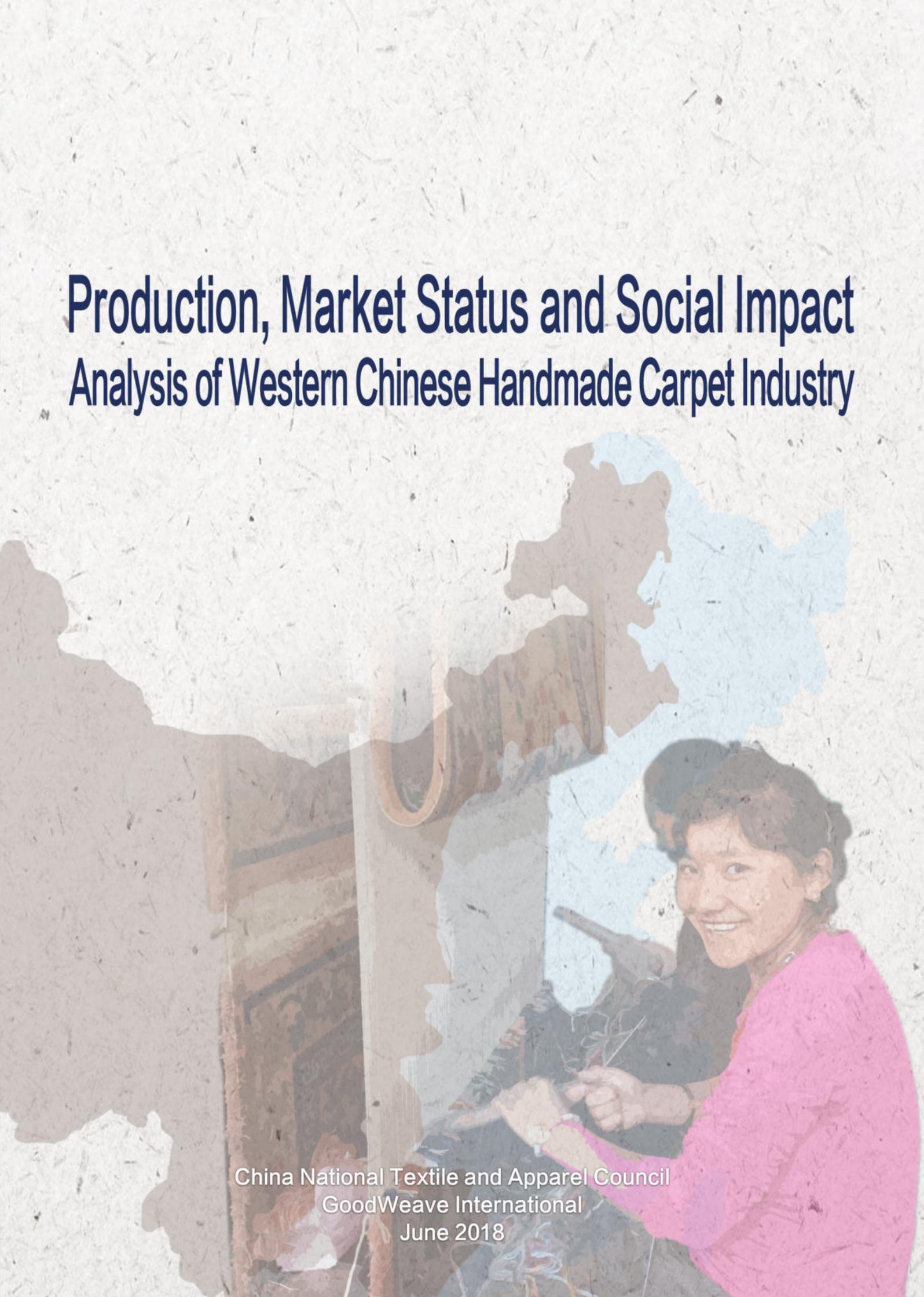


Production, Market Status and Social Impact Analysis of Western Chinese Handmade Carpet Industry

A woman with dark hair, wearing a bright pink shawl, is smiling as she works on a traditional wooden loom. She is weaving a colorful, patterned carpet. The background is a textured, light-colored wall. The overall scene is set in a workshop or home environment.

China National Textile and Apparel Council
GoodWeave International
June 2018



Preface

In today's world, the Internet has disrupted the traditional way of life and production. People are increasingly surrounded by products that are mechanized and digitally produced and away from those handicraft products containing extensive historic, geographical and cultural values, and hence, they hardly enjoy the feelings inspired from those soul-touching products.

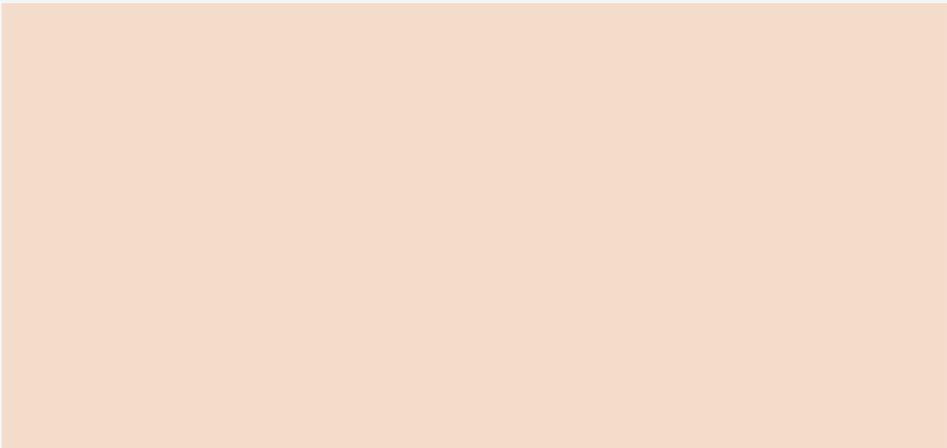
In its legacy of history, handmade carpet not only had warm and convenient functions for human beings, but also accumulated diversified national features, bearing the aesthetic of Chinese culture while integrating with other civilizations. As a carrier of these extensive cultural heritages and a result of people's spiritual pursuit, handmade carpet products have met challenges in modern society — tremendous challenges brought by consumer behavior change and market restructuring in the process of rapid globalization and industrialization. On the other hand, with increasing and diversifying demands for a better life in China and the rest of the world, more and more people show their interest in traditional handmade products. Well, how could we revive old handmade carpets? This research report drafted by Office for Social Responsibility of China National Textile and Apparel Council offers some suggestions for the development of handmade carpet industry.

To address challenges, the first task for hand-made carpet industry is to create effective demands targeted at modern consumers and change the traditional ideas that product supply is subject to demand. The industry needs to innovate products in combination of tradition and fashion and stimulate the new consumer demands through modern interpretation of traditional culture and handcraft process, integration of production and sales through transforming marketing modes.

This is an organic system that requires long-term cooperation among industry, market and government. China National Textile and Apparel Council and China Home Textile Association would like to work with all those people who are interested in and like hand carpets. Let's jointly achieve this ambitious mission with our unremitting efforts!

Yang Zhaohua

President of China Home Textile Association



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Survey Purpose and Methods



As a unique type among a variety of carpet products, Chinese handmade carpet is not only famous for its long history, diversified types and rich cultural elements, but also for its fine materials, delicate patterns and exquisite technique. Since ancient times, Chinese handmade carpet was traded as a commodity and was sold around the world through the Silk Road and the Maritime Silk Road. After new China was founded, especially in the 1970s–1990s, handmade carpet enterprises across the country experienced unprecedented development, and handmade carpet became an important moneymaker in foreign markets.

However, due to the Asian financial crisis in 1998, foreign orders fell sharply. Since the 21st century, with rapid economic development in China, the cost of factors of production for carpets such as raw materials, labor resources, land have gone up tremendously; moreover, as a handicraft, carpet's fashion cycle was affected by the world economic and international trade environment, thus China's handmade carpet industry declined rapidly and was at a low point. Meanwhile, the emerging of machine-made carpets, benefited from China's booming real estate market, has also had huge impact on the handmade carpet industry.

To understand the development, production and market status, as well as social impact of the handmade carpet industry in China's western provinces in recent years, Office for Social Responsibility of China National Textile and Apparel Council conducted a survey in major handmade carpet-producing areas such as Henan, Gansu, Qinghai, Xinjiang, Tibet and Sichuan, visited 23 carpet enterprises and interviewed people from enterprises, local government departments and industry associations. The survey was mainly conducted through questionnaires, supplemented by individual interview and group discussion. A total of 75 valid questionnaires were recovered and 47 persons were interviewed. Most of handmade carpet enterprises surveyed are distributed in remote prefecture-level cities, counties and townships, and are of middle-small scale. Some have a history of about 60 years, they not only witnessed the rise and decline of the handmade carpet industry, but also the takeoff of China's economy.

During the survey, the project team also talked with local authorities, regional professional or industry associations to understand their positioning and favorable policies for the handmade carpet industry, and explored the industry's development prospect.

Survey Findings



1. Overview of the handmade carpet industry

1.1 Definitions and types

Since the earliest times, carpet is hand-woven, thus in ancient and modern times, carpet refers to handmade carpet. In the late 1970s, carpet loom was invented. To separate from machine-made carpet, the name of "handmade carpet" was adopted.

Handmade carpet refers to carpet made manually. By technique, there are two types:

1. **Hand-knotted carpet:** also called manual knotted carpet, it is constructed with fine threads of colored yarn that are hand-knotted through a warp/weft backing and then sheared to create a pile. There are three knot styles: Persian knots, Turkish knots and double knots. By knot display direction, there are two types: closed back and open back. The former is woven with five strands of thicker yarn and no white specks of weft are visible from the back of the carpet. The latter is woven with four strands of less thicker yarn and specks of weft are visible from the back of the carpet. The two types of carpets are made using similar weaving method, and there is only one difference in weft weaving process: closed back carpet is woven with coarse weft after the lease rod is pulled down, and light weft features an open back and a figure-eight knot; open back carpet is woven with coarse weft without pulling down the lease rod, and light weft features a closed back

Photo 1: hand-knotted carpet



and a figure-eight knot in reverse. Hand-knotted carpet is purely handmade carpet in a real sense. If there are no special instructions, the "handmade carpet" mentioned in the following text all refers to hand-knotted carpet.

2. **Hand-tufted carpet, also called latex backed carpet.** i.e. the carpet is made with a tool called a "tufting gun", and loops of dyed wool are pushed through a backing. Then, the foundation is applied with latex glue, and finally a cloth backing is applied. Hand-tufted carpet takes less time to make than a purely hand-knotted carpet, but it takes far more time than a machine-made carpet. Strictly speaking, hand-tufted carpet is made with the aid of a tool, thus it does not belong to the category of handmade carpet. However, in my opinion, hand-tufted carpet should be grouped into this category because it is chiefly made by manual labor.

By material, handmade carpet uses natural fibers as raw materials. Handmade carpet can be divided into: handmade wool carpet, handmade silk carpet, cotton, hemp (ramie and jute) carpets; by purpose, handmade carpet can be divided into: handmade art tapestry, handmade tapestry, art carpet, etc. There are different sizes of handmade carpets, and large-size ones can still present a full picture. Especially handmade silk carpet, with high lines and delicate patterns, can recreate sketched images. In this sense, it holds great ornamental and artistic value.

By density, handmade carpets can be divided into 120 lines, 160 lines, 360 lines, 540 lines and 720 lines, etc. Line refers to the number of knots per square inch. Higher line means the carpet has more exquisite pattern, higher quality and more artistic value. Especially handmade silk carpet, it is painstaking and time-consuming to make. It generally takes one worker 14 to 20 months to weave a piece of 5×8 feet silk carpet of 300 lines, and 40 to 50 months to weave a piece of 1.4×2 feet silk carpet of 800 lines. Silk carpet of 1000 lines requires more fine materials and time. Therefore, due to its high cost, the silk carpet of higher lines has earned the name of "soft gold".

Moreover, by style and origin, handmade carpets can be grouped into Chinese Art Carpet, Xinjiang Carpet, Beijing Carpet, Ningxia Carpet, Mongolia Carpet and Tibetan Carpet, etc. Different types of carpets have strong ethnic and regional characteristics.

1.2 Geographical layout and ethnic characteristics

Chinese handmade carpet is famous for its distinctive regional and ethnic characteristics both at home and abroad. The follows are several representative carpets:

1. Xinjiang carpet

Xinjiang carpet has a very long history. According to existing archaeological records, the earliest carpet technology came into existence at least over 2000 years ago. Xinjiang is one of the birthplaces of carpets in the world. Southern Xinjiang, especially Hotan region, is an important carpet-producing place since ancient times, and has formed its own unique artistic style after over 1000 years of evolution.



Photo 2: Xinjiang carpet



Hotan handmade wool carpet is handmade carpet woven with Hotan heterogeneous sheep wool as raw material (spun into threads of yarns by hand or machine and dyed with vegetable dyes (nowadays imported chemical dyes are used in most cases), and feature Persian knots, and Xinjiang traditional patterns or Persian patterns.

Xinjiang carpet is light-weight and thin type manual knotted wool carpet and has about 80~150 lines per square inch. It features fine texture, higher lines, a firm but smooth feel, soft but durable and balanced color contrasts. There are many patterns. Some use distinctive western and Uighur floral patterns as the motif, for example, apricot, pomegranate, rose, etc.; some use patterns from neighboring countries, such as Persia, Turkmen and Azerbaijan. Moreover, there are special prayer carpets with mihrab pattern.

2. Tibetan carpet

Tibetan carpet has a history of over 2000 years. During the period of Ming Dynasty, it was loved by the ruling class for its pure wool, fine craftsmanship, beautiful colors and diverse patterns. Thanks to the remoteness of the snowy plateau, Tibet people's devout religious belief, and their rough and simple personality, Tibetan carpet has preserved unique ethnic characteristics. Tibetan carpet is mainly produced in Lhasa and Gyangz regions, and Qinghai province.

Firm, long, flexible and lustrous wool produced in Tibet Plateau is used as raw material for Tibetan carpet. Its technique is mainly characterized as "holding lease rod with left hand and tying knots with right hand", and involves production processes ranging from combing, spinning, dyeing, yarn-transferring, hand weaving, horizontal shearing and washing, etc. It features fine texture, a firm and smooth feel, soft, lustrous and durable color contrast. Pigment used for dyeing is extracted from local tree leaves, grass roots and minerals. This kind of natural pigment has bright colors and never fades. Given the fine quality and rich ethnic colorful patterns, Tibetan Carpet has high ornamental value. It is renowned for its superb craftsmanship and aesthetic value both at home and abroad, and it was sold to India, Nepal and Bhutan, etc.

Tibetan carpet can be used in a civilian or temple settings. In a civilian setting, carpets (khaden, flooring carpet, saddle rug, etc.) are necessities for nomadic life and floral patterns are common. In a temple setting, prayer carpet, pillar carpet, curtain carpet, tapestry, etc. are used, and they are emblazoned with Buddhist symbolism such as eight treasures and dragon patterns. They are utilitarian in function and convey religious messages.

3. Beijing carpet, also called palace carpet, etc. Originated in the northwest China, Beijing carpet is a handiwork that is rich in regional and palace characteristics. The solid and soft carpets were favored by royals and aristocrats. Since the Yuan Dynasty, it was exclusively used in the imperial palaces, thus came the name "palace carpet". In 2008, the craft of making palace carpet was added to Beijing's list of intangible cultural heritage. In 2010, it was also listed as a national intangible cultural heritage by the State Council.

With a density of 90~150 lines, palace carpet uses wool and silk threads as raw materials and features firm texture and soft surface. With traditional patterns as the theme, the palace carpet combines the elements of Chinese painting, embroidery, tapestry and art deco. There are several styles, such as Beijing-style, antique style,

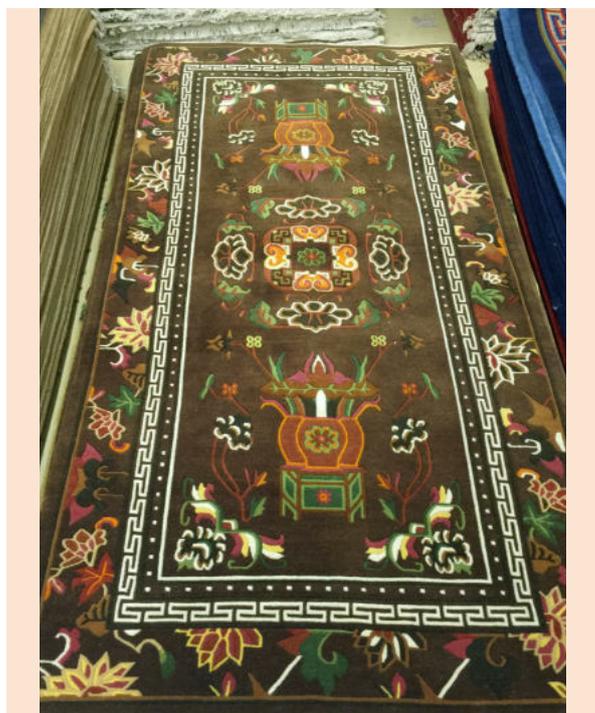


Photo 3: Tibetan carpe

ethnic style, brocade style, bird and flower-style, etc. All of the patterns are symmetric and balanced, and rich in Chinese cultural elements. "Gold silk carpet" is the most distinctive one among palace carpets. As a decorative item for the imperial palace, gold silk carpet-making craft is very complicated and was lost at one time. The craft was recovered after 2000 years later. Technically speaking, one tael of gold is required to be converted into gold foil, then gold foil threads are needed to be woven on the warp, only then can weaving get started. Given its expensive material, complicated process and time-consuming making, gold silk carpet is of great collectible value.

4. **Silk carpet:** it is woven with natural silk, features bright and lustrous colors, and a smooth feel. Warm in winter and cool in summer. The number of lines of silk carpet is rather high, and the 1200 lines silk carpet once broke the Guinness World Record. Its patterns are delicate and sophisticated, even can portray the nuances of people's facial expressions. Patterns such as Beijing style, Persian style, figures, landscapes, etc. are common on the carpet. Silk Carpet has a long history and is considered as a high-end handicraft.



Photo 4: Gold silk palace carpet



Photo 5: Handmade silk carpet

1.3 Evolution and contributions

Speaking of Chinese carpet history, there is no way to not to mention its origin. The earliest carpet in human history was probably inspired by animal hides and furs. Animal hides were used by our forefathers to keep warm in cold winters, but after years of use, furs would fall off and lose its warm-keeping property. Therefore, our smart ancestors started to mimic the way furs grow, and tied the stranded furs on the fabric. In this way, fabric was more durable than animal hides.

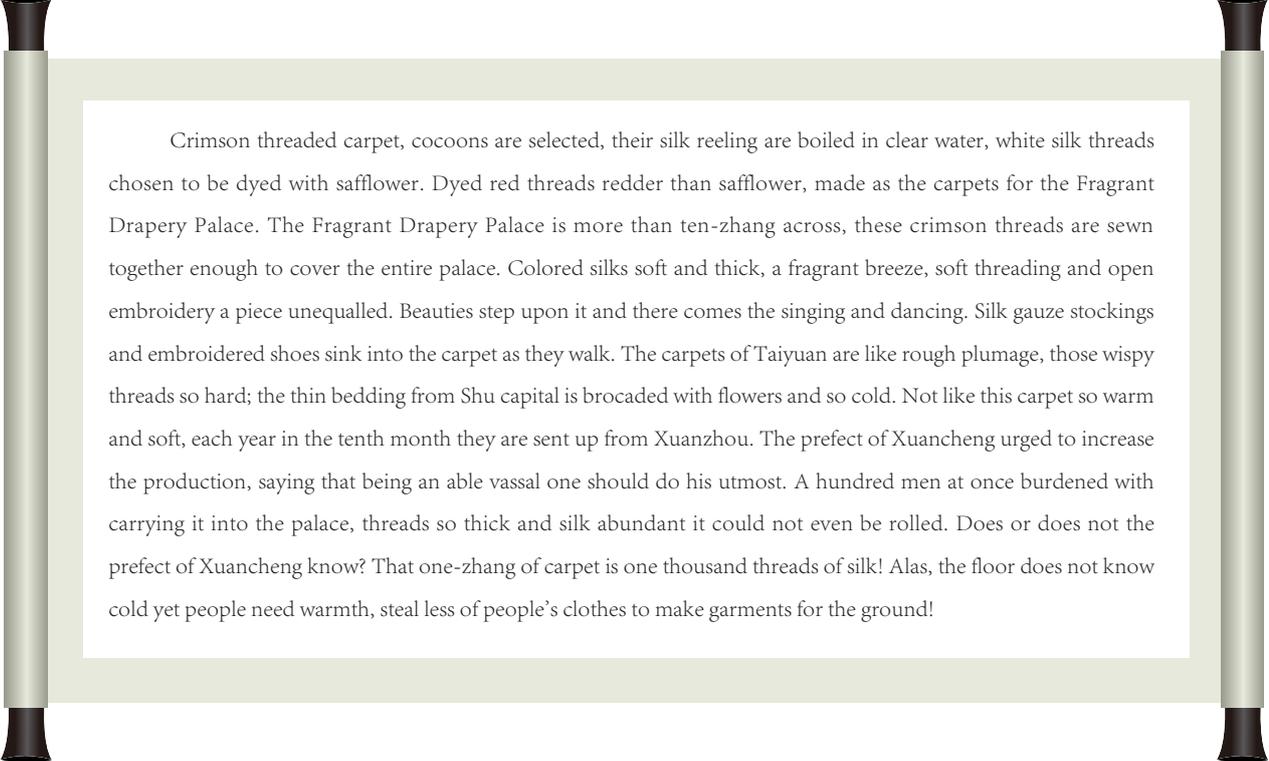
According to ancient literature, felt was used during the reign of the Yellow Emperor. It is a seating and sleeping rug which is woven with animal furs and hemp fibers. In the Zhou Dynasty, special officials and workers were assigned to make felt for the emperor. In the Neolithic period, people started to grow mulberry trees and raise silkworms in the Yangtze River Valley. Traces of silkworm can be found on the unearthed jade from the period of Liangzhu culture. With development in productive technologies and emergence of various textile tools, the textile industry started to emerge. This is also a precondition for the development of the carpet industry.

During 1200 BC to 220, China's weaving technologies matured. Among many unearthed woven artifacts in Xinjiang, multiple types of woven carpets dating to this period could be found. Besides plain weave and twill weave, there are embroidery, kesi and knotted carpet weaving methods dated back to the Eastern Han Dynasty. With different weaving methods, rich colors and diverse patterns, a colorful carpet is born. Take Yingpan cemetery in Yuli county for example, during archaeological excavation in over 100 years, many textile products were unearthed. Among which, there was a special knotted wool carpet with lion pattern (unearthed in 1997). This

carpet was decorated with colorful floral pattern (there were more than ten colors, such as red, dark yellow, white, sky blue) and a lively-gentle-looking sleeping lion pattern, testifying the superb carpet-weaving skills at that time.

There are many ethnic groups living in northwest China and the animal husbandry business is booming, providing ample raw materials for the development of the carpet industry. Especially all kinds of wool with thick, long, elastic and lustrous fibers, are perfect for weaving carpets. Moreover, cotton, hemp, etc. also abound in northwest provinces. Rich natural resources have laid a foundation for the emergence and development of China's carpet industry. In this sense, northwest region can be deemed as the birthplace of Chinese carpet.

Thanks to the booming trade between different ethnic groups in different dynasties, the exquisite carpet produced in northwest China became aristocrat's favorite item in central China. After hundreds of years of war in the Three Kingdoms, the Eastern and Western Jin Dynasties and the Southern and Northern Dynasty, and by the Tang Dynasty, carpet weaving industry witnessed unprecedented development and became popular. This could be confirmed by many ancient literature, poems and drawings. Bai Juyi, a famous poet in Tang Dynasty, wrote in *Crimson Threaded Carpet*:



Crimson threaded carpet, cocoons are selected, their silk reeling are boiled in clear water, white silk threads chosen to be dyed with safflower. Dyed red threads redder than safflower, made as the carpets for the Fragrant Drapery Palace. The Fragrant Drapery Palace is more than ten-zhang across, these crimson threads are sewn together enough to cover the entire palace. Colored silks soft and thick, a fragrant breeze, soft threading and open embroidery a piece unequalled. Beauties step upon it and there comes the singing and dancing. Silk gauze stockings and embroidered shoes sink into the carpet as they walk. The carpets of Taiyuan are like rough plumage, those wispy threads so hard; the thin bedding from Shu capital is brocaded with flowers and so cold. Not like this carpet so warm and soft, each year in the tenth month they are sent up from Xuanzhou. The prefect of Xuancheng urged to increase the production, saying that being an able vassal one should do his utmost. A hundred men at once burdened with carrying it into the palace, threads so thick and silk abundant it could not even be rolled. Does or does not the prefect of Xuancheng know? That one-zhang of carpet is one thousand threads of silk! Alas, the floor does not know cold yet people need warmth, steal less of people's clothes to make garments for the ground!

This poem not only describes the weaving method for the silk carpet, but also tells us a historical fact that: wool carpet-weaving centers were set up in Taiyuan and Xuanzhou, Jiangnan, and special officials were assigned to manage such centers in the Tang Dynasty. In the subsequent dynasties, a time when the society was stable and the economy was prosperous, the carpet industry experienced rapid development. From royal palace to ordinary home, carpet found its way into people's lives. In the meantime, carpets were grouped into different types by purpose, including tapestry, carpet and seating rug.

The booming carpet industry was also accompanied by increased circulation of carpet as a commodity. Whether in the prosperous Tang and Song dynasties, or in the Ming dynasty when budding capitalism appeared, China-made carpets were exported to countries all over the world via the Silk Road and the Maritime Silk Road. Even in the remote coastal Quanzhou in the east, the starting point of the Maritime Silk Road, the carpet industry also saw tremendous development. According to historical data, there is a saying that "Quanzhou artisans are

good at copying various types of crafts, not to mention the orange red silk in Beijing, nor the wool products in the west side of ancient China".

In the Qing Dynasty, Qing people adored carpet for it was part of their life. The Qing court opened carpet-weaving centers in Beijing, Tianjin, Hebei, Shaanxi, Shandong, Gansu, Rehe, and Shanxi. Emperor Qianlong even opened "carpet research institutes" to train artisans. Till the late Qing Dynasty, carpet has become a bulk trade commodity. In the late Qing Dynasty and the early period of the Republic of China, private workshops started to rise, exhibiting a trend that a carpet industry was forming.

From the founding of new China to the latter half of the 20th century, the carpet industry also saw significant development. Foreign trade companies, arts and crafts associations, universities and colleges vied to set up a special carpet department, which has facilitated the development of the carpet industry. In this period, China's carpet export resumed its past glory and carpet became an important foreign exchange earner. Around 2000, carpets were exported to more than 50 countries, totaling about 0.5–0.6 billion yuan. There were more than 1500 carpet enterprises and about ten million people working in this industry.

2. Status of the handmade carpet industry

2.1 Industry overview

2.1.1 Main raw materials and processes

Main raw materials for handmade wool carpet are:

Wool: produced in northwest provinces such as Xinjiang, Qinghai, Ningxia, and Gansu, etc. Take Xinjiang Hotan carpet for example, it is made of autumn wool from Yecheng, Hotan. The wool has long, not easily bonded, tough and resilient fiber, smooth surface, warmth retention property and is not easily soiled. Yarn: 3.5–7.5 counts. The quality of the machine-spun yarn is better than that of the hand-spun, for a thread spun by machine is even in thickness and strength.

Cotton yarn: used as carpet's warp and weft. Quality cotton yarn has high strength and resiliency and can ensure carpet's strength. Quality Xinjiang long-staple cotton (21 counts) is often used as raw material.

Dye: natural vegetable and mineral dyes are used for making carpet in traditional process. Vegetable dyes: sophorae, gardenia, madder, shikonin, indigo, walnut skin, pomegranate rind, hematoxylin, etc. Mineral dyes: cinnabar, coral, turquoise, loess, schungite, etc. Considering mineral dyes' outdated process and inconsistent coloring, many places have adopted chemical dyes instead of mineral ones.

Raw materials for making handmade silk carpet include:

Silk: silkworms are raised in many places. At present, tussah silk from Sichuan, northeast region and Xinjiang are used as raw material for making silk carpet. Quality silk is extracted from the best part of silkworm cocoon. Natural silk has long, soft, firm, smooth and shiny fiber. If you look the pile carefully, you will find that it is composed of single fibers and make your hand feel warm once you touch it. After long time use, silk carpet does not fluff and shed fibers.

Spun silk: yarn made from pierced cocoons and silk waste, its quality is poor. Some spun silk is blended with cotton. Its fiber is short, like filament. Compared with pure silk, the processed spun silk is less shiny, smooth, firm

Photo 6: Woolen yarn



Photo 7: Knotting



Photo 8: Finishing



Photo 9: Manual shearing



and durable. Its advantage lies in cheap cost.

Rayon: also called mercerized cotton. This material is synthetic fiber and costs little. Its fiber is short, like filament, and its color is rigid and not soft, the white part looks dazzling and makes your hand feel cool. It is also used as raw material for making silk carpet.

Main processes:

Chinese handmade carpets' main feature is handmade. Till today, main carpet-making processes are done manually and traditions of the handicraft industry are kept. Automated or semi-automated machines were introduced in the before/after supporting processes such as preparation and sorting & washing. These machines will help improve the quality of handmade carpet without compromising its features.

From raw material to finished product, handmade carpet needs to go through over 100 processes. Generally speaking, there are three processes: preparation, molding and finishing.

Preparation process mainly involves wool sorting & washing, spinning, dyeing, etc., to prepare yarn for weaving. Moreover, there are drawing design, machine beam commissioning, tool preparation, etc.

Molding process is also called weaving process. It mainly involves warp weaving, padding, marking, knotting, weft weaving, tightening with rake, thread cutting, etc. Knotting is an important process for making handmade carpet. Persian knots and Turkish knots are usually adopted to tie the yarn on the warp, then use a knife to cut it off. Numerous knots constitute the pattern of the whole carpet.

Finishing process involves straightening, washing, shearing, finishing, etc. These processes play a crucial role in carpet's look and quality, and can correct missteps in the above processes. Shearing process is a unique process in China's carpet-making, and was created by carpet-weaving artisans in the 1920s-1930s. Scissor (nowadays electric scissor is the first choice) is used to cut, slice, cast and peck the contour of the carpet, so that pattern looks structured from different angles. The carpet surface is uneven, creating a relief-like effect.

2.1.2 Production capacity

At present, China's handmade carpet enterprises are mainly distributed in central (machine-made carpet and handmade carpet develop at the same time), western (focus on handmade carpet) and eastern (focus on machine-made carpet) regions respectively. Therefore, this survey mainly covers western provinces such as Xinjiang, Gansu, Qinghai, Tibet and Sichuan, as well as Henan province in the central region. Product distribution of these provinces is as follows:

Survey location	Product type
Beijing	Palace carpet
Nanyang, Henan	Handmade silk carpet, handmade silk wool carpet, machine-made rayon carpet, etc.
Tianshui, Gansu	Handmade silk carpet, silk tapestry, handmade wool carpet
Hotan, Xinjiang	Handmade wool carpet, tapestry
Xi'ning, Qinghai	Handmade Tibetan carpet, machine-made wool carpet
Lhasa, Rikaze, Shanna, Tibet	Handmade Tibetan carpet, machine-made wool carpet
Langzhong, Sichuan	Handmade silk carpet

Table 1: Survey area and product type

Considering that handmade carpet enterprises are scattered, this survey mainly covers those key carpet-producing provinces. The following are main information about each carpet-producing area:

1)**Tibet**: there are a total of 14 Tibetan carpet enterprises in the Tibet autonomous region. Currently, foreign exchange earners are concentrated in Lhasa, Rikaze, Shannan and Naqu, etc. However, the scale of the handmade carpet industry is small. In 2015, the handicraft industry generated a total output of 1.104 billion yuan in 2015, of which, carpet industry accounted for about 40%.

2)**Xinjiang**: Hotan region is an important carpet-producing region in Xinjiang. There are a total of 160 handmade carpet enterprises (cooperatives included). The annual output of handmade carpet is about 0.8 million square meters, and the output of 2015 amounted to 1.008 billion yuan. 30–40% output is for export. The handmade carpet industry accounted for less than 10% of local economy.

3)**Qinghai**: Tibetan carpet-making province. In 2015, Qinghai produced about 22 million square meters of carpets, accounting for over 90% of the total output, which were exported to 22 countries including US and Japan, accounting for 30% of the total handmade carpet export in China (ranked at the top). In 2014, its output amounted to 4 billion yuan, accounting for 40% of the gross value of light textile industry in Qinghai.

4)**Gansu**: there are 9 handmade carpet enterprises in the province. Located in Tianshui, Linxia, Qingyang, etc., they mainly produce handmade wool carpet, handmade silk carpet, tapestry, etc. In 2015, it produced about 0.5 million square meters of carpets. Its output accounted for less than 5% of the total value of economic output in the province.

5)**Sichuan**: there are 4 carpet enterprises in the province, mainly produce silk carpet, tapestry, etc. In 2015, their main business income was 0.712 billion yuan.

6)**Beijing**: Beijing Palace Carpet, predecessor of Beijing No.5 Carpet Manufacturing Plant, is a carpet company established in the 1980s in Beijing. In its glorious days, the plant owned 11 carpet-processing plants and employed more than 5000 workers. In 2015, the plant was restructured, its main business was to make high-end palace carpet. It produced about 90 square feet of palace carpet with an output of 5 million yuan.

7)**Henan**: silk carpet enterprises are concentrated in three counties: Zhenping, Nanzhao and Zhechuan under Nanyang city. Nanzhao mainly produces tussah silk carpet. According to statistics, there were 31 carpet enterprises (limited liability company) and 9 private enterprises in 10 counties in Nanyang city in 2015. There were

more than 300 business owners, mainly engaged in the business of wholesale and retail of carpet and tapestry.

On the whole, the production scale and development level of the handmade carpet industry, as a part of the light industry, is uneven in the above provinces and cities. Thanks to their geographical advantage and preferential policies, handmade carpet industry in Xinjiang and Qinghai saw relatively stable development; while handmade carpet industry in Gansu and Sichuan was declining. Detailed reasons are given in the following text.

2.1.3 Export and market analysis of handmade wool carpet

According to customs data, China mainly exported several types of carpets: machine-made carpet, hand-knotted wool carpet and silk carpet. As a traditional Chinese handicraft, hand-knotted wool carpet was very popular in the international carpet market and was also a moneymaker in foreign markets. In recent years, due to market changes, and influx of handmade latex backed carpet and unauthentic knotted carpet, the export of hand-knotted wool carpet declined.

Customs data show that, the total export value of Chinese knotted wool carpet exhibited a downward trend in 2005–2008, fell sharply in 2009 (only 50% that of 2005), subsequently fell year by year to half of that of 2009 in 2014, then rebounded noticeably in 2015, almost a 100% jump.



Figure 1: Export value of Chinese knotted wool carpet in 2005–2015

In 2009–2014, the export volume of wool carpet maintained a downward trend, especially reached to the lowest point in 2012 and 2013, then almost doubled in 2015 (considering that the unit was changed from "square meter" to "kilogram" in 2009, data collected in 2005–2008 and 2009–2015 were incomparable, hence, only data collected in 2009–2015 were used in this report.)



Figure 2: Export volume of Chinese knotted wool carpet in 2009–2015

The unit price for China's exported wool carpet fluctuated between 11–17 dollar/kilogram in the past and exhibited an upward trend in 2009–2013. Such change in price was probably caused by the rise in the costs of factors of production. Especially in 2011–2013, the unit price climbed rapidly. In view of various factors, rapid decline in export volume in recent years also contributed to such change in the entire export market for "rare things are more precious". However, in the recent two years, the unit price for exported wool carpet fell slowly.

Generally, in the last decade, China's wool carpet exports exhibited a downward trend.



Figure 3: Unit price for Chinese exported knotted wool carpet in 2009–2015

With regard to export market, data about export volume and export value were collected. Take 2015 for example, the top 5 wool carpet-exporting countries were: the United States, India, Malaysia, Singapore, Angola. Moreover, Egypt, Nigeria and Australia were also important wool carpet-exporting countries. Among wool carpet-exporting countries, it is customary for people in religious countries like India and Malaysia to adorn their floor with carpet.

It is worth noting that though the United States was listed as the No.1 wool carpet-exporting country, its proportion was different (35% by export value and 47% by export volume.) Our preliminary conclusion is that the United States mainly exports middle- and low-end handmade wool carpet.

By export value, Turkey and Japan were listed as top 10 wool carpet-exporting countries. Data about export volume were not collected. It's easy to deduce that these two countries were among consumers for China-made middle- and high-end handmade wool carpet.

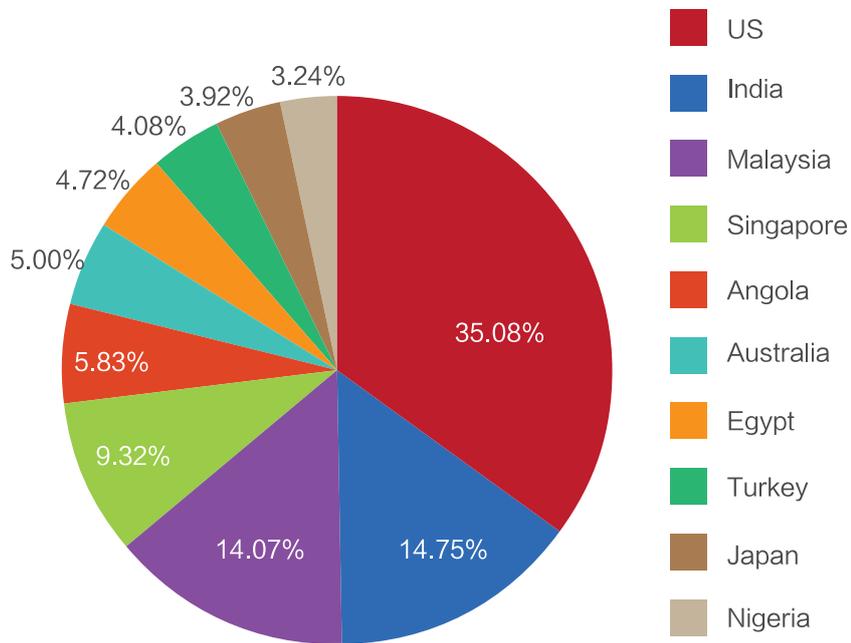


Figure 4: Top 10 wool carpet-exporting countries in 2015 (by export value)

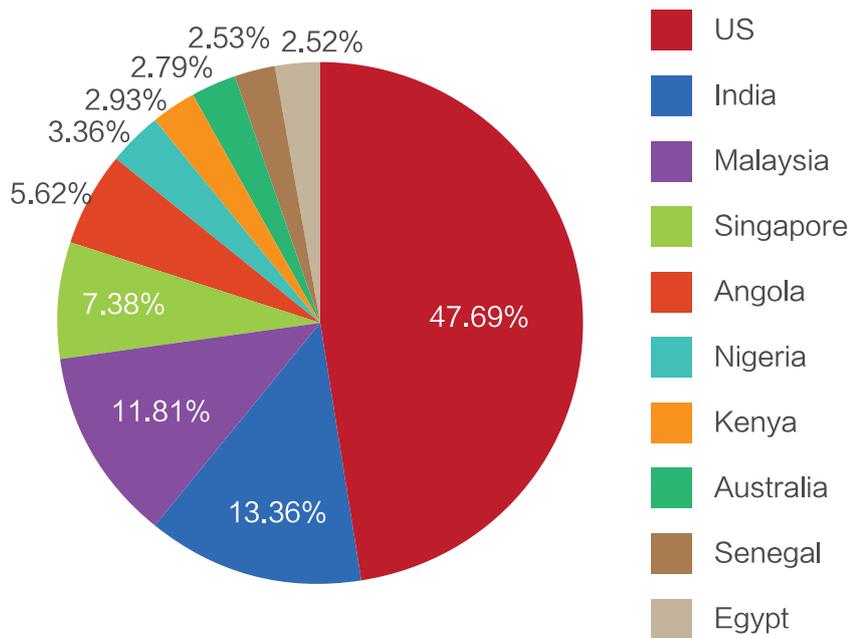


Figure 5: Top 10 wool carpet-exporting countries in 2015 (by export volume)

2.1.4 Import and market analysis of handmade wool carpet

According to statistics, China's handmade wool carpet imports exhibited an upward trend in 2010–2015, up by 44.36% year-on-year in 2012, fell slightly in 2013 and 2014, and up by 36.32% in 2015.

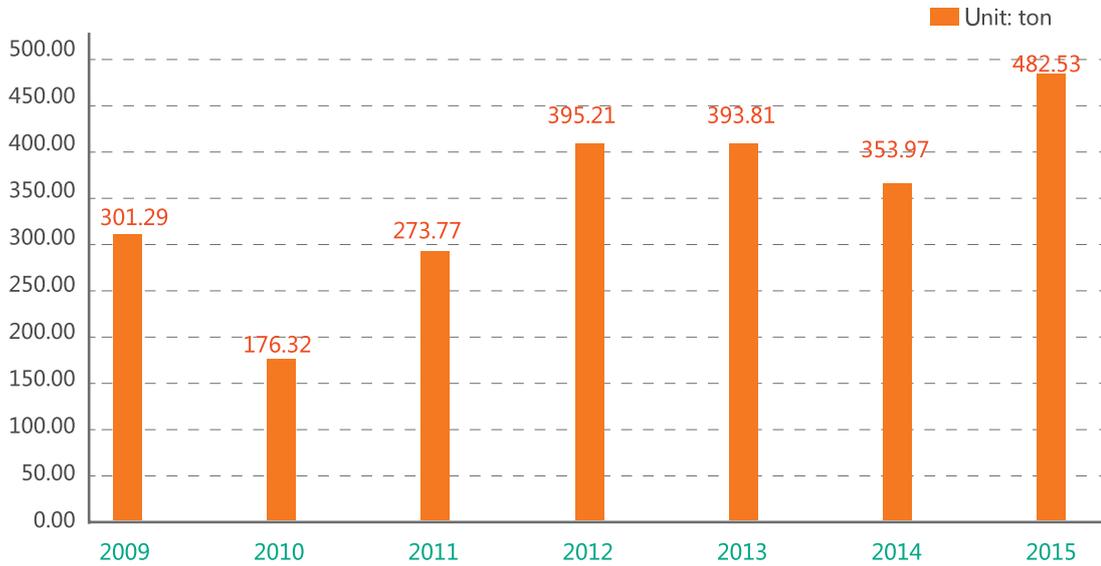


Figure 6: Import volume of Chinese hand-knotted wool carpet in 2009–2015

The import value of China's handmade wool carpet exhibited strong upward trend in 2009–2013, up by 79.72% year-on-year in 2012, fell slightly in recent two years.



Figure 7: Import value of Chinese hand-knotted wool carpet in 2009–2015

Generally, China's handmade wool carpet imports exhibited an upward trend. Due to lack of sales data, it is believed that the following three factors contributed to such change: first, as part of their life necessities and their financial situation improves, ethnic minorities can afford to and are willing to buy imported carpets; second, as the housing market continues to heat up, people tend to spend more on interior decorative items, which in turn drive the growth of imported handmade carpet; third, as the population of high-net-worth people grows in China in recent years, their living style and consumption habit also become westernized and they prefer to spend money on collectibles and luxuries. In conclusion, imported high-end Persian carpet, as a luxury item, will be favored by these people.



Figure 8: Unit price for Chinese imported knotted wool carpet in 2009–2015

2.1.5 Export analysis of China's handmade silk carpet

Among various types of handmade carpets, silk carpet is the one with the highest added value, especially the silk tapestry with high lines, which has high artistic and collectible value. With a relatively high price in foreign markets and small export volume, the silk carpet production is relatively stable. However, since 2011, exports of silk carpet fell dramatically, till 2015, the export value of silk carpet only accounted for 30% that of 2010, while the export volume of silk carpet accounted for less than 25% that of 2010----such change was closely correlated with cutback in spending due to global economic recession.

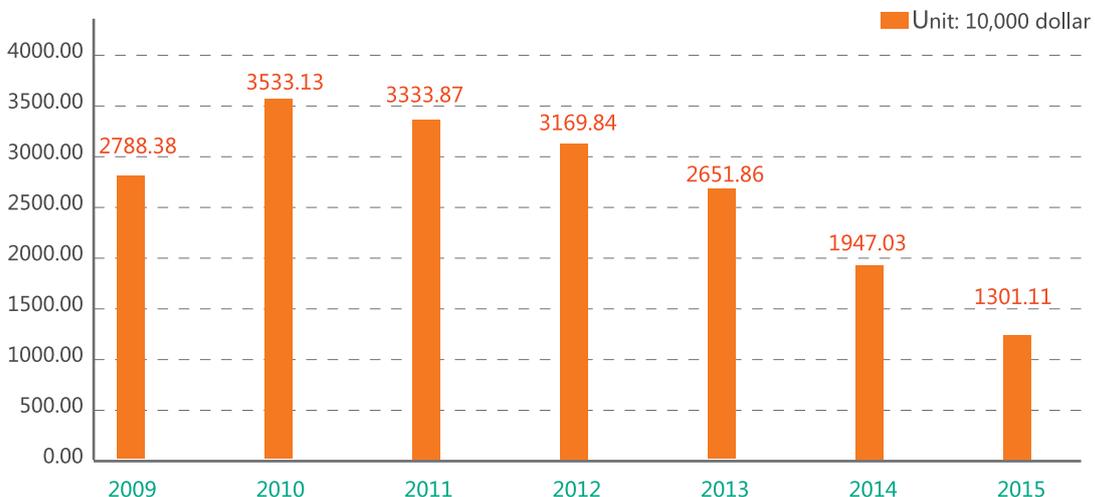


Figure 9: Export value of Chinese handmade silk carpet in 2009–2015

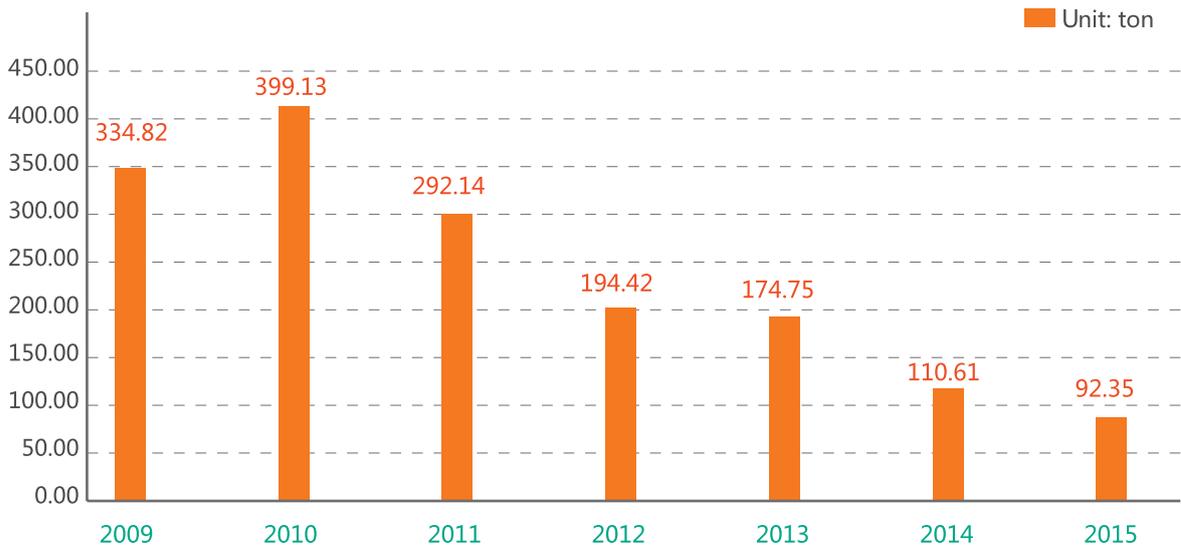


Figure 10: Export volume of Chinese handmade silk carpet in 2009–2015

2.2 Worker analysis

(1) Basic information of respondents

During field survey, we distributed questionnaires to front-line workers, including those working on weaving, washing, packing lines, etc., and in sales department. Based on the recovered questionnaires, we noticed that handmade carpet factories employ more women than men, accounting for 69.4%. Generally speaking, women are the mainstay of the handmade carpet-weaving profession. In terms of gender and age, women aged 35 and above (35–45, 45 and above) account for 37.5%, men aged 18–30 (18–25, 25–30) account for about 16.6%.



Figure 11: Worker's gender and age

In terms of education, most of workers have a middle school diploma and a high school diploma, accounting for 26.1% and 37% respectively. Factoring in age factor, we noticed that 13% of workers aged 45 and above have a high school diploma or above; while 10.9% of workers aged 25–30 have a middle school diploma. Unexpectedly, over 20% of respondents have an associate degree or above, and 4.3% of respondents have a master degree. Factoring in education and position, we noticed that respondents with a master degree are middle-level managers. This shows that today's workers are receiving more education.

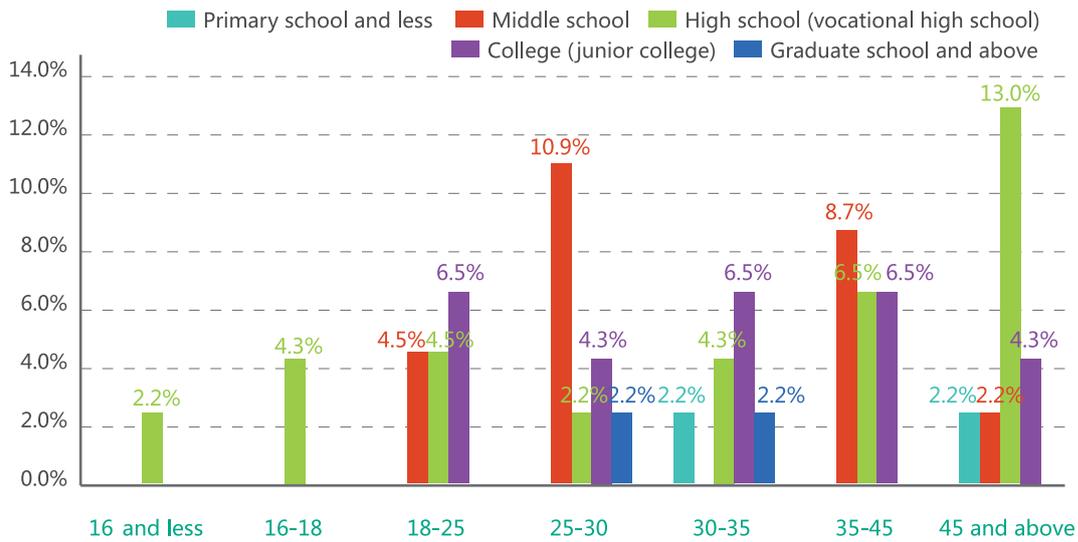


Figure 12: Worker's age and education

In terms of worker's ethnic group, 58.3% of respondents are Han people, the rest are Hui people. Due to language barrier, only a small percentage of ethnic Wei and Tibetan people filled the questionnaire.

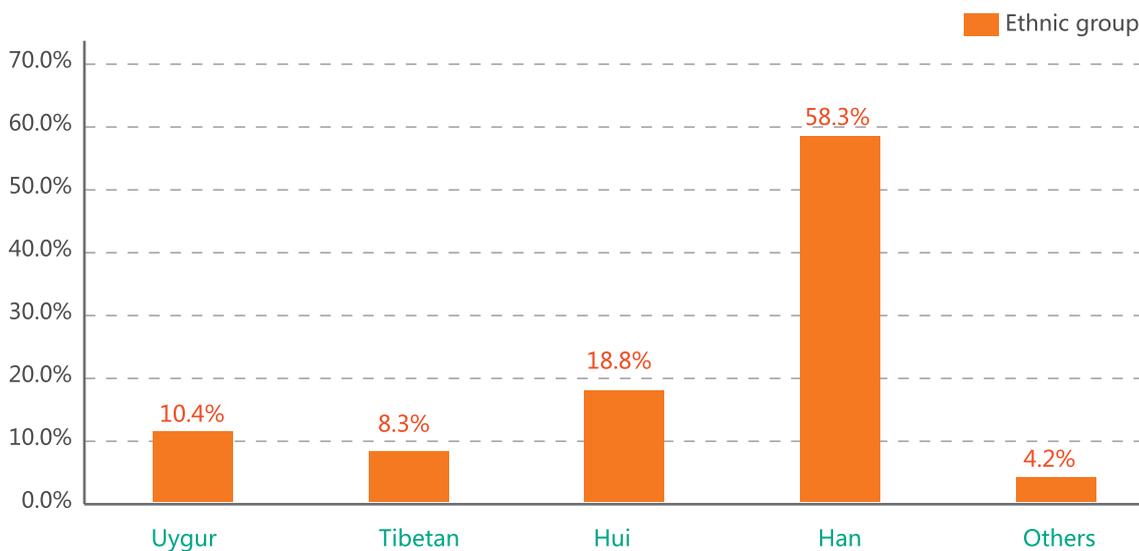


Figure 13: Worker's ethnic group

In terms of years respondents working in this industry, 18.6% of workers worked for 1–2 years, 39.5% of workers worked for over 10 years. Factoring in age, 18.6% of workers aged 35–45 and 16.3% of workers aged 45 and above worked in this industry for over 10 years. We think the possible explanation is the low entry barrier for entering this profession. As long as workers are willing to make an effort, they can master the skills in a year and become proficient in two years. However, due to the dull working environment, not everyone can stick it to the end. For those who can work in this field for over 10 years, they are out of two reasons: first, their employers are of collective or state ownership (such employers usually offer generous retirement package), second, their passion for this craft.

CASE 01 Wang Guoying, inheritor of Beijing palace carpet

After graduating from Carpet Technical School in 1985, she was assigned to Beijing No.5 Carpet Manufacturing Plant. In the last 30 years, she has been working in the profession of weaving carpet. Now, she is known as the inheritor of municipal-level intangible cultural heritage. Under the leadership of experts in 2003, Beijing No.5 Carpet Manufacturing Plant set up a palace carpet rescue team. Wang Guoying and her master Kang Yusheng, national-level palace carpet-making craft inheritor are members of this rescue team. They have spent more than two years to study the well-preserved gold silk carpet in the Palace Museum and have successfully revived the gold silk carpet-making craft. Luckily, during the process to rescue such craft, they also revived another intangible cultural heritage, i.e. gold foil thread-making craft.

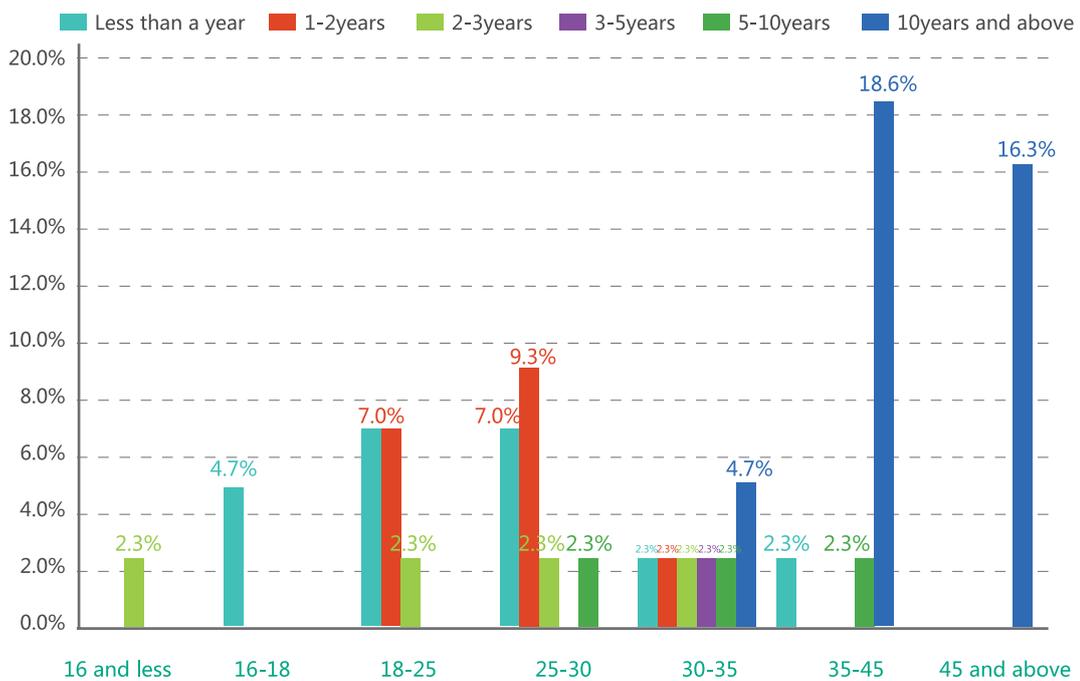


Figure 14: Worker's age and working years

In terms of respondent's age and position, 43.5% of respondents are grass-roots workers, 26.1% of respondents are lower-level managers, 19.6% of respondents middle-level managers, and the rest 10.9% of respondents are senior managers or owners. In terms of age, grass-roots workers are between 16–45 years old and above, lower-level managers are between 35–45 years old, and middle-level managers are 45 years old and above.

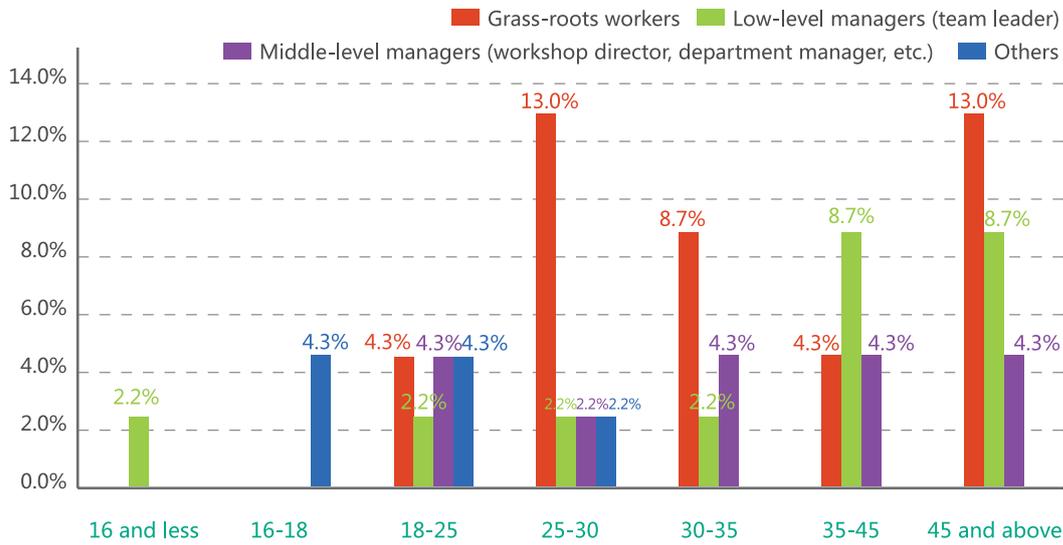


Figure 15: Age and position

In terms of native place, most of workers are native-born workers (in the city or county, 76.1%) or (in the province, 15.2%), while non-native workers only account for less than 8.7%. This shows that handmade carpet industry basically creates jobs for local people and does not attract a lot of non-native workers.

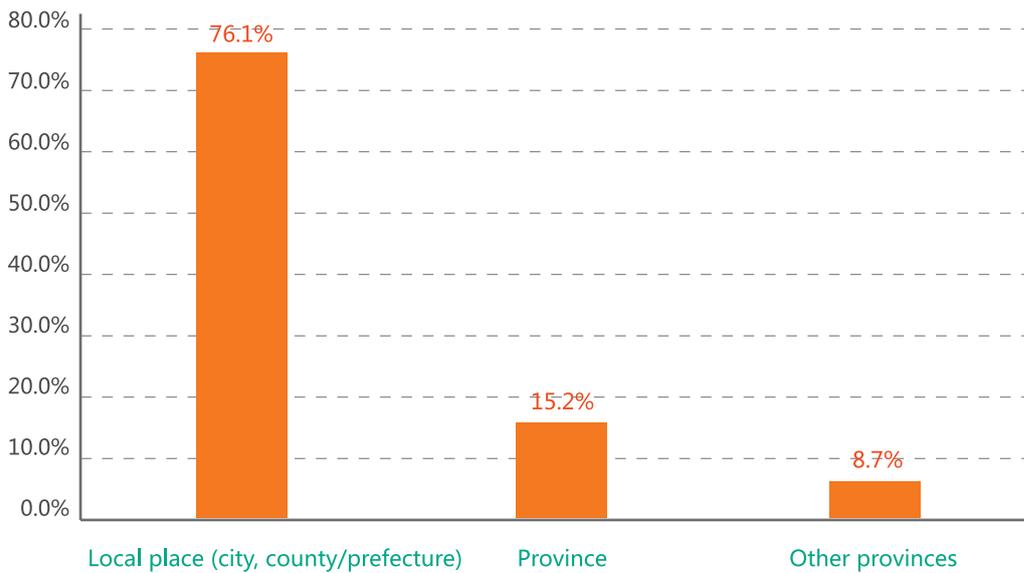


Figure 16: Respondent's native place

As to previous profession before engaging in carpet-related work, statistics show that 54.2% of respondents were student, aged between 16-45 years old and above (22.9%). This shows that some of the respondents started working in the handmade carpet industry after graduating from school and have stayed in this profession. Moreover, 22.9% and 12.5% of workers were working in other industries and engaged in farming.

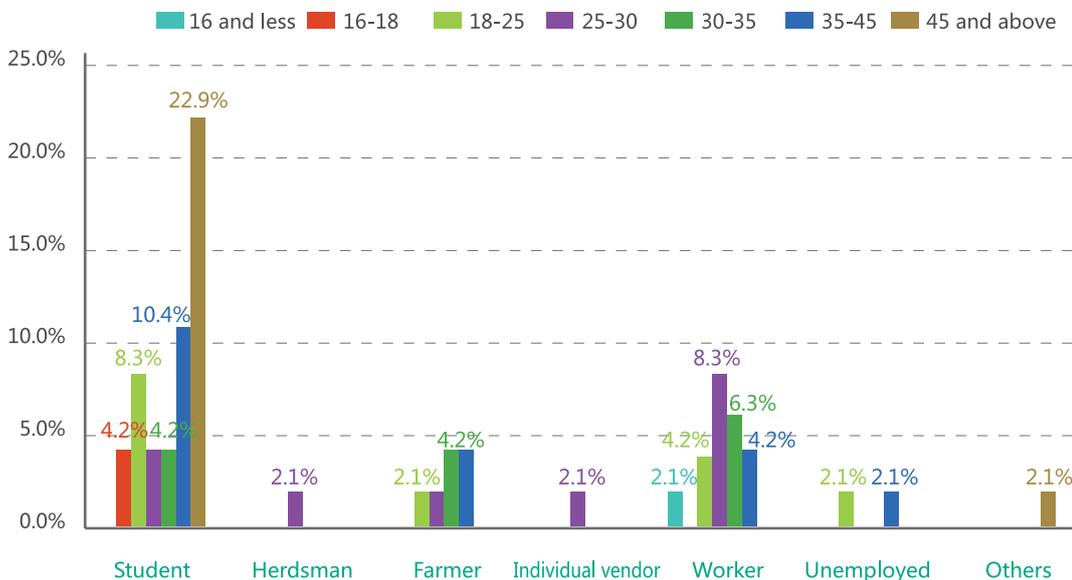


Figure 17: Previous profession before engaging in carpet-related work

(2) Respondent's working time, salary and benefits, etc.

As to respondent's monthly salary, 20.8% and 22.9% of respondents earn 1500-2000 and 2000-2500 yuan per month respectively, 14.6% and 12.5% of respondents earn 3500-4000 and 2500-3000 respectively. Factoring in age and salary, 6.3% of workers aged 25-30 earn a relatively high salary (3500-4000 yuan), while 12.5% of workers aged 45 and above earn a relatively low salary(1500 yuan and less). This shows that workers in the carpet-processing industry are paid poorly, this may has a lot to do with the underdeveloped economy and lackluster carpet industry in the west region.

In terms of position and salary, workers with the highest salary (5000-6000) are not those with the highest education, 66.7% hold a high school (vocational high school) diploma, 33.3% hold a middle school diploma. For those with highest education, 2.1% earn 3500-4000 yuan and 2.1% earn 4500-5000 yuan. This data shows that income and education are not necessarily correlated.

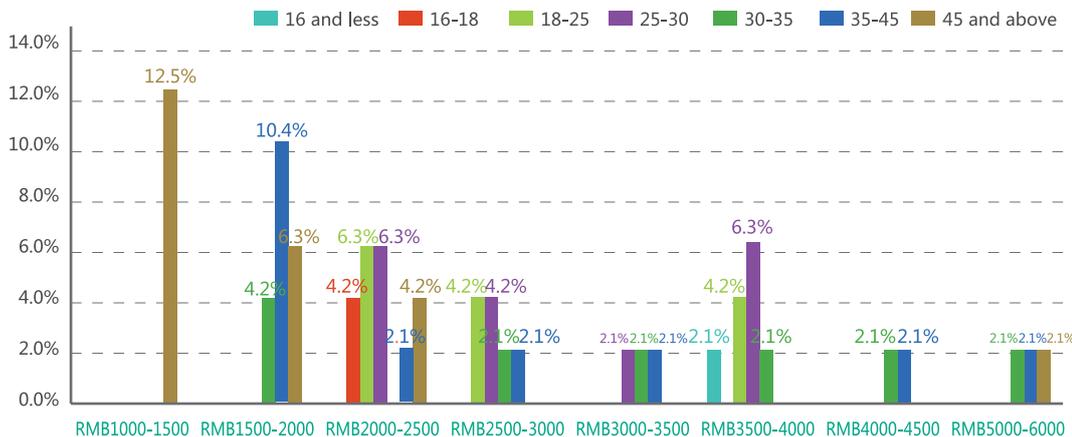


Figure 18: Worker's monthly salary

Figure 19, 20 and 21 show that most of workers (80.8%) work 10–26 days a month, and 17% of workers work over 26 days a month. 47.9% of respondents work less than 8 hours a day, 47.9% of respondents work 8–10 hours a day, and the rest 4.2% work over 10 hours a day. About 60% of respondents work extra 5 hours or less a week. This shows that workers working in carpet industry are paid by the pieces of work they completed, but most of workers work in normal hours and receive overtime pay as per national labor law.

As for overtime pay, 91.5% of respondents say that they received overtime pay, of whom, 72.3% saying that their overtime work was paid as per national labor law, while 12.8% saying that they haven't heard about such law, 6.4% saying that their overtime work was not paid as per national law. This shows that miscommunication concerning overtime pay between some carpet enterprises and their workers exist.

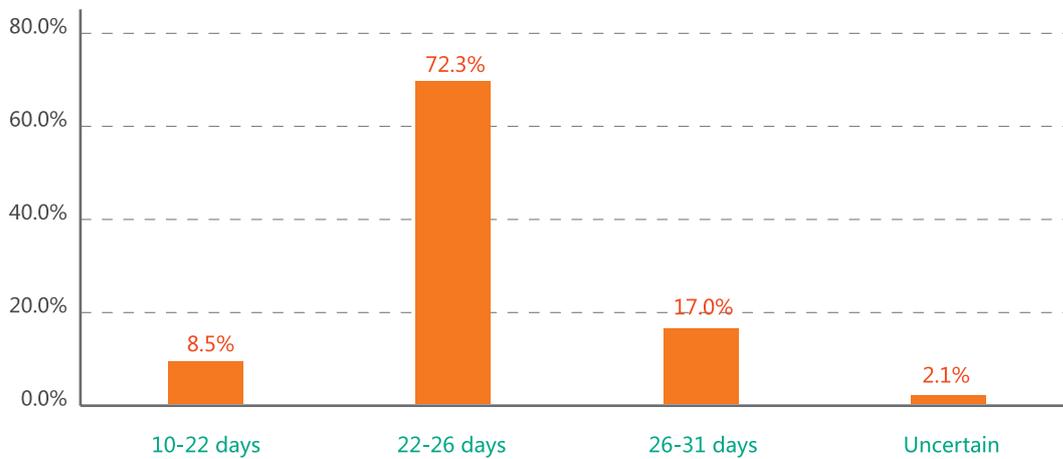


Figure 19: Working days per month

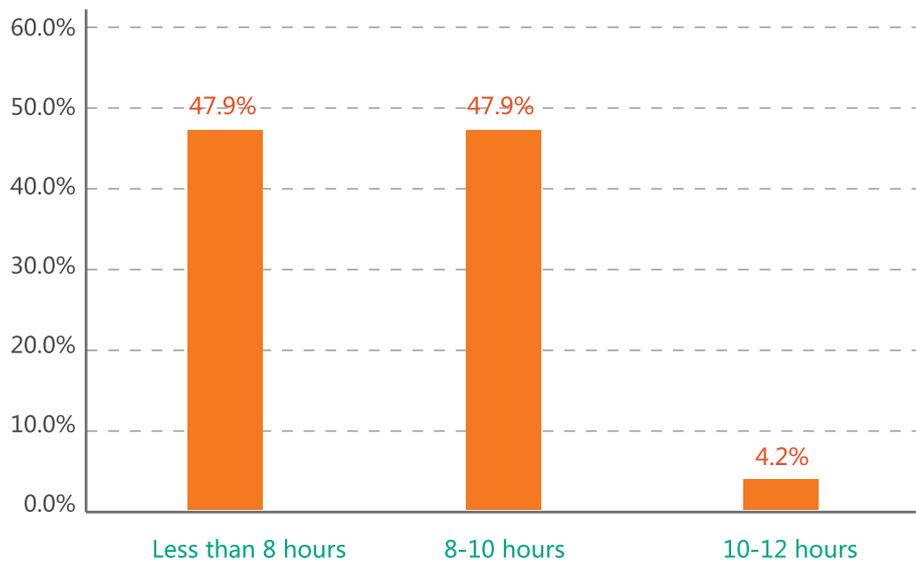


Figure 20: Working hours per day

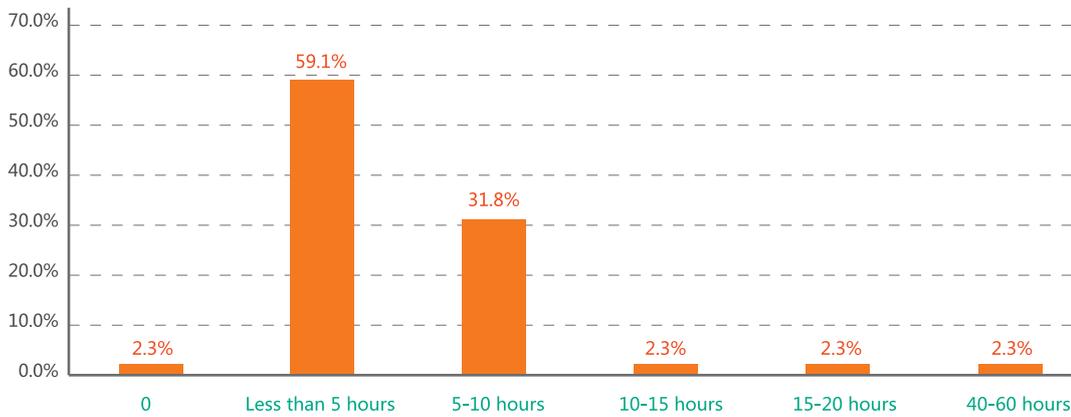


Figure 21: Overtime work per week

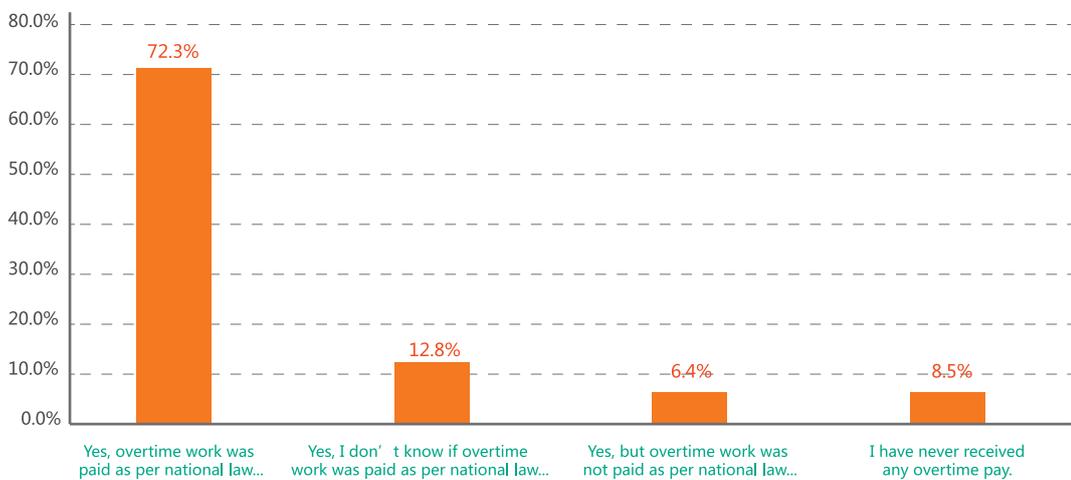


Figure 22: Overtime pay

On the question of social security, 87% of respondents say that they are covered by social insurance, 13% of respondents say that they are not covered by social insurance, 45.5% of respondents say that "I don't want to buy social insurance;" 22.7% of respondents say that "I want to buy social insurance, but the company does not approve," and 31.8% of respondents say "I don't know anything about social insurance." On the question of employment contract, 78.7% of respondents say that they signed employment contract with the company, the rest

say that they did not sign any employment contract. Details are as follows: 20.0% say that "the company refuses to sign employment contract with me," 30.0% say that "I myself don't want to sign employment contract, it does not matter either way," 10.0% say that "I don't know," 30.0% say that "Both the company and I don't want to sign employment contract."

(3) Respondent's opinion on pay and job prospect

When asked "do you think your pay is high or low considering your workload?", 12.8% of respondents say that "their pay is high considering their workload", 42.6% of respondents say that "their pay is proportional to their workload", 38.3% of respondents say that "their pay is low considering their workload", 6.4% of respondents say that "their pay is too low." Among them, workers aged 45 and above (6.3%) are most satisfied with their pay; workers aged 16–18 (4.3%) are least satisfied with their pay.

On the question "if your pay is enough to cover your basic necessities", 10.6% of respondents say that "it's enough to cover my basic necessities and there is a little left," 48.9% of respondents say that "my pay barely covers my basic necessities," 40.4% of respondents say that "not enough to cover my basic necessities." On this question, workers aged 30–35 (6.4%) are most satisfied, while workers aged 45 and above (10.6%) are least satisfied.

When asked "what do you think of the carpet industry?" 74.3% of respondents say that it looks promising; 8.6% of respondents say that "not promising", 17.1% of respondents say that "no idea".

On the question of "if you are satisfied with your work (pay, environment, etc.)", 48.9% of respondents say that "satisfied", 34.0% of respondents say that "it's ok," 17.0% of respondents say that "not satisfied." Among which, workers aged 25–30 (12.8%) are most satisfied, and workers aged 45 and above (10.6%) are least satisfied.

(4) Labor relation

When asked "if you have any ideas, suggestions or complaints, are there any ways for you to voice them?", 35.6% of respondents say that "they will tell to their managers' face", 28.9% of respondents say that "they will tell to their co-workers", 22.2% of respondents say that "there is no way, I can only keep it to myself." Among which, 17.8% of respondents aged 45 and above say that "there is no way, I can only keep it to myself"; while 11.1% of respondents aged 25–30 say that "they will tell to their managers' face." This shows that workers in different age bracket adopt different approach to solve problems and communicate with their managers. Older workers tend to be more conservative in this respect.

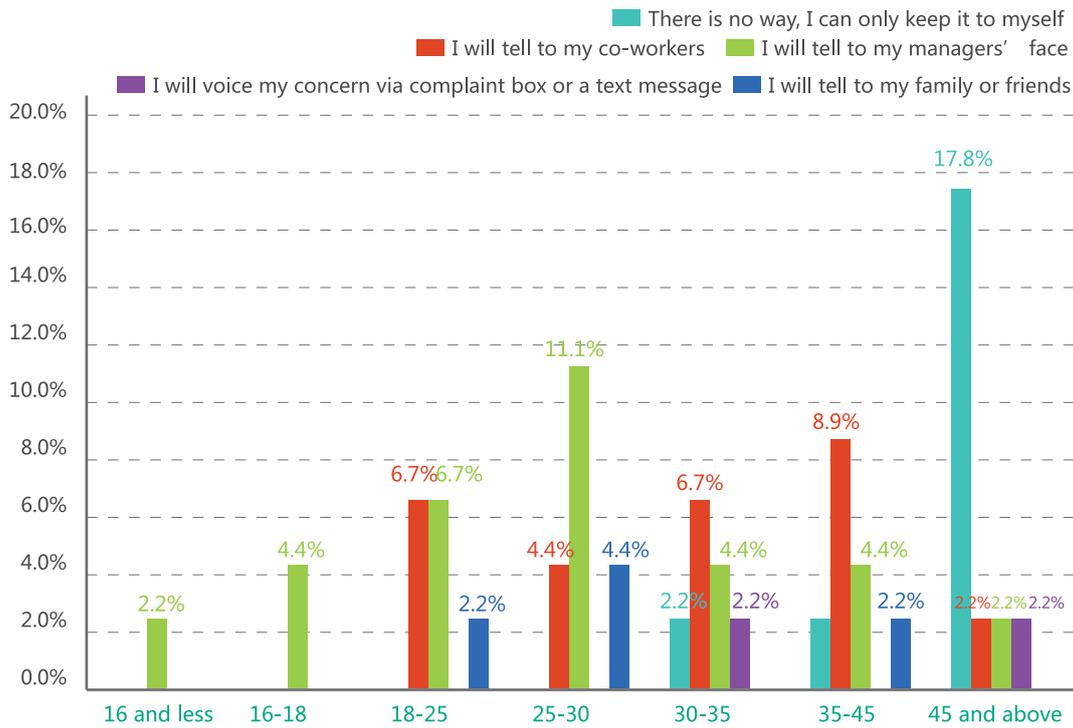


Figure 23: "How to give your feedback regarding work?"

2.3 Social impact

As a traditional industry in survey areas, handmade carpet industry at least has 30 years of history. Many enterprises were quite large in size and influential back then, and made important contribution to the local economy at that time. Despite its decline in recent years, the carpet industry still has significant social impact.

1

Create job opportunities and attract surplus labor forces. Most of the surveyed enterprises are collectively-owned enterprises or cooperatives in the cities. Most of them are small and medium-sized enterprises. Some has over 50 years of history, and play a vital role in creating job opportunities for labor forces. For example, creating job opportunities for surplus labor forces, returned intellectuals, staff's children, and laid-off workers. At present, many carpet enterprises internalize some orders and outsource the rest to individual households to process. This mode of production not only creates new job opportunities, but also offers a way for nearby rural residents and women to earn a living.

2

Help ethnic minorities lift themselves out of poverty. The key lies in "blood production" instead of "blood transfusion." Specifically speaking, we should leverage ethnic cultural advantage and rich natural resources to develop the handmade carpet industry, and fully tap local people's enthusiasm to come up with new ways to get out of poverty.

C 02 Social responsibility of handmade carpet-making enterprise
ASE

Xinjiang Gulhan Handicraft Carpet Co., Ltd. is a small handmade carpet-making enterprise in Hotan. The owner is a Uyghur woman who has a sense of modern enterprise management. We noticed three items on the walls of the workshop: one is a LCD TV, which is used to entertain workers; second is an electric heater with cups sitting beside it; third is a price list in Uyghur language, specifying the price for each process. In the factory yard, we also noticed a shower room and a swing. Two children were playing while their moms were weaving carpet in the workshop. On the honor board in the office, we also noticed ten certificates testifying its contribution for the education cause.



Photo 10: Honor certificates of an enterprise surveyed

2.4 Development mode

2.4.1 Development challenges faced by the handmade carpet industry

In retrospect, China's handmade carpet industry in most provinces like Gansu and Henan all experienced a cycle of rise (in the 1970s), boom (in the 1980s and 1990s) and decline (in the 21st century). Thanks to China's open-door policy, the handmade carpet industry not only witnessed China's economic prosperity, but also rapid changes in the global economic landscape.

CASE 03 Changes in carpet industry in Nanzhao, Henan

Nanzhao county in Nanyang, Henan has long kept the tradition of raising silkworms and spinning yarns. Since 1970s, this place started to produce silk carpets, which were sold to more than 40 countries and regions. In the 1980s, there were more than 30 silk carpet factories in Nanzhao county alone, and 80% of rural residents were also engaged in the business of carpet processing. After 2000, the carpet industry in Nanzhao started to decline, many factories went bankrupt and the once booming silk trade market was also closed. At present, there is only 1 large enterprise that is still in business.

CASE 04 Glorious past of the carpet industry in Tianshui, Gansu

Some carpet factory was established in 1954 in Tianshui city, Gansu province. Its products once won many prizes and were sold to more than 10 countries and regions including Europe and Japan. At its glorious days, the factory hired over 3000 workers. However, in 2015, there were only 60 and more people left and the factory only created an annual output value of more than 1 million yuan, 3% of the total value in 1997.

The once glorious handmade carpet manufacturing industry was declining, and there are only a few enterprises left. Some of the enterprises have resorted to diversifying their business to make up the loss in carpet business, such as invest in real estate, plant nurseries and lease property, etc. These enterprises are struggling to make ends meet, some even saying that they will close up after the last worker gets retired. 30 years on, a lot has changed, what did the handmade carpet industry go through?

"I was very young when I set up this carpet factory. I personally oversaw the building of factory, applied for loans, took care of retired worker, etc. Then the factory grew bigger. We were placed at the third place and the first place by output and quality respectively... Even today, I still have the factory's drawings, some advised me to sell them, but I find it hard to do so."

—Mrs. Li, General Manager of Tianshui xx Carpet Factory

Based on the information we gathered, we find that the industry currently faces the following challenges:

1.Labor cost: Chinese labor cost has grown dramatically in the past ten years, which has great impact on many labor-intensive industries. Compared with other labor-intensive industries, cost of handmade carpet industry is made up of two parts: raw materials and labor costs. So increase in labor cost has far greater impact on the carpet industry than textile and electronic industries, etc. As labor costs rise, the pay also rises. To hire

"Job seekers claim to not consider the position without 5,000 yuan a month, what has the world come to? They all want a cushy job without doing any actual work."

—A HR manager from an enterprise in Gansu when asked about hiring

workers, employers have no way but to offer higher pay. In the past 15 years, the worker's average income grew by 5.5 times from 9371 yuan in 2000 to 52357 yuan in 2015. However, the selling price of handmade carpet did not go up accordingly. Instead, the selling price of the silk carpet, which was sold at the price of more than 100,000 yuan, is far lower than its pricing back then.

Employment trends: one is upward trend in salary, the other is "difficulty in recruiting workers". For the mainstay workforce born after 1980 and 1990, a job in the tertiary industry where no sophisticated skills are required and the workload is small looks far more appealing than the dull and monotonous job in the carpet industry. Catering, hotel and service industries also attracted a large batch of young workers, making the labor shortage situation worse. Moreover, Chinese has long held the view that school education was more important and useful compared with other pursuits. In the countryside, children who were enrolled into colleges normally won't return to their native place after graduation, while children who failed to get into colleges are not willing to do heavy manual work, not to mention to work in the time-consuming, laborious and low-paying carpet-weaving industry.



Photo 11 : 200-year-old weaving machine

2.Craft inheritance: like many traditional handicraft, there might not be anyone to inherit the carpet-weaving craft. From the perspective of talent cultivation, a majority of art colleges in China do not have "handmade carpet"-related majors. Even college students who received professional training in traditional arts and crafts, switch to graphic design-related jobs after graduation. The "master-apprentice" program is not nearly enough for training qualified artisans. In an age where efficiency and speed prevail, both master and apprentice find it impossible, both finance and time-wise, to survive the "sadhu"-like training process. Moreover, "family inheritance" is not the best option for carpet weavers and the next generation.

"Nowadays, the youngest worker is over 30 years old, there are no 20 something workers. Workers of my generation started to weave since over 10 and I have spent half of my lifetime weaving. For another 3 and 5, my eyes won't be any good."

—A female worker from Zhenping, Henan

"Personally, I think it doesn't make any sense not to protect handmade carpet, for it is a Chinese traditional craft and a light textile handiwork. You see, a folk song is protected, why not handmade carpet?"

—A General Manager from a carpet enterprise in Gansu

3.Comsumption habit: consumption habit plays a role in the decline of handmade carpet industry. In the 1990s, carpet was a much sought-after commodity and people considered carpet as a symbol of wealth and their artistic taste. However, more than 20 years later, a simple, easy-to-maintain decoration style was the trend, catering to people's fast-paced lifestyle. This reshaped people's understanding and consumption habit. Now, people shy away from the expensive and not-easy-to-clean carpet. This is also one of the reasons why the sales of handmade carpets went down in China.

4.Impact from machine-made carpets and unauthentic carpets: machine-made carpet appeared in the 1970s. At present, Axminster and Wilton are commonly used in China. Machine-made carpet is woven by interlacing warp, weft and pile yarns, applying latex and cutting pile, etc., these processes are all completed by machine, for it has a high efficiency and a large yield. To my knowledge, one loom can produce 500 square meters of carpet per day and it only takes 6-9 persons to operate in turn. Machine-made carpet with high yield and low cost is usually sold at a price from a dozen yuan to a few hundred yuan per square meter, which is far lower than that of handmade carpet (a few thousand yuan per square meter). Moreover, the market is also flooded with unauthentic handmade carpets, which are pieced together using machine-made carpets. These fake handmade carpets are sold at a low price to consumers who can't tell the difference, this also had an adverse effect on the handmade carpet industry.

C 05 Impact from cheap Nepal-produced Tibetan carpet
ASE

Due to cheaper raw materials (cheap wool from Australia, New Zealand and Tibet) and low wage, Tibetan carpets produced in Nepal are cheaper. Starting from 2006, Nepal-produced carpets flowed into our market and accelerated their pace of flowing in 2008 and 2009. Their sales offices were visible all over the country. Hence, the sales of locally-produced Tibetan carpet were adversely affected. For example, for a same-size Tibetan carpet, it takes 5700 yuan to make the carpet in Tibet, while it only takes 3000 yuan to buy one (tag price is 6000) made in Nepal.

(From Several Opinions on the Impact of Foreign Cheap Tibetan Carpet on China Tibetan Carpet-producing Enterprises by Tibet Tibetan Carpet Association)

5.Taxation: a topic merits special attention is tax. As productive enterprise, carpet factory is listed as general taxpayer (except areas inhabited by ethnic minorities), and needs to pay 17% VAT. Considering worker's salary is counted as tax base for VAT, so this portion of tax is actually rather high. During survey, many enterprises in Gansu, Qinghai, Henan, all voiced their concern. Considering the handicraft industry is very sensitive to labor cost, high taxes will squeeze enterprise's profit margins and is an important factor in pricing. But to export-oriented enterprises, taxes mattered little to them for the tax money would be offset by tax rebates. However, as they export less and less handmade carpets to foreign countries in recent years, enterprises who didn't care about taxes in the past started to pay attention to this issue.

6.Industry standard: what constitute a premium handmade carpet? After many years of practice, enterprises have formed their own set of standards, which are based on experience and not tested by science. However, these experience alone is not enough to meet the needs of modern carpet enterprises. In recent years, some local governments and industry organizations have started to pay attention to the preparation of carpet standards, for example, relevant department in Hotan, Xinjiang rolled out five carpet standards in 2014, including Hotan Handmade Wool Carpet, Hotan Wool, Technical Specification for the Production of Yarn Used for Making Hotan Carpet, Dyeing Process Regulation for Hotan Carpet and Steel Carpet Frame for Hotan Carpet, which have provided scientific basis for improving the quality of Hotan handmade wool carpet; Hand-knotted Tibetan Carpet drafted by enterprises in Qinghai also was approved in 2008 and became a national standard. Generally speaking, handmade carpet standards basically equal to international ones. Moreover, handmade carpet standards cover almost all products, and can meet their production and inspection needs at present and help factories make relatively high quality products. However, in practice, there is no one to supervise the implementation of standards, which in some degree resulted in inconsistent quality.

S/N	Standard Name	Type
1	GB/T 15050-2008 Hand-knotted wool carpet	National standard Product standard
2	GB/T 22768-2008 Hand-knotted Tibetan carpet	National standard Product standard
3	GB/T 27729-2011 Hand-made, gun-tufted and latex backed carpet	National standard Product standard
4	QB/T 2215-1996(2009) Hand-knotted silk carpet	Industrial standard Product standard
5	QB/T 2756-2005(2014) Hand-woven Aubusson-basilica carpet	Industrial standard Product standard
6	QB/T 1085-91 (2009) Pure cotton warp and weft for making hand-knotted carpet	Industrial standard Raw material standard
7	QB/T 2518-2001 Carpet yarn	Industrial standard Raw material standard
8	GB/T 28476-2012 Carpets direction for use and labels	National standard Basic standard
9	GB/T 26847-2011 Textile floor covering—Vocabulary	National standard Basic standard
10	QB/T 2213 - 96 (2009) Classification and denomination for carpet products	Industrial standard Basic standard
11	GB/T 15964-2008 Carpets -Determination of number of tufts or loops per unit length and per unit area	National standard Test method standard
12	GB/T 15965-2008 Methods for measuring the length of handmade carpet pile	National standard Test method standard
13	QB/T 1086-91 (2009) Hand-made carpets - Sampling and selection of areas of tests	Industrial standard Test method standard
14	QB/T 2214-1996 (2009) Determination of dimension and shape of carpets	Industrial standard Test method standard
15	QB/T 3647-99 (2009) Sampling inspection rules for handmade carpets	Industrial standard Test method standard
16	GB/T 4736-2014 Test method of the quantity of shedding of hand-made wool carpets	National standard Test method standard
17	GB/T 28483-2012 Environmentally friendly rubber latex for carpet application—Carboxylated styrene-butadiene rubber latex and limitation of hazardous substances	National standard Test method standard
18	QB/T 3646-1999 Determination of the color of the carpet yarn dyed	Industrial standard Test method standard
19	GB/T 10685-2007 Wool-Determination of fiber diameter -- Projection microscope method	National standard Test method standard
20	GB/T 6501-2006 Test method for measure length of the wool fibre	National standard Test method standard
21	GB/T 6500 Test method for moisture regain of hair fibers—Oven method	National standard Test method standard
22	GB/T 2910-2009 Textiles-Quantitative chemical analysis-Part 1-24	National standard Test method standard

Table 2 Existing handmade carpet-related standards
(provided by China Carpet Industry Association under China Arts and Crafts Association (CCIA))

2.4.2 Opportunities in handmade carpet industry

Challenges and opportunities co-exist in the handmade carpet industry. In the past 30 years, China seized opportunities and experienced rapid development. At present, in a world where the economic, technological and environmental landscape is being reshaped, Chinese economy has entered into a stage of new normal: comprehensive reform is being promoted at a rapid pace and many new opportunities are presented. In this environment, we believe the carpet industry will break through its own bottlenecks and find a new way of development.



Photo 12: machine-made carpets

Capitalize on opportunities presented by "mass entrepreneurship and innovation" to develop handmade carpet industry.

Chinese premier Li Keqiang raised the concept of "mass entrepreneurship and innovation" in 2014 for the first time, and stated in the 2015 government work report that the benefits of promoting this campaign: it will not only create more jobs and increase people's incomes, but also improve upwards social mobility and social equity and justice. "While creating wealth, people will be able to meet their cultural and intellectual needs and realize their full potential in life". The proposal of mass entrepreneurship and innovation has brought opportunities for the traditional handicraft industry.

Due to low entry barrier, little capital requirement and flexible employment, people are more easily persuaded to start businesses in the handmade carpet industry, thus creating new job opportunities and unlocking new demands. College graduates, laid-off workers, rural surplus labor, the disabled, are ideal candidates for starting businesses as a way to get employment.

2) Located in the middle-west regions, carpet industry has ample room for growth, and is the best test ground for the "Internet Plus" action plan. With the help of convenient IT technology, scattered factories, workshops and salespeople are easily connected, thus realizing seamless connection of production, sales, logistics and other links. E-commerce has provided a new platform and a sales channel for merchants in China's western countryside to sell their traditional handicrafts online.

3) Combining mass entrepreneurship and innovation with handmade carpet industry is conducive to capture market trends and demand information, increase the added value of labor-intensive products, and upgrade the driving powers. Moreover, handmade carpet enterprises can also move into service business and introduce high-quality customer-oriented services.

Under current conditions, the handmade carpet industry has the quality of "new productive force", and revitalizing the industry is an important dimension to address the issue of growth drivers. Encouraging people to start businesses in the traditional industry can unlock maximum potential of the industry.

Photo 13: machine-made carpets



Revitalize the handmade carpet industry to realize national rejuvenation.

Chinese traditional culture was a product of all ethnic groups in the past several thousand years. In the history of Chinese civilization, many skilled craftsmen were born in the handicraft industry. They had left numerous masterpieces and witnessed the evolution of Chinese history. Fine traditional handicrafts have great cultural and historical significance. China's handmade carpets, be it Tibetan carpet, Xinjiang carpet, Ningxia carpet... are crystallization of our ancestor's wisdom, aesthetic taste and creativity. In an industrialized world, people are becoming more and more dependent on standardized machine-made products. Until recent decade, traditional handiworks have come back to people's life and have attracted more and more attention.

The following were proposed in the 13th Five-Year Plan: "We should carry forward China's cultural traditions, develop a system for carrying forward fine traditional culture and realize creative shift and innovative development of the Chinese civilization, spread fine traditional culture and include it in Chinese education... We will work to protect and carry forward intangible cultural heritage, revitalize traditional handicraft industry, carry forward and develop traditional drama. We will promote the development of folk culture and ethnic minority cultures, support the development of non-governmental cultural and social organizations." The fact that government takes initiative in planning, promoting and revitalizing traditional handicraft industry carries great significance. Revitalizing the industry means to carry forward Chinese traditions and rebuild Chinese cultural confidence, revitalize Chinese culture and creativity, and rejuvenate national industry. This requires joint efforts from social and economic entities to rebuild the contemporary value of traditional handicrafts from the perspective of cultural cultivation, legal protection, industry planning, design conversion, national education and academic construction.



Photo 14: manual spinning wheel at the Tibetan carpet fair

Under the influence of traditional technique, handicrafts like carpet are rich in cultural elements and is a representative product of industrial innovation. As an integral part of intangible cultural heritage, handmade products vary from place to place in cultural significance and inheritance. As to revival and development of the handmade carpet industry, in the short term, we need to take specific measures to address immediate problems and improve protection and development mechanism; in the long term, we need to take the cultural landscape into consideration, create an enabling environment where craftsmanship is fostered, and our maker-philosophy is enriched and inherited, and the value and content of our traditional handicrafts are respected and valued, as part of the efforts to promote the inheritance, renewal and development of our traditional handicrafts in today's economy and culture. In a world where information technology experiences rapid development, traditional handicrafts still manage to exhibit vitality. We need to leverage various centers' new technologies and means to unlock market demands for traditional cultural products and present our glorious history and cultures to the world.

CASE 06 Support policies for Hotan carpet by Hotan government

In 2014, Xinjiang Hotan Prefectural Committee and Administrative Bureau Office issued Rules for Implementation of Handmade Wool Carpet Industry Development Plan in Hotan to speed up the implementation of the Five-Year Plan for Hotan carpet. With "building a traditional processing and production base with ethnic characteristics" as objective, and "quality, brand, scale and efficiency" as core, we should carry out preferential policies in areas such as finance, fiscal, land, equipment purchase, brand building, etc., promote the "cultivation base + key enterprises + large carpet-weaving family + rural household" mode, encourage carpet enterprises to form alliances to realize uniform supervision, apply the same standards, use the same trademark, and form a production and sales network, striving to upgrade the handmade wool carpet industry to an important livelihood industry.

Development goals for 2015:

- 1) 1.2 million square meters of handmade wool carpet, annual sales of 1.4 billion yuan, 50,000 pieces of steel supports, 55,000 carpet-weaving households, 190,000 workers, average annual income of 4500 yuan.
- 2) Support leading middle-and-high-end handmade wool carpet enterprises with relatively concentrated raw materials and finishing; support 20 key families with an annual production of 10,000 square meters and more, nurture 150 large carpet-weaving households, add 30,000 new carpet-weaving households. Each county should at least have one finishing workshop, consisting washing, ironing, drying, smoothing functions set up in key enterprises. If conditions allow, each county should set up one carpet-weaving center.
- 3) Build 2-3 "Xinjiang famous brands" or "Xinjiang renowned trademarks", and build a "Chinese famous brand" or a "Chinese famous trademark".

The emergence of new consumer groups prompted the upgrading of the handmade carpet industry

Upgrading the consumption structure will create new market demands and drive economic development. In recent years, China's economic growth has slowed, and economic structure has been adjusted. However, consumption structure has been upgraded and optimized. There are two reasons: 1) excess capacity, 2) change in consumer demands. As people enjoy a higher living standard, the consumption structure is bound to upgrade

accordingly. In the early period of reform and opening up, people spent most of their income on clothes and food, while in recent years, they tended to spend more on housing and travel. Driven by demands, related industries experienced rapid development, for example, China's textile and clothing industry experienced rapid development in the past thirty years. In recent decade, as people prefer comfortable living space and convenient travel mode, the real estate, auto, high-speed railway, aero, and tourism industries saw tremendous development. According to Maslow's theory, once people's physical needs are met, they will turn to spiritual fulfillment. Therefore, the consumption structure will be further divided, and there is great potential in the culture and service sectors. Especially the traditional cultural industry will face unprecedented development opportunities.

From the perspective of consumer structure, the older generation's consumption power is weakening, while those born after 1980 and 1990 have become the main body of consumers and have different consumption and shopping habits: they spend for pleasure and entertainment, and seek physical and spiritual fulfillment; they value "self", and look for products that help distinguish their personalities, their enthusiasm for homogenous products and services will soon be diverted; compared with consumers belonging to other age brackets, they favor products with high added value. Younger generation's diversified spending habits bode well for the handicraft industry. For example, products that combine modern and traditional cultural elements appeal to younger generation's consumer taste. Traditional craftsmen still need to study younger generation's spending habits and mentality to produce products that fit their needs.



Photo 15: Premium hand-made tapestry

Main Suggestions



Just as the saying goes, “There is no such thing as a sunset industry, only enterprise and individual reach sunset years” . Though handicapped by the challenges it faces, the declining handmade carpet industry is in urgent of rescue plan to break its bottlenecks. The handmade carpet, with a history of over 2000 years, is full of vitality and rich in cultural elements. An embodiment of nomadic and agricultural civilizations, this legacy handicraft should not fade into history in the information age. However, the revival of an industry requires the joint efforts of all parties instead of a few enterprises.

1. Government + Enterprise: carry out supply side reform and adjust industry position

In 2015, the Chinese government proposed “supply side reform” for the first time and pointed out that “while working to achieve an appropriate expansion of aggregate demand, we need to give particular emphasis to structural reform on the supply side, improve the quality and efficiency of the supply system, and drive sustained growth.” The key of supply side reform lies in improving production capacity to boost economic growth. Policy measures include: streamline administration, deregulation, financial reform, restructure of state-owned enterprises, land reform, enhance innovation capability, etc. Supply side management and supply side reform are in essence a means to increase total factor productivity. Currently, excess production capacity in China has resulted in supply and demand imbalance. On the one hand, traditional low-and-middle-end consumer goods are in excessive supply, prices continue to drop, there is a lack of infrastructure facilities for service and high- manufacturing industries in the middle-west and rural areas; on the other hand, there is a lack of premium consumer goods, many consumers had no way but to turn to foreign markets to look for their desired products. Such imbalance and misplacement can also be seen in the carpet industry. For example, the market is flooded with low-end products, fake handmade wool carpet (machine-made carpet or latex backed carpet) and fake silk carpet (machine-made carpet) to deceive amateur consumers. However, consumers who want to purchase high-end carpets, prefer to purchase imported Persian carpets for Iran-produced carpets are more competitive than China-produced ones. This shows that China's handmade carpet lacks of positioning and fails to satisfy domestic consumer's varying needs. Against the background of supply side reform, handmade carpet industry needs to reconsider its positioning and transformation, break a series of constraints and focus on the following:

1) Re-evaluate the role of the handicraft industry, make the traditional handmade carpet industry stronger as part of the supply side reform.

2) Strive to improve product quality and design capacity, adopt "craftsman spirit" and professionalism to upgrade traditional handcraft manufacturing industry, and enhance its innovation capability.

3) Build policy support and financial service systems that meet the needs of upgrading and transformation of the traditional handcraft industry.

4) Establish a training system that matches the practical needs of training innovative research talent and technicians required by the upgrading and transformation of the traditional handmade carpet industry.

5) Steadily promote tax cuts and tax rebates for the handmade carpet industry, facilitate export, lower high transaction costs and revive international trade of handmade carpets.

2. Industry + Enterprise: improve industry standards and implement product production place protection policy

Standards provide an important technical support for the development of human civilization. Currently, standardization level is used to judge the core competitiveness of countries and regions. It is not only used as the basis for enterprise production and operation but also concerns the survival and development of an industry. High standard means high quality. Just as Ishikawa Kaoru, a famous Japanese quality management expert, said, “Without standardized progress, there can be no success in quality.” As a traditional handicraft, there is no way to make standardized products like a machine. Manual production adds to its unique beauty, it also makes it more difficult to tell its quality. To ensure consistent quality of the same batch of products and similar products in the long term, a series of standards involving production and inspection should be formulated.

Moreover, with the promotion of liberalized trade, standards have become a major means for developed countries to pursue trade protectionism. Many countries use standards as weapons to ban the export of foreign products and protect their own industries. Specifically, as standards involve a diversity of technical indexes and harsh requirements, and are being revised constantly, developing countries find it hard to measure up to these requirements. Considering that new trade protectionism is rising, trade frictions caused by different standards will be intensified. To ensure smooth international trade, it is vital for products to meet different standard requirements.

On the issue of preparing hand-made carpet standards, our standard system is relatively sound. Especially, there are specific specifications concerning production and testing of different types of handmade carpets (silk or wool). However, some enterprises did not strictly apply standards during production. Hence, due to selective application of standards, the quality of the highly artistic hand-made carpets was compromised. This is also one of the reasons why China's hand-made carpets performed poorly in international market. Therefore, industry associations including handmade carpet industry association should fully acknowledge the role of standards in international competition, popularize the use of standards, so as to help the industry realize leapfrog development.

Products bearing geographical indications refer to products that are produced in a specific region, their quality, reputation and other features in essence depend on the natural and cultural factors of such places, and are named after geographical locations. They mainly include: products grown or cultivated in the local place; and products manufactured and processed with local raw materials or partial local raw materials using region-specific process. The protection of products bearing geographical indications is conducive to the standardization of product quality and business scope, the maintenance of local brands and product reputation, the promotion of product popularity and added value both at home and abroad, and the protection of operator and consumer's legal rights and interests. These products with high added value, are not only protected in China but also recognized in the world.

Handmade carpets produced in Western China are represented by Tibetan carpet and Hotan carpet. Locally-produced special wool is used as raw material, their production process, from raw material preparation, yarn production, carpet weaving, late preparation to finished products, are in compliance with relevant standards. In 2008 and 2011, Qinghai-produced Tibetan carpet and Tibet-produced Tibetan carpet were listed as protected products bearing geographical indications respectively. And Xinjiang also rolled out local standards governing the

production of Hotan handmade wool carpet. We believe that if Hotan handmade wool carpet is listed as protected geographical indication product, it will help boost product brand awareness both at home and abroad, thus contributing to an orderly and sound development of the local carpet industry.

3. Government + Community: take targeted measures in poverty alleviation, encourage migrant workers to return home and start businesses to promote the inheritance of traditional cultures

Many western regions in China are not developed, especially in some regions where ethnic minorities are concentrated. Due to harsh natural conditions, inconvenient transportation and low industrial level, many people's living standards are on the poverty line. From the perspective of poor people, there is a diversifying trend. On the one hand, our goal has shifted from "ensuring food and clothing" to "consolidating poverty reduction achievements, helping people shake off poverty and get well-off more quickly, improving ecological environment, increasing development capacity and narrowing development gaps." On the other hand, the goal of "ensuring everyone entering into a moderately prosperous society at the same pace" makes it more difficult to promote the poverty reduction campaign. This means that different industry + poverty reduction modes are required for different groups of poor people in western regions. In the handmade carpet industry, a new production and business mode should be adopted, i.e. "leading enterprises - specialized cooperatives - poor households", "enterprises + bases + poor households" or "enterprises + bases + associations + poor households". Through establishing an e-commerce platform in rural areas, we can explore ways to help people get out of poverty, for example, e-commerce + specialized production households model. Other measures include offering free training courses, preferential policies for business start-ups and job opportunities, establishing a viable platform for them to start "online" businesses and find employment. Also, we should explore the option of getting people out of poverty through financial means, thus strengthening the "blood producing" function of poor areas. Commercial banks should be encouraged to explore new ways to improve the situation, come up with new industry chain loan model and new way of poverty reduction via financial means. Moreover, we should also ramp up efforts to provide training courses to help farmers master practical and professional skills.

China is accelerating the pace of urbanization, and one of the important goals for the strategy of large-scale development of the western region is to speed up the regional modernization. Since China adopted the open-door policy, the focus of development is in cities instead of countryside. The ultimate goal of rural modernization is to make sure farmers live and work in peace and contentment. The priority should be to address the issue of second generation migrant workers. They were basically born and grew up in the city, and they prefer to live in the city if there are no appealing jobs waiting for them in the countryside. Our government should consider practical needs resulted by industry transfer and new urbanization, and roll out preferential policies and measures to encourage them to start businesses in their hometown. Especially, in western regions, government should take advantage of local resources to develop advantageous traditional industries.

As an intangible cultural heritage, the best way to protect handmade carpet is to let it walk into people's life instead of shelving it in the museum. Revitalizing the handmade carpet industry is an important means and a must for carrying forward and protecting intangible cultural heritage. To revive the industry, government, enterprise, industry association and social forces must join hands to accelerate the industrialization process.

This report is based on the findings of the "survey on western Chinese handmade carpet industry" initiated by the Social Responsibility Office of China National Textile and Apparel Council and Good Weave International.

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