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تطوير الملابس الخارجية المنتجة من أقمشة الدنيم باستخدام الخيوط الزخرفية Developing the Outwear Produced from Denim Fabrics using Fancy Yarns

Mohamed A. Abou bakr

Depart. of readymade garments, Fac. of
App. Arts, Damietta University, Egypt

Fayrouz A. Elgamel

Prof. of knitting, Depart. of spinning,
weaving and knitting, Fac. of App. Arts -
Damietta University, Egypt.

Hatem M. F. Idrees

Prof. of Production Management,
Department of readymade garments, Fac. of
App.

Arts, Damietta University, Egypt

Tarek M. Zaghlol

Assoc. Prof., Depart. of readymade
garments, Fac. of App. Arts, Damietta
University, Egypt.

Abstract:

Fancy threads are mainly designed for their aesthetic appearance rather than performance. As many threads achieve a deliberate change in appearance in a color manner. To be more comprehensive, decorative threads can be defined as any threads that have intentional contrast either in shape, color, or both. The word “intentional” is very important here because all the standard made of the basic fibers are inherently variable due to the shortage of filament spinning systems and the irregularity of the fiber materials, and efforts are made to minimize these differences so that the fabric is eventually enlarged and performance characteristics such as strength and resistance to wear. However, differences are introduced by design to enhance the aesthetic appearance.

On the other hand, Decorative woven shapes are created by adjusting the design pattern from the basic mounting pattern, but there is a limit to the use of a certain number of structures to accommodate a simple plain loom 8 to 10 stairs of the basic fabric. Accordingly, we had produced samples from that component, 12 samples we did.

Creating those unique fabrics, give us a clear idea for a new denim strategy, which can lead us for a new out wear innovation can be used for upcoming seasons in correct fit, style, finishing and presentation.

Keywords: Denim, Denim process, Fancy yarns, Fancy weaves and outwear fashion

Introduction:

It is known that the ready-made garment industry plays an important role from ancient times until now, the importance of this role in developing countries, especially the Arab Republic of Egypt, increases due to its advantages and capabilities that allow it to develop in this industry. the manufacture of ready-made clothes by themselves as a goal is one of the most important things that are taken into account as basics in living.

While we are talking about the garment industry, jeans quickly come to our minds as a material that appeared giant and continued until now, and if you asked a group of people about the reason for wearing jeans, you will get different answers; some see it comfortable, durable and easy as well, while others see it exciting and wonderful.

Fancy threads are mainly designed for their aesthetic appearance rather than performance. As many threads achieve a deliberate change in appearance in a color manner. To be more comprehensive, decorative threads can be defined as any threads that have intentional contrast either in shape, color, or both. The word “intentional” is very important here because all the strands made of the basic fibers are inherently variable due to the shortage of filament spinning

systems and the irregularity of the fiber materials, and efforts are made to minimize these differences so that the fabric is eventually enlarged and performance characteristics such as strength and resistance to wear. However, differences are introduced by design to enhance the aesthetic appearance.

These strings give the textile designer more leeway to achieve a more attractive and exclusive product, but they also pose bigger challenges since they usually suffer from poor performance and higher costs. The luxurious yarn gives a fancy touch to the fabrics for a wide range of end uses, and we also cannot forget the great demand for luxurious clothes made from decorative threads in the clothes of men and women alike.

It would be a useless attempt to try to describe all kinds of decorative threads, because these are designed to differ in definition, but in terms of spinning effects can be divided into two categories:

- Fiber effect: the effects of the fibers are inserted before threading is formed.
- Yarn Effect: Yarn effects are introduced by combining two or more threads.

Obviously, these two categories can be combined to produce more complex effects.

1-2- The problem of study:

- Didn't use Fancy threads in clothes which produced from denim fabrics.
- Searching for an alternative to some of the processing that takes place on clothes produced from denim fabrics in order to improve the appearance of the produced clothes.

1-3- The objectives of study:

- Create a new fashion for denim fabrics using Fancy threads.
- Production of denim fabrics of aesthetic value for use in the production of outer clothing.
- Producing functional denim fabrics for use in the production of outer clothing.

- Improving the functional properties of outer clothing produced from denim fabrics.
- Developing the appearance of jeans cloth to suit the development of the ready-made clothes industry.

1-4- Study Hypotheses: the researcher assumes that:

- The use of Fancy threads contributes to raising the aesthetic value of clothes produced from the denim fabrics.
- The use of Fancy threads contributes to raising the functional value of clothes produced from denim fabrics.
- A new fashion can be created from denim fabrics produced using Fancy threads.
- Replacing some of the processing effects made on denim fabrics, using Fancy threads.

1-5- The importance of the study:

This study aims to:

- Creating a new fabric with new structural properties comparable to jeans for use in youth clothes.
- The structural composition of the fabric is one of the most important elements that must be available in fabrics, especially jeans Fabric.
- Providing a new fabric by developing some elements in production

1-6- Methodology:

An **experimental approach**, through the implementation of samples and proposed practical experiments on it and analysis of jeans fabrics.

1-7- Limits of study:

- Cloth produced: jeans (denim).
- Materials used: jeans fabric (denim).
 - Warp: 100% cotton.
 - Weft: Fancy wefts.

- Finishing materials used: Standard and Over Dye technology.

- Weave Type used: Standard and Fancy weaves.

- Machine which we used to produce the samples:

- Ring Spinning with Carded Machines
- Indigo Rope Dying process
- Rapier weaving machines
- Continues Line for Finishing

- Laboratory tests:

- Before and after washing Weight.
- Shrinkage.
- Tear and Tensile strength.
- Stiffness.
- Crocking.
- Color Fastness.
- Elasticity and Growth.

2-Literature Review

2-1- Denim

Denim is a strong cotton fabric made using a twill weave, which creates a subtle diagonal ribbing pattern. The cotton twill fabric is warp-facing, meaning that the weft threads go under two or more warp threads ^(1,2), and the warp yarns are more prominent on the right side. The diagonal ribbing is what makes denim fabric different from canvas or cotton duck, which is also a sturdy woven cotton fabric ^(3,4,29).

2-2- History of Denim

Word “denim” comes from fabric "serge de Nimes" made in France city of Nimes from where it originates. It has been used in America since the late

18th century, colored blue with indigo dye to make blue "jeans", a type of cotton pants. Jeans come from "Genes" - a name

given by French to Genoa and the people from Genoa where the cotton trousers were made. In the 1800s, in the time of the Gold Rush, American gold miners needed clothes that were strong, lasted longer and did not tear easily. Levi Strauss, a businessman, and Jacob Davis, a tailor, supplied miners with denim pants that were made from durable material and reinforced with rivets at the places where pants tended to tear which prolonged life of pants. This marked the beginning of the legend of jeans and brand Levi Strauss is still hugely successful today ^(5,6).

Original denim was dyed with dye from plant *Indigofera tinctoria*. Modern denim is dyed with synthetic indigo. Denim is

often dyed with indigo and dried many times over to get a stronger color that will not fade quickly. After the denim is made into clothing it is most often washed to make it softer and to reduce or eliminate shrinkage. Denim that is not washed is called dry or raw denim. Denim fades in time and gets a worn-out look which is often desired as a fashion detail. Some denim is artificially distressed so a worn-out look can be got even before wearing. Denim that is not made of pure cotton but also has an elastic component (most often elastane) is stretch denim. Beside indigo dyeing, denim can be colored with sulfur dyeing which is used for dyeing of denim in colors other than indigo ^(7,8).



Fig. (1) Workers from starting of Denim

2-3- Denim Process

The warp yarn (length-wise) used in denim fabrics is uniquely prepared for denim manufacturing compared to conventional woven fabrics. The yarn goes through numerous processing steps before it is placed on the weaving machine. Unlike the warp yarn, most filling yarn (width-wise) is put onto yarn packages and delivered directly to the weaving machine where it is

inserted into the fabric without any further preparation in the same manner as conventional woven fabrics. The following flow chart reveals the necessary steps in the manufacture of denim fabrics, beginning with the production of the warp yarns used. The chart forms an outline for most of the pics that will be covered in this bulletin.

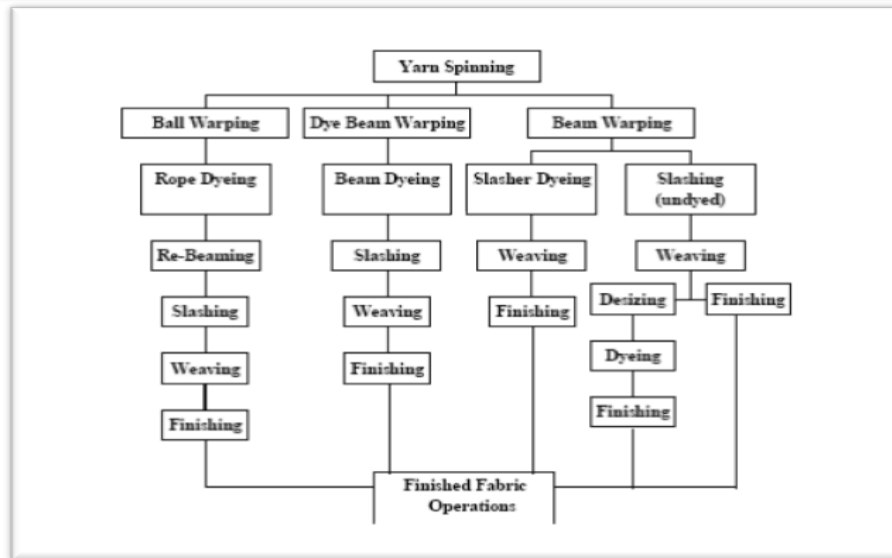


Fig. (2) Process flow for denim manufacturing

2-3- Denim Weave Types

Denim fabrics are woven by interlacing two sets of yarns perpendicular to one another in fabric form. Yarns in the machine direction are called warp yarns or warp ends, and these are interlaced with filling yarns or picks. The sequence or order of interlacing the two sets of yarns can be varied to produce many different weave designs. The finished fabric construction is determined by the number of warp and filling yarns per square inch or centimeter. For example, a typical construction for bottom weight denim may be 62 x 38. This is interpreted as 62 warp

yarns per inch of width and 38 filling yarns per inch of length and always in that order. This thread counts along with the yarn counts used will influence fabric properties such as weight, fabric tightness, cover, drape, hand, tensile strength, tear strength, and other fabric properties^(12,13,14).

The number of weave structures that can be produced is practically unlimited. In general, there are three principal classes of fabrics with different weave structures:

- Plain weave
- Twill weave
- Satin weave

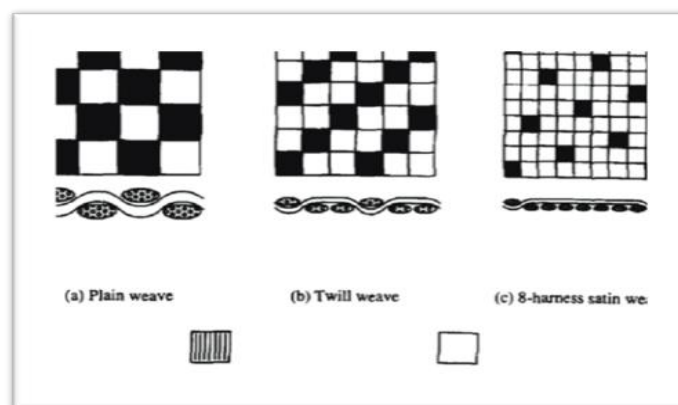


Fig. (3) Denim common weave types

2-4- Raw Materials

-4-1 Cotton

Cotton is one of the most important textile fibers in the world, and cotton occupies the main position among the fibers for the textile industry and in human clothing, as the world consumes cotton fibers about twice what it consumes of all other fibers combined⁽¹⁵⁾. The Arab Republic of Egypt is famous among other countries for the production of the finest types of cotton textiles, which are characterized by durability and flexibility, as Egypt relies on cotton textile industries from an economic

point of view, as it depends on the global market in discharging about 65% of its cotton production⁽¹⁶⁾

A cotton filament is a single plant cell. When examined during the growth period, we find it cylindrical, with an inner channel in the middle, taking a rounded shape and containing the remains of protoplasm, and some dyes, followed by a secondary wall and then a first wall covering a crust or a thin cutaneous envelope from the outside, and the cross-section turns into the shape of a bean after ripening as it is in figure (4)^(17,32)

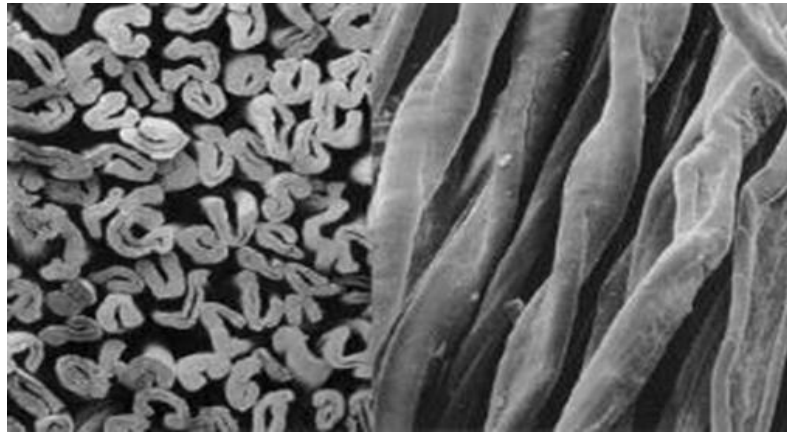


Fig. (4) Picture of cotton properties

Among the ease of care for cotton fabrics, as this characteristic affects the retention of the fabric's shape and appearance during use and after washing, the need for special care such as ironing, which is affected by wrinkle resistance, dimensional stability, shrinkage rate after washing, fullness, which appears in the thickness of the fabric, its porosity, the retention of crumbs, and the vitality of the pulp, which It appears in the elasticity of the fabric when it is folded or folded⁽¹⁸⁾

The efficiency of clothing performance in general is affected by some properties, including resistance to static electricity generation, resistance to melting and

ignition, fire resistance and resistance to dirt^(19,30)

2-4-2 Elastane

They are those threads that can stretch to at least twice their original length with the effect of carrying, and they return to their original length by removing the influence⁽²⁰⁾.

Or we can know it as elastic threads made of polyurethane and has a high elasticity property that reaches 700% and can be used raw as it is in many areas fabrics with stretchy, whether fabric or knitting and has many uses in practical life such as socks, beachwear and women's clothing The interior is also added in a certain percentage

to woven fabrics such as jeans and to knitted fabrics such as stretch pants (21) Elastane family of synthetic filaments (known as Spanx in the United States and Canada) .Segmented polyurethane consists

of parts or pieces (soft or flexible) linked together by (hard) pieces. This partial structure gives Lycra the ability to have high elasticity and resilience (22) ,as in Picture (٥).

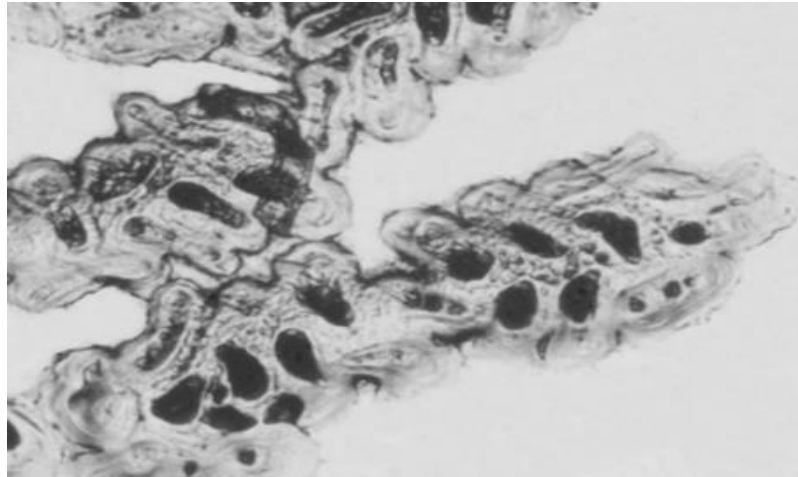


Fig. (5) Illustration of Lycra

2-5 Fancy yarns

Fancy yarns are unusual types of textiles and have some industrial applications in making furnishings, curtains, upholstery, carpets and floor coverings, wall coverings, covers for car seating and plane airplane seating, trims of furnishing articles, etc. Bending stiffness of raw textile fibers is believed to have an influence on shaping the effect profiles of fancy yarns when making those fancy yarns from drafted fiber strands, e.g., slivers or roving (23). In a study, it was observed that a thick, and stiff, core thread gave a strong base to support the effect profiles and made them protrude over the fancy yarn surface when making bouclé yarns and similar fancy yarns from drafted fibers (24).

are considered as fashionable products with a bright future due to their special aesthetic and highly decorative additions to fabrics and clothing. The search for new textile products in terms of fashion and appearance has continuously led to the design of new

types of fancy yarns with an impression of varying color effect. Researches relating to fancy yarns have mainly focused on three aspects: (25) the manufacturing techniques and properties of these yarns, (as below):

- Wavy yarn
- Wrapped yarn
- Loop yarn
- Snarl yarn

2-6 Out wear fashion

In the past few years, the world has witnessed strong competition in the field of ready-made garments, The producing countries sought to achieve a difficult equation based on the lowest possible cost with the finest taste and the best quality, Industrial, the ready-made garments industry is subject to international fashion trends and contributes to the production of clothing, At a level of quality that makes it competitive, in addition to achieving the expressive artistic and aesthetic dimension about society(26).

Fashion industry has been undergone substantial transformation over the years. Fashion houses are no longer, working

with two collections per year – Fall/Winter and Spring/Summer. Many fashion professionals are working, with multiple collections and deliveries every season. They are constantly searching for fresh idea and creating, new products in

order to meet their customer’s aspirations. ‘Fast fashion’ companies have been successfully, using various strategies to reduce the production lead time, increase their competitive advantage (27,31).



Fig. (6) Denim outwears fashion

3 Experimental study

3-1 Machine Description:

- Ring Spinning with Carded Machines

- Indigo Rope Dying process
- Ravier weaving machines
- Continues Line for Finishing

3-2 Materials Description:

- Warp:

<input type="radio"/> Ne Around 6	<input type="radio"/> 20.8 Yarn/Cm	<input type="radio"/> 100% Cotton
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- Weft:

<input type="radio"/> Ne Around 6	<input type="radio"/> 15 Pick/Cm	<input type="radio"/>
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- Study has been produced from different wefts, as below:

- 100% Cotton
- 50% Cotton + 50% Acrylate
- 94% Coton + 6% Elastane
-

3-3 Weave Type:

Below weave type has been used in the Study:

- Simple weave: 3/1 Z

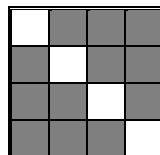


Figure (7) 3/1 Twill weave

- New weaves as below:
 - Fancy weave-1 (Sateen 8 with adding a mark in weft direction)

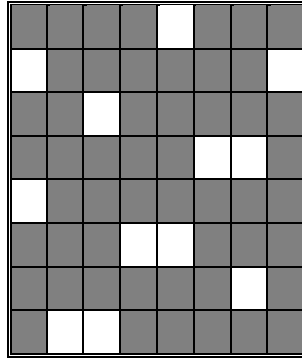


Figure (8) Fancy weave-1

- Fancy weave-2 (Sateen 8 with adding a mark in warp direction with moving some marks)

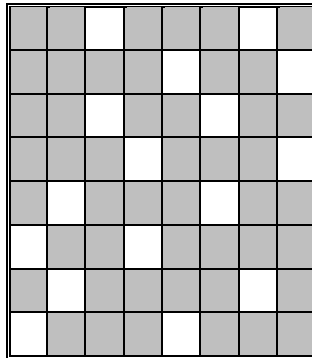


Figure (9) Fancy weave-2

- Fancy weave-3: (Sateen 8 with adding an entanglement lines and marks to get the needed final appearance)

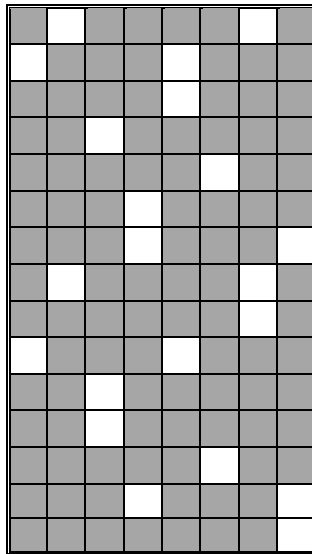


Figure (10) Fancy weave-3

3-4 Fabric Description:

Fabric Plan for the mentioned samples is in below:

Table (1), Fabric plan table

Fabric No.	Weave	Weft
1	STD Twill	STD Cotton
2	STD Twill	Fancy weft-1
3	STD Twill	Fancy weft-2
4	Fancy weave-1	STD Cotton
5	Fancy weave-1	Fancy weft-1
6	Fancy weave-1	Fancy weft-2
7	Fancy weave-2	STD Cotton
8	Fancy weave-2	Fancy weft-1
9	Fancy weave-2	Fancy weft-2
10	Fancy weave-3	Fancy weft-2
11	Fancy weave-3	Fancy weft-2
12	Fancy weave-3	Fancy weft-2

3-5 Testing Method:

Table (2), Test method

Name Of the test	Test Method
Fabric Weight	LS & Co. 21
SHRINKAGE	ISO 6330/ISO 5077
Weft TENSILE Strength	ASTM D5034
Weft TEAR Strength	ASTM D1424
Weft Seam Slippage	ASTM D434
STIFFNESS	ASTM D4032
ELASTICITY	ASTM D3107
GROWTH	ASTM D3107
CROCKING	AATCC 8
COLOR Fastness	ISO 6330/ISO 5077

4 Result and Discussion:

In this study on Denim work wear, the researchers aim to find new fabrics which can be fit to outwear using Denim fabrics, which are leading us into:

- Create a new fashion for denim fabrics using Fancy threads.

- Production of denim fabrics of aesthetic value for use in the production of outer clothing.

- Producing functional denim fabrics for use in the production of clothing.

- Improving the functional properties of outer clothing produced from denim fabrics.

- Developing the appearance of jeans made garments industry. cloth to suit the development of the ready-

4-1 Tested Samples Results

Table (3), fabric test results

Fabric Name	Weave	Weft	Weight		Shrinkage		Elasticity	Growth	Stiffness	Weft Strength performance			Croaking		color fastness to perspiration and water						Quality Coefficient				
			Before	After	Warp	Weft				Tensile	Tear	Seem Sleepage	Dry	Wet	BLEACHED COTTON			COLOR CHANGE							
			gr/m2	gr/m2	%	%									kg	Gr	Kg	rating	rating	rating		rating	rating	rating	rating
			-	-	-	-									+	-	-	+	+	+		+	+	+	+
1	STD Twill	STD Cotton	380	416	-7	-2.5	0	0	0.98	74.68	6.34	34.62	4	2	4.5	4	4.5	4.5	4.5	4.5	91.23				
2		Fancy weft-1	464	470	-10.3	-3.5	0	0	1.29	80.09	6.5	36.55	4	2	4.5	4.5	4.5	4.5	4.5	4.5	89.73				
3		Fancy weft-2	507	601	-13.8	-3.3	0	0	4.67	83.44	6.5	75.37	4	2	4	4	4	4.5	4.5	4.5	81.81				
4	Fancy weave-1	STD Cotton	401	439	-8	-4.8	0	0	0.89	70.45	6.253	30.77	4	2	4.5	4.5	4.5	4.5	4.5	4.5	89.83				
5		Fancy weft-1	469	475	-10.5	-9.5	0	0	1.25	72.72	6.253	32.75	4	2	4.5	4.5	4.5	4.5	4.5	4.5	87.08				
6		Fancy weft-2	530	664	-14.3	-5.5	0	0	3.57	73.92	6.269	33.22	4	2	4.5	4.5	4.5	4.5	4.5	4.5	82.18				
7	Fancy weave-2	STD Cotton	410	439	-9.3	-9.5	8	4	0.78	64.75	6.164	30.15	4	2	4.5	4.5	4.5	4.5	4.5	4.5	85.77				
8		Fancy weft-1	480	560	-10.8	-10.3	18	5.2	1.1	64.85	6.231	30.18	4	2	4	4	4	4.5	4.5	4.5	81.59				
9		Fancy weft-2	570	726	-14.5	-9.8	16	4.8	4.07	69.57	6.253	30.5	4	2	4.5	4.5	4.5	4.5	4.5	4.5	77.23				
10	Fancy weave-3	STD Cotton	462	461	-9.8	-21.5	44	6.4	0.71	59.09	5.938	30.11	4	2	4.5	4.5	4.5	4.5	4.5	4.5	83.82				
11		Fancy weft-1	490	578	-12.5	-25.8	54	7.6	0.98	60.47	6.058	30.11	4	2	4.5	4.5	4.5	4.5	4.5	4.5	80.94				
12		Fancy weft-2	584	832	-16	-24.3	46.8	7.2	1.42	62.99	6.124	30.15	4	2	4.5	4.5	4.5	4.5	4.5	4.5	76.71				

4-1-1 Results of Fabric Weight

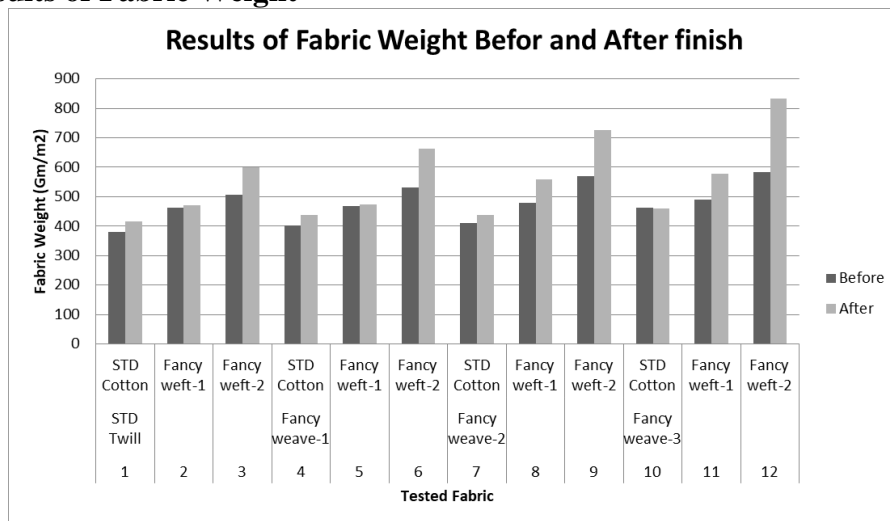


Fig. (11), Results of Fabric Weight for Tested Samples

From figure (11), the average values of the Weight property before and after treatment are shown as follows:

- STD Twill had the lowest weight with an average weight (449.50), duo to less shifts and matching points which is not

allowing the weft to shrink and give the weight.

- After treatment: Fancy weave-3 had the heaviest weight with an average weight of (615), and STD Twill had the lowest weight, with an average weight of (495.67).

- That's duo to fancy weave-3 has the highest shifts of free weft, so it gave freer move after wash, that's why fabric will

have high warp and weft shrinkage, so we will have a high weight after wash accordingly.

4-1-2 Results of Fabric Warp and Weft Shrinkage

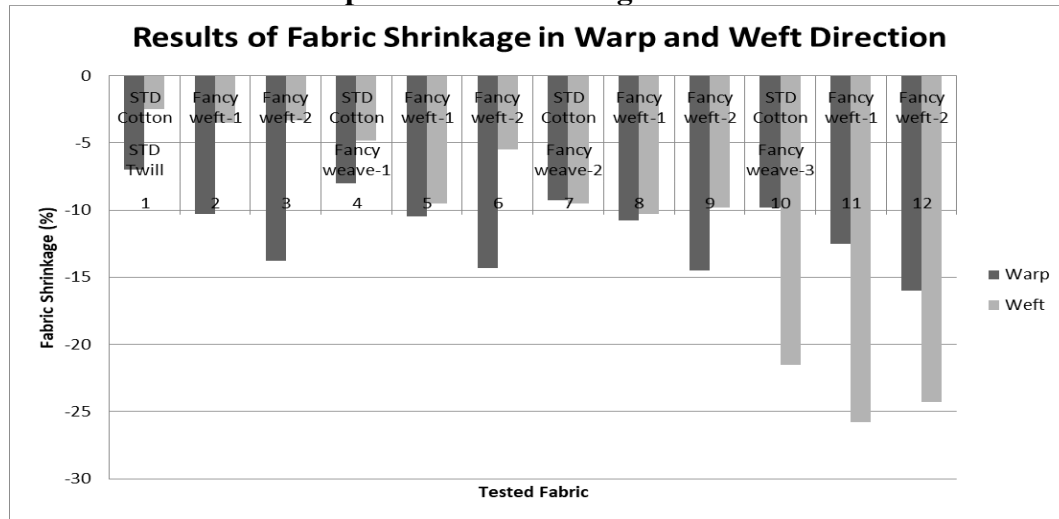


Fig. (12), Results of Warp and Weft Shrinkage for Tested Samples

From figure (12), the values of the mean values of the Shrinkage property in the (Warp/Weft) direction are as follows:

- In the direction of Warp: the texture Fancy weave-3 came the most with an average shrinkage (12.32%), and the STD Twill texture came the least with an average shrinkage (9.78%).
- In the Weft direction: Fancy weave-3 had the highest shrinkage, with an average shrinkage of (23.42%), and STD Twill had the least shrinkage, with an average shrinkage of 3.02%.

That's duo to fancy weave-3 has the highest shifts of free weft, so it gave freer

move after wash, that's why fabric will have high warp and weft shrinkage.

4-1-3 Results of Elasticity and Growth

From figure (13), it is clear that the Fancy weave-3 has the scratchiest texture, with the average stretching values reaching (6.93%), and the Fancy weave-1 and STD Twill texture without stretching, reaching (zero%) 0.

That's duo to fancy weave-3 has the highest shifts of free weft, so it gave free move after wash, that's why fabric will have high warp and weft shrinkage.

4-1-4 Results of Fabric Stiffness

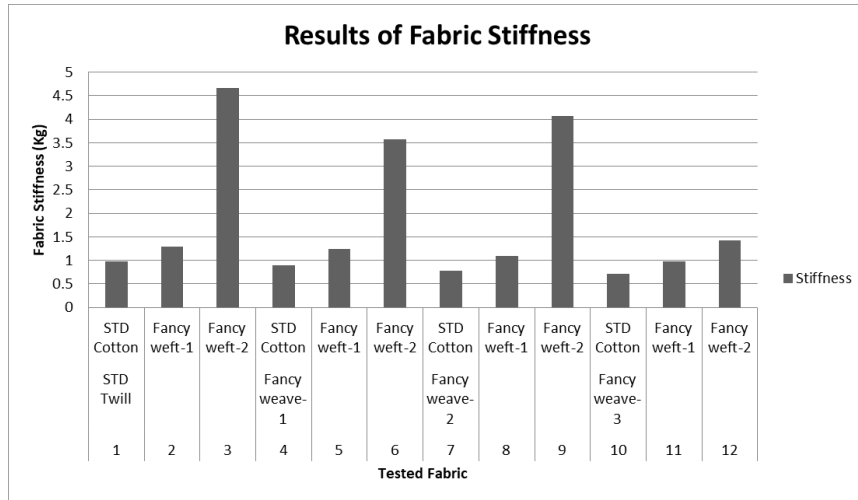


Fig. (14), Results of Stiffness for Tested Samples

From figure (14), it is clear that the STD Twill histological structure is the most rigid, with an average of (2.30%) stiffness values, and the Fancy weave-3 has the least stiffness with an average of (1.0%)0. And this duo to the high density of STD twill and of course the entanglement of warp and weft in 1 cm.

Its easy to understand in the same way of logic that, Fancy weft-3 has less entanglement of warp and weft which will give looser to the fabric structure, so it will have less stuffiness.

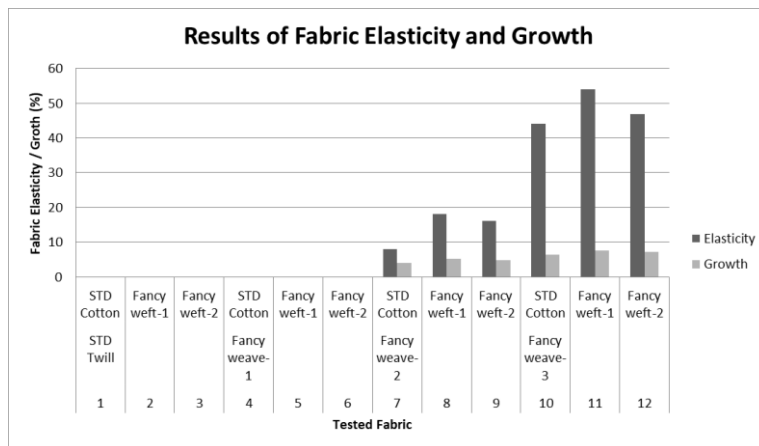


Fig. (13), Results of Tenacity and Growth for Tested Samples

From figure (13), it is clear that Fancy weave-3 is the most flexible, with the average elasticity values reaching (47.47%), and Fancy weave-1 and STD Twill without elasticity, reaching (zero%)

0 From figure (13), it is clear that the Fancy weave-3 has the scratchiest texture, with the average stretching values reaching (6.93%), and the Fancy weave-1 and STD Twill texture without stretching, reaching

(zero%) 0. That's due to fancy weave-3 fabric has the highest shifts of free weft, so it gave free move after wash, that's why

fabric will have high warp and weft shrinkage.

4-1-4 Results of Fabric Stiffness

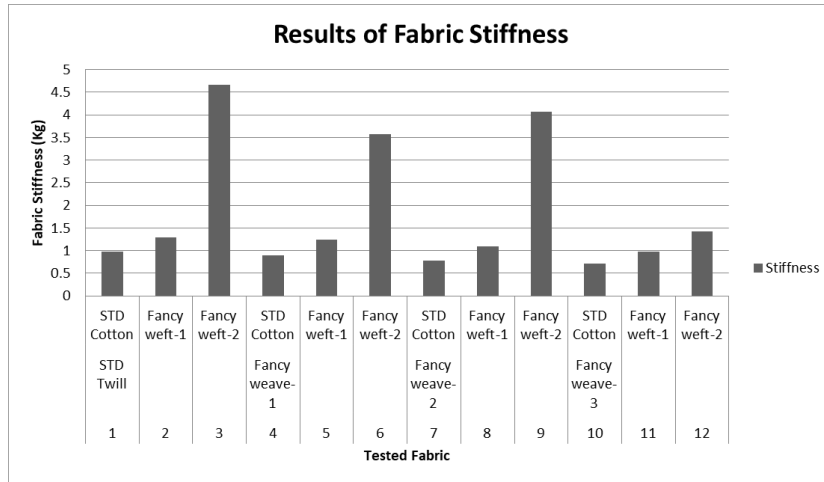


Fig. (14), Results of Stiffness for Tested Samples

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4-1-5 Results of Strength Performance

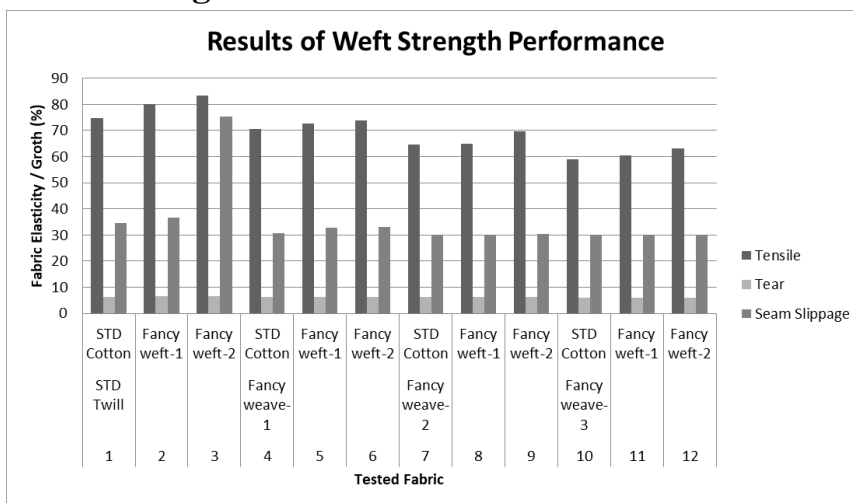


Fig. (15), Results of Strength Performance for Tested Samples

From figure (15), it is clear that the STD Twill has the most tensile strength, with an average tensile strength of (79.28), and Fancy weave-3 has the least tensile strength with an average of (58.65)0.

And this duo to the high density of STD twill and of course the entanglement of warp and weft in 1 cm.

It's easy to understand in the same way of logic that, Fancy weft-3 has less entanglement of warp and weft which will give looser to the fabric structure, so it will have less strength.

4-1-6 Results of Crocking

It is clear that the STD Twill histological structure and others has the same Value in

Dry and wet, and this is happened because the 12-fabrics constriction almost the same surface we have as a fabric structure in general, same Dye and reactions, so we will have almost the same Dry and wet rating.

4-1-7 Results of Color Fastness

It is clear that the STD Twill histological structure and others has almost the same Value in Acid, Alkaline and water, and this is happened because the 12th fabrics constriction almost the same surface we have as a fabric structure in general, same Dye and chemical reactions. So we will have almost the same Acid, Alkaline and water rating.

4-2 Quality Coefficient:

Table (6), the Quality coefficient of research samples

Fabric Number	Weave	Weft	Quality coefficient	Ranking
1	STD Twill	STD Cotton	91.23%	1
2	STD Twill	Fancy weft-1	89.73%	3
3	STD Twill	Fancy weft-2	81.81%	8
4	Fancy weave-1	STD Cotton	89.83%	2
5	Fancy weave-1	Fancy weft-1	87.08%	4
6	Fancy weave-1	Fancy weft-2	82.18%	7
7	Fancy weave-2	STD Cotton	85.77%	5
8	Fancy weave-2	Fancy weft-1	81.59%	9
9	Fancy weave-2	Fancy weft-2	77.23%	11
10	Fancy weave-3	STD Cotton	83.82%	6
11	Fancy weave-3	Fancy weft-1	80.94%	10
12	Fancy weave-3	Fancy weft-2	76.71%	12



Fig. (16), Quality Coefficient of Tested Samples

Sample No. (1) was the best with quality factor (91.23%), followed by sample No (4) with quality factor (89.83%) then sample No. (2) With quality factor (89.73%).

4-3 Conclusions:

According to above results and discussion,

- Before and after wash weight: Fabric with fancy weft and fancy weave will have long shift and high weft shrinkage.
- Warp shrinkage: Will be has more value according to Weft has injection then notes that standard cotton & Weave which has high shift as 3
- Weft shrinkage: Weave which has high shift, has high weft shrinkage (weave 3) & Weft has notes that style has high weft shrinkage.
- Elasticity: Fancy weave 3 has high shifts, so it's given high Elasticity> Fancy weave 2 and 1 have a mechanical strength for the weave so there is a little bit Elasticity.
- Growth: Fancy weave 3 has high shifts, so it's given high Growth & Fancy weave 2 and 1 have a mechanical

strength for the weave so there is a little bit Growth

- Stiffness: Injection weft has high stiffness, less shift has high stiffness, so twill has high stiffness
- Weft Strength performance: Standard twill has good results due to high density and less shifts. Fancy wefts have good results duo to synthetics component.
- Crocking: On Dry side there is no any change and this is proven that we are on safe side to use those trials. On wet side also same situation with a little bit change
- color fastness to perspiration and water, almost no change and this is proven that with all those changes and parameters, we are on safe side

4-4 Recommendations:

This paper recommends the following:

- Denim is a very dynamic item, so search and continues development is a must.
- Add more fancy wefts inspired from natures and historical roots.
- Try more composition on weft side to avoid any kind of strength problems.

- Using more technology with design program to able to produce more Fancy Denim.

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تطوير الملابس الخارجية المنتجة من أقمشة الدنيم باستخدام الخيوط الزخرفية

ملخص البحث:

تم تصميم الخيوط الزخرفية بشكل أساسي لمظهرها الجمالي بدلاً من الأداء. نظرًا لأن العديد من الخيوط تحقق تغييرًا متعمدًا في المظهر عن طريق اللون، ويمكن تعريف الخيوط الزخرفية على أنها أي خيوط لها تباين مقصود سواء في الشكل أو اللون أو كليهما. كلمة "مقصود" مهمة جدًا هنا لأن جميع المعايير المصنوعة من الألياف الأساسية متغيرة بطبيعتها بسبب نقص أنظمة الغزل الخيطي وعدم انتظام مواد الألياف، ويتم بذل الجهود لتقليل هذه الاختلافات، ومع ذلك يتم إدخال الاختلافات حسب التصميم لتعزيز المظهر الجمالي .

ومن ناحية أخرى تم إنشاء الأشكال المنسوجة الزخرفية عن طريق تحويل التركيب النسجي الأصلي، وفقًا لذلك تم إنتاج 12 عينة من تلك المكونات.

وعند تصميم تلك الأقمشة الفريدة كلياً، أعطتنا فكرة واضحة عن استراتيجية جديدة لإنتاج للدنيم، والتي يمكن أن تقودنا إلى ابتكارات جديد للملابس الخارجية يمكن استخدامها في المواسم القادمة بشكل مناسب بحيث تلبى احتياجات المصمم.

الكلمات المفتاحية:

القماش الدنيم – مراحل إنتاج القماش الجينز – الخيوط الزخرفية – التراكيب النسيجية الزخرفية – الملابس الخارجية