

FACTORS AFFECTING THE DECISION TO CHOOSE FABRIC SUPPLIERS OF GARMENT EXPORT ENTERPRISES IN VIETNAM

● NGUYEN XUAN VIEN - NGUYEN XUAN THINH - NGUYEN THI KIM NGAN

ABSTRACT:

This study explored the factors affecting the decision to choose fabric suppliers of garment export enterprises in Vietnam. The study used quantitative research methods, including descriptive statistics analysis, reliability analysis, multiple regression analysis, and ANOVA, to organize and visualize the data in order to evaluate the effects of each factor on the decision to choose fabric suppliers of garment export enterprises in Vietnam. The SPSS 29.0 software was also used to analyze collected data. Based on the study's findings, the study made some recommendations for fabric suppliers and Vietnamese garment export enterprises to improve their business performance and contribute to the textile and garment industry's development.

Keywords: fabric supplier choice, garment export enterprises, textile and garment industry.

1. Introduce

In recent years, Vietnam's textile and garment industry (T&G) witnessed a strong development and plays an increasingly crucial role for the country economy growth. Of all current export industrial products, T&G is one of the key export industries, accounting for 12 - 16% of the country's total export turnover. After more than 10 years of participating the World Trade Organization (WTO), Vietnam's T&G export value increased more than 4 times, of which the domestic export value ones increased over 6 times. In addition, the T&G industry currently employs about 3 million industrial workers, accounting for over 10% of the country's industrial workers. (Nguyen Van Nghi, 2022)

Currently, Vietnam is in the top of the world's largest T&G exporting countries, having exported 36 T&G products to 104 markets. Of these, the United States is the market with the largest proportion, followed by the EU, Korea, China, and Japan. Vietnam's T&G industry still has much room to strengthen international economic integration

and expand export markets. To gain competitiveness in the export sector, Vietnamese T&G enterprises have proactively improved production capacity; improved skill level; shifting production direction from a form of only accepting processing to a form of self-control of raw material sources, self-design and completion of products. (Ha Trang, 2023)

Price competition and good supplier base has long been a bottleneck hindering the T&G industry on its path to entering the global supply chain. Also, the choice of material suppliers is a crucial one that, by facilitating the success of downstream processes in the supply chain, can greatly increase a company's competitive advantage. Reducing purchasing risks, maximizing total value for purchasers, and fostering close, long-term relationships between buyers and suppliers are the major goals of a supplier selection process of those companies. As a result, selecting the appropriate supplier is crucial to an organization's success or failure. Therefore, the problem of where to buy raw

materials and which suppliers to work with to get the most competitive price, keep orders and ensure quality needs to be prioritized to find a solution. Although over the years, T&G enterprises have made great efforts to proactively source raw materials to serve production, according to statistics, domestic enterprises are having to import about 70% of raw materials and accessories, mostly from China. (Ha Trang, 2023)

As of October 2023, Vietnam has participated in negotiations for 18 Free Trade Agreements (FTAs), of which 15 FTAs have been signed and come into effect, 1 FTA has ended negotiations and 2 FTAs are under negotiation. negotiations (Vietnam - EFTA FTA; Vietnam - UAE FTA) (Ha Trang, 2023). In this context, the T&G industry is expected to benefit greatly, but also face many challenges when having to meet FTA's rules of origin. Vietnam's textile and apparel products have to closely adhere to the requirements committed in the Agreement, such as the standards of the origin of raw materials, in addition to the tax reduction in the EVFTA Agreement's terms. For example, Textile and apparel companies in Vietnam will benefit from a zero percent tax rate upon joining the Trans-Pacific Strategic Partnership Agreement (TPP). Vietnam's T&G industry is still heavily dependent on foreign material supply; most of the countries from which Vietnam imports raw materials are not members of the TPP. Nevertheless, the TPP stipulates that all input materials of this industry must be from the TPP to be eligible for preferential tax rates. Moreover, the purchasing trends of major garment importers in the world such as the US, Europe, and Japan are changing as they prioritize choosing a supply chain capable of producing multiple stages, concentrated in one place, and at the same time transparent the entire production process from raw materials to finished products, while Vietnam's T&G industry is lacking connectivity along the supply chain, especially the downstream.

On the one hand, working with foreign suppliers will be complicated and require stricter control because of geographical distance, language differences, technology, culture and policy regulations vary across countries. On the other hand, with an emphasis on encouraging investment in domestic fabric production to support the T&G

industry and lessen dependency on imports, the Prime Minister issued Decision No. 1643/QĐ-TTg on December 29, 2022, "*Vietnam textile and garment industry development strategy to 2030, vision to 2035*". There will be a big change for domestic suppliers. In the current context, the use of fabric in Vietnam for export products of garment enterprises depends on many factors, the quality of domestic fabric is still unstable, the price is not competitive compared to foreign suppliers. Therefore, research on factors affecting the decision to choose fabric suppliers of export garment enterprises is a good reference for the business models of Vietnamese garment export enterprises to choose appropriate international or local suppliers as well as Vietnamese domestic fabric suppliers. (Vietnam's Government, 2022)

So, the author chose the topic: "Factors affecting the choice of fabric suppliers of garment export enterprises in Vietnam". The author believes that the research can bring insightful views regarding the topic to support garment export enterprises to choose optimal suppliers for their situation as well as domestic fabric suppliers and Government to have accordingly action.

2. Research methods

This research uses a combination of qualitative and quantitative methods are used in order to achieve research's aims and objectives.

- Qualitative method: The author gathers secondary data from related previous research, T&G market reports, reputable international websites, economic papers, and other sources. The author can choose research variables, scales, and the best preliminary research model based on this secondary data. In order to check the suitability and reliability of those scales, the author collected primary data from 40 garment export firms to conduct a pilot test before proposing official scale developments, questionnaires and conceptual model.

- Quantitative method: the author gathered data by two approaches: offline survey by paper and online survey by Google Forms. After data collection, the author will use various methods to analyze the data, including descriptive data statistics analysis, Cronbach's Alpha analysis, Exploratory Factor Analysis, Pearson correlation analysis, Multiple regression and One-way analysis of variance (ANOVA). The author uses SPSS 29.0

software for data analysis and Microsoft Excel 2021 for data cleaning and standardization in order to perform the research properly.

3. Proposed research model

Based on the research by Do et al. (2023), the author chose six factors: cost, quality, delivery, service, flexibility and reliability to be independent variables for the proposed conceptual model. (Fig. 1)

Proposed research hypothesis:

- Cost positively affects the choice of fabric suppliers of garment export enterprises in Vietnam.
- Quality positively affects the choice of fabric suppliers of garment export enterprises in Vietnam.
- Delivery positively affects the choice of fabric suppliers of garment export enterprises in Vietnam.
- Service positively affects the choice of fabric suppliers of garment export enterprises in Vietnam.
- Flexibility positively affects the choice of fabric suppliers of garment export enterprises in Vietnam.
- Reliability positively affects the choice of fabric suppliers of garment export enterprises in Vietnam.

4. Research results

4.1. Cronbach's Alpha - Reliability analysis

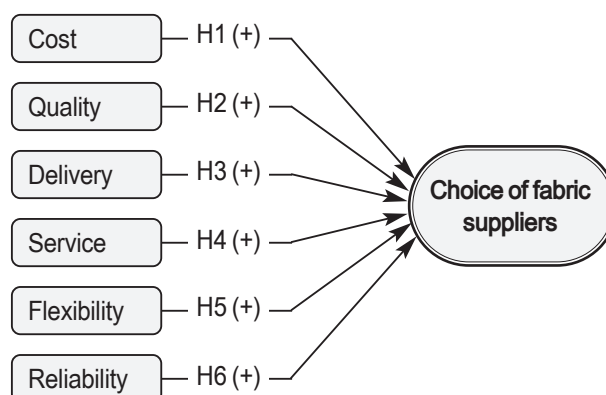
The Cronbach's Alpha analysis result shows all 24 observational variables have the qualified corrected item-total correlations of more than 0.3 (ranging from 0.569 to 0.922). For the second criteria of Cronbach's Alpha analysis to be reliable, six independent variables (Cost - C, Quality - Q, Delivery - D, Service - S, Flexibility - F, Reliability - R) and dependent variable (Fabric supplier choice - SC) also have satisfied coefficients, ranging from 0.780 to 0.946 (> 0.6). Moreover, all scales have Cronbach's Alpha not increase if we delete some items. (Table 1)

4.2. Exploratory factor analysis (EFA)

4.2.1. Exploratory factor analysis (EFA) of dependent variable

The EFA result of dependent variable, the KMO value is 0.799 ($0.5 \leq \text{KMO} \leq 1$) and Sig. Bartlett's test value $< 0.001 < 0.05$. Also, the Eigenvalue of one factor is $3.227 \geq 1$.

Fig 1: Proposed research model



This means that 4 observational variables are extracted into 1 factor, explaining 80.68% of data variations (Total Variance Explained $\geq 50\%$). Lastly, factor loadings of those observational variables have absolute values from 0.866 to 0.954 (> 0.5), which also satisfy the condition listed.

Therefore, the dependent variable remains the same and is qualified for the Pearson correlation analysis.

4.2.2. Exploratory factor analysis (EFA) of independent variables

The EFA result for 6 independent variables show that's some noticeable points as follows:

Firstly, the KMO value is 0.742 ($0.5 \leq \text{KMO} \leq 1$) and Sig. Bartlett's test value is < 0.001 (Sig. Bartlett's Test < 0.05). Those figures show that there is a reasonability of EFA to research's sample size ($n = 242$) and there are correlations of observational variables in the same factor.

Table 1. Cronbach's Alpha analysis result

Variable	Cronbach's Alpha coefficient	Corrected Item-total correlation	Cronbach's Alpha if Item Deleted
C	0.946	From 0.836 to 0.922	From 0.914 to 0.940
Q	0.903	From 0.744 to 0.896	From 0.784 to 0.915
D	0.927	From 0.814 to 0.848	From 0.901 to 0.913
S	0.842	0.733	
F	0.780	From 0.569 to 0.607	From 0.715 to 0.735
R	0.821	From 0.636 to 0.732	From 0.695 to 0.796
SC	0.918	From 0.767 to 0.908	From 0.861 to 0.912

Source: Summarized by the author from SPSS 29.0

Secondly, the Eigenvalue of 6 factors is $1.315 \geq 1$, proving that 20 observational variables are extracted to 5 factors. These factors explain 79.96% the data variation (% of variance). Besides, the observational variables are accepted as total variance extracted > 0.5 .

Thirdly, factor loadings of those observational variables have absolute values > 0.5 . This means there is convergent validity of the model and all observational variables are statistically significant.

So, independent variables stay constant and are qualified for the Pearson correlation analysis.

4.3. Pearson correlation analysis

The Pearson correlation analysis result show that's correlation between each dependent variable and fabric supplier choice as all the Sig. values are < 0.05 . To be more specific, Service and Flexibility shows a strong correlation with fabric supplier choice with Pearson coefficients of 0.564 and 0.528, respectively. While Quality, Delivery and Reliability are moderately correlated the fabric supplier choice, Cost only has a weak correlation of Pearson coefficient 0.181. The Pearson correlation analysis results also show some correlations between independent variables (Sig. value < 0.05). However, the Pearson coefficients just range from 0.179 to 0.305, which shows a weak correlation.

4.4. Multiple regression analysis

The result of multiple regression analysis is as follows (Table 2):

Evaluating the fitness of the model: From the results, it is indicated that adjusted R^2 is 0.626, which proves that six independent variables can explain 62.6% dependent variable variations. This figure is greater than 0.5, satisfied the multiple regression analysis criteria.

Testing the fitness of the model: The author uses F-test to see whether dependent variable can be explained by independent ones in the model. The F-test is expressed as follows:

$$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0 \text{ or } R^2 = 0$$

$$H_1: \exists \beta_i \neq 0 (i = 1 \rightarrow 5, \text{integer})$$

The results are F statistic = 68.333 and Sig. < 0.001 ; therefore, H_0 is rejected. It inferred that R^2 is statistically significant and at least one of six independent variables have effect on the dependent variable.

Testing the significance of regression's coefficient: The test is expressed as follows:

$$H_0: \beta_i = 0 (i = 1 \rightarrow 5, \text{integer})$$

$$H_1: \beta_i \neq 0 (i = 1 \rightarrow 5, \text{integer})$$

The results are all Standardized Coefficients are different from 0 and Sig. value are smaller than 0.05 (95% confidence interval). As a result, H_0 hypotheses are rejected. The test states that all six independent variables positively influence fabric supplier choice of garment export enterprises in Vietnam because of the positive direction of Beta.

Checking and detecting assumption violations:

Table 2. Multiple Regression analysis result summary

$R^2 = 0.797$			Adjusted $R^2 = 0.626$			
Durbin - Watson = 2.128						
F = 68.333			Sig. ≤ 0.001			
Independent variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	β	STD				
(Constant)	-0.910	0.235		-3.870	< 0.001	
C	0.083	0.034	0.100	2.482	0.014	1.040
Q	0.140	0.029	0.197	4.789	< 0.001	1.090
D	0.178	0.027	0.263	6.462	< 0.001	1.070
S	0.211	0.029	0.314	7.267	< 0.001	1.205
F	0.373	0.049	0.321	7.563	< 0.001	1.160
R	0.255	0.040	0.258	6.333	< 0.001	1.071

Source: Summarized by the author from SPSS 29.0

- *Multicollinearity*: From the result, VIF coefficients of independent variables vary from 1.040 to 1.205, showing no multicollinearity phenomenon.

- *Autocorrelation*: H0: The overall correlation coefficient of the residuals = 0. H1: The overall correlation coefficient of the residuals $\neq$ 0. The Durbin - Watson is 2.128 showing that there is no first order autocorrelation. So, the overall correlation coefficient of the residuals = 0, H0 is accepted.

- *Heteroskedasticity*: The outcome demonstrates that there is no clear trend and that the regression standardized residuals primarily scatter around the ordinate of 0. Consequently, there is homoscedasticity and the conceptual model continues to guarantee its fitness.

- Normal probability plot of residuals: The histogram indicates that the mean value is 2.95E-17 (close to 0) and the standard deviation is 0.987 (close to 1). It proves that there is no violation for the normal probability plot of residuals assumption.

- *Testing research hypothesis*: All hypotheses H1 to H5 are accepted (confidence interval = 95%). Also, the regression's coefficients are greater than 0, showing positive direction.

- *Regression equation*: From the from, the regression equation relating to fabric supplier choice of garment export enterprises in Vietnam is illustrated as follows:

$$SC = -0.910 + 0.083C + 0.140Q + 0.178D + 0.211S + 0.373F + 0.255R + \varepsilon$$

4.5. General assessment

Cost: Cost (C) factor has the lowest influence on fabric supplier choice of garment export enterprises with the coefficient of only 0.083 (Sig. = 0.014). This means that assuming other variables are constant, an increase of 1 in cost, on average, leads to an increase of 0.083 unit in fabric supplier choice of garment export enterprises in Vietnam. This result is similar to some previous research (Felix and Niraj, 2007; Ho, Xu and Dey, 2010; Do et al., 2023), which states the decreasing impact of cost on supplier choice. Hence, the results concluded from this study for garment export enterprises are similar to previous research.

Quality: Quality (Q) is the factor that has the second lowest effect ($\beta = 0.140$, Sig. < 0.001). This

means that assuming other variables remains unchanged, an increase on average of 1 in quality, results in an increase of 0.140 unit in fabric supplier choice of garment export enterprises in Vietnam. Similarly, other previous studies suggest relevant results, as: Pearson and Ellram (1995), Nong and Ho (2019), Wang et. al. (2019).

Delivery: Delivery (D) factor has the fourth highest effect on fabric supplier choice ($\beta = 0.178$, Sig. < 0.001). This means that assuming other variables are constant, an increase of 1 in delivery, on average, leads to an increase of 0.178 unit in fabric supplier choice of garment export enterprises in Vietnam. This result is appropriate to some related study where Felix and Niraj (2007), Nong and Ho (2019), Luong (2015) and Nguyen (2013).

Service: Service (S) factor has the third highest effect on fabric supplier choice ($\beta = 0.211$, Sig. < 0.001). This means that assuming other variables remains the same, an increase on average of 1 in service, results in an increase of 0.211 unit in fabric supplier choice of garment export enterprises in Vietnam. This result is appropriate to some related study where Nong and Ho (2019), Ho, Xu and Dey (2010), Ha and Krishnan (2008), Do et al. (20203), Felix and Niraj, (2007).

Flexibility: Flexibility (F) factor has the highest influence on fabric supplier choice of garment export enterprises with the coefficient of only 0.373 (Sig. < 0.001). This means that assuming other variables are constant, an increase of 1 in flexibility, on average, leads to an increase of 0.373 unit in fabric supplier choice of garment export enterprises in Vietnam. The positive impact of flexibility is suggested by many previous studies for companies in the Garment Industry of Vietnam like Do et al. (2023), Nong and Ho (2019) and Nguyen (2013).

Reliability: Reliability (R) factor has the second highest effect ($\beta = 0.255$, Sig. < 0.001). This means that assuming other variables are constant, an increase of 1 in reliability, on average, leads to an increase of 0.255 unit in fabric supplier choice of garment export enterprises. The result of this study confirms previous study's result, as: Taherdoost and Brand, (2019), Do et al. (2023), Nguyen (2013); and expands the scope not only in one city but to Vietnam.

5. Conclusions

The author has developed the research model and appropriate scale by reviewing theories, existing domestic and international studies related to fabric suppliers choice of garment export enterprises. The result shows to have the six independent variables that were initially proposed all have a positive influence on choice of fabric suppliers of garment export enterprises in Vietnam. These variables are (i) Flexibility; (ii) Reliability; (iii) Service; (iv) Delivery; (v) Quality and (v) Cost,

depending on the degree of influence. Furthermore, 62.6% of the variations in garment export enterprises' fabric suppliers choice can be explained by these six criteria, indicating the significance and applicability of this research model.

The study provided one more topic about companies' behavior in reference research. Specifically, the study adds to the breadth of variables influencing garment export enterprises' decision to choose fabric suppliers in Vietnam ■

REFERENCES:

1. Do Thi Thuy, Nguyen Thi Lien, Nguyen Anh May, Dao Thi Phuong Thao and Giap Thu Trang, (2023). Research the effects of a number of factors on decisions to choose fabric suppliers of garment firms in Vietnam. *Journal of Science and Technology*, 59(5), 99-105.
2. Felix T.S. Chan and Niraj, K. (2007). Global supplier development considering risk factors using fuzzy extended AHP-based approach. *Omega*, 35(4), 417-431.
3. Ha, S. H. and Krishnan, R., (2008). A hybrid approach to supplier selection for the maintenance of a competitive supply chain Expert Systems with Applications. *Expert Systems with Applications*, 34(2), 1303-1311.
4. Ho, W.; Xu, X. and Dey, P.K., (2010). Multi-criteria decision making approaches for supplier evaluation and selection: A literature review. *European Journal of Operational Research*, 202(1), 16-24.
5. Hoang Trong and Chu Nguyen Mong Ngoc, (2008). *Applied statistics in socio-economics*. Hanoi: Statistical publisher.
6. Luong Thuy Thu Truc, (2015). Research on factors affecting the decision to choose raw material suppliers of some garment enterprises exporting to the United States. Master Thesis, University of Finance - Marketing, Vietnam.
7. Nguyen Ngoc Diep, (2013). Research on factors affecting the decision to choose raw material suppliers of garment export enterprises in Ho Chi Minh City. Master Thesis, University of Economics Ho Chi Minh City.
8. Nguyen Van Nghi (2022). The current situation of Vietnam's textile and garment industry and challenges brought by the Industry 4.0. *Industry and Trade Magazine*, 6, 128-133.
9. Nong Thi Nhu Mai and Ho Thanh Phong, (2019). Supplier selection criteria in Vietnam: A case study in the textile and apparel industry. *Journal of Asian Business and Economic Studies*, 26(2), 71-100.
10. Pearson J. and Ellram L., (1995). Supplier selection and evaluation in small versus large electronics firms. *Journal of Small Business Management*, 33(4), 53-65.
11. Taherdoost, H. and Brard, A., (2019). Analyzing the Process of Supplier Selection Criteria and Methods. *Procedia Manufacturing*, 32, 1024-1034.
12. Vietnam's Government (2022). Decision No. 1643/QĐ-TTg on December 29, 2022 V/v Vietnam textile and garment industry development strategy to 2030, vision to 2035.
13. Wang, C. N.; Zheng, T. C.; Thai, H. T. N., and Nguyen, V. T., (2019). Sustainable supplier performance evaluation and selection in garment industry with fuzzy analytic network process and goal programming. In *The international conference on logistics and industrial engineering 2019*, August 30th 2019 (pp 1- 8). Ho Chi Minh, Vietnam.

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Author Information:

1. NGUYEN XUAN VIEN¹

2. NGUYEN XUAN THINH²

3. NGUYEN THI KIM NGAN³

¹Univeristy of Phan Thiet

²University of Economics Ho Chi Minh City

³Foreign Trade University - Ho Chi Minh Campus

CÁC YẾU TỐ ẢNH HƯỞNG ĐẾN QUYẾT ĐỊNH LỰA CHỌN NHÀ CUNG CẤP VẢI CỦA CÁC DOANH NGHIỆP XUẤT KHẨU HÀNG MAY MẶC TẠI VIỆT NAM

● NGUYỄN XUÂN VIỄN¹

● NGUYỄN XUÂN THỊNH²

● NGUYỄN THỊ KIM NGÂN³

¹Trường Đại học Phan Thiết

²Đại học Kinh tế TP. Hồ Chí Minh

³Trường Đại học Ngoại thương - Cơ sở II tại TP. Hồ Chí Minh

TÓM TẮT:

Nghiên cứu này nhằm tìm hiểu các yếu tố ảnh hưởng đến quyết định lựa chọn nhà cung cấp vải của các doanh nghiệp xuất khẩu hàng may mặc tại Việt Nam. Nghiên cứu sử dụng các phương pháp nghiên cứu định lượng, bao gồm phân tích thống kê mô tả, phân tích độ tin cậy, phân tích hồi quy bội, và phân tích ANOVA để liệt kê và trực quan hóa dữ liệu nhằm đánh giá tác động của từng yếu tố đến quyết định lựa chọn nhà cung cấp vải của các doanh nghiệp xuất khẩu hàng may mặc tại Việt Nam. Phần mềm SPSS 29.0 cũng được sử dụng để phân tích dữ liệu thu thập được. Dựa trên các kết quả thu được, nghiên cứu đưa ra một số khuyến nghị cho các nhà cung cấp vải và các doanh nghiệp xuất khẩu hàng may mặc Việt Nam để cải thiện hiệu quả kinh doanh cũng như thúc đẩy sự phát triển của ngành dệt may.

Từ khoá: lựa chọn nhà cung cấp vải, doanh nghiệp xuất khẩu hàng may mặc, ngành dệt may.