishment and the amount of marketing-related activities it engaged in. While almost all experts acknowledged that marketing is beneficial, some of the smaller enterprises viewed it as an extra hassle in the small setting they operated in. Furthermore, many experts also contributed that entrepreneurship is essential for the progress of this industry since the global community is heading towards a digital age where everything is changing rapidly. To keep up, establishments will need to innovate at a greater pace.

Job Placement

Job placement can be made more effective by inculcating the importance of graduating from these training institutes and raising awareness about the difference in quality of a formally trained graduate and an informally trained apprentice. TSPs should form linkages with the industry or form an employment agency. Public private partnerships should be formed. The government should endorse the hiring of the trained graduates at better wages. Some preference is given to workers who do not need to be trained, however the majority of the employers would much rather have employees they can train according to their own needs and requirements.

Contributions Required of Other Players

The major players in the private sector can assist the furniture industry in terms of establishing more teaching institutions and training centres. They should share their knowledge and technical know-how with the rest of the industry workers; can assist with the updating of curriculum and syllabi being offered by the TSPs; provide funds for advanced and expensive machinery; and develop linkages between the private and the public sector.

Most of the sector experts were of the opinion that the government does not help the industry. it can help by declaring the woodworking sector as a separate industry with its own policies and procedures and regulations; by establishing more TSPs and increasing the existing capacity of TSPs; by preserving forest cover to ensure the availability of raw material; incentivizing exports; giving benefits and tax holidays to this sector.

The public Sector TSPs should expand their outreach to become more accessible. The curriculum must be reviewed for it to be relevant, affordable, up-to-date and according to the needs of the Furniture Sector. These TSPs should establish a network of skilled workers and offer incentives to encourage more young people to join the industry (in terms of internship opportunities and stipends). They should pay more attention to the future trends, and train the workers for machine operations and maintenance, process flows, draftsmen, new materials and new composite wood materials. They should be able to produce skilled graduates who know all the concepts of the trade, i.e. hand skills, machine operations and safety SOPs, work ethics, i.e. proper management of the job assigned to them, and control of materials. Their graduates must have a certified Diploma / Certificate, and quality of training and education must be up to the professional level requirement.

To establish strong ties and linkages, the TSPs should be in constant touch with the players in the industry, be aware of the new trends and technologies, and should involve other parties when designing the curriculum and course contents.

Recommendations for the Training Institutes

The sector experts stated that PSDF and training institutes in Pakistan should teach the use of new and modern machinery, latest trends in designing, finishing and upholstery of products, machine maintenance, safety standards, process and industrial engineering, precision cutting, fixing of hardware (straight line manufacturing), fitting, draftsman skills, supervisory skills, knowledge about different types of wood, among others.

Other suggestions for the training institutes were to somehow erase the culture of *Ustaad* and *Shagird,* and inculcate a deeper sense of ownership in furniture manufacturing. Some of the Sector Experts quoted the examples of Malaysia and China, where the training institutes were advanced and much more receptive towards the changing trends of the Industry. Some experts were also of the opinion that the industry needs to pay importance to process/production flow planning, product pricing, bill of materials and bills of quantities, technical drawings of the items, techniques of manufacturing items on high tech machinery and basic teaching on all the materials.

The furniture industry can benefit from different services, provided that raw material is available. Marketing and other related services are secondary when it comes to the procurement of good quality raw material. The services that need improvement include designing, quality, finishing, packaging and storage of wooden products. Marketing is an essential tool that has benefitted most of the furniture manufacturers if they are able to deliver high quality products. TDAP used to give subsidies to this sector in the form of stall rents, but now nothing is being done to promote the “Made in Pakistan” slogan. Possible training delivery modes that require funding include on-the-job trainings in the form of online trainings, skype trainings and pre-recorded trainings.

General Recommendations

One of the major steps that the Industry needs to take is to have a strict policy on usage of the *Old Jungle Grade Teakwood (Saagwan)*. This must be strictly preserved and rationed out to only those exporters who have confirmed Export Orders in hand.

The government can help through TDAP by procuring a permanent warehousing facility in importing countries to facilitate the cost effectiveness, effective delivery mechanisms and in-country quality inspection by the buyers. Pakistan can capitalize on the comparative advantage by learning new designs[31] from the European and the US markets. Other areas that the Pakistani Furniture Industry will have to focus on include:

- Marketing
- Excellent Quality teakwood (Saagwan)
- Certification for furniture exports (in terms of child labor and Environment protection
- Increase in trainings
- Reduction in electricity prices
- Provision of excellent quality upholstery and polishing materials
- Focus on multiple functionality of the product
- Making value additions[32] to the furniture products
- New markets should be accessed[33]
- Introduction of quality checking procedures for tree age and density of wood

Modern machinery should be installed to minimize production cost and time. The *Gujrat furniture sector is much modern and properly run, Associations facilitate showrooms at local and at international level; even government is fair to them. The fact is that their businesses are flourishing and even then ninety percent of their furniture they make here in our workshops*. – Sector Expert

Major Findings from the TSPs

This study had ascertained interviewing a total of up to 39 TSPs. However, due to the limited number of TSPs that are registered as separate entities in this sector, IDS was only able to identify and interview 19 formal TSPs. To fulfill the requirement of the study objectives, IDS undertook snowball sampling technique to identify and interview informal TSPs as well. The main rationale for this was the huge informal furniture sector in Pakistan. Hence, a total of 10 informal TSPs were also part of the study group. (List at Annex B):

While identifying TSPs, it was observed that entities providing trainings in the furniture sector comprise of two main types: formal and informal. The formal training centers provide certification to their students and were dedicated training institutions. The informal training centers were primarily furniture manufacturing workshops that act as informal suppliers of training services by hiring apprentices or by giving on-the-job training to already existing labor. Using this difference as the distinguishing factor in the TSPs in the furniture sector, an overall picture of the training capacity was taken into account.

31 Some of the names of the designs include Victoria, Gothic, Chappendale, Georgian, Queen Anne. These are all design names for an entire set of furniture consisting of chairs, tables, dressings, beds, dining, among others.

32 We can add value by developing aesthetics of designs, design pool improvement and improving the engineering of designs, their ergonomics and ease of use, along with durability.

33 There is a high demand of antique handcrafted designs in South Africa, Bangladesh, Sri Lanka and Kenya.

Formal TSPs

Profile

In this study, TSPs have been categorized as "formal" if they follow a planned curriculum and have facilities dedicated to training. In addition, they provide certification which is recognized by the government. Formal TSPs of this nature are few in the furniture sector.

Respondents (or interviewees) from the 19 formal TSPs were trainers, training directors/coordinators, curriculum manager, principal/ vice principal, project director or (in one case) professor from the institute.

Major formal diploma awarding entities which have been working in this sector since late 1960s and early 1970's include Wood Working Service Centre (WWSC) Gujrat which was previously associated with Ministry of Industries Punjab, and now associated with Technical Education and Vocational Training Authority (TEVTA), and Pak-German WWSC Peshawar, associated with Small Industries Development Board, Ministry of Industries KPK (Khyber Pakhtunkhwa). These TSPs offer Short Certificate and Diploma courses. Both of these were established as Woodworking Service Centers to cater simultaneously for the government demand of office furniture and to formally train workers for this sector.

Another major TSP is PIFD Lahore operating since 2008 which works under the Ministry of Commerce. It provides degree courses (Bachelors in Designing) with furniture designing and basic woodwork machinery operations, being an optional subject.

There was only one TSP i.e. Pak Polytechnic Institute in Chiniot that was established by an NGO. The courses offered by this institute were mandated by TEVTA.

Courses and Available Training Capacity

In Annex E, a complete inventory of the courses offered at the interviewed institutes is provided, along with durations and capacities of these courses. The most common courses offered were related to carpentry, woodworking, polishing and finishing, and machine process for wood. Subjects that were less common include furniture designing and marketing (offered only by PIFD among the surveyed TSPs) and AutoCAD (offered only at WWSC Rawalpindi among surveyed TSPs)

With the exception of four TSPs (PIFD, Pak German WWSC, WWSC Rawalpindi, Government College of Technology, and Karachi Vocational Training Centre) that provided 2-year and 3-year diplomas or certificates, most TSPs offered courses typically of 3 or 6 months duration. Because courses were short, a few of the larger TSPs run courses multiple times in a year (for example, TEVTA's WWSC in Rawalpindi runs one of its courses 25 times in a single year with each run accommodating 25 students). In total, TSPs reported total annual enrolment capacity of approximately 2,018 individuals (as an aggregate of different furniture courses and of different durations), with trainee trainer ratio of 21.21.

The capacity of the two largest Certificate / Diploma awarding institutes was not competitive in comparison with the size and employment potential of this sector. The progress in technology, both in machinery and materials was also not reflected in their courses and their lab floors. This is suggestive that current capacity may be inadequate for wide-scale initiatives for training in the sector.

Furthermore, with regards to capacity in terms of available trainers, most of the TSPs stated that they were not satisfied with the inventory of trainers they had. The trainers for Auto/High-tech machinery, cabinet making, new materials management, and production process management are not available.

Available Relevance and Quality of Courses Offered by TSPs

It was felt that the TSPs were either following syllabi that were outdated and not entirely relevant to the technological and operational changes taken place in the past decade. When asked for syllabi, the TSPs generally seemed reluctant to produce the content. (However, the syllabi for TEVTA based courses are available online on TEVTA's website).

The current training facilities and curricula were initially developed in the 1960s, and updated in the 1970s and 1980s. With no further development until recently, the courses seem outdated in terms of their content in comparison with the needs of the industry. As a result, the trainings can only cover a small portion of the present day technological requirements of the industry.

Before the establishment of TEVTA, the TSPs followed curricula developed and approved by the members of their own controlling boards while Government Technical Training Centers followed curricula set by their respective Boards of Technical Education. The WWSC Gujrat previously followed curriculum developed by the Ministry of Industries, Punjab, till the time it was taken over by TEVTA. The Pak German WWSC Peshawar still follows the curriculum developed by Ministry of Industries KPK.

As a result, there was a difference in the contents of the syllabi. For example, the syllabi of the Boards of Technical Education were different from those of the provincial Ministries etc.

At present, TEVTA has been mandated as the governing body of all Diploma/Certificate awarding technical training institutes in the Punjab. Now being governed by a single authority, it is expected that the syllabi of all these institutes shall be uniform.

Degree-awarding institutes namely PIFD, NCA and The Institute of Educational Research at the University of the Punjab were also present among the formal TSPs interviewed. PIFD offers Furniture Designs & Woodworking courses made in consultation with the Higher Education Commission (HEC) of Pakistan and with Buck New University (UK) and reviewed by an independent board which includes personnel from the industry, academia and the Department of Furniture Design of PIFD. The Institute of Educational Research at University of the Punjab, and NCA also has properly accredited curricula.

Capacity of the TSPs to Develop and Adapt Curricula

Interviews with TSPs suggested their limited capacity to develop and adapt curricula, as no formal processes existed at the institutes to achieve this. Except for PIFD, formal assessments for curriculum development were not conducted in consultation with the entrepreneurs in this sector. It seems that the institutions were not keen at approaching the leading entrepreneurs and the owners were also not interested to take a part in this process. According to one TSP, the owners do not want to change the traditional culture of work and training. The reason for this could be that formal qualified personnel are not easily available. They have to work with whatever skilled workforce is available to them. Moreover, carpentry is a traditional business for most owners, large, medium and small. As such attitudes towards learning are not very open and the majority is not even interested in introducing safety procedures for their workers.

Most of the TSPs were not aware of Training Needs Assessments and had not conducted any for the furniture sector. Most of the training centers did not make annual training plans either. Only in some cases TSPs had made work plans but these were done in a non-systematic manner (on their own or after getting verbal approval by the institutes' management).

Available Capacity of the TSPs to Train Trainers

Although there is sufficient demand for Training of Trainers, the TSPs do not conduct these trainings. There exist communication gap between TSPs and the private sector. There were no arrangements between the TSPs and the large furniture firms to cater for their training needs. Though somewhat satisfactory facilities are available with most of the TSPs, the entrepreneurs were also not inclined towards getting their staff trained.

Most of the TSPs interviewed agreed that they had trainers available. However, there were instances where improvement was required in training expertise, specifically in areas of: sofa and chair making, carving, high-tech machinery maintenance and operations, cabinet and architectural furniture making, new materials management, production flow management and preparation of Bills of Materials.

TEVTA recruits the trainers / instructors for its institutions through its own selection criterion. In one case, a special educator monitored the performance of trainers.

Capacity to Establish Linkages with Employers

TSP survey revealed the reasons as to why the communication between TSPs and private establishments was weak, resulting in poor linkages being formed between the employers, the trainees and the training centers. The major reason identified was absence of TSPs in the clusters where the furniture market is large. This situation diminished the chances of trained candidates to secure employment in the private sector.

In Punjab, except for Gujrat, the TSPs were situated in areas which do not have a developed furniture industry. The TSPs in Gujrat, being in the government sector, do not have the flexibility to develop strong linkages with the entities in private furniture sector.

There were TSPs in cities where the private sector was not large, i.e. Gujjar Khan, Leyyah, Kot Addu, and Multan. Hence, the demand for linkages with the furniture establishments may not be strong.

In clusters like Lahore there was no major TSP except of NCA & PIFD with limited capacity to train individuals and there is a small sized TSP in Chiniot, operated by a foreign NGO only "Finishing & Polishing" course is being taught.

Another factor that possibly limits the capacity of formal TSPs to establish linkages was the level of financial payout, i.e. wages, for "Formally Trained" and "Informally Trained" workers are the same in the market. In addition, advancement in career was not linked to "Formal Training" by the employers. This diminishes the chances of trained candidates to secure employment. This has further narrowed the possibility of high enrolment at TSPs and contributed negatively to the size of an already small trained labour force. Moreover TSPs lack the ability and capacity to guide the trainees for the career placement which again hinders the employability of trainees.

An example of a working linkage is only in Karachi, where there are some instances of agreements between TSPs and large private furniture sellers like Habitt and Interwood. Discounts were offered and availed when these organizations register their staff for trainings in big groups.

Skills Needs and Available Skills (as Perceived by TSPs)

In the opinion of respondents from formal TSPs, the existing workers in the furniture sector were not familiar with theoretical aspects of furniture manufacturing. Only workers who were formally qualified are familiar with these aspects of furniture manufacturing.

In the opinion of formal TSPs the skills sets presently in demand and not easily available in the furniture sector include: skills of operating and maintaining CNC (Computer Numerical Controlled) machines, designing on AutoCAD (software for Computer-aided Design), modern finishing/polishing materials and techniques, installing modern hardware like concealed hinges, sliders and latches etc., architectural furniture making, preparation of Bills of Materials.

The skills required in the coming decade would include: operating high tech machines for production automation, matching the finishing and wood materials on international standards, application of water based paints and polishing including latest hardware, preparation of Bills of Materials / Bills of Quantity, and innovative designing among others.

Informal TSPs

Profile

TSPs have been categorized as "informal TSPs" if they have no planned curriculum and cannot provide any (recognized) certification. These informal TSPs are typically workshops where the owner is considered an "*Ustaad*" (teacher or master). Among the few workers who received training (other than informal on-the-job training), it was common to receive training at a workshop rather than at a formal institute such as the ones described above which were unavailable in most areas. In Chiniot, for instance, there were some workshops that were very popular in delivering trainings.

In Chiniot, pupils were trained as apprentices. Initially, for the first six months, they earn Rs. 20–30 per week and only observe the work and perform menial tasks like handing things to the *Ustaad*. The pay is then raised to Rs.50 per week and after a few years; the pay is then increased to a maximum of Rs. 1000 per week. After a good 3 – 4 years, the pupil was believed to have acquired a skill. These pupils, however, were not paid for overtime work and were only taught if they were obedient.

Available Training Capacity

The workshops in Chiniot were sources to learn new skills since the workers were not rushed into trainings and can learn at their own speed. The theoretical concepts were not touched upon, leaving the students with little to no information about the significance of the tasks being performed.

SWOC for Furniture Industry in Punjab, Pakistan

The following is a SWOC (**Strengths Weaknesses Opportunities Challenges**) analysis of the furniture industry in Punjab, Pakistan. It takes into account all the three major clusters of Lahore, Gujrat and Chiniot.

		Strengths	Weaknesses
Internal	Macro	• High demand • Durable furniture	• Lack of unity within the sector. • No proper representation to address the issues faced by the sector.

	Micro	• Excellent craftsmanship skills, especially handcrafted furniture	• Lack of entrepreneurial spirit in the sector • Improvements needed in marketing to increase sales potential • Diminishing level of technical furniture making skills • Trades within the sector are not respected professionally, limiting its potential • Lack of specialization
		Opportunities	Constraints
External	Macro	• Export potential not actualized • Liaison with the government to improve the sector	• Most investors are profit-oriented; quality assurance is not a concern for them. • Unavailability of reasonably priced raw material • The sector is not regarded as an 'Industry' • Nation-wide electricity shortage • Training institutes not operating effectively • Reliance on imports of raw materials
	Micro	• Potential to adapt technology/machinery • The use of social media for promotional activities	• Shortage of skilled labor • Uneducated labor • Little help from the government • No dedicated wood bank/market • No communication between the private sector and TSPs • Cultural barriers for women to enter the industry

Conclusions and Recommendations

General Recommendations

- The sector presents several challenges. The level of education and exposure to formal skill development among firm owners in the sector is extremely low, and therefore there is a tendency to discount the importance and value of proper, formal training. Many of the firm owners have been relying on on-the-job and learning-by-doing approaches, and feel that these are sufficient for their needs. However, this perception is likely to be the result of the lack of exposure, low levels of education, and compounded by the fact that existing TSPs are not providing very high-quality training services. All these factors lead to a general low regard for training.
- Therefore, any initiative for skill development should begin by targeting owners, by providing them with high quality training services, that creates tangible productivity gains and demonstrate the value of skill development. Incentives may have to be provided to generate attendance, as our findings suggest that firms are reluctant to participate and send workers for off-site training.
- PSDF can play a huge role in fulfilling the training needs of the sector. This can be done by highlighting the skill gaps and identifying the challenges that the students face. For instance, if students are waiting for up to 6 months to find a job, PSDF can form a liaison between the TSP and the private sector Furniture manufacturer. This can create a linkage between the employer and the potential employee. The employee, upon knowing that he will be able to get a job right after graduation, can undertake customized training suited to the need of the employer before he graduates.
- 46% of the firms were willing to send their workers for training if training was provided for free. PSDF can find sponsors to fund the training and organize training seminars.
- Out of 450 firms, only 4 were aware of PSDF. This can be improved by distribution and increased public awareness of PSDF through seminars, brochures and such. PSDF may also consider a more direct approach: launching a training scheme/series for the furniture industry in which furniture specific training institutes and establishment are invited to deliver training. This would serve to generate awareness of PSDF while also serving to bring together TSPs and establishments.

Specific Recommendations

Revamp and Modernize Vocational Education and Training Pertaining to Furniture Sector

- Owners of firms frequently reported that nothing new was taught in trainings. The curricula therefore need to be modernized. Presently, TSPs exist in two forms that is to say formal training institutes and informal training establishments in the form of individuals who provide mentoring services to the new entrants and middling skill level workers. As such their existence is ad hoc and their training methods/curricula are obsolete and traditional in nature. In order to make training demand-oriented, there is a requirement to revamp and modernize vocational education and training for furniture sector. This can be done through the upgrading of existing course content, identifying training needs and organizing trainings specific to the skills in demand.
- In order to achieve modernization of the current curriculum and ensuring that this continues to occur in a systemic manner in the future, it may be necessary to create an apex coordinating body that ensures that curricula meet current standards. The body should include representation from all stakeholders, and can be used to create national and state-level skills development programs that cohere to a single set of national occupational or competency standard so that common performance standards are set, in addition to being modern and frequently reviewed.

Course Recommendations

- Findings in this study suggest that courses specific to the following trade are most needed and are most likely to cater best to needs as identified by manufacturers and sector exerts.
    - Bedframe making
    - Sofa/chair making
    - Fitting, joining and assembling of furniture
    - Table making

    These trades/occupations were found to be the greatest in demand, vacancies were hard-to-fill due to skills shortages, PSDF may intervene by encouraging the development of courses specifically designed for these trades among TSPs. These courses are most likely to attract the interest of existing manufacturers.
- In addition, the study also identified modern skills in furniture making that are currently lacking in the sector or are likely to be required in the future.
    - Design innovations and the use of AutoCAD
    - The use of CNC machinery
    - Installing modern hardware like concealed hinges, sliders and latches etc.
    - Finishing and polishing on international standards
    - Marketing, and business development and management skills
- Any new courses should be properly institutionalized and adequately structured into different levels for beginners, mid-level workers and more experienced workers considering that a common view among firm owners was that nothing new is taught in existing courses. New courses for existing or experienced workers need to be especially designed to appeal to them.
- It may also be necessary to train existing trainers to be able to deliver new courses. The development of new courses and the development of capacity of TSPs can be best achieved with a "micro-supply capacity assessment" - an assessment at the individual TSP level and its immediate locality to: assess each TSPs capacity for growth, and create a complete inventory of existing courses can also be created.

Strategic Choices to Meet the Furniture Sector Occupational and Skills Demand

- Comprehensive courses for SME owners may be conducted to build their capacities and competence for business management and understanding of technical aspects of the business. This will create an environment of competitiveness, innovation and modernization.

- TSPs may be organized to facilitate training cooperation between SMEs. This will improve inter-disciplinary and multi-disciplinary education and learning.

- PSDF awareness can be increased by conducting robust awareness activity in the form of orientation workshops and FM Radio dissemination programs across the province. The activity should be directed to the sectors which have a better employment potential. Informal TSPs should also be approached and informed about the funding opportunities offered by PSDF for training delivery which in –turn will help PSDF in expanding the training base.

Support Joint Training Networks to Foster Apprenticeship in the Sector as an Aspect of Public Private Partnership

- As an aspect of public private partnership, linkages and relations may be established between the existing TVET institutions and large enterprises in the furniture sector to create an environment where the new entrants who have received basic skills training are given an opportunity to undergo internship programmes to polish their skills.

Development of E-learning and blended learning environment

- The existing TSPs should be equipped to provide e-learning and blended learning environment where students, in addition to practical training, are shown visual graphics for better understanding of furniture designing and making processes.

Measures to improve the image of the Sector

- The research reveals that among the younger generation, furniture making is not the most sought after occupation. The reason for this is both economic and social. In order to build the image of the sector, a pro-active advocacy campaign in the furniture sector clusters using documentaries and radio/FM channels is required. PSDF can do this by publishing reports and newsletters on advancements in the furniture sector. Government should take into account the importance of this sector, and in collaboration with the private sector, must carry out campaigns to increase public awareness.

Using TSPs as Career Guidance and Placement Agencies

- The TSPs be capacitated to serve as career guidance and placement agencies for the new entrants. This will create an environment for the new entrant to select appropriate trades in furniture making and acquire awareness on the availability of vacancies and opportunities.

Establishment of Communities of Practice to intensify collaboration between all stakeholders

- An environment of establishing and identifying community of practice should be encouraged in the main and sub furniture clusters where local experts belonging to different furniture trades would sit and discuss various aspects of furniture making use of their personal experiences in the form of anecdotes over a cup of tea or social meeting. This activity can be socially mobilized by the TSPs or different focal persons identified by the PSDF to conduct these meetings on a fortnightly or monthly basis. This environment of sharing experiences creates an immense value for the new entrants and the struggling workers.

Annexures

Annex A: List of Sector Experts Interviewed

Sr	Name	Designation	Name of company
1	Mr. Umer Farooq	Owner	Bello Furnishers
2	Mr. Muhammad Younis	Director	M. Zaman Furniture
3	Mr. Shahid Iqbal	Owner	Sam's Furniture
4	Mr. Mirza Shabbir	Manager	Geo Interiors
5	Mr. Hammad Aslam	Director	Landmark Furnishers
6	Mr. Mirza Muhammad Fayyaz	Director	Decent Furnishers
7	Mr. Imran Amjad	Manager	Woodpecker Timbers
8	Mr. Ali Ansar Ghumman	CFO	Trendline Furnishers
9	Mr. Hassan Muhammad	Owner	Empire Woods Furnishers
10	Mr. Chaudhary Javed	Owner	Chaudhary Javed Furniture House
11	Mr. Shahzad Muzammil	Chief Executive / Proprietor	Wood Designs
12	Mr. Mian Ahad Yaqoob	Chief Executive Officer	Ahad Home Signatures
13	Ms. Ghazala Rehman	Chief Executive Officer	InDesign
14	Mr. Sajid Mansur	Retired Director	Woodworking Service Center, Gujrat
15	Mr. Shoaib Iqbal	Proprietor	Decorum Furnishing
16	Mr. Anwer Daniel	General Manager	Chen One Stores Limited
17	Ms. Iram Siddique	HR Manager	Interwood Mobel Private Limited
18	Mr. Muhammad Arshad	General Manager	Kalamkar
19	Mr. Khawaja Nouman	Director	Mohkam Furnishers
20	Mr. Shahbaz Aslam	Chief Executive Officer	Charagh Din & Co
21	Mr. Umer Mehdi	Director	Studio O
22	Mr. Shahid Iqbal	General Manager	Wood Creations
23	Mr. Shahzad Yusaf Mughal	Director	Workman
24	Mr. Muhammad Furqan Hayat	Director	Hayat Furnitures
25	Mr. Kashif Ali	Owner	Al Qaim Furniture
26	Mr. H. M. Jamil Fakhri	Director	City Furniture
27	Mr. Naveed Iqbal	Owner	Ideal Wood Furnitures
28	Mr. Anis Javaid Vohra	Owner	Wood Pecker Art Furniture
29	Mr. M. Nadeem	Director	Pirjha Enterprises
30	Mr. M. Mudasir Ali	Owner	GM Furniture
31	Mr. Javed Iqbal	Manager	Aarish Furnitures
32	Mr. Mehmood Akmal Tamimi	Manager	Al-Fakhri Furnitures
33	Mr. M. Bilal	Manager	M. Afzal Furniture
34	Mr. Malik Khalil Ahmed	Owner	Chiniot Art Centre
35	Mr. Rashid Bokhari	Technical and Production Consultant	N M Furnishers
36	Mr. Haider Ali Khan	Manager Planning and Quality	Enviro Furniture
37	Mr. Muhammad Imran	Manager	Fantac Furniture
38	Mr. Ch. Ahtisham Ali Akhtar	C.E.O.	Focus Interiors Pvt. Ltd.
39	Mr. Syed Abrar Sherazi	Manager	Mechano Pvt. Ltd.
40	Mr. Muhammad Riaz	Owner	Al Rehman Furniture

Sr	Name	Designation	Name of company
41	Mr. Rana Asif	Supervisor	Ijaz Furniture
42	Mr. Hammad	Owner	MAYA – The Exclusive Furntiure
43	Mr. Muhammad Tariq	Owner	Welcome Furniture
44	Mr. Syed Faisal Hussain	Owner	Sony Interiors

Annex B: List of TSPs Interviewed

Sr	Name	Designation	Name of company	Formal/Informal	Location
1	Mr. Asif Shabbir	Trainer	Wood Working Service Center, Gujrat	Formal	Gujrat
2	Mr. Shahid Raza Qureshi	Trainer	Government Technical Training Institute	Formal	Gojar Khan
3	Mr. Naveed Butt	Assistant Professor & Coordinator	Pakistan Institute of Fashion Design	Formal	Lahore
4	Mr. Muhammad Waseem	Director (Q.E.C.)	National College of Arts	Formal	Lahore
5	Mr. Akhtar Bajwa/ Mr. Salim	Principal/ Training Incharge	Government Technical Training Center	Formal	Layyah
6	Dr. Shahid Farooq	Assistant Professor & Projects Coordinator	Institute of Educational Research, University of the Punjab	Formal	Lahore
7	Mr. Rana Adeel Javaid/ Mr. Hanif	Training Instructor/ Training Incharge	TEVTA Woodworking Center	Formal	Kot Addu
8	Mr. Saeed Hamdam/ Mr. Salim Haider	Inchrge Carpentry/ Training Incharge	Pak German Polytechnic Institute for Cooperative Agriculture	Formal	Multan
9	Mr. Asad Raza	Course Coordinator	Pak Plytechnic Institute, Chiniot	Formal	Chiniot
10	Mr. Zia ud Din/ Mr. Ahsan Ullah	Project Director/ Training Incharge	Pak German Woodworking Center	Formal	Peshawar
11	Mr. Waseem Bari	Principal	Oxford Polytechnic Institute	Formal	Sheikhupura
12	Mr. Ameer Khan	Project Director	TEVTA Woodwork Service Center	Formal	Rawalpindi
13	Mr. Ghulam Ahhmed	Associate Professor	Pak Swedish Institute	Formal	Karachi
14	Mr. Hassan Aijaz	Vice Principal	VTI Karachi	Formal	Karachi
15	Mr. Qazi Zaheer ul Hassnain	Vice Principal	Government College of Technology, Karachi	Formal	Karachi
16	Mr. Javed Latif	Principal	Vocational Training Centre, Lalu Khait, Karachi	Formal	Karachi
17	Mr. Saeed Ahmed Rehmani	Principal	Vocational Training Institute, Korangi	Formal	Karachi
18	Mr. Kamal Ahmed	Director Marketing & Development	3 D Educators	Formal	Karachi
19	Mr. Muhammad Imran	Curriculum Manager	KVTC	Formal	Karachi
20	Mr. Zafar Hayat	Trainer	Zafar Workshop	Informal	Chiniot
21	Mr. Allah Ditta	Owner/Trainer	Allah Ditta Workshop	Informal	Chiniot
22	Mr. Abrar	Trainer	Ahmed Furniture Workshop	Informal	Chiniot

Sr	Name	Designation	Name of company	Formal/Informal	Location
	Hussain				
23	Mr. Ali Akhter Perja	Owner/Trainer	Ali Akhtar Perja Workshop	Informal	Chiniot
24	Mr. Muhammad Rashid	Owner/Trainer	Khuzaifa Workshop	Informal	Chiniot
25	Mr. Asghar Ali	Trainer	Haji Sultan Workshop	Informal	Chiniot
26	Mr. Hassan Ali	Owner/Trainer	Sultan Wood Art	Informal	Chiniot
27	Mr. Azhar Abbas	Owner/Trainer	Usmani Poshesh Centre	Informal	Chiniot
28	Mr. Adeel Akbar	Trainer	Fine Poshesh Maker	Informal	Chiniot
29	Mr. Zafar Hayat	Trainer	Zafar Workshop	Informal	Chiniot

Annex C: List of Establishments Interviewed

Sr. #	Name Of Establishment	Location
1	Zawar Furnitures	Chiniot
2	Nou Shair Furnitures	Chiniot
3	Waheed Abbas Furniture	Chiniot
4	Navid Furniture	Chiniot
5	Shair Muhammad Furnitures	Chiniot
6	Zakir Furniture	Chiniot
7	Zafar Furniture	Chiniot
8	Khalid Furnitures	Chiniot
9	Alam Tawaqqal Furniture	Chiniot
10	Riaz Furniture	Chiniot
11	Rajpoot Furniture	Chiniot
12	Ali Workshop	Chiniot
13	Ali Furnitures	Chiniot
14	Aziz Ullah Workshop	Chiniot
15	Nasir Ali Workshop	Chiniot
16	Raja Furniture Workshop	Chiniot
17	Fazal Furniture Workshop	Chiniot
18	Ali Furniture House	Chiniot
19	Shakeel Furniture	Chiniot
20	Khuram Furniture	Chiniot
21	Zakir Furnitures	Chiniot
22	Ibrahim Workshop	Chiniot
23	Faiz Ahmed Workshop	Chiniot
24	Arif Furniture	Chiniot
25	Riaz Furniture Workshop	Chiniot
26	Akbar Furniture Shop	Chiniot
27	Imran Ali Workshop	Chiniot
28	Amir Hamza Workshop	Chiniot
29	Hussain Furniture	Chiniot
30	Sheikh Workshop	Chiniot
31	Aftab Furniture	Chiniot
32	Huzaifa Furniture Workshop	Chiniot
33	Javed Workshop	Chiniot
34	Ajmal Furnitures	Chiniot
35	Iftikhar Furniture	Chiniot
36	Ijaz Workshop	Chiniot
37	Safdar Ali Furniture	Chiniot
38	Hussain Furniture	Chiniot
39	Qasim Furniture	Chiniot

Sr. #	Name Of Establishment	Location
40	Shoukat Furniture	Chiniot
41	Asad Furniture	Chiniot
42	Zahid Furniture	Chiniot
43	Riaz Loona Workshop	Chiniot
44	Umar Furniture	Chiniot
45	Qamar Abbas Workshop	Chiniot
46	Ahmed Sher Work Shop	Chiniot
47	Waqas Furniture	Chiniot
48	Iqbal Furniture	Chiniot
49	Adnan Workshop	Chiniot
50	Sajid Ali	Chiniot
51	Bilal Work Shop	Chiniot
52	Bilal Arshad Workshop	Chiniot
53	Akbar Furniture Shop	Chiniot
54	Imran Furniture	Chiniot
55	Hussani Furniture House	Chiniot
56	Ghulam Rasool Workshop	Chiniot
57	Hafiz Factory	Chiniot
58	Yousaf Workshop	Chiniot
59	Imran Workshop	Chiniot
60	Muhammad Zafar Furniture	Chiniot
61	Sulaiman Workshop	Chiniot
62	Muhammad Asif Workshop	Chiniot
63	Muhammad Ilyas Furniture	Chiniot
64	Sarfraz Workshop	Chiniot
65	Muhammad Younus Furniture	Chiniot
66	Shamshair Ali Workshop	Chiniot
67	Ali Workshop	Chiniot
68	Muhammad Nasir Workshop	Chiniot
69	Muhammad Mukhtar Workshop	Chiniot
70	Muhammad Ali Workshop	Chiniot
71	Nasir Ali Workshop	Chiniot
72	Hafiz Furniture Workshop	Chiniot
73	Inam Elahi Workshop	Chiniot
74	Muhammad Ashraf Workshop	Chiniot
75	Nazar Muhammad Workshop	Chiniot
76	Ilyas Furniture Workshop	Chiniot
77	Abbas Furniture Workshop	Chiniot
78	Khuram Furniture Workshop	Chiniot
79	Malak Furniture Workshop	Chiniot

Sr. #	Name Of Establishment	Location
80	Tariq Hussain Workshop	Chiniot
81	Sufi Furniture	Chiniot
82	Mubashir Furnitures	Chiniot
83	Abdul Rehman Furnitures	Chiniot
84	Hidayat Ullah Furnitures	Chiniot
85	Qaisar Furniture	Chiniot
86	Imran Furnitures	Chiniot
87	Nazir Furniture Workshop	Chiniot
88	Ijaz Furniture	Chiniot
89	Nadeem Furniture	Chiniot
90	Bilal Furniture Workshop	Chiniot
91	Nawaz Furniture	Chiniot
92	Asif Furniture Workshop	Chiniot
93	Hussain Furniture Worshop	Chiniot
94	Qasim Workshop	Chiniot
95	Safdar Furniture Workshop	Chiniot
96	Hafeez Furniture	Chiniot
97	Tanveer Furniture	Chiniot
98	Waqas Furniture	Chiniot
99	Ilyas Furniture	Chiniot
100	Zafar Furniture Workshop	Chiniot
101	Nazir Furniture Workshop	Chiniot
102	Bimillah Furniture Workshop	Chiniot
103	Kamran Warkshop	Chiniot
104	Dastgeer Furnitures	Chiniot
105	Sana Ullah Workshop	Chiniot
106	Farhat Workshop	Chiniot
107	Qabri Furniture Shop	Chiniot
108	Rehmat Furniture Workshop	Chiniot
109	Hassan Woodworks	Chiniot
110	Sajjab Furniture Shop	Chiniot
111	Ali Furnitures	Chiniot
112	Muhammad Zakria Workshop	Chiniot
113	Ali Fiaz Furniture	Chiniot
114	Imtiaz Furniture Workshop	Chiniot
115	Haji Gahangir Furniture Workshop	Chiniot
116	Hashmi Furniture Workshoop	Chiniot
117	Arif Furniture	Chiniot
118	Aslam Furnitures	Chiniot
119	Aown Ali Furnitures	Chiniot

Sr. #	Name Of Establishment	Location
120	Akhtar Furnitures	Chiniot
121	Galaxy Woods	Chiniot
122	Nasar Furnitures	Chiniot
123	Mansha Furnitures	Chiniot
124	Safdar Furniture	Chiniot
125	Khalid Furnitures	Chiniot
126	Sarfraz Furniture	Chiniot
127	Shair Furnitures	Chiniot
128	Elegent Furnitures	Chiniot
129	Farooq Furnitures	Chiniot
130	Raees Ur Rehman Furnitures	Chiniot
131	Jamil Furnitures	Chiniot
132	Saleem Furnitures	Chiniot
133	Allah Rakkha Furniture	Chiniot
134	Chiniot Furniture Point	Chiniot
135	Manzoor Furniture	Chiniot
136	Shan Furniture Shop	Chiniot
137	Saleem Furniture Workshop	Chiniot
138	Naeem Workshop	Chiniot
139	Ali Worshop	Chiniot
140	Akhtar Ali Workshop	Chiniot
141	Muhammad Amir Workshop	Chiniot
142	Haq Nawaz Workshop	Chiniot
143	Shah Jahan Workshop	Chiniot
144	Muhammad Kashif Workshop	Chiniot
145	Manzoor Workshop	Chiniot
146	Muhammad Sadique Furniture	Chiniot
147	Jaafar Ali Furniture	Chiniot
148	Amjid Furniture Works	Chiniot
149	Chinot Wood Works	Chiniot
150	Hassan Furniture Workshop	Chiniot
151	Ijaz Furniture House	Lahore
152	Nazar Hussain Furniture House	Lahore
153	Muhammad Tahir Khokar Furnitures	Lahore
154	Faisal Furniture House	Lahore
155	Munir Furniture	Lahore
156	Malik Furniture House	Lahore
157	Akhtar Kharad Wood Works	Lahore
158	Sharif Furniture Shop	Lahore
159	Lahore Badshah Furniture House	Lahore

Sr. #	Name Of Establishment	Location
160	Adeeb Furniture	Lahore
161	Lal Furniture House	Lahore
162	Ghulam Nabi Furniture	Lahore
163	Shop 104	Lahore
164	Ashraf Furniture House	Lahore
165	Mustafa Furniture	Lahore
166	Naseer Furniture	Lahore
167	Ilyas Furniture	Lahore
168	Hamza Furniture	Lahore
169	Shop 88	Lahore
170	Ashraf Furniture	Lahore
171	Shahbaz Furniture Maker	Lahore
172	Allah Malik Furniture	Lahore
173	Shop 375	Lahore
174	Shop 184	Lahore
175	Shop 182	Lahore
176	Khokar Furniture Walay	Lahore
177	Liaqat Furniture	Lahore
178	Sher Rabbani Furniture	Lahore
179	Daim Furniture Works	Lahore
180	Gulshan Furniture House	Lahore
181	Shop No 125	Lahore
182	Shop No 354	Lahore
183	Shop No 178	Lahore
184	Shop No 93	Lahore
185	Faisal Furniture House	Lahore
186	Shop # 311	Lahore
187	Bolla Furniture Shop	Lahore
188	Hasmi Furniture House	Lahore
189	Hussain Woodworks	Lahore
190	Aslam Woodworks	Lahore
191	Ghafoor Furniture	Lahore
192	Shop 131	Lahore
193	Shop 141	Lahore
194	Shop 180	Lahore
195	Ashraf Furniture	Lahore
196	Shop# 142	Lahore
197	Labbah Furniture	Lahore
198	National Furniture	Lahore
199	Chaha Khansi Furniture	Lahore

Sr. #	Name Of Establishment	Location
200	Qadri Furniture Maker	Lahore
201	Shop#391	Lahore
202	Afzqal Furniture House	Lahore
203	Shop#119	Lahore
204	Malik Muhammad Akram Furniture House	Lahore
205	Shop#118	Lahore
206	Shop#296	Lahore
207	Shop#317	Lahore
208	Hakim Ali Furniture	Lahore
209	Iftikhar Furniture	Lahore
210	Nawaz Furniture	Lahore
211	Amjad Fruniture	Lahore
212	Bismillah Karachi Furniture	Lahore
213	Madni Furniture Works	Lahore
214	Nadeem Furniture	Lahore
215	Ameer Ali Furniture	Lahore
216	Almakkah Furniture Works	Lahore
217	Muhammad Sarwar Furniture	Lahore
218	Sajid Furniture House	Lahore
219	Abdullah And Kasoori Furnitures	Lahore
220	Azeem Furniture	Lahore
221	Hameed Furniture	Lahore
222	Mian Abbas Furniture	Lahore
223	Miran Lajpal Furniture Shop	Lahore
224	New M Hussain	Lahore
225	Abdul Ghafoor Furniture	Lahore
226	Madni Furniture	Lahore
227	Ramzan Furniture	Lahore
228	Alnoor Furniture	Lahore
229	Royal Woodcraft	Lahore
230	Siraj Din House	Lahore
231	Atif Furniture	Lahore
232	Junaid Furniture	Lahore
233	Madina Furniture	Lahore
234	Zamzam Furniture	Lahore
235	Muhammad Yousaf And Brothers	Lahore
236	M Yaseen Furniture House	Lahore
237	Data Furniture And Sofa Cloth	Lahore
238	Bashir Furniture	Lahore
239	Alsaeed Furniture Point	Lahore

Sr. #	Name Of Establishment	Location
240	Chen One Stores Limited Furniture	Lahore
241	Hayat's 1870	Lahore
242	Majid Waood Works	Lahore
243	Hanif Wood Works	Lahore
244	Hamza Furnitures	Lahore
245	Nawaz Sofa Makers	Lahore
246	Imtiaz Furniture Point	Lahore
247	Tayyab Wood House	Lahore
248	Malik Furniture	Lahore
249	Naeem Furnitures	Lahore
250	Naafay Furnitures	Lahore
251	Jaffar Ali Furniture	Lahore
252	Azeem Furnitures	Lahore
253	Bsto Furnitures And Upholstry	Lahore
254	Al Rehman Furniture House	Lahore
255	Gondal Furniture	Lahore
256	Al Raheem Furniture	Lahore
257	Ilyas Sofa Maker	Lahore
258	Usman Furniture	Lahore
259	Mudasar Wood Works	Lahore
260	Al Rahma Woods	Lahore
261	Baba Fareed Furniture	Lahore
262	Karachi Stylish Furniture	Lahore
263	Gousia Furniture	Lahore
264	Akram Mughal Brothers	Lahore
265	Qadri Furniture	Lahore
266	Nazir Furniture	Lahore
267	Irfan Furniture	Lahore
268	Rehman Wood Works	Lahore
269	Arshad Woodcrafts	Lahore
270	Adeel Furnitures	Lahore
271	Asif Furniture	Lahore
272	Ilahabad Wood Works	Lahore
273	Imrna Furniture	Lahore
274	Iqraa Woodworks	Lahore
275	Arslan Furniture House	Lahore
276	Hussain Woodworks	Lahore
277	Mughal Brothers	Lahore
278	Alkareem Furniture	Lahore
279	Siddique Furniture	Lahore

Sr. #	Name Of Establishment	Location
280	New Asia Furniture	Lahore
281	Mian Brothers Furniture	Lahore
282	Bao Riaz Furniture	Lahore
283	H.S Furniture	Lahore
284	Qureshi Furniture	Lahore
285	Anmol Furniture House	Lahore
286	Makkah Madina Furniture	Lahore
287	Shahid Woodworks	Lahore
288	Safdar Furniture	Lahore
289	Peer Bakhsh Woodworks	Lahore
290	Ghulam Hussain	Lahore
291	Ilyas Woodworks	Lahore
292	Hajveri House	Lahore
293	Madina Furniture	Lahore
294	Mirza Zulfiqar Furniture	Lahore
295	Darul Ishan Furniture Chinoti Style	Lahore
296	Eshan Wood Works	Lahore
297	Haidery Furniture	Lahore
298	Imran Woods Work	Lahore
299	Maki Madni Furnitures	Lahore
300	Hussain Poshis And Furniture House	Lahore
301	Khalid Furnitures	Gujrat
302	Mf Furnitures	Gujrat
303	Fayyaz Furnitures	Gujrat
304	Asif Butt Furnitures	Gujrat
305	Dilawar Furnitures	Gujrat
306	Ghulam Sarwar Furniture	Gujrat
307	Mirza Amanat Ali Wood Works	Gujrat
308	Munawwar Furnitures	Gujrat
309	Shahzad Furnitures	Gujrat
310	Yaseen Furnitures	Gujrat
311	Shabir Wood Works	Gujrat
312	Ali Abbas Wood Works	Gujrat
313	Khajoorwala Furnishers	Gujrat
314	Tariq Furnitures	Gujrat
315	Ashraf Furnitures	Gujrat
316	Malik Sofa Center	Gujrat
317	Ghulam Mustafa Furniture	Gujrat
318	Mudassar Furniture	Gujrat
319	Munawwar Hussain Furnitures	Gujrat

Sr. #	Name Of Establishment	Location
320	Sarfraz Furnitures	Gujrat
321	Molvi Muneer Furnitures	Gujrat
322	Kamran Karvine Centre	Gujrat
323	Ismail Furnitures	Gujrat
324	Lateef Furniture	Gujrat
325	Hamid Furnitures	Gujrat
326	Bashir Furnitures	Gujrat
327	Asad Furniture	Gujrat
328	Ansar Furnitures	Gujrat
329	Empire Woods	Gujrat
330	Faiz Ghous Furniture	Gujrat
331	Khalil Furniture	Gujrat
332	Sabar Furniture	Gujrat
333	Afzal Furniture	Gujrat
334	Imran Furnitures	Gujrat
335	Tahir Furniture	Gujrat
336	Naveed Furniture	Gujrat
337	Rizwan Furniture	Gujrat
338	Irfan Wood Works	Gujrat
339	Yasir Furnitures	Gujrat
340	Asghar Wood Works	Gujrat
341	Aslam Furniture	Gujrat
342	Amjad Furniture	Gujrat
343	Al Karm Chishtia Funiture	Gujrat
344	Yasin Furnitures	Gujrat
345	Ahsan Furniture House	Gujrat
346	Aurangzaib Furniture	Gujrat
347	Imran Furniture	Gujrat
348	Sajid Furniture	Gujrat
349	M Basheer Furniture	Gujrat
350	Arshad Furnishers	Gujrat
351	Ashraf Furnishers	Gujrat
352	Sahab Furniture	Gujrat
353	Arif Furniture	Gujrat
354	Wajahat Furnitures	Gujrat
355	Ghaffari Furnitures	Gujrat
356	Umer Sofa Structure Maker	Gujrat
357	Mitho Office Furniture	Gujrat
358	Ms Furnishers	Gujrat
359	Ali Furnishers	Gujrat

Sr. #	Name Of Establishment	Location
360	Gulzar Furniture	Gujrat
361	Sufi Shukat Furniture	Gujrat
362	Tariq Furnishers	Gujrat
363	Sajid Furniture House	Gujrat
364	Khalil Wood Works	Gujrat
365	Suleman Furnishers	Gujrat
366	Alyas Wood Works	Gujrat
367	Meer Mumtaz Furnitures	Gujrat
368	Ghafoor Furniture	Gujrat
369	Haji Khalid Furniture	Gujrat
370	Sial Furnitures	Gujrat
371	Zulfiqar Furniture House	Gujrat
372	Muzammal Woodwroks	Gujrat
373	Hunra Furnitures	Gujrat
374	Mehmood Furniture House	Gujrat
375	Kamran Furniture	Gujrat
376	Qaser Furniture	Gujrat
377	Haji Shabir Furniture	Gujrat
378	Mughal Furnitures	Gujrat
379	Khalil Furnitures	Gujrat
380	Maqsood Furniture House	Gujrat
381	Shahbaz Furnitures	Gujrat
382	Sajid Carving And Khirad Center	Gujrat
383	Grace Furniture	Gujrat
384	M Younas Furniture	Gujrat
385	Mukhtar Furnitures	Gujrat
386	Asif Furnitures	Gujrat
387	Rasheed Furnitures	Gujrat
388	Malik Furniture	Gujrat
389	Sajid Carving Shop	Gujrat
390	Abdullah Furniture	Gujrat
391	Bismillah Kharad And Carving Center	Gujrat
392	Waheed Furnitures	Gujrat
393	Imran Furniture	Gujrat
394	Mirza Sehbaz Hussain Furniture House	Gujrat
395	Super Al Quaity Seri House	Gujrat
396	Abid Furnitures	Gujrat
397	Toor Furniture	Gujrat
398	Azam Furnitures	Gujrat
399	Khalil Carving Center	Gujrat

Sr. #	Name Of Establishment	Location
400	Nawaz Furnitures	Gujrat
401	Asif Furniture Center	Gujrat
402	Kaleem Furnitures	Gujrat
403	Sams Furniture	Gujrat
404	Muneer Furnitures	Gujrat
405	Basheer And Sons	Gujrat
406	Ashraf Funitures	Gujrat
407	Miaan Furnitures	Gujrat
408	Malik Al Fazal Furniture	Gujrat
409	Choudhary Basheer Furniture	Gujrat
410	Tariq Furnitures	Gujrat
411	Awais Wood Works	Gujrat
412	Al Bilal Furniture	Gujrat
413	Zafar Furniture	Gujrat
414	Mazhar Furnishers	Gujrat
415	Rizwan Furnitures	Gujrat
416	M.Ashraf Poshing Center	Gujrat
417	Naseebi Furnitures	Gujrat
418	Zeeshan Carving And Kharad Center	Gujrat
419	Al Rehman Fazal Furniture	Gujrat
420	Bilal Carving Center	Gujrat
421	Abdul Javid Furnitures	Gujrat
422	Abdul Waheed Furnitures	Gujrat
423	Azhar Wood Works	Gujrat
424	Arfaq Furnitures	Gujrat
425	Ibne Shafi Furniture	Gujrat
426	Aslam Furnitures	Gujrat
427	Ghulam Abbas Wood Works	Gujrat
428	Sheraz Wood Works	Gujrat
429	Ali Asghar Wood Works	Gujrat
430	Muhammad Shafi Wood Works	Gujrat
431	Gul Mustafa Serhi Maker	Gujrat
432	New Standard Wood Works	Gujrat
433	B.J Furnichers	Gujrat
434	Mughal Furniture	Gujrat
435	Nasir Wood Works	Gujrat
436	Shabaz Furniture	Gujrat
437	Al Madina Furniture House	Gujrat
438	Tariq Furnishers	Gujrat
439	Arshad Furnitures	Gujrat

Sr. #	Name Of Establishment	Location
440	Sadeeq Wood Works	Gujrat
441	Janjua Wood Works	Gujrat
442	Afzal Multani Furnitures	Gujrat
443	Zafar Furniture House	Gujrat
444	Creative Hands Furniture And Interiors	Gujrat
445	Nizam Furnishers	Gujrat
446	Zubair And Umair Furnisher	Gujrat
447	Pak Wood Furnishers	Gujrat
448	Karvings Furnishers	Gujrat
449	Shafqat Furnitures	Gujrat
450	Bashir Design Furniture	Gujrat
451	Grace Interior	Karachi
452	Ajaz Furniture	Karachi
453	Ary Talid	Karachi
454	Perception Furniture	Karachi
455	Mehran Furniture	Karachi
456	Diamond Furnishers	Karachi
457	See And Select	Karachi
458	Al Noor Furniture	Karachi
459	S.A Amin Furniture Market	Karachi
460	Wood Master Furniture	Karachi
461	Millat Furniture	Karachi
462	Al Rafay Furnitures	Karachi
463	Sardar Furniure	Karachi
464	Wood Mart Furniture	Karachi
465	Paradise Furniture	Karachi
466	Iqra Interiors 469	Karachi
467	Wood Crafft	Karachi
468	Iqra Interior	Karachi
469	Unh Furniture	Karachi
470	Hameed Furniture	Karachi
471	Samar Furniture Studio	Karachi
472	Vision Next	Karachi
473	Welcome Furniture	Karachi
474	Wood Art	Karachi
475	Glorious Furniture	Karachi
476	Bismillah Carving Furniture	Karachi
477	R.H Furnitures	Karachi
478	Bari Furniture	Karachi
479	Al Hammad Furniture	Karachi

Sr. #	Name Of Establishment	Location
480	Furniture Mart	Karachi
481	Rasheed Sons Furniture	Karachi
482	Rehmania Interior	Karachi
483	Obsession	Karachi
484	M. Riaz Interior	Karachi
485	Zain Interior	Karachi
486	Aziz & Sons	Karachi
487	Shahzad Rafi & Co	Karachi
488	Evernew	Karachi
489	Maya- The Exclusive Furniture	Karachi
490	Ijaz Furniture	Karachi

Annex D: Sampling Plan

Taking into effect the limitations of the sample, simple random sampling of the Furniture manufacturing units across the region would have been very difficult. Due to this, a cluster-sample design seemed to be a practical solution for most surveys[34] (Bennett et al, 1991). Hence, Innovative Development Strategies (IDS) restructured the sample size according to the following:

i) Increase in the precision rate
ii) Minimizing the standard error
iii) Developing suitable sampling design for sampling representation

This segment will focus on formulas that can be used to estimate the sample size like:

$$SS = Z^2 * P(1 - P)/c^2$$

Where:
SS=Sample Size
Z = Z value (e.g. 1.96 for 95% confidence level)
p = percentage picking a choice, expressed as decimal (5 used for sample size needed)
c = confidence interval, expressed as a decimal
(e.g., .05 = ±5)

Calculating the Sample Size

$$\boldsymbol{ss = (1.96)^2 *.05(1-.05)/(0.05)^2} \textbf{=384.16}$$

Theoretically, the estimated sample size is approximately 384. Assuming that 15% of the participants will refuse to follow the study protocol, the reserve sample size has been increased to($\frac{384}{0.85} \cong 450$).

Sampling Procedure

The sample was selected using the multi-stage cluster sampling technique. Geographically, this constituted areas in Punjab and other identified clusters in Pakistan, and was assumed to have relatively adequate representation of the leading industrial players in the furniture manufacture industry.

First-Stage: The study in question was divided into 3 clusters that were further divided into 45 small, discrete, geographical sub clusters (15 per cluster) as primary sampling units (PSUs).
Second-Stage: In each cluster, secondary sampling units (SSUs), both formal and informal manufacturing units (MUs) were selected by choosing: (i) a location near the center of the respective market/sub cluster, (ii) a random direction (which is often defined in the field by spinning a pen or bottle), and (iii) the first MU at random. The subsequent MUs were visited systematically using a "sampling interval"; this was determined by dividing the total number of MUs by the number needed to give an adequate sample.

34 Bennett, Steve, Tony Woods, Winitha M. Liyanage, and Duane L. Smith. "A simplified general method for cluster-sample surveys of health in developing countries." *World Health Stat Q* 44, no. 3 (1991): 98-106.

Sampling Rationality

Considering the Manufacturing Unit survey, IDS divided the sub-clusters into 10 Manufacturing Units per sub cluster, and it was expected that resources will allow for about 45 sub clusters to be sampled. The standard error of the proportion p may be written in the form:

$$s = \sqrt{\frac{p(1-p)D}{n}}$$

Where:
S =Standard error
p = percentage picking a choice, expressed as decimal
(.5 used for sample size needed)
D= Design Effect
n= Sample Size
If the data is generated from simple random sampling, then the formula will change into the binomial formula:

$$S = \sqrt{\frac{p(1-p)}{n}}$$

If the design effect is ignored, the estimated binomial standard error would give much more precise results:

$$S = \sqrt{0.5 * 0.5/450} = 0.02$$

Since variance is higher in cluster sampling, the standard error increases. In order to reduce the standard error:

a) Sample size has been increased
b) Number of sub-clusters has been increased

The value of $\sqrt{D}$ measures the increase in the standard error due to the cluster sampling procedure used.

$$D = 1 + (b-1)roh$$

Where:
b = the average number of respondents in each sub cluster
roh = rate of homogeneity, which is the variability of socio-economic factors in Manufacturing units.

If the value of b is 10 and roh is assumed to be the acceptable value of proportion variability 0.50, then the design effect of cluster sampling is:

$$D = 1 + (10-1)0.50 = 5.5$$

Estimate of the standard error is:

$$S = \sqrt{0.5 * 0.5 * 5.5/450} = 0.05$$

Hence, this approximate value of 5% specifies that such a sample size can be 95% certain that the true proportion of the respondent will lie within +/- 10% (2-standard errors). This ensures that cluster sampling will prove to be a reliable and effective method for this research.

Annex E: Courses Offered

Sr. #	Name of Institute	City	Name of Course	Duration	Enrolment Capacity	Eligibility Criteria	Curriculum Source
1	Pakistan Institute of Fashion & Designs	Lahore	B. Des (Furniture Designing & Marketing	3 years	60	Intermediate	PIFD
2	National College of Arts	Lahore	Certificate in Furniture Designing & Woodworking	12 weeks	40	Matric	NCA
3	University of the Punjab, Institute of Education & Research	Lahore	Machine Process for Wood	5 weeks	50	Middle	TEVTA
4	Pak Polytech Institute	Chiniot	Wood Painting & Polishing	6 months	54	Middle	TEVTA
5	Pak German Polytech Institute for Crop Agriculture	Multan	Wood Working & House Carpentry	6 months	30	Middle	TEVTA
			Wood Working & House Carpentry	3 months	150	Primary	TEVTA
7	Wood working Service Center	Kot Addu	Certificate in Woodworking	3 months	30	Primary	TEVTA
			TEVTA short course on Woodworking	3 months	30	Primary	TEVTA
9	Govt. Technical Training Center	Layyah	Certificate on Woodworking	6 months	20	Primary	TEVTA
10	Pak German Woodworking Service Center	Peshawer	Diploma in Woodworking & Carpentry	3 years & 6 months	35	Matric	Small Industries Department
			Certificate in Woodworking & Carpentry	2 years	25	Matric	Small Industries Department
			Certificate in Woodworking & Carpentry	6 months	30	Matric	Small Industries Department
			Certificate in Woodworking & Carpentry	3 months	30	Matric	Small Industries Department
11	Pak Swedish Technical Institute	Karachi	Wood working and Carpentry Courses Discontinued since 1992				
12	Vocational Training Institute, Karachi	Karachi	Certificate on Woodworking	1 year	20	Middle	STEVTA
13	Govt. College of	Karachi	Diploma (Mechanical +	3 years	250	Matric	STEVTA, and NED

Sr. #	Name of Institute	City	Name of Course	Duration	Enrolment Capacity	Eligibility Criteria	Curriculum Source
	Technology		Carpentry)				University
14	Vocational Training Institute, Korangi	Karachi	Certificate in Cabinet making	1 year	20	Matric	STEVTA, and GIZ
15	3 D Educators	Karachi	Certified Carpenter Training Program	6 weeks	-	-	STEVTA, and IMRTC USA
16	KVTC	Karachi	Certificate in Carpentry	3 years	20	-	Trade Testing Board, Sindh Board of Technical Education
17	TEVTA Wood Working Service Centre	Rawalpindi	Wood Technology (Cabinet Making)	2 Years	120	Matric	TEVTA
		Rawalpindi	Machine Man	1 Year	18	Matric	TEVTA
		Rawalpindi	Spray Painter/ Polisher	6 Months	6	Middle	TEVTA
		Rawalpindi	AutoCAD	6 Months	150	Middle	TEVTA
		Rawalpindi	CCA	3 Months	625	Middle	TEVTA
		Rawalpindi	Finishing & Polishing	6 Months	80	Middle	TEVTA
18	TEVTA Wood working Service Center	Gujrat	Carpenter	3 months/ 6 months	25	Middle	TEVTA
			Polish and Finishing	3 months	25	Middle	TEVTA
			Machine Process for Wood	3 months/ 6 months	25	Middle	TEVTA
			Cabinet Making	2 Years	15	Matric	TEVTA
			Wood Carving	6 months	25	Middle	TEVTA
19	Government Technical Training Center	Gojar Khan	Carpenter	6 months	10	Middle	TEVTA

Annex F: Trade (Occupation) to Skill Mapping

No.	Trade	*Skills*	*Skill required for trade*
			% of "yes" responses
1	**Wood sawyer**		
		Making of basic wood planks	*99.5*
		Setting and adjusting various kinds of machines for operation by others	*0.5*
2	**Precision woodworking sawyer**		
		Making of basic wood planks	*0.2*
		Setting and adjusting various kinds of machines for operation by others	*99.5*
		Not applicable	*0.2*
3	**Wood seasoning plant operations**		
		Making of basic wood planks	*0.1*
		Setting and adjusting various kinds of machines for operation by others	*0.1*
		Stacking with spacing (1 year)	*48.5*
		Seasoning with plant	*51.2*
5	**Wood shaper & leveler**		
		Making of basic wood planks	*0.2*
		Preserve and treat wood manually using wood treatment equipment	*0.2*
		Leveling, plaining, boring and sizing of the planks	*99.5*
6	**Wood furniture designer**		
		Setting and adjusting various kinds of machines for operation by others	*0.5*
		Leveling, plaining, boring and sizing of the planks	*0.5*
		Pattern designing using Auto-CAD and manually	*99.1*
7	**Wood patternmaker**		
		Plan, lay out, and construct wooden unit or sectional patterns used in forming sand molds for castings	*100.0*
8	**Wood working lathe operator**		
		Setting and adjusting various kinds of machines for operation by others	*0.7*
		Seasoning with plant	*0.2*
		Plan, lay out, and construct wooden unit or sectional patterns used in forming sand molds for castings	*0.2*
		Operating power saws, jointing, mortisering, , shaping and drilling	*98.6*
		Tracing	*0.2*
9	**Furniture manufacturing with hand tools**		
		Making of basic wood planks	*0.1*
		Setting and adjusting various kinds of machines for operation by others	*0.1*
		Seasoning with plant	*0.1*
		Operating power saws, jointing, mortisering , shaping and drilling	*0.1*
		Tracing	*49.9*
		Dowel nailing	*49.5*
		Cutting using hand tools	*0.1*
10	**Carving machine operator**		
		Setting and adjusting various kinds of machines for operation by others	*0.9*
		Tracing	*0.2*
		Dowel nailing	*0.5*

No.	Trade	Skills	Skill required for trade
			% of "yes" responses
		Cutting using hand tools	97.1
		Carving	0.9
		Nailing	0.5
11	**Furniture fitter/ Assembler (Joiner)**		
		Making of basic wood planks	0.1
		Leveling, planingi, boring and sizing of the planks	0.1
		Cutting using hand tools	0.1
		Carving	20.9
		Assembling all articles together	19.8
		Joining	20.6
		Gluing	20.3
		Nailing	18.2
12	**Furniture finisher**		
		Assembling all articles together	0.1
		Joining	0.1
		Nailing	0.4
		Sanding	48.3
		Edging	50.6
		Spirit Polish	0.4
13	**Furniture polisher/ Painter**		
		Cutting using hand tools	0.1
		Edging	0.2
		Spirit Polish	24.6
		Sealer coating	24.7
		Laker coating	25.1
		Painting	25.0
		Foaming	0.4
14	**Furniture upholsterer**		
		Painting	0.3
		Foaming	32.8
		Upholstering	33.9
		Stitching	33.0
15	**Cabinet maker**		
		Stitching	0.5
		Cabinet/Racks maker	99.3
		Door maker	0.2
16	**Door maker**		
		Stitching	0.5
		Cabinet/Racks maker	0.5
		Door maker	98.8
		Table maker	0.2
17	**Table maker**		

No.	Trade	*Skills*	*Skill required for trade*
			% of "yes" responses
		Edging	*0.2*
		Cabinet/Racks maker	*1.0*
		Door maker	*0.5*
		Table maker	*98.3*
18	**Sofa/chair maker**		
		Setting and adjusting various kinds of machines for operation by others	*0.5*
		Table maker	*0.5*
		Sofa /chair maker	*99.1*
19	**Structure of Bed maker**		
		Making of basic wood planks	*0.2*
		Setting and adjusting various kinds of machines for operation by others	*0.9*
		Sealer coating	*0.2*
		Sofa/chair maker	*0.5*
		Structure of bed maker	*98.2*

Note: Table does not include occupations with few observations: “Dewan maker”, “TV Trolley Maker”, “Wood finial maker”, “wood swing maker”, “showcase maker” and “stairs set maker”.

Annex G: Qualitative Questionnaire for Sector Experts

Enterprise Interviewed by: ______________________

Supervised by: ________________________________

Contact Information

Enterprise Name ____
Respondent Name ____
Respondent's position/designation ______________________________________

Partnership/Affiliation ______________________________________
Contact No ____
Respondent ID ____

Gender: 1 = Male
2 = Female

Age ________

District ____

Tehsil ____

UC ____

Village/Mohallah ______________________________________

Address ____

For how many years have you been associated with this establishment?

How long have you been working in this sector?

1. Are you a member of any furniture association in Pakistan?

2. What differentiates Pakistani furniture from the one produced in other countries?

3. How can we capitalize on this comparative advantage to increase exports?

4. What is the employment potential of the sector?

5. What do you think about the furniture sector performance in Pakistan in the last 5 years?

6. What are the main strengths of the furniture industry?

7. What are the main challenges faced by the industry?

8. How should we address these challenges at the enterprise, industry and national level?

9. How is this sector regulated?

10. In your opinion, what are the most important trades/skills that should be concentrated upon by a) the furniture manufacturers; b) training institutes; c) PSDF?

11. What are some of the skills most in demand in the sector? The least in demand? What are the reasons for both?

12. Which skills does the sector lack? What is the solution for this?

13. Please identify skills where formal/informal training is required in the following trades:

Trades	**Skills Yes = 1 No = 2**		**If yes, how do we address the gap**

14. In your opinion, what nature of skilled work are women most likely to be recruited to perform?

15. What are the training needs of the industry that are not being met currently?

16. In your personal capacity, would you like to offer or organise trainings for trainers?

17. Are there any possible training delivery modes that require funding?

18. Do you think training institutes are doing a satisfactory job in training according to the needs of the sector? How effective are they in meeting the industry demand?

19. Please comment on the relevance and quality of courses being offered by these institutes.

20. How can job placement be made more effective after training completion by the participants?

21. Is there a local demand for the adoption of new trends and practice in the furniture industry? If yes, is the demand being met? If no, why not?

22. Can you comment on the new trends being incorporated in the furniture sector (in terms of technology and operations?
23. What are the likely major developments that you foresee materializing in the future?
24. What is the effect of the new developments on the existing skill levels of workers?
25. Do you think the furniture industry can benefit from marketing and/or other related services that promote the products?
26. Are you aware of Punjab Skill Development Fund (PSDF)? Its role, objectives and schemes?
27. Have you ever interacted or worked with PSDF?
28. How was your experience working with PSDF?
29. Who are the main leading TSPs in the Furniture Sector?
30. What is unique about them? How are they different from the rest of the TSPs?
31. What is the kind of curriculum they are offering? Is it relevant?
32. How can the major players in the private sector of furniture industry assist the existing TSPs in imparting effective training?
33. Does the government help the furniture industry in any way?
    If yes, in what ways?
    If no, how can they help?
34. What are the contributions required of the public sector TSPs?
35. What is the mechanism to establish strong linkages with employers by TSPs?

Annex H: Qualitative Questionnaire for TSPs

TSP Interviewed by: ____________________

Supervised by: ______________________________

Contact Information

Name of TSP ______________________________
Respondent Name ______________________________
Trade of Expertise ______________________________

Respondent's position/Designation ______________________________
Number of branches ______________________________
Names of branches ______________________________
____
Partnership/Affiliations ______________________________

Contact No ______________________________
Respondent ID ______________________________

Gender: 1 = Male
2 = Female

Age ________

District ______________________________

Tehsil ______________________________

UC ______________________________

Village/Mohallah ______________________________

Address ______________________________
____
____

Do you conduct Audit finances?
1. Yes 2. No

How many years have you been associated with this establishment?

How long have you been working in this sector?

1. Please comment on the existing training landscape within the Furniture sector in Pakistan.

2. Who are the major entities in training delivery?

3. What are their strengths and weaknesses

4. Do you have an arrangement with the large furniture firms to cater to their training needs?

5. Have you ever conducted a training need assessment for the furniture sector?

6. What were the findings of the assessment?

7. Based on your experience, and the assessments that you have conducted/aware of, could you identify the skills sets which are presently in demand and not available?

8. Given the technological development, what are the skill sets that would be required in the coming decade?

9. Are you satisfied with the inventory of trainers that you have? In your opinion, which are the trades for which experience and qualified trainers are not available?

10. Do you conduct training for trainers?

11. Is there a sufficient demand for training of trainers?

12. How relevant are the current trainings in terms of their course content and the needs of the industry?

13. Do you have proper institutionalised curricula for the all the furniture courses that you are offering?

14. Are the curricula that you develop approved by the Government or is your institute duly accredited to self-approve it?

15. Who else is involved in the designing and reviewing of the curriculum?

16. Do you make annual training plans? Do you consult industry experts before making your training plan?

17. Is the curriculum for each course mostly based on demand or the new trends in the international market?

18. How do you ensure the quality of your trainers?

19. Do you have any plans to introduce new courses?

20. How long has your organisation been providing training services pertaining to the furniture sector?

21. What types of accreditation does your organisation offer?

22. What is the enrolment capacity of your institute for each furniture-related trade course?

23. Do you maintain a counselling office for job placement after completion of training?

24. Do you have any mechanism to track graduates employment status and other details (average salary and employment opportunities)? (*Other things that might be asked could include: employment ratio, were they able to get a job in the furniture sector, amongst others).*

25. If yes, then on average, how much time does it take for the previously unskilled graduate to acquire a job after graduation/completion of course?

26. Do you have formal liaison with the private sector enterprises pertaining to the furniture sector?

27. Do you plan on expanding your outreach/services?

28. Are you aware of Punjab Skill Development Fund (PSDF)? Its role, objectives and schemes?

29. Have you ever interacted or worked with PSDF?

30. How was your experience working with PSDF?

Types of Trade	Nomenclature of the course	Eligibility criteria		Gender	No. of individuals trained during last 5 years	Number of trainers per course	No. of courses offered per year	Duration of the course	Fee of the course
		Age limit	Qualification					No. of weeks	Rs.

Annex I: Quantitative Questionnaire for Establishments

Questionnaire ID

Contact Information

Employer Name:

Respondent Name:

Contact No:

Respondent ID

Respondent Gender: **Code**

Male.........1

Female......2

Respondent Age ***(in completed years)*** **Age**

District Name

Code

Tehsil Name

Code

UC Name

Code

Village/Mohallah

Code

Address

Index PSDF Survey

Module A	Establishment profile
Module B	Characteristics of the existing workforce
Module C	Product Manufacturing
Module D	Skills analysis
Module E	Human Resource and other issues

Introduction

Instructions: Enumerator please read to the respondent

Asalamoalaikum. My name is …………………… I am working with Innovative Development Strategies and we are currently conducting research for Punjab Skills Development Fund on how to bring about skills-related improvements in the Furniture Sector of Pakistan. The purpose of the survey is to understand the demand and supply of skills and the training needs in the sector. The duration of this survey is around 45 minutes. Please rest assured that any information you provide will solely be used for the purposes of this project. I thank you in advance for taking out time to fill the survey and helping us in the project.

Code

Consent:

Yes…..1
No……2

Signature --

Definitions

Employer	A person or business that employs one or more people for wages or salary.
Enterprise	A company, business, organization, or other purposeful endeavor.
Unskilled	Unskilled occupations typically require the performance of simple and routine physical or manual tasks. They involve tasks such as cleaning; digging; lifting and carrying materials by hand; sorting, storing or assembling goods by hand. For some jobs basic skills in literacy and numeracy may be required. If required these skills would not be a major part of the job.
Skilled	Skilled occupations can be very diverse and may involve the performance of tasks such as operating machinery and manual tools. Skilled occupations may also include the performance of complex technical and practical tasks. They may also include tasks that require complex problem solving and decision making which require an extensive body of factual, technical and procedural knowledge in a specialized field. Occupations at this skill level will require basic to extended levels of literacy and numeracy, sometimes at a very high level, and may also require excellent interpersonal communication skills. Skills shall be defined as tasks that workers are required to perform in a particular job – in TVET parlance "key competencies"
Hard-to-fill	Hard-to-fill vacancies are those positions against which establishments are unable to find a suitable candidate within the relatively medium to long term, at prevailing wages through the usual recruitment procedures. The number of such vacancies is often reflective of qualitative discrepancies or inflexibility in the overall labour market such as deficiencies in previous training and/or mismatching of an establishment's own internal training activities. Other reasons cited include employers demanding unrealistic requirements of applicants or that the jobs offered may be low-skilled or low paid and involve relatively unattractive work and working conditions.
A Skill shortage	A skill shortage vacancy is one that occurs when an employer cannot find applicants with the right skills, qualifications or experience to do the job. Jobs are thus left vacant.
A Skill gap	A skill gap exists when an employer thinks a worker does not have enough skills to perform their job with full proficiency. Skills gap applies to existing employees.
Contractual/ Casual Employee	Those employees hired for short spans of time, primarily to meet the seasonal increases in workload. For example, right before the wedding season, eid etc.
Permanent Employee	Those employees who are permanently borne on the strength of the organization. They are given monthly salaries; provided with legal contracts or other undertakings serving as their job security.

Module – A: Establishment profile

Q1. Name of Company

Q2. Owner's Name

Q3. Address

Q4. Contact No: Land line

Q5. Contact No: Mobile

Q6. Fax No.

Q7. Email:

Q8. Web Site:

Code

Q9. What is your position within the company?

Owner/Director----------------------1
Manager/supervisor ----------------2
Other (Specify)

Code

Q10. What is the legal status of your enterprise?

Sole proprietorship--1
Partnership ---2
Private limited Company--3
Public Limited Company --4
Cooperative ---5
Cash-for-work programs organized by private organizations/NGOs etc. ----------------6
Foreign firm/Multinational---7
NGO, or international / political / humanitarian organization ----------------------------8

Q11. Is this business inherited?

Code

Yes…..1
No……2

Q12. Is your establishment a member of any of the following organizations?
(Read from the list & tick as many required)

Code

Chambers of Commerce and Industry Including women chambers ---------------------- 1
Related Business Associations -- 2
Securities & Exchange Commission of Pakistan (SECP) ------------------------------------ 3
Any Networking Group (with name)-- 4
Provincial and District Government --- 5
None-- 6
Others (Specify) ---

Q13. How many years has this establishment been operating for?

Code

Less than 1 year------------------------------- 1
1 to 5 years ----------------------------------- 2
6 to 10 years --------------------------------- 3
11 years & above ----------------------------- 4

Q14. For how many years have you been associated with this establishment?

Years

Q15. How long have you been working in this sector?

Years

Q16. What is the highest level of education you have attained?

Code

Kachi/Pacci/Never enrolled	1	Class 12
Class 1	2	Class 13
Class 2	3	BA/B. Sc (Hons)
Class 3	4	MA/M.Sc, M.Phil, PhD
Class 4	5	MBBS Doctor
Class 5	6	Engineer
Class 6	7	Lawyer
Class 7	8	Diploma
Class 8	9	Adult Literacy Program
Class 9	10	Deeni Madrassa
(complete)	22	
Class 10	11	Other (please specify)
Class 11	12	

Q17. Any technical training that you acquired specific to your area of operation?

Code

Yes…..1
No……2 (Go to Q 21)

Q18. If yes,

Trade(s) See trade list	Nomenclature of the training course	Time duration (Number of weeks)

Sr	Type of Trades		Sr	Type of Trades
1	Wood sawyer		8	Wood working lathe operator
2	Precision woodworking sawyer		9	Furniture manufacturing with hand tools
3	Wood seasoner		10	Carving machine operator
4	Wood treater		11	Furniture fitter/ Assembler (Joiner)
5	Wood shaper & leveler		12	Furniture finisher
6	Wood furniture designer		13	Furniture polisher/ Painter
7	Wood patternmaker		14	Furniture upholsterer

Q19. If No, why not?

Code

Q20. What type of establishment do you own/work for?

Only showroom -------------------------------------1
Workshop and showroom combined ------------2
Only workshop --------------------------------------3
Workshop and showroom separated ------------4

If the answer is 1, then termina

Code

Q21. Which type of Furniture does your establishment sell?

Imported ---1
Local ---2
Both --3

Code

Q22. What type of furniture products do you manufacture?
(Read from the list & tick as many required)

Wooden------------------------1
Iron -----------------------------2
Synthetic Wood ---------------3
Plastic --------------------------4
Other (specify) ----------------

If the answer is only 4, then terminat

Code

Q23. Do you purchase readymade furniture for your showroom?

Yes---------------- 1
No----------------- 2 ***(Go to Q25A)***

Code

Q24. How do you purchase furniture for your showroom?

Available readymade furniture from the market-------1
By placing specific orders----------------------------------2
Other (Specify)--

Code

Q25A. Is your establishment manufacturing and selling Office furniture?

Yes------------------------ 1
No------------------------- 2 ***Go to Q25B***

Sr	Description	Imported	Local	
		Yes = 1 No = 2	Self-manufactured Yes = 1 No = 2	Purchased Yes = 1 No = 2
1	Chairs			
2	Tables			
3	Conference tables			
4	Cabinets/Racks			
5	Computer tables			
6	Visitor chairs			
	Other (please specify)			

Code

Q25B. Is your establishment manufacturing and selling Household/Individual furniture?

Yes------------------------ 1
No------------------------- 2 ***Go to Q25C***

Sr	Description	Imported	Local	
		Yes = 1 No = 2	Self-manufactured Yes = 1 No = 2	Purchased Yes = 1 No = 2
1	Bed sets			
2	Dining table & chairs			
3	Sofa sets			
4	Side tables			
5	Coffee tables			
6	Centre tables			
	Other (please specify)			

Code

Q25C. Is your establishment manufacturing and selling Architectural furniture?

Yes------------------------ 1
No------------------------- 2 ***Go to Q25D***

Sr	Description	Imported	Local	
		Yes = 1 No = 2	Self-manufactured Yes = 1 No = 2	Purchased Yes = 1 No = 2
1	Doors			
2	Cabinets/Racks			
3	Counters			
4	Kitchen counter/cabinet			
	Other (please specify)			

Code

Q25D. Is your establishment manufacturing and selling School furniture?

Yes------------------------ 1

No------------------------- 2 ***Go to Q25E***

Sr	Description	Imported	Local	
		Yes = 1 No = 2	Self-manufactured Yes = 1 No = 2	Purchased Yes = 1 No = 2
1	Office chairs			
2	Office tables			
3	Conference tables			
4	Cabinets/Racks			
5	Computer tables			
6	Student desks & chairs			
7	Visitor Chairs			
	Other (Specify)			

Code

Q25E. Is your establishment manufacturing and selling Hospital furniture?

Yes------------------------ 1

No------------------------- 2 ***Go to Q26***

Sr	Description	Imported	Local	
		Yes = 1 No = 2	Self-manufactured Yes = 1 No = 2	Purchased Yes = 1 No = 2
1	Cabinets/Racks			
2	Visitors Chairs			
3	Office chairs/tables			
4	Counters			
	Other (please specify)			

Code

Q26. What are the types of customers that you have?

(Read from the list & tick as many required)

Government-------------------1

Educational Institutes -------2

Hotels --------------------------3

Households/Individuals-----4

Other furniture enterprises-5

Q27. Please rank the following in order of maximum revenue earned?

(1 for maximum and 5 for minimum)

	Code
Government------------------- 1	
Educational Institutes ------- 2	
Hotels -------------------------- 3	
Households/Individuals----- 4	
Other furniture enterprises- 5	

Q28. Which category of your furniture sells the most?

		Priority
Priority ---------- 1	C	
Priority ---------- 2	Household/Indivi	
Priority ---------- 3	Architec	
Priority ---------- 4	S	
Priority ---------- 5	H	

Module – B: Characteristics of the existing workforce

Q29. What is the current number of the following types of workers that you have employed?

Number of workers (Total)	Permanent	Casual

Q30. What are the daily working hours for your full-time and part-time workers?

Full-time(hrs)	
Part-time(hrs)	

Q31. What types of trade can women be employed in the furniture sector? *(See Code Box Q31)*

Code

Sr	Q31: Type of Trades	Sr	Q31: Type of Trades
1	Wood sawyer	8	Wood working lathe operator
2	Precision woodworking sawyer	9	Furniture manufacturing with hand tools
3	Wood seasoner	10	Carving machine operator
4	Wood treater	11	Furniture fitter/ Assembler (Joiner)
5	Wood shaper & leveler	12	Furniture finisher
6	Wood furniture designer	13	Furniture polisher/ Painter
7	Wood patternmaker	14	Furniture upholsterer
			Other (Specify)
			Other (Specify)
			Other (Specify)
			Other (Specify)

Q32. Please provide information about your workers by their primary skills level.

ID	Gender 1. Male 2. Female	Age in Completed Years	Relationship with owner 1. Relative 2. Non-Relative	What is the education status of [Name] *See Code Box 32.5*	Job status 1. Permanent 2. Casual	Type of Role 1. Management 2. Supervisory role 3. Labour/Worker role	Primary Trade Type *See Trade list Q32.8*	Employee Category by level of skill 1. Highly Skilled 2. Semi-Skilled 3. Low-Skilled	Did [worker] receive raining through 1. Formal channel 2. Informal channel	Work Experience (in years)
32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	32.10	32.11

Q32.5: Education Level			
Kachi/Pacci/Never enrolled	1	Class 12	13
Class 1	2	Class 13	14
Class 2	3	BA/B.Sc. (Hons)	15
Class 3	4	MA/M.Sc. M.Phil. PhD	16
Class 4	5	MBBS Doctor	17
Class 5	6	Engineer	18

Sr	Q32.8: Type of Trades
1	Wood sawyer
2	Precision woodworking sawyer
3	Wood seasoner
4	Wood treater
5	Wood shaper & leveler
6	Wood furniture designer

Class 6	7	Lawyer	19
Class 7	8	Diploma	20
Class 8	9	Adult Literacy Program	21
Class 9	10	Deeni Madrassa (complete)	22
Class 10	11	Other (please specify)	
Class 11	12		

7	Wood patternmaker
8	Wood working lathe operator
9	Furniture manufacturing with hand tools
10	Carving machine operator
11	Furniture fitter/ Assembler (Joiner)
12	Furniture finisher
13	Furniture polisher/ Painter
14	Furniture upholsterer

Q33. What is the average level of wages paid to your workers per month?

Sr.	Type of Trade	Salary per month PKR (Skilled/Experienced)		Salary per month PKR (Semi Skilled/Low Skilled)	
		Permanent	**Casual**	**Permanent**	**Casual**
Q33.1	**Q33.2**	**Q33.3**	**Q33.4**	**Q33.5**	**Q33.6**
1	Wood sawyer				
2	Precision woodworking sawyer				
3	Wood seasoner				
4	Wood treater				
5	Wood shaper & leveler				
6	Wood furniture designer				
7	Wood patternmaker				
8	Wood working lathe operator				
9	Furniture manufacturing with hand tools				
10	Carving machine operator				
11	Furniture fitter/ Assembler (Joiner)				
12	Furniture finisher				
13	Furniture polisher/ Painter				
14	Furniture upholsterer				
	Others (Specify)				
	Others (Specify)				
	Others (Specify)				
	Others (Specify)				

Q34. What is the average entry salary level of workers who entered the market during the last 3 years?

Sr	Type of Trade	Salary per month PKR
Q34.1	**Q34.2**	**Q34.3**
1	Wood sawyer	
2	Precision woodworking sawyer	
3	Wood seasoner	
4	Wood treater	
5	Wood shaper & leveler	
6	Wood furniture designer	
7	Wood patternmaker	
8	Wood working lathe operator	
9	Furniture manufacturing with hand tools	
10	Carving machine operator	
11	Furniture fitter/ Assembler (Joiner)	
12	Furniture finisher	
13	Furniture polisher/ Painter	
14	Furniture upholsterer	

Sr	Type of Trade	Salary per month PKR
Q34.1	**Q34.2**	**Q34.3**
	Others (Specify)	
	Others (Specify)	
	Others (Specify)	
	Others (Specify)	

Q35. How many permanent employees have left your organization in the last 12 months?

Sr	Type of Trade	No of Employees Left	Reason for Leaving the Office Discipline ------------- 1 Lack of skills --------- 2 Family problems----- 3 Medical reasons------ 4 Downsizing----------- 5 Better opportunity -- 6 Others (Specify)
Q35.1	**Q35.2**	**Q35.3**	**Q35.4**
1	Wood sawyer		
2	Precision woodworking sawyer		
3	Wood seasoner		
4	Wood treater		
5	Wood shaper & leveler		
6	Wood furniture designer		
7	Wood patternmaker		
8	Wood working lathe operator		
9	Furniture manufacturing with hand tools		
10	Carving machine operator		
11	Furniture fitter/ Assembler (Joiner)		
12	Furniture finisher		
13	Furniture polisher/ Painter		
14	Furniture upholsterer		
	Others (Specify)		
	Others (Specify)		
	Others (Specify)		
	Others (Specify)		

Q36. Please identify how many positions are currently vacant in your establishment?

Sr.	Type of Trade	Current vacant vacancies	Hard-to-fill vacancies	Time taken to fill the vacancies	Reasons for Hard-to-fill trades (see Code Box-1)
Q36.1	**Q36.2**	**Q36.3**	**Q36.4**	**Q36.5**	**Q36.6**
1	Wood sawyer				
2	Precision woodworking sawyer				
3	Wood seasoner				
4	Wood treater				
5	Wood shaper & leveler				
6	Wood furniture designer				

7	Wood patternmaker				
8	Wood working lathe operator				
9	Furniture manufacturing with hand tools				
10	Carving machine operator				
11	Furniture fitter/ Assembler (Joiner)				
12	Furniture finisher				
13	Furniture polisher/ Painter				
14	Furniture upholsterer				
	Others (Specify)				
	Others (Specify)				
	Others (Specify)				
	Others (Specify)				

Code Box 1

Reasons	Code
Non-availability of skilled/experienced worker	1
Skilled/experienced worker's demand high salary	2
Skilled worker is not willing to work at this location	3
Better salary packages in other cities for the skilled workers	4
For non-resident workers accommodation is expensive	5
Demand extra benefits like leave or free accommodation	6
Long working hours	7
Not willing to work with obsolete machinery	8
Other (please specify)	

Code
Yes -- 1
No -- 2

Q37. What are the modes your company uses to advertise vacancies?

	Code
References	
Banner publicizing	
Newspaper	
Liaison with training centers	
Placement Agencies	
By word of mouth	
Notice outside the factory	

Code

Q38. Have you recently hired fresh workers?

Yes------------------------- 1
No-------------------------- 2 *Go to Q39*

ID	**Trade type** ***See Trade Type List Q38.2***	**Number of Employee**	**Level of competence** **Poor---------------- 1** **Satisfactory ------ 2** **Good --------------- 3**
Q38.1	**Q38.2**	**Q38.3**	**Q38.4**

Sr	**Q38.2: Type of Trades**

1	Wood sawyer		8	Wood working lathe operator
2	Precision woodworking sawyer		9	Furniture manufacturing with hand tools
3	Wood seasoner		10	Carving machine operator
4	Wood treater		11	Furniture fitter/ Assembler (Joiner)
5	Wood shaper & leveler		12	Furniture finisher
6	Wood furniture designer		13	Furniture polisher/ Painter
7	Wood patternmaker		14	Furniture upholsterer
				Other (Specify)

Q39. Do you plan on increasing your workforce in the next 12 months?

Sr #	**Type of Trade**	**Do you plan to increase** **Yes** **1** **No** **2**(*if No go to Q 31.3)*	**No. of employees to be increased**	**Reasons for not increasing** Lack of skilled labor force - High cost of labor ----------- Lack of demand-------------- Strict rules and regulations ------------------- Others (Specify) -------------
Q39.1	**Q39.2**	**Q39.3**	**Q39.4**	**Q39.5**
1	Wood sawyer			
2	Precision woodworking sawyer			
3	Wood seasoner			
4	Wood treater			
5	Wood shaper & leveler			
6	Wood furniture designer			
7	Wood patternmaker			
8	Wood working lathe operator			
9	Furniture manufacturing with hand tools			
10	Carving machine operator			
11	Furniture fitter/ Assembler (Joiner)			
12	Furniture finisher			
13	Furniture polisher/ Painter			
14	Furniture upholsterer			
	Others (Specify)			
	Others (Specify)			
	Others (Specify)			
	Others (Specify)			

Q40. During the last 12 months, did you increase/decrease your workforce?

Sr #	**Type of Trade**	**Increased/Decreased** **Increased-1** **Decreased-2** (*Go to Next Trade)*	**Reasons for increase** Increase in demand of skilled labor force----------------------------------- 1 Increase in demand in furniture Issues with workers behaviour --- 2 Expansion in business --- 3 Others (Specify)	**Reasons for decrease** Lack of skilled labor force --------------------- High cost of labor ------ Lack of demand--------- Strict rules and regulations -------------

				Issues with workers behavior Others (Specify) --------
Q40.1	**Q40.2**	**Q40.3**	**Q40.2**	**Q40.3**
1	Wood sawyer			
2	Precision woodworking sawyer			
3	Wood seasoner			
4	Wood treater			
5	Wood shaper & leveler			
6	Wood furniture designer			
7	Wood patternmaker			
8	Wood working lathe operator			
9	Furniture manufacturing with hand tools			
10	Carving machine operator			
11	Furniture fitter/ Assembler (Joiner)			
12	Furniture finisher			
13	Furniture polisher/ Painter			
14	Furniture upholsterer			
	Others (Specify)			
	Others (Specify)			
	Others (Specify)			
	Others (Specify)			

Module – C: Skills analysis

Q41. Do you train your employees?

Sr #	**Type of Trade**	**Do you train your employees in [Trade] Yes-1 No-2 (*Go to next Trade)***	**If Yes Formal-1(go to Q 41.5) Informal-2 (*go to Q 41.6)***	**Mode of training (see Code Box Q41.5) Go to next Trade**	**Mode of training (see Code Box Q41.6) Go to next trade**	**What are the reasons for not training (multiple response) (see Code Box Q41.7)**			
Q41.1	**Q41.2**	**Q41.3**	**Q41.4**	**Q41.5**	**Q41.6**	**Q41.7.1**	**Q41.7.2**	**Q41.7.3**	**Q41.7.4**
1	Wood sawyer								
2	Precision woodworking sawyer								
3	Wood								

	seasoner								
4	Wood treater								
5	Wood shaper & leveler								
6	Wood furniture designer								
7	Wood patternmaker								
8	Wood working lathe operator								
9	Furniture manufacturing with hand tools								
10	Carving machine operator								
11	Furniture fitter/ Assembler (Joiner)								
12	Furniture finisher								
13	Furniture polisher/ Painter								
14	Furniture upholsterer								
	Others (Specify)								
	Others (Specify)								
	Others (Specify)								
	Others (Specify)								

Q41.5

Mode of Training Formal	Code
Through private TSPs	1
Vocational training organized by TVET Institutions or Public TSPs	2
Vocational training through NGOs	3
Through Polytechnic Institutes	4
Other (please specify)	

Q41.6

Mode of Training Informal	Code
On-the-job training by next senior	1
Mentoring/Counselling by supervisor	2
Organized training by in-house management	3
Other (please specify)	

Q41.7

Reasons	Code
Training is not important	1
Training is unproductive and time consuming	2
New employees can learn on their own	3

Supervisor/Trainer does not have enough time to train effectively	4
Our employees are already trained	5
Lack of training facilities	6
Risk of poaching by competitors	7
Other (please specify)	

Q42. Please identify skills available/not available with your enterprise?

Sr	Type of Trade	Number of employees available	Number of employees required now	Number of employees required in coming 5 years
Q42.1	**Q42.2**	**Q42.3**	**Q42.4**	**Q42.5**
1	Wood sawyer			
2	Precision woodworking sawyer			
3	Wood seasoner			
4	Wood treater			
5	Wood shaper & leveler			
6	Wood furniture designer			
7	Wood patternmaker			
8	Wood working lathe operator			
9	Furniture manufacturing with hand tools			
10	Carving machine operator			
11	Furniture fitter/ Assembler (Joiner)			
12	Furniture finisher			
13	Furniture polisher/ Painter			
14	Furniture upholsterer			
	Others (Specify)			
	Others (Specify)			
	Others (Specify)			
	Others (Specify)			

Q43. Please identify skills where formal/informal training is required in the coming 5 years?

Sr	Type of Trade	Type of Skills *See skills type Q43.3*	Training required now Yes = 1 No = 2		Training required in coming 5 years Yes = 1 No = 2	
			Formal	**Informal**	**Formal**	**Informal**
Q43.1	**Q43.2**	**Q43.3**	**Q43.4**	**Q43.5**	**Q43.6**	**Q43.7**
1	Wood sawyer					
2	Precision woodworking sawyer					
3	Wood seasoner					
4	Wood treater					
5	Wood shaper & leveler					
6	Wood furniture designer					
7	Wood patternmaker					
8	Wood working lathe operator					
9	Furniture manufacturing with hand tools					

Sr	Type of Trade	Type of Skills *See skills type Q43.3*	Training required now Yes = 1 No = 2		Training required in coming 5 years Yes = 1 No = 2	
			Formal	Informal	Formal	Informal
Q43.1	Q43.2	Q43.3	Q43.4	Q43.5	Q43.6	Q43.7
10	Carving machine operator					
11	Furniture fitter/ Assembler (Joiner)					
12	Furniture finisher					
13	Furniture polisher/ Painter					
14	Furniture upholsterer					
	Others (Specify)					

Q43.2: Trade/ Activity	Q43.3: Skills
Wood sawyer	Making of basic wood planks
Precision woodworking sawyer	Setting and adjusting various kinds of machines for operation by others
Wood seasoner	Stacking with spacing (1 year)
	Seasoning with plant
Wood treater	Preserve and treat wood manually using wood treatment equipment
Wood shaper & leveler	Leveling, planingn, boring and sizing of the planks
Wood furniture designer	Pattern designing using Auto-CAD and manually
Wood patternmaker	Plan, lay out, and construct wooden unit or sectional patterns used in forming sand molds for castings
Wood working lathe operator	Operating power saws, jointing, mortising, shaping and drilling
Furniture manufacturing with hand tools	Tracing
	Dowel nailing
	Cutting using hand tools
Carving machine operator	Carving
Furniture fitter/ Assembler (Joiner)	Assembling all articles together
	Joining
	Gluing
	Nailing
Furniture finisher	Sanding
	Edging
Furniture polisher/ Painter	Spirit Polish
	Sealer coating
	Laker coating
	Painting
Furniture upholsterer	Foaming
	Upholstering
	Stitching

Q44. How many training centers are there in your area?

Numbers

Code

Q45. Will you be interested in sending your employees for off-the-job trainings?

Yes------------------------ 1
No------------------------- 2

Code

Q46. What are the desired training methods for your company?

Tick as many required

On-the-job training ----------- 1
Videos/articles ---------------- 2
Counselling/Mentoring------ 3
National conferences--------- 4
Training manuals ------------- 5
Short courses ------------------ 6
Off-site training facility ------ 7
Other (please specify---------

Code

Q47. How much time would you allow your employees to take off for these trainings?

2 days off----------------- 1
5 days off----------------- 2
7 days off----------------- 3
Others (Specify)-----------

Code

Q48. Will you be willing to pay for the trainings?

Yes------------------------ 1
No------------------------- 2 G***o to Module – E***

Code

Q49. Do you have specific allocations in your budget for trainings?

Yes------------------------ 1
No------------------------- 2

Q50. Who will be the most appropriate entity to conduct the trainings?

Sr	**Training entity**	**Is [Entity] the most appropriate to conduct the training?** **Yes 1** **No 2**	**Have you utilized any of their services previously?** **Yes 1** **No 2**
Q50.1	**Q50.2**	**Q50.3**	**Q50.4**
1	Industry experts		
2	Vocational-technical institutes		
3	Consultants		
4	Equipment manufacturers		
5	Universities		
6	Others (please specify)		

Code

Q51. Have any of your workers ever been trained by a TSP?

Yes------------------------ 1
No------------------------- 2 G***o to Module – E***

Q52. If "Yes" please provide following information:

Sr	Trades	Nomenclature of the Course	Duration of the Course	No. of Employees Trained	Effectiveness of the training Effective-1 Satisfactory-2 Unsatisfactory-3	Name of TSPs
Q52.1	**Q52.2**	**Q52.3**	**Q52.4**	**Q52.5**	**Q52.6**	**Q52.7**
1	Wood sawyer					
2	Precision woodworking sawyer					
3	Wood seasoner					
4	Wood treater					
5	Wood shaper & leveler					
6	Wood furniture designer					
7	Wood patternmaker					
8	Wood working lathe operator					
9	Furniture manufacturing with hand tools					
10	Carving machine operator					
11	Furniture fitter/ Assembler (Joiner)					
12	Furniture finisher					
13	Furniture polisher/ Painter					
14	Furniture upholsterer					
	Others (Specify)					
	Others (Specify)					
	Others (Specify)					
	Others (Specify)					

Q53. Please name the best 3 TSPs where you would like to send your workers for training?

No.	Name of TSPs	Address of TSPs	Contact No. of TSPs
Q53.1	Q53.2	Q53.3	Q53.4
1			
2			
3			

Q54. Please rate each subject with regard to its importance to your company's success and the knowledge your personnel have in the subject area:

Subject	Least				Most important		Least				Most im
	Company's Success						Personnel Knowledge				
Management Subject											
Safety regulations	1	2	3	4	5		1	2	3	4	5
New product development	1	2	3	4	5		1	2	3	4	5
Sales abilities	1	2	3	4	5		1	2	3	4	5
Regulation laws	1	2	3	4	5		1	2	3	4	5
Motivation of personnel	1	2	3	4	5		1	2	3	4	5
Cost reduction	1	2	3	4	5		1	2	3	4	5
Total quality management	1	2	3	4	5		1	2	3	4	5
Product certification	1	2	3	4	5		1	2	3	4	5
Plant management and finance	1	2	3	4	5		1	2	3	4	5
Competitive positioning	1	2	3	4	5		1	2	3	4	5
Product pricing	1	2	3	4	5		1	2	3	4	5
Finding market information	1	2	3	4	5		1	2	3	4	5
Technical Subjects											
Effect of moisture on wood	1	2	3	4	5		1	2	3	4	5
Drying	1	2	3	4	5		1	2	3	4	5
Lumber grading	1	2	3	4	5		1	2	3	4	5
Basic wood properties	1	2	3	4	5		1	2	3	4	5
Inventory control/ Production scheduling	1	2	3	4	5		1	2	3	4	5
Wood gluing	1	2	3	4	5		1	2	3	4	5
Wood machining processes	1	2	3	4	5		1	2	3	4	5
Wood identification	1	2	3	4	5		1	2	3	4	5
Exporting economics	1	2	3	4	5		1	2	3	4	5
Computer education (CAC/CNC/CAM/CAD)	1	2	3	4	5		1	2	3	4	5
Product improvement	1	2	3	4	5		1	2	3	4	5
Wood finishing	1	2	3	4	5		1	2	3	4	5
Gluing/Jointing	1	2	3	4	5		1	2	3	4	5
Sawing/cutting technology	1	2	3	4	5		1	2	3	4	5
Finishing and coating	1	2	3	4	5		1	2	3	4	5
Basic problem solving skills	1	2	3	4	5		1	2	3	4	5
Sanding/abrasives	1	2	3	4	5		1	2	3	4	5
Product distribution	1	2	3	4	5		1	2	3	4	5
Quality and Process control	1	2	3	4	5		1	2	3	4	5

Dealing with changing raw materials	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Developing business plans	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Utilizing composite products	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Plant maintenance	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

Numbers

Q55. What is the number of workers performing multiple tasks in your organization?

Code

Q56. What are the reasons for multitasking?

Lack of skilled manpower-----------------------------------1
I have faith only in the experienced workers -----------2
To save the cost--3
Skilled workers are more reliable and proficient------4

Module – D: Product Manufacturing

Q57. From where do you purchase your input supplies?

Sr #	**Input supplies**	**Local** **Yes --- 1** **No---- 2**	**Imported** **Yes ---1** **No----2**
Q57.1	**Q57.2**	**Q57.3**	**Q57.4**
1	Wood		
2	Polishing material		
3	Carpentry tools		
4	Upholstering Material (leather, foam, clothes etc.)		
5	Other Material (glue, nails, latch, handles etc.)		
6	Other (please specify)		
7	Other (please specify)		
8	Other (please specify)		

Q58. Please tick all the equipment your establishment currently uses:

Sr #	**Equipment**	**Does your establishment use [Equipment]?** **Yes---------1** **No----------2** ***Go to next Equipment***	**Operators**	
			Held	**Required**
Q58.1	**Q58.2**	**Q58.3**	**Q58.4**	**Q58.5**
1	Log band saw			
2	Drill machine			
3	Circular saw			
4	Former chards			
5	Bean saw			
6	CAD			
7	Drafting equipment			
8	Clamp table			
9	Draw knife			
10	Jointer			
11	Shaper			
12	Thickness planer			
13	Sanding file			
14	Double miter			
15	Spindle moulder/shaper			
16	Drill			

Sr #	Equipment	Does your establishment use [Equipment]? Yes---------1 No----------2 *Go to next Equipment*	Operators	
			Held	Required
	Other (please specify)			
	Other (please specify)			
	Other (please specify)			
	Other (please specify)			
	Other (please specify)			

Module – E: Human Resource and other issues

Q59. Can you please indicate how problematic each of the following labour factors is for the operation and growth of your business?

Sr #	Problems	No problem =1 Severe problem =2 Not applicable = -99
Q59.1	**Q59.2**	**Q59.3**
1	Employment protection legislation	
2	Labour availability	
3	General education of workers	
4	Technical education/vocational training of workers	
5	Finding workers with previous experience	
6	High Employee Turnover	
7	High Taxes	
8	Salary Costs	
9	Minimum wage rate	

Code

Q60. In case of a decrease in demand, which strategy will you adopt?

Reduce the number of wage earners ---------------------1
Reduce salaries ---2
Reduce benefits paid out to workers ---------------------3
Diversify your activities -------------------------------------4
Abandon your activity ---------------------------------------5
Improve quality of products--------------------------------6
Aggressively market the products ------------------------7
Other (Specify)

Code

Q61. Which of the following workers will you prefer as new employees?

At least having 10 years of experience, highly-skilled, behaviour and attitude doesn't matter 1
At least having 10 years of experience, highly-skilled, behaviour and attitude matters---- 2
Educated, highly-skilled, 10 years of experience, attitude and behaviour matters ---------- 3
Educated, highly-skilled, 10 years of experience, attitude and behaviour does not matter 4
Educated, semi-skilled, 5 years of experience, attitude and behaviour matters ------------- 5
Educated, semi-skilled, 5 years of experience, attitude and behaviour does not matter --- 6
Others (please specify) --

Q62. What are some of the obstacles that you face in terms of training the workforce?

Code

Q63. Do you foresee any future challenges in any of the skill sets required in this industry?

Yes------------------------- 1
No-------------------------- 2

Q64. Are there any areas in the industry where women can be trained and employed in?

Code

Q65. Are you aware of Punjab Skills Development Fund (PSDF)? Its role, objectives and schemes?

Yes------------------------- 1
No-------------------------- 2

Code

Q66. Have you ever interacted or worked with PSDF

Yes------------------------- 1
No-------------------------- 2

Q67. How was your experience working with PSDF?