
Journal of Creativity Student

<http://journal.unnes.ac.id/journals/jcs>

Analysis of the Quality of Knitted Bags Techniques Based on the Differences in Polyester

Pramesti Raafsanjani^{1*}, Wulansari Prasetyaningtyas²

¹Universitas Negeri Semarang, Indonesia, <https://orcid.org/0009-0009-2805-600X>

²Universitas Negeri Semarang, Indonesia, <https://orcid.org/0009-0004-3728-5537>

*Corresponding Author: pramestiaaa@students.unnes.ac.id

Abstract

This study aims to analyze the quality of knitting bags based on the differences in the use of yarn types. A quantitative approach was employed involving 30 panelists, consisting of 3 expert panelists and 27 trained panelists. The research objects were two handmade knitted bags made using two types of yarn: polyester and nylon, with identical designs and production techniques to minimize bias. Quality assessment was based on four indicators: shape, aesthetics, color, and size. The data were analyzed using descriptive statistics and the Mann-Whitney U nonparametric test after conducting normality and homogeneity tests. The results indicate that both knitted bag products exhibit very good quality, with mean scores for each indicator exceeding 81%. The Mann-Whitney U test yielded a significant value of 0.988 (>0.05), indicating no significant difference in quality between polyester and nylon knitted bags. Therefore, it can be concluded that the type of yarn does not have a significant difference on the quality of knitted bags, and yarn selection can be adjusted according to design requirements, cost, considerations and user preferences.

Keywords: knitted bag, knitting technique, polyester yarn, nylon yarn, product quality

INTRODUCTION

Technological developments in the fashion industry have experienced rapid growth and significantly impacted changes in people's clothing styles. Clothing, which initially served as body covering, has now shifted in meaning to become a means of aesthetic expression, identity, and self-image. Between 2000 and 2020, people obtained clothing style references through television and social media. However, since 2021, increased technological literacy and access to digital media have made it easier for people to access fashion information, resulting in a more diverse and dynamic variety of clothing styles¹.

This development goes hand in hand with the advancement of knitting techniques, which have undergone a significant transformation. Knitting techniques, originally used only for clothing, have now evolved into various functional and decorative crafts, such as bags, shoes, tablecloths, and even wall hangings. The growing interest in knitted products has encouraged artisans to introduce design innovations and unique characteristics to each piece they produce. Handmade knitted products are considered to be of higher quality due to the detailed and meticulous manufacturing process, resulting in aesthetic value and uniqueness that distinguish them from machine-made knitted products.

Knitting is a craft made using yarn and needles, with the main techniques including knitting, crochet, and weaving². Knitting and crochet techniques have similarities in the manufacturing process,

¹ Sari, A., & Indrawati, D. (2022). Perkembangan Penamaan Gaya Berpakaian Dan Jenis Pakaian Pada Kalangan Milenial Di Indonesia: Kajian Linguistik Antropologi. *SAPALA*, 9(2), 85–93.

² Wendanto, W., Vanda, Y., & Syarifah, M. (2019). Meningkatkan Nilai Jual Rajut Di Masyarakat Melalui Desain Dan Media Sosial. *Jurnal SEMAR*, 8(1), 1–8.

but differ in the tools used, where knitting uses two knitting needles while crochet uses one hook ³. Meanwhile, weaving is the process of forming fabric from yarn, initially done manually. With the advancement of technology, weaving and knitting are now often done with the help of machines, allowing for large-scale production in a more efficient manner. Nevertheless, handmade knitted products still have advantages in terms of neatness, detail, and exclusivity, so they generally have a higher selling price than machine-knitted products.

In recent years, knitting has become a trend again across all age groups and backgrounds. Changes in lifestyle and clothing preferences have led to an increase in the use of knitted clothing, which is considered simple, natural, and comfortable. Knitted clothing not only serves as body protection but also plays a role in enhancing self-image and social recognition⁴. This phenomenon is also marked by the emergence of various knitting communities that serve as platforms for developing creativity, skills, and empowering the community's economy.

One active knitting community is Poyenghobby, a knitting enthusiast community founded in 2008 in Sleman, Yogyakarta Special Region. This community has members of various ages and provides a variety of services, from knitting packages for beginners to advanced craftspeople, to producing knitted bags and clothing, and holding private and group knitting classes. The existence of such communities demonstrates that knitting has developed not only as a creative activity but also as part of a lifestyle and a creative economic opportunity⁵.

One of the knitted products that is currently in high demand is knitted bags⁶. Knitted bags have experienced rapid development in terms of design, motifs, and function, making them easy to combine with various clothing styles. The quality of a knitted bag is greatly influenced by the choice of yarn type, knitting technique, and color combination. According to ⁷ choosing the right color can create an attractive visual impression while increasing user confidence. Furthermore, the type of thread used affects the product's density, texture, stability, and durability.

Polyester and nylon yarns are commonly used in knitted bags due to their strength, durability, water resistance, and ease of care. Both yarns are made from synthetic fibers that provide structural strength to knitted products, making them suitable for functional bags. Selecting the right raw materials is crucial for determining the aesthetic quality and functionality of knitted products, particularly for bags used in everyday life ⁸.

A number of previous studies have shown that the choice of technique and type of yarn influences the quality of knitted products ⁹. The study ¹⁰ stated that using knitting techniques with the right yarn selection can produce products with high design and appearance quality also shows that the use of different types of yarn results in varying product quality in terms of design, technique, and

³ Rosdiana, A., & Wijanarko, K. D. (2018). Rajutan Pada Kriya Seni Handmade. *SULUH: Jurnal Seni Desain Budaya*, 1(1). <https://doi.org/10.34001/jsuluh.V1i1.726>

⁴ Saviola, D. A., Putratama, D., & Febriansyah, F. (2023). Gaya Berpakaian Crop Top Pada Kalangan Mahasiswi Universitas Jember Dalam Tinjauan Teori Dramaturgi Erving Goffman. *Lencana: Jurnal Inovasi Ilmu Pendidikan*, 2(1), 133–146. <https://doi.org/10.55606/Lencana.V2i1.3055>

⁵ Purwaningrum, C. (2024b). *Pengaruh Brand Image Dan Kualitas Produk Terhadap Keputusan Pembelian Produk Tas Smiggle Pada Pengguna Instagram Jabodetabek*. 4(6). <https://doi.org/10.36418/Syntax-Imperatif.V4i6.311>

⁶ Adawiyah, S. R. (2020). *Pelatihan Kerajinan Tas Rajut Bagi Remaja Putri Di Desa Mambalan*. 3, 199–202.

⁷ Suantara, D., Siregar, Y., & Fahrurroji, R. (2019). *Kain Sandang Menggunakan Mesin Rajut Single Knit Semi Seamless Knit Fabrics With Optical Illusion Effects For Clothing*. 57–64

⁸ Khoiriah, A. L., & Singke, J. (2016). *Pengaruh Jenis Benang Rajut Terhadap Hasil Jadi Tatting Pada Kerah Rebah*. 5.

⁹ Adlina, S., Prasetyaningtyas, W., & Suci, P. H. (2020). *Kualitas Hasil Karpas Menggunakan Teknik Merajut (Knitting)*. *Fashion And Fashion Education Journal (FFEJ)*, 9(1).

¹⁰ Dewi, K., & Widowati, D. (2020). *Kualitas Pembuatan Cape Teknik Crochet*. *Fashion And Fashion Education Journal (FFEJ)*, 9(1).

materials. Meanwhile, research ¹¹ proves that there are differences in the quality of the final knitted bag results based on the type of yarn used through statistical tests.

Based on the description, this study focuses on the differences in the use of polyester and nylon knitting yarn on the quality of knitted bags made using the knitting technique with a mock honeycomb motif. The mock honeycomb motif has a distinctive three-dimensional texture characteristic, so the choice of yarn type greatly determines the visual and functional results of the product. This study is expected to provide theoretical and practical contributions in the development of knitted bag products, as well as being a reference for craftsmen and creative industry players in choosing the right materials to improve the quality and competitiveness of products in the market.

Product quality is the ability of a product to carry out its main function according to consumer needs and expectations ¹². Quality is not only understood as the physical durability of a product, but also includes reliability, conformity to specifications, aesthetic value, and consumer perception of the benefits and utility of the product ¹³. In the context of the creative and crafts industries, quality is a crucial element because it is directly related to consumer satisfaction and product sustainability in the market.

In handicraft products, especially knitted products, quality has a more complex dimension because it is not only produced through a mechanical process, but also involves the skills, precision, and creativity of the craftsman. Knitting is a handicraft product that is made manually and has an attractive appearance and uses thick materials and is long-lasting ¹⁴. The quality of a knitted product can be seen from the neatness of the knitting, the consistency of the pattern, the accuracy of the technique, and the suitability of the design to the product's function. A quality knitted product reflects the craftsperson's skill in optimally managing techniques and materials, resulting in a product with high aesthetic and functional value. This is in line with ¹⁵ who believes that knitting techniques have the potential to produce high-quality creative products with significant aesthetic and commercial value.

Good knitting quality is characterized by several technical aspects, including selecting a pattern that suits the characteristics of the yarn, controlling yarn tension during the knitting process, and a neat and strong finishing ¹⁶. Stated that consistency and precision in each knitting process significantly influence the structural strength and visual beauty of the knit. Yarn tension, loop regularity, and knitting technique stability determine the appearance and performance of the product. Therefore, knitting quality is determined not only by the final product, but also by the manufacturing process.

Bags, as functional products, play a vital role in supporting daily activities and have evolved into a lifestyle and fashion staple. As trends evolve, bags are no longer simply a means of carrying items, but also a symbol of identity and aesthetic taste. Therefore, bag quality is a key factor influencing user comfort, durability, and the product's visual appeal to consumers.

Knitted bags using the knitting technique offer a unique advantage over mass-produced bags due to their distinctive texture and high craftsmanship. The knitting technique produces a relatively strong and elastic knit structure, allowing for a variety of bag designs. The quality of a knitted bag can be assessed through several key indicators, such as shape, aesthetics, color harmony, size, and the suitability between function and design. These indicators serve as the basis for assessing the quality of the knitted bags produced in this study.

¹¹ Nurcahyani, E. R. (2019). *Pengaruh Benang Rajut Polyester Dan Benang Orchid Terhadap Hasil Jadi Satchel Bag Pada Rajutan Teknik Crochet*. Fakultas Keguruan Pgri Adi Buana Surabaya.

¹² Kotler, P., & Keller, K. L. (2018). *A Framework Of Marketing Management* (6th Ed.). Pearson Education Limited.

¹³ Tjiptono, F. (2015). *Strategi Pemasaran* (3rd Ed.). Andi Offset.

¹⁴ Deliani Et Al. (2024). *Membuat Rajutan Dari Benang Wol Sebagai Produk Umkm Pondok Tahfidz Susy*. November, 43–55.

¹⁵ Maryati Et Al. . (2025). *Gudang Jurnal Pengabdian Masyarakat Eksplorasi Rajut Knitting Sebagai Perwujudan Ekonomi Kreatif*. 3(2020), 149–156.

¹⁶ Ding, X., Sanchez, V., Bertoldi, K., & Rycroft, C. H. (2024). *Unravelling The Mechanics Of Knitted Fabrics Through Hierarchical Geometric Representation*.

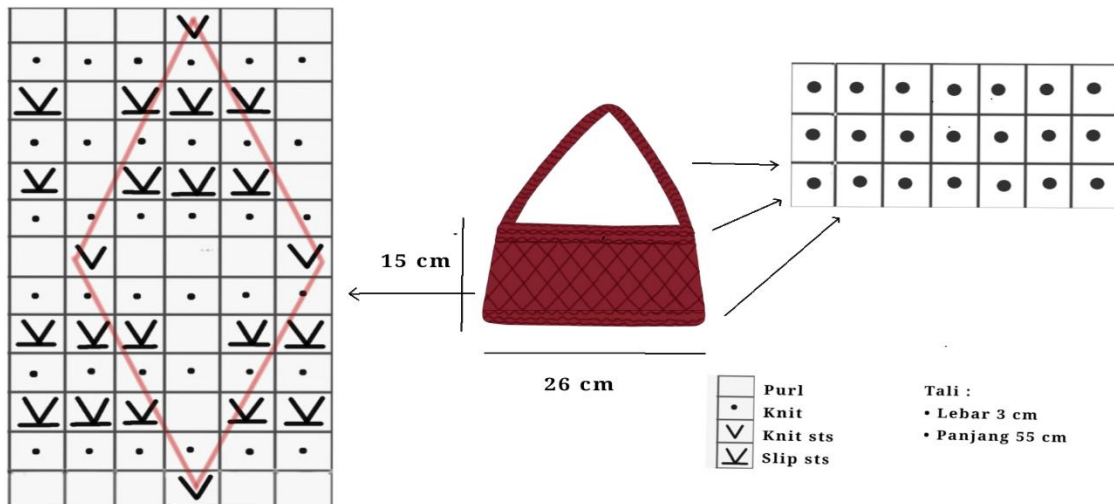


Figure 1. Bag design and motifs used

Knitting yarn is the primary material in the knitting process, consisting of natural and synthetic fibers. Polyester and nylon yarn are synthetic fibers characterized by strength, durability, water resistance, and relatively easy care. These characteristics make these two types of yarn widely used in knitted bags, which require structural strength and durability. Therefore, choosing the right yarn type is crucial for the final quality of a knitted bag, both in terms of aesthetics, comfort, and durability.

Improving the quality of textile craft products, particularly handmade knitted bags, is a crucial factor in supporting the competitiveness of the creative industry. One of the main aspects influencing the quality of knitted bags is the type of yarn, as material characteristics play a role in determining the shape, aesthetics, color, and accuracy of the product's size. Although polyester and nylon yarns are widely used in knitted bag production, empirical studies quantitatively comparing the differences between the two types of yarn on the quality of knitted products are still limited. Crafters' choice of materials is generally based on practical considerations and subjective experience and is therefore not fully supported by scientific evidence. Therefore, this study aims to analyze the quality of knitted bags based on differences in use thread type based on indicators of shape, aesthetics, color, and size, in order to provide a scientific basis for material selection and contribute to the development of literature in the field of textile crafts and knitted product design.

The framework for this research is shown in Figure 2 below:

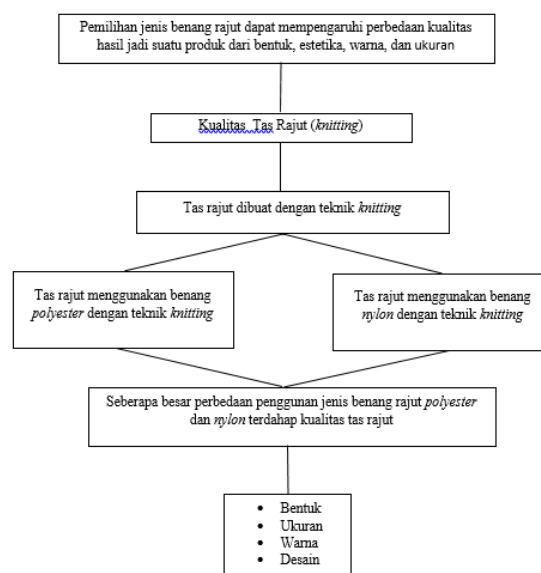


Figure 2. Research Framework

METHOD

This study uses a quantitative approach with observational methods to determine the differences between yarn types used and the quality of knitted bags. This quantitative approach was chosen because the research data is expressed in numerical form, which is then analyzed statistically to obtain objective and measurable conclusions¹⁷. Quantitative research emphasizes the systematic measurement of variables through numerical data collection and statistical analysis. Observational methods are used because they allow researchers to directly observe the quality of knitted bags made using different types of yarn.

This research was conducted from September to December 2025 at the Fashion Design Study Program Laboratory, Department of Family Welfare Education, Faculty of Engineering, Semarang State University. The research location was chosen because it has adequate facilities and an environment that supports the process of making and observing knitted products in a controlled manner. The object of the research was the quality of knitted bags using a knitting technique that uses two types of yarn, namely polyester knitting yarn and nylon knitting yarn. The assessment of the quality of knitted bags was based on indicators of shape, aesthetics, color, and size.

The research subjects consisted of three expert knitters who have competence and experience in the knitting field, namely Ajeng G. Sitoresmi as the owner of Poyenghobby, Nunilona as a knitter @bynunil, and Neni Sulistian as a fashion instructor at BBPVP Semarang. In addition, as many as 27 respondents who are members of the Poyenghobby knitting community and the Rajuters Solo community were also involved as assessors of the quality of knitted bags. The selection of subjects was carried out purposively by considering the respondents' experience, skills, and understanding of knitting techniques and knitted products.

The variables in this study consist of independent and dependent variables. The independent variable is the type of knitting yarn, namely polyester and nylon, while the dependent variable is the quality of the knitted bags. Data were collected through observation using a structured assessment sheet that has been tested for validity and reliability. The research instrument begins by creating an instrument grid. The instrument grid for this study is shown in the following table:

Table 1. Instrument

Indicator	Statement	Item Number
Form ¹⁸	The shape of the knitted bag produced is in accordance with the planned design.	1
	The body and base structure of the bag is very sturdy and can withstand loads without changing shape.	2
	All the crochet stitches look very uniform and even across the surface of the bag.	3
Aesthetics ¹⁹	The composition and placement of the ropes is very harmonious and balanced.	4
	The bag design shows a high level of creativity and has a strong distinctive character.	5
	The final finishing process was carried out neatly and smoothly.	6
Color ²⁰	The choice of thread colors is very interesting and eye-catching.	7

¹⁷ Sugiyono. (2018). *Metode Penelitian Kuantitatif, Kualitatif, Dan R&D*. Alfabeta.

¹⁸ Jumai Latte, A. M. (2022). Pengaruh Desain Produk Terhadap Keputusan Pembelian Produk Tas Anyaman Purun Di Kecamatan Haur Gading Kabupaten Hulu Sungai Utara. *Inovatif*, 4.

¹⁹ Supangkat, A. H. (2017). *Pengaruh Citra Merek, Kualitas Produk, Harga Terhadap Keputusan Pembelian Tas Di Intako Supriyatin Sekolah Tinggi Ilmu Ekonomi Indonesia (Stiesia) Surabaya*.

²⁰ Septiyadi, A. L., Made, I., & Dirgantara, B. (2021). Pengaruh Atribut Kemasan (Packaging) Terhadap Minat Beli Konsumen Pada Produk Kosmetik Emina. *Diponegoro Journal Of Management*, 10(4), 1–14. [Http://Ejournal-S1.Undip.Ac.Id/Index.Php/Dbr](http://Ejournal-S1.Undip.Ac.Id/Index.Php/Dbr)

Size ²¹	The color of the thread used is completely consistent and even without any spots of color difference.	8
	The color selection is very relevant and with the time of use	9
	Product size according to the design made	10
	The size of the bag is ideal and functional for holding items according to the main purpose of the bag.	11
	The proportion between the bag body and the strap looks balanced.	12

The validity of the instrument was tested using content validity where a test measures the extent of its intended content, based on the items. Technically, an instrument grid can assist in testing content validity. The instrument grid contains the variables being studied, indicators as benchmarks, and item numbers (questions or statements) that have been explained from the indicators. Furthermore, content validity is calculated using Aiken's V formula ²² as follows:

$$V = \frac{\sum s}{[n(c-1)]}$$

Information:

- s : r - lo
r : a number given by a researcher
lo : low validity assessment score
n : number of assessors
c : highest validity assessment number

The results of item analysis can be said to be valid if they meet Aiken's V limit. The validity of the instrument with a total of 12 instrument items was assessed using five raters and four rating scales. The results of the Aiken V table calculations, with the threshold of the assessment coefficient for each item are ≥ 0.87 . Each statement item on the assessment instrument gets a V Aiken score ≥ 0.87 . Therefore, all instrument items are declared valid and suitable for use in data collection.

Reliability was tested using the Intraclass Correlation Coefficient (ICC) with the help of SPSS version 23. According to ²³. The instrument is said to be reliable if the calculation results show 0.75-1.00.

Table 2. Reliability Test Results with ICC
Intraclass Correlation Coefficient (ICC)

	Intraclass Correlation b	95% Confidence Interval		F Test with True Value 0		
		Lower Bound	Upper Bound	Value	df1	df2
Single Measure	.217	.021	.775	3,741	4	44
Average Measure	.769	.207	.974	3,741	4	44

The results of the instrument reliability test using the Interclass Correlation Coefficient (ICC) with the help of the SPSS 23 application. The test results showed 0.769 which means it is declared reliable because it is in the range of 0.75-1.00 and can be used for data collection.

²¹ Purwaningrum, C. (2024b). *Pengaruh Brand Image Dan Kualitas Produk Terhadap Keputusan Pembelian Produk Tas Smiggle Pada Pengguna Instagram Jabodetabek*. 4(6). <https://doi.org/10.36418/Syntax-Imperatif.V4i6.311>

²² Prasetyaningtyas, Wulansari, And S. W. (2022). *Needs Analysis To Develop A Practice Assessment Instrument For Learning Process During Covid-19 Pandemic*.

²³ Prasetyaningtyas, Wulansari, And S. W. (2022). *Needs Analysis To Develop A Practice Assessment Instrument For Learning Process During Covid-19 Pandemic*.

Data analysis was carried out using descriptive statistics with the formula ²⁴:

$$P = \frac{n}{N} \times 100\%$$

Information:

P = Percentage

n = Average number of all items

N = Maximum number of criteria

Calculation of the quality of knitted bags using two types of knitting yarn, namely polyester and nylon yarn, must be adjusted to the percentage class interval that has been made.

Table 3. Percentage Class Interval

Category	Percentage
Very good	81% - 100%
Good	63% - 81%
Low	44% - 63%
Very Low	25% - 44%

Statistical Assumption Test

Normality Test

Statistical assumption tests in the form of the Shapiro–Wilk normality test. Data is considered normal if the sig. value is > 0.05, and the data is considered abnormal if the sig. value is < 0.05 and the Levene homogeneity test. If the sig. value is < 0.05, the variance of the data is said to be non-homogeneous. If the sig. value is > 0.05, the variance of the data is said to be homogeneous ²⁵.

Table 4. Data Normality Test Results

Thread Types	Sig. (Shapiro–Wilk)
Polyester	0,000
Nylon	0,000

The results of the normality test were carried out using Shapiro–Wilk with the criteria of normally distributed data if the significance value is > 0.05. Based on the results presented in Table 4, it can be seen that in the table above shows the significance value of the polyester yarn knitted bag $0.00 < 0.05$, and the significance value of the nylon yarn knitted bag $0.00 < 0.05$, which means that both data are not normally distributed.

Homogeneity Test

The homogeneity test is used to determine whether several variants are the same or not. As a testing criterion, if the significance value is more than 0.05, it can be said that the variances of the two data groups are the same or homogeneous ²⁶. Through the homogeneity of variance test, data analysis can be seen from the Levene's test value through the SPSS program with the following provisions:

1. If the sig value. < 0.05 then the variance of the data is said to be not homogeneous.
2. If the sig value. > 0.05 then the data variance is said to be homogeneous.

The homogeneity test was carried out using the Levene Test to determine the similarity of variance between groups.

Table 5. Results of the Homogeneity of Variance Test

²⁴ Chamdani, M. N. (2023). Statistika Deskriptif : Bilangan Rangkuman. *Jurnal Statiska*, 1–3.

²⁵ Agustian, A., Lisdiana, K., Suryana, A., & Nursalman, M. (2025). *Analisis Statistik Uji Normalitas Dan Homogenitas Data Nilai Mata Pelajaran Dengan Menggunakan Python*. 10(1), 51–56.

²⁶ Agustian, A., Lisdiana, K., Suryana, A., & Nursalman, M. (2025). *Analisis Statistik Uji Normalitas Dan Homogenitas Data Nilai Mata Pelajaran Dengan Menggunakan Python*. 10(1), 51–56.

Levene Statistics	df1	df2	Sig.
0.015	1	58	0.903

Homogeneity test results in Table 5 shows a significance value > 0.05 , namely 0.903, so it can be said that the variance of two or more data groups in this research data is homogeneous.

Hypothesis Testing

Statistical assumption tests indicate that the data are not normally distributed, but rather homogeneous. Therefore, the hypothesis testing uses a non-parametric statistical test, namely the Man-Whitney U test, to analyze the differences in the results of two knitted bags using two different types of yarn²⁷. By determining the test results Mann–Whitney University seen from the significance value or Asymp. Sig. (2-tailed) in the Test Statistics table with the following provisions:

1. Asymp. Sig. Value (2-tailed) > 0.05 : So H_0 is accepted and H_a is rejected. This means that there is no significant difference between the quality of knitted bags made of polyester and nylon.
2. Asymp. Sig. Value (2-tailed) < 0.05 : So H_0 is rejected and H_a is accepted. This means that there is significant difference between the quality of knitted bags made of polyester and nylon.

RESULTS AND DISCUSSION

Descriptive Analysis

The descriptive analysis aims to provide an overview of the quality of knitted bags based on four quality indicators: shape, aesthetics, color, and size, to determine the average trend and distribution of researchers' assessments. The assessments were conducted by 30 panelists, consisting of 3 expert panelists and 27 trained panelists. The assessment was conducted by comparing the use of polyester and nylon yarns.

Table 6. Descriptive Statistics of Knitted Bag Quality

Indicator	Polyester	Nylon
Form	21.74%	21.88%
Aesthetics	21.39%	21.25%
Color	21.32%	21.25%
Size	21.81%	21.74%
Total	86.25%	86.11%
Criteria	Very good	Very good

In the results table above, it can be seen that the quality of the polyester yarn knitted bag has very good quality with a total of 86.25% and the quality of the nylon thread knitted bag has very good quality with a total 86.11%. Nylon yarn obtained a higher mean value in the shape aspect.

Hypothesis Testing

Mann–Whitney U test

Hypothesis testing was conducted to determine the differences in the quality of knitted bags based on the type of yarn.

Table 7. Mann–Whitney U Test Results

Statistics	Mark
Mann–Whitney University	449,000
Z	-0.015
Asymp. Sig. (2-tailed)	0.988

Based on Table 7, the test results show that the type of knitting yarn there is no significant difference on the quality of knitted bags. The significance value is $0.988 > 0.05$, so H_0 is accepted and H_a is rejected. This indicates that there is no significant difference between the quality of knitted bags using nylon or polyester yarn.

²⁷ Ramadhani, F., Fazarin, F. M., Yulianti, C., Silitonga, L., Lestari, D., Cornel, A., Province, B. I., & Province, C. K. (2024). *Scientia: Jurnal Hasil Penelitian* Vol. 9, Nomor 1 (2024). 9, 66–72.

Discussion

Both knitted bags were declared to be very good because they had a value $\geq 81\%$. The quality of the polyester yarn knitted bag has a quality value of 86.25% and the quality of the nylon yarn knitted bag has a quality value of 86.11%. While both yarn types produce relatively equivalent quality, there is a tendency for differences in average scores for each indicator. Nylon yarn scored higher on average for shape, while polyester yarn demonstrated superiority in size and aesthetics. This difference is closely related to the physical characteristics of each material, which influence the final knitted product.

Differences in the quality of knitted bags are not only influenced by the type of yarn; the physical and mechanical characteristics of each yarn also influence the quality of the bag. Polyester yarn has stable elastic properties, a low shrinkage rate, and a relatively stiff fiber structure compared to nylon. This allows polyester knits to maintain product dimensions and shape consistently throughout use. Meanwhile, nylon yarn has high elasticity and greater stretchability, so the flexibility of the knitted structure can potentially stretch when subjected to repeated loads. Fiber properties indicate that nylon has higher flexibility than polyester, resulting in different flexural responses in knitted products. These differences in properties cause different performance responses of knitted products for each quality indicator ²⁸.



Figure 3. Finished Knitted Bag Result Using Polyester Yarn



Figure 4. Finished Knitted Bag Result Using Nylon Yarn

While no statistically significant differences were found between the two yarn types, there was a tendency for performance variations in certain indicators that reflect differences in material characteristics in the final knitted product. This suggests that differences in material physical properties play a greater role in shaping specific advantages in certain aspects, rather than in determining the overall quality of the product.

The results of the study show that the quality of knitted bags using the knitting technique is influenced by the characteristics of the yarn material used and the interaction between the physical

²⁸ Choi, S., Kim, J., & Kwon, M. (2022). *The Effect Of The Physical And Chemical Properties Of Synthetic Fabrics On The Release Of Microplastics During Washing And Drying*.

properties of the material and the knitted structure formed during the production process ²⁹. The use of polyester and nylon yarns resulted in product quality that was categorized as very good, according to respondents. This indicates that the quality of knitted products is determined not only by the type of material but also by the material's ability to support shape stability, visual appearance, and the product's suitability for everyday use.

Yarn characteristics play a crucial role in maintaining the structure of a knitted bag during use. The higher value of nylon yarn is explained by the nylon fiber's ability to deform and return to its original position. The structure of nylon fibers allows the knit to adapt to the pressure of use without easily breaking the loop structure. This makes nylon knitted bags appear more adaptable to changing loads. However, polyester exhibits better structural stability due to its fiber stiffness, which helps maintain a neat and stable knit configuration ³⁰.

The performance of polyester yarn, which has high stiffness and low elongation, can contribute to the shape stability of textile products. Shape stability is a crucial aspect because it directly relates to the bag's function as a functional product. This condition aligns with opinion³¹ which states that product quality is the main factor that influences consumer perception of a product, where aspects of form and performance in use are part of the overall quality assessment.

In addition to structural aspects, the quality of knitted bags is also reflected in the product's aesthetic appearance. The research results show that neat knitted appearance, pattern balance, and texture consistency contribute to enhancing the product's aesthetic value. The stable and dense fiber structure of polyester yarn contributes to the creation of more visually consistent knits. This finding aligns with opinion ³² which explains that product design and visual quality have a positive influence on consumer evaluations because visual appearance can increase the attractiveness of a fashion product. In handmade knitted products, aesthetics are seen not only in design but also in the neatness of the knitted construction.

Knitted bags made with polyester yarn have a higher value due to polyester's relatively low tensile strength, which plays a role in maintaining uniformity in the shape and aesthetics of knitted bags. Knitted bags made with polyester tend to be less likely to change size due to tension or environmental humidity, so the product size is more consistent compared to bags knitted with nylon yarn. Meanwhile, nylon has more elastic properties, allowing for changes in the length of the knitted loops when subjected to pressure during use ³³.

The visual aspect of color also influences product quality perception. The natural sheen of nylon fiber allows for better light reflection, creating a bright, uniform color. Stable color perception contributes to increased product psychological appeal among adult respondents. This is consistent with opinion ³⁴ which states that color has an important role in forming consumers' psychological responses to products, because attractive and consistent colors can strengthen the perception of the quality and aesthetic value of the product as a whole.

The visual appearance of the colors on a polyester yarn knitted bag tends to produce a neater and more uniform knitted surface. This is due to the polyester filament structure, which has a low fiber

²⁹ Ding, X., Sanchez, V., Bertoldi, K., & Rycroft, C. H. (2024). *Unravelling The Mechanics Of Knitted Fabrics Through Hierarchical Geometric Representation*.

³⁰ Ateş, M., & Ünver, Z. (2024). *The Effect Of Recycled Fiber Content On Performance / Quality Properties Of Swimwear Fabrics*. 10(1), 72–75. <https://doi.org/10.15406/Jteft.2024.10.00368>

³¹ Reza Suriansha, E. R. (2024). Pengaruh Kualitas Produk Dan Keistimewaan Estetika Desain Terhadap Keputusan Pembelian Produk Fashion Di Salah Satu Departement Store Di Jakarta Utara. *Journal Of Economics And Business Ubs*, 13.

³² Adrian, M., Setiawan, F., & Hanafia, F. (2023). *Pengaruh Desain , Kualitas Produk Dan Promosi Terhadap Keputusan Pembelian*. 01(02), 90–102.

³³ Wickramasinghe G, Dolawatte Su, Thebuwana Iu, B. W. (2022). Effect Of Production Speed On Polyester/Nylon Intermingled Yarn And Melange Fabric Properties. *International Journal Of Clothing Science And Technology*, 34(1), 65–78.

³⁴ Shamoi, P., Muratbekova, M., & Izbassar, A. (2023). *Arxiv : 2310 . 00791v1 [Cs . Cv] 1 Oct 2023 Towards A Universal Understanding Of Color Harmony : Fuzzy Approach. September*.

yield and is more stable during the knitting process. Synthetic fibers with a high level of evenness are known to improve visual consistency and reduce surface irregularities in textiles. Nylon provides a more glossy visual effect due to its high light reflection capacity, thus enhancing the visual appeal of handmade products ³⁵.

The quality of knitted products is also related to the ability to maintain dimensions according to the initial design. Dimensional stability is influenced by the level of yarn elasticity during the knitting process. Polyester yarn, with its relatively lower elasticity, helps craftspeople maintain uniform product dimensions, resulting in more consistent bag sizes. This finding is supported by opinion ³⁶ which states that product size has a positive influence on perceived quality and contributes significantly to consumer purchasing intention. Accuracy of size indicates the successful integration of materials and production techniques in producing functional knitted products.

Overall, the results of the Mann–Whitney nonparametric statistical analysis indicate that differences in material characteristics do not result in significant differences in the quality of knitted bags. This indicates that both polyester and nylon yarns have relatively equal capabilities in producing quality knitted products if the manufacturing techniques, design, and craftsman skills are controlled consistently. Differences in material properties play a greater role in forming specific advantages in certain aspects, but do not determine the overall quality of the product. Thus, both types of yarn can be declared equally suitable for use as materials for making knitted bags using the knitting technique because they are able to optimally the aesthetic and functional aspects of the product.

CONCLUSION

The results of the research above can be concluded as follows:

1. Knitted bags made using polyester and nylon yarns demonstrated excellent product quality across all assessment indicators. Both yarn types produced bags that met functional, aesthetic, and form stability requirements, making them suitable for use as materials for knitted bag production.
2. The Mann–Whitney test results showed a p-value >0.05 , indicating no significant difference in quality between knitted bags made from polyester and nylon yarn. Therefore, both yarn types have relatively equivalent quality performance and can be selected based on design needs and product characteristics.

REFERENCES

- Adawiyah, S. R. (2020). Pelatihan Kerajinan Tas Rajut Bagi Remaja Putri Di Desa Mambalan. 3, 199–202.
- Adlina, S., Prasetyaningtyas, W., & Suci, P. H. (2020). Kualitas Hasil Karpet Menggunakan Teknik Merajut (Knitting). *Fashion And Fashion Education Journal (Ffej)*, 9(1).
- Adrian, M., Setiawan, F., & Hanafia, F. (2023). Pengaruh Desain , Kualitas Produk Dan Promosi Terhadap Keputusan Pembelian. 01(02), 90–102.
- Agustian, A., Lisdiana, K., Suryana, A., & Nursalman, M. (2025). Analisis Statistik Uji Normalitas Dan Homogenitas Data Nilai Mata Pelajaran Dengan Menggunakan Python. 10(1), 51–56.
- Ateş, M., & Ünver, Z. (2024). The Effect Of Recycled Fiber Content On Performance / Quality Properties Of Swimwear Fabrics. 10(1), 72–75. <https://doi.org/10.15406/Jteft.2024.10.00368>
- Chamdani, M. N. (2023). Statistika Deskriptif : Bilangan Rangkuman. *Jurnal Statiska*, 1–3.
- Choi, S., Kim, J., & Kwon, M. (2022). The Effect Of The Physical And Chemical Properties Of Synthetic Fabrics On The Release Of Microplastics During Washing And Drying.
- Deliani Et Al. (2024). Membuat Rajutan Dari Benang Wol Sebagai Produk Umkm Pondok Tahfidz Susy. November, 43–55.
- Dewi, K., & Widowati, D. (2020). Kualitas Pembuatan Cape Teknik Crochet. *Fashion And Fashion Education Journal (Ffej)*, 9(1).

³⁵ Faiza Nurul Azmy1), I. (2022). Pengaruh Fast Fashion Terhadap Lingkungan. *Perpustakaan Internasional Waqaf Ilmu Nusantara*.

³⁶ Putri, S. C., Armaniah, H., Ekonomi, F., Bina, U., & Informatika, S. (2023). *Pada Produk Noera Collagen Drink Di Tiktokshop*. 2(3), 99–109.

- Ding, X., Sanchez, V., Bertoldi, K., & Rycroft, C. H. (2024). Unravelling The Mechanics Of Knitted Fabrics Through Hierarchical Geometric Representation.
- Faiza Nurul Azmy1), I. (2022). Pengaruh Fast Fashion Terhadap Lingkungan. Perpustakaan Internasional Waqaf Ilmu Nusantara.
- Jumai Latte, A. M. (2022). Pengaruh Desain Produk Terhadap Keputusan Pembelian Produk Tas Anyaman Purun Di Kecamatan Haur Gading Kabupaten Hulu Sungai Utara. Inovatif, 4.
- Khoiriah, A. L., & Singke, J. (2016). Pengaruh Jenis Benang Rajut Terhadap Hasil Jadi Tatting Pada Kerah Rebah. 5.
- Kotler, P., & Keller, K. L. (2018). A Framework Of Marketing Management (6th Ed.). Pearson Education Limited.
- Maryati Et Al, . (2025). Gudang Jurnal Pengabdian Masyarakat Eksplorasi Rajut Knitting Sebagai Perwujudan Ekonomi Kreatif. 3(2020), 149–156.
- Nurcahyani, E. R. (2019). Pengaruh Benang Rajut Polyester Dan Benang Orchid Terhadap Hasil Jadi Satchel Bag Pada Rajutan Teknik Crochet. Fakultas Keguruan Pgri Adi Buana Surabaya.
- Prasetyaningtyas, Wulansari, And S. W. (2022). Needs Analysis To Develop A Practice Assessment Instrument For Learning Process During Covid-19 Pandemic.
- Purwaningrum, C. (2024a). Pengaruh Brand Image Dan Kualitas Produk Terhadap Keputusan Pembelian Produk Tas Smiggle Pada Pengguna Instagram Jabodetabek. Syntax Imperatif, 4(6). <https://doi.org/10.36418/Syntax-Imperatif.V4i6.311>
- Purwaningrum, C. (2024b). Pengaruh Brand Image Dan Kualitas Produk Terhadap Keputusan Pembelian Produk Tas Smiggle Pada Pengguna Instagram Jabodetabek. 4(6). <https://doi.org/10.36418/Syntax-Imperatif.V4i6.311>
- Putri, S. C., Armaniah, H., Ekonomi, F., Bina, U., & Informatika, S. (2023). Pada Produk Noera Collagen Drink Di Tiktokshop. 2(3), 99–109.
- Ramadhani, F., Fazarin, F. M., Yulianti, C., Silitonga, L., Lestari, D., Cornel, A., Province, B. I., & Province, C. K. (2024). Scientia: Jurnal Hasil Penelitian Vol. 9, Nomor 1 (2024). 9, 66–72.
- Reza Suriansha, E. R. (2024). Pengaruh Kualitas Produk Dan Keistimewaan Estetika Desain Terhadap Keputusan Pembelian Produk Fashion Di Salah Satu Departement Store Di Jakarta Utara. Journal Of Economics And Business Ubs, 13.
- Rosdiana, A., & Wijanarko, K. D. (2018). Rajutan Pada Kriya Seni Handmade. Suluh: Jurnal Seni Desain Budaya, 1(1). <https://doi.org/10.34001/Jsuluh.V1i1.726>
- Sari, A., & Indrawati, D. (2022). Perkembangan Penamaan Gaya Berpakaian Dan Jenis Pakaian Pada Kalangan Milenial Di Indonesia: Kajian Linguistik Antropologi. Sapala, 9(2), 85–93.
- Saviola, D. A., Putratama, D., & Febriansyah, F. (2023). Gaya Berpakaian Crop Top Pada Kalangan Mahasiswi Universitas Jember Dalam Tinjauan Teori Dramaturgi Erving Goffman. Lencana: Jurnal Inovasi Ilmu Pendidikan, 2(1), 133–146. <https://doi.org/10.55606/Lencana.V2i1.3055>
- Septiyadi, A. L., Made, I., & Dirgantara, B. (2021). Pengaruh Atribut Kemasan (Packaging) Terhadap Minat Beli Konsumen Pada Produk Kosmetik Emina. Diponegoro Journal Of Management, 10(4), 1–14. <http://ejournal-s1.undip.ac.id/index.php/dbr>
- Shamoi, P., Muratbekova, M., & Izbassar, A. (2023). Arxiv : 2310 . 00791v1 [Cs . Cv] 1 Oct 2023 Towards A Universal Understanding Of Color Harmony : Fuzzy Approach. September.
- Suantara, D., Siregar, Y., & Fahrurroji, R. (2019). Kain Sandang Menggunakan Mesin Rajut Single Knit Semi Seamless Knit Fabrics With Optical Illusion Effects For Clothing. 57–64.
- Sugiyono. (2018). Metode Penelitian Kuantitatif, Kualitatif, Dan R&D. Alfabeta.
- Supangkat, A. H. (2017). Pengaruh Citra Merek, Kualitas Produk, Harga Terhadap Keputusan Pembelian Tas Di Intako Supriyatin Sekolah Tinggi Ilmu Ekonomi Indonesia (Stiesia) Surabaya.
- Tjiptono, F. (2015). Strategi Pemasaran (3rd Ed.). Andi Offset.
- Wendanto, W., Vanda, Y., & Syarifah, M. (2019). Meningkatkan Nilai Jual Rajut Di Masyarakat Melalui Desain Dan Media Sosial. Jurnal Semar, 8(1), 1–8.
- Wickramasinghe G, Dolawatte Su, Thebuwana Iu, B. W. (2022). Effect Of Production Speed On Polyester/Nylon Intermingled Yarn And Melange Fabric Properties. International Journal Of Clothing Science And Technology, 34(1), 65–78.
- Wijaya, T. (2015). Manajemen Kualitas Jasa. Pt Indeks.
- Zulyanti, N. R. (2016). Analisis Pengaruh Kualitas Alat Produksi, Harga Bahan Baku, Pemakaian Bahan Baku, Dan Jumlah Tenaga Kerja Terhadap Volume Produksi. Jurnal Penelitian Ekonomi Dan Akuntansi.