International Journal of Scientific Trends- (IJST)
ISSN: 2980-4299
Volume 3, Issue 12, December - 2024
Website: https://scientifictrends.org/index.php/ijst
Open Access, Peer Reviewed, Scientific Journal

Assessment of the Competitive Potential of Sewing and Knitting Enterprises

Vafoyeva Dilafruz Ikromovna
Senior Lecturer PhD
International School of Finance Technology and Science

Abstract

The article develops a questionnaire to assess the competitive potential of Uzbek sewing and knitting enterprises, and provides suggestions and recommendations for assessing competitive potential based on consumer opinions.

Keywords: Product, competition, quality, marketing, price, enterprise, efficiency.

Introduction

In the process of globalization in the world economy, the center of textile production has moved from Europe and the United States to the developing regions of South America, Southeast Asia, and Central Asia. This requires the modernization of the knitting, silk, and sewing industries, which are considered economically important sectors in our country, along with developing countries, and the management of business processes in organizing the activities of enterprises producing export-oriented, high-quality textile products, in particular, focusing on the process approach to management, and organizing the production of competitive products. In today's era of increasingly fierce competition in the global market, it is impossible to ensure the economic and financial stability of enterprises without reconstructing them, equipping them with modern advanced technology, and updating the range of products they produce. The introduction of continuous forms of production organization should be the most important condition and source of measures taken to develop the textile industry of our country and produce high-quality export-oriented products. The fact that textile production has its own raw material base should be the basis for the rapid development of the Uzbek textile industry, which processes cotton raw materials.

Literature Review

A market is a set of relationships that arise between producers and consumers (sellers and buyers) in the process of exchange through money [1]. The market system serves as a permanent management object for a successfully operating enterprise. Like any living system, the market requires the presence of positive and negative feedback. The balance between supply and demand is established only when there are positive (from production to market) and negative (from market to production) connections [2]. Nowadays, economic development is closely linked to

globalization. Enterprises, regions, and states are facing increasing global market pressure due to intense price and non-price competition, which forces them to innovate [3]. The high competition of modern technologies and science-intensive products in the global market requires constant adjustments in the development and implementation of scientific and technical strategies, as well as the modernization of all sectors of the economy in the direction of active use of innovations[4].

Materials and methods

Nowadays, controlling the management of manufacturing-knitting production is one of the most challenging endeavors. In this regard, we considered it appropriate to analyze the current state of competitiveness of national and foreign brands in managing the production process of sewing and knitting enterprises operating in our country. The study is in the form of primary data, with 20 questions collected from 280 respondents via an online questionnaire. The null hypothesis is that the expected results may be a nonlinear function of the observed variables in the model.

Figure 1. Descriptive statistics of research variables

Variable	Obs	Mean	Std. Dev.	Min	Max
age	280	1.3	1.18	0	4
price importance	280	1.789	1.069	1	5
quality importance	280	1.664	1.155	1	5
enterprise competitiveness	280	1.854	1.056	1	5
packaging design	279	1.918	1.088	1	5
advertising	279	2.283	1.179	1	5
product price satisfaction	280	1.736	.53	0	2
information	280	3.043	.82	1	5
residence	280	6.168	.374	6	7
modernization cost	279	8.717	.858	8	10
product quality	279	12.19	.637	11	14
product purchase	280	16.936	1.405	15	20
utility	280	22.532	.761	21	25
foreign country	280	31.582	1.87	26	34
product comparison	279	12.656	2.963	11	37
national brand purchase	280	43.525	3.415	38	48
foreign brand	280	55.871	2.777	49	59
product price satisfaction	280	61.6	.774	60	62

(Author's elaboration based on survey data)

To this end, we expressed the general statistics of the research process based on the inclusion of questionnaire questions in the model (Table 2).

International Journal of Scientific Trends- (IJST)
ISSN: 2980-4299
Volume 3, Issue 12, December - 2024
Website: https://scientifictrends.org/index.php/ijst
Open Access, Peer Reviewed, Scientific Journal

2-jadval General description of the age of respondents

Code	Age range	Freq.	Percent	Cum.
0	18-24	85	30.36	30.36
1	25-35	87	31.07	61.43
2	36-45	66	23.57	85.00
3	46-54	23	8.21	93.21
4	55 and above	19	6.79	100.00
Total		280	100.00	

(Author's elaboration based on survey data)

The expanded data representation of the responses received from respondents during the research process is as follows:

According to Table 3 above, there were 85 people between the ages of 18-24 (coded as number 0), 87 between the ages of 25-35 (coded as number 1), 66 between the ages of 36-45 (coded as number 2), 23 between the ages of 46-54 (coded as number 3), and 19 people over 55 (coded as number 4).

Table 3 General characteristics of respondents who considered price to be important in terms of product competitiveness

The importance of price	Freq.	Percent	Cum.
1	146	52.14	52.14
2	82	29.29	81.43
3	31	11.07	92.50
4	7	2.50	95.00
5	14	5.00	100.00
Total	280	100.00	

(Author's elaboration based on survey data)

Table 4 shows that the number of respondents in Group 1 who considered the price of a product to be important in determining product competitiveness was 146, in Group 2 - 82, in Group 9 - 31, in Group 4 - 7, and in Group 5 - 14 participants expressed their opinion.

Table 4 General characteristics of respondents who considered quality important for product competitiveness

The importance of quality	Freq.	Percent	Cum.
1	191	68.21	68.21
2	32	11.43	79.64
3	35	12.50	92.14
4	4	1.43	93.57
5	18	6.43	100.00
Total	280	100.00	

(Author's elaboration based on survey data)

According to the study's calculations, among those who assessed that competitiveness generally depends on product quality, there were 191 participants in Group 1, 32 in Group 2, 35 in Group 3, 4 in Group 4, and 18 in Group 5 (Table 4).

Also, 144 respondents in Group 1, 60 in Group 2, 57 in Group 3, 11 in Group 4, and 8 in Group 5 expressed their opinions regarding the importance of the company's image.

Table 5 General characteristics of respondents who considered corporate image important for product competitiveness

Corporate image	Freq.	Percent	Cum.
1	144	51.43	51.43
2	60	21.43	72.86
3	57	20.36	93.21
4	11	3.93	97.14
5	8	2.86	100.00
Total	280	100.00	

(Author's elaboration based on survey data)

During the analysis, Table 5 also included opinions that the packaging of the product was considered important, with 131 participants in Group 1, 74 in Group 2, 52 in Group 3, 11 in Group 4, and 8 in Group 5 expressing their opinions in the model.

Table 6 General characteristics of respondents who found brand design important for product competitiveness

Packaging design	Freq.	Percent	Cum.
1	131	46.95	46.95
2	74	26.52	73.48
3	52	18.64	92.11
4	10	3.58	95.70
5	12	4.30	100.00
Total	279	100.00	

(Author's elaboration based on survey data)

At the same time, according to the records of those who assessed that advertising is crucial for product competitiveness, 90 respondents in Group 1, 81 in Group 2, 61 in Group 3, 33 in Group 4, and 14 in Group 5 expressed their views (Table 7).

Table 7 Advertising is found to be important in product competitiveness

Advertisement	Freq.	Percent	Cum.
1	90	32.26	32.26
2	81	29.03	61.29
3	61	21.86	83.15
4	33	11.83	94.98
5	14	5.02	100.00
Total	279	100.00	

(Author's elaboration based on survey data)

Table 7 shows the columns according to the respondents' education level, with 16 having secondary education, 27 having secondary specialized education, 179 having higher education, 45 having higher education, and 13 having incomplete education.

Table 8 General descriptive statistics on respondents' education

Education	Freq.	Percent	Cum.
Secondary education	16	5.71	5.71
Secondary_specialized	27	9.64	15.36
Higher	179	63.93	79.29
Post-higher	45	16.07	95.36
Incomplete	13	4.64	100.00
Total	280	100.00	

(Author's elaboration based on survey data)

Our research question is to assess the potential of the local situation to increase the competitiveness of our country's garment and knitwear enterprises. We used the factor analysis method in econometric analysis of the data.

Results and Discussion

Factor analysis is a method of taking a mass of data and reducing it into a smaller data set that is more manageable and understandable. This is a way to find hidden patterns, see how these patterns overlap, and show what features appear in multiple patterns. It is also used to create a set of variables for similar objects in a collection (this set of variables is called dimensions). This can be a very useful tool for complex data sets that include psychological research, socioeconomic status, and other related concepts. A "factor" is a set of observed variables that have similar response patterns; they are related to a latent variable that is not directly measured (called a confounding variable). Factors are listed according to their loadings, or how much variation in the data they can explain [5]. This model also allows you to interpret aggregate data by placing the aggregate values between 1 and 0.

These calculations are based on a specific sequence, starting with the creation of latent variables. This process was carried out as follows:

1. Select variables that explain the general meaning observed during the research process;
2. Naming the latent variable that was not observed during the research process;
3. Formation of the latent;
4. Calculate the determination correlation matrix;
5. Check the values according to the Bartlett test;
6. Obtain the result according to the Kaiser-Meyer-Olkin test;
7. Orthogonal rotation at an angle of 90 based on the Varimax test;
8. Determining factor weights as a result of orthogonal rotation;
9. Drawing a scriplot graph based on the factor rotation matrix;
10. Determining new values as a result of rotating the total model by 90 degrees.

The model conditions require us to reject the hypotheses based on a series of tests and accept the alternative form. Also, (Ceteris Paribus) the results are considered valid if the values of all independent variables in the model are found to be statistically significant at $r<0.05$ (5%)[6].

International Journal of Scientific Trends- (IJST)
ISSN: 2980-4299
Volume 3, Issue 12, December - 2024
Website: https://scientifictrends.org/index.php/ijst
Open Access, Peer Reviewed, Scientific Journal

1. Demographics (1-Latent)

When constructing this Latent, we selected the variables age, gender, and high salary.

9-Jadval Latent formation method

Factor analysis/correlation — Number of obs = 280
Method: principal-component factors — Retained factors = 2
Rotation: (unrotated) — Number of params = 3

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	1.091	0.057	0.364	0.364
Factor2	1.035	0.160	0.345	0.709
Factor3	0.874	.	0.291	1.000

LR test: independent vs. saturated: chi2(3) = 3.67 Prob>chi2 = 0.2999

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Uniqueness
Age	-0.793	-0.072	0.366
Gender	0.380	0.791	0.229
High salary	0.564	-0.635	0.279

(Author's elaboration based on survey data)

The number of observations in the study is 280 respondents, and the eigenvalues greater than 1 are 2. Eigenvalues are associated with eigenvectors in linear algebra and are used in the analysis of linear transformations. This is a special set of values in the model, which is associated with a set of linear equations in matrix equations. It is a non-zero vector that can be transformed by its scalar coefficient after linear transformations are applied, and the corresponding factor that scales the eigenvectors is called the eigenvalue.

For this Latent, the determination correlation matrix Det = 0.987 and the Bartlett test value Chi-square = 3.652, Degrees of freedom = 3, p-value=0.000. The hypothesis H0: (variables are not intercorrelated) is formed as follows: the variables are not correlated. We select the alternative hypothesis that the test "r" value is less than 0.05, and the minimum condition KMO=0.50 according to the Kaiser-Meyer-Olkin test must be satisfied.

Figure 2 shows the values of the two selected factors separated by a 90-degree rotation based on the Varimax test.

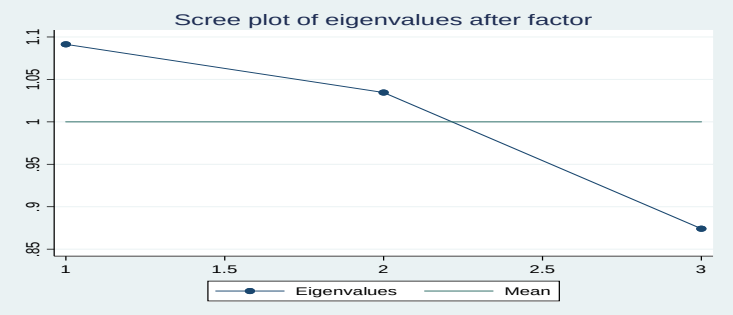

Figure 2 shows the values of the two selected factors separated by a 90-degree rotation based on the Varimax test.

Author's elaboration based on survey data)

International Journal of Scientific Trends- (IJST)
ISSN: 2980-4299
Volume 3, Issue 12, December - 2024
Website: https://scientifictrends.org/index.php/ijst
Open Access, Peer Reviewed, Scientific Journal

This figure shows the values of the variables age, gender, and monthly salary greater than 1. The remaining factors are not included in the model due to their small values.

The new values of the conditions for the formation of the 1st latent variable were finally determined (Table 10).

In this order, "Product Competitiveness" includes the 2nd Latent Price Importance, QualityImportance, Corporate Image, and Product Design variables.

Table 10. Product Competitiveness (2-Latent)

(obs=279)

Factor analysis/correlation — Number of obs = 279
Method: principal-component factors — Retained factors = 1
Rotation: (unrotated) — Number of params = 4

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	2.486	1.674	0.622	0.622
Factor2	0.813	0.367	0.203	0.825
Factor3	0.446	0.191	0.112	0.936
Factor4	0.255	.	0.064	1.000

LR test: independent vs. saturated: chi2(6) = 407.04 Prob>chi2 = 0.0000

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Uniqueness
The importance of price	0.825	0.319
The importance of quality	0.806	0.351
Corporate image	0.816	0.335
Product design	0.701	0.508

(Author's elaboration based on survey data)

According to the results of the analysis, the weights of the single factor among the variables with eigenvalues greater than 1 are 0.825, 0.806, 0.816, and 0.701.

Table 11. Marketing Services (3-Latent)

(obs=278)

Factor analysis/correlation — Number of obs = 278
Method: principal-component factors — Retained factors = 2
Rotation: (unrotated) — Number of params = 6

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	1.127	0.094	0.282	0.282
Factor2	1.032	0.098	0.258	0.540
Factor3	0.935	0.029	0.234	0.773
Factor4	0.906	.	0.227	1.000

LR test: independent vs. saturated: chi2(6) = 4.10 Prob>chi2 = 0.6637
Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Uniqueness
Advertising	0.535	0.511	0.453
Satisfaction with product price	-0.566	0.402	0.517
Product purchase	0.663	0.247	0.499
Product_comparison	-0.282	0.741	0.371

(Author's elaboration based on survey data)

According to the results of the analysis, the number of eigenvalues greater than 1 in the formation of the 3rd Latent, known as "Marketing Services", is 2, explaining the variables of advertising, satisfaction with product price, product purchase, and product comparison. The number of observations was 278, and the model parameters were 6. The weights of this factor 1 were advertising 0.535, product price satisfaction -0.566, product purchase 0.663, and product comparison -0.282, respectively (Table 11).
Continuing the research process by constructing Latent 4, we determine the values of the tests called "Foreign Attractiveness".

Table 12. Foreign attractiveness (4th Latent)

(obs=280)
Factor analysis/correlation Number of obs = 280
Method: principal-component factors Retained factors = 1
Rotation: (unrotated) Number of params = 1

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	1.034	0.068	0.517	0.517
Factor2	0.966	.	0.483	1.000

LR test: independent vs. saturated: chi2(1) = 0.32 Prob>chi2 = 0.5728
Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Uniqueness
Made in a foreign country	0.719	0.483
Has a foreign brand	0.710	0.483

(Author's elaboration based on survey data)

In constructing the 4th Latent "Foreign Attractiveness", variables developed in a foreign country and with a foreign brand were selected. According to the results of the analysis, factor weights of 0.719 and 0.710 were calculated for the only eigenvalues greater than 1.
According to the expected "Factor" test results, the determination correlation matrix Det=0.999 and the Bartlett test value Chi-square = 0.317, Degrees of freedom = 1, p-value=0.573 were determined. The Kaiser-Meyer-Olkin test result was KMO=0.500. This explains that the latent

variable is constructed based on the conditions of the lowest value according to the conditions of factor analysis.

Also, the last 5th Latent, "Local Condition," is constructed by interpreting the observed variables of national brand product purchase, design change evaluation, and product quality. According to the results of the analysis, it was found that among the variables for the 5th Latent, one factor has eigenvalues greater than 1 (Table 12).

Table 12. Local situation (5-Latent)

(obs=278)

Factor analysis/correlation Number of obs = 278
Method: principal-component factors Retained factors = 2
Rotation: (unrotated) Number of params = 3

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	1.214	0.153	0.405	0.405
Factor2	1.061	0.335	0.354	0.758
Factor3	0.726	.	0.242	1.000

LR test: independent vs. saturated: chi2(3) = 18.82 Prob>chi2 = 0.0003

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Uniqueness
National brand_purchase	0.116	0.923	0.135
Construction Change Cost	0.749	-0.393	0.284
Product Quality	-0.799	-0.235	0.306

(Author's elaboration based on survey data)

The matrix of the determination correlation explaining the latent variable has a value of Det=0.934 and a Bartlett test value of Chi-square = 18.752, Degrees of freedom = 3, p-value=0.000, which is equivalent to Kaiser-Meyer-Olkin KMO=0.550.

According to the results of the analysis, the relationship was determined using the Pearson correlation test. This allowed us to examine the correlation between the 5 latent variables, which were explained by the independent variables observed in the course of a total of 22 studies, divided into parts. The relationships calculated in the pairwise correlation system are as follows:

- there is a 15 percent inverse relationship between demographics, i.e., consumers' age, gender, and high salary levels, and marketing services;
- there is a 15 percent inverse relationship between demographics, i.e. consumers' age, gender, and high income, and local conditions, in particular, national brand purchases, the cost of design changes, and product quality;
- there is a 20 percent inverse relationship between a company's competitiveness and local conditions, in particular, national brand purchases, the cost of design changes, and product quality;

International Journal of Scientific Trends- (IJST)
ISSN: 2980-4299
Volume 3, Issue 12, December - 2024
Website: https://scientifictrends.org/index.php/ijst
Open Access, Peer Reviewed, Scientific Journal

- There is a 7% positive correlation between the competitiveness of an enterprise and foreign attractiveness, in particular, the fact that the product is manufactured in a foreign country and has a foreign brand.

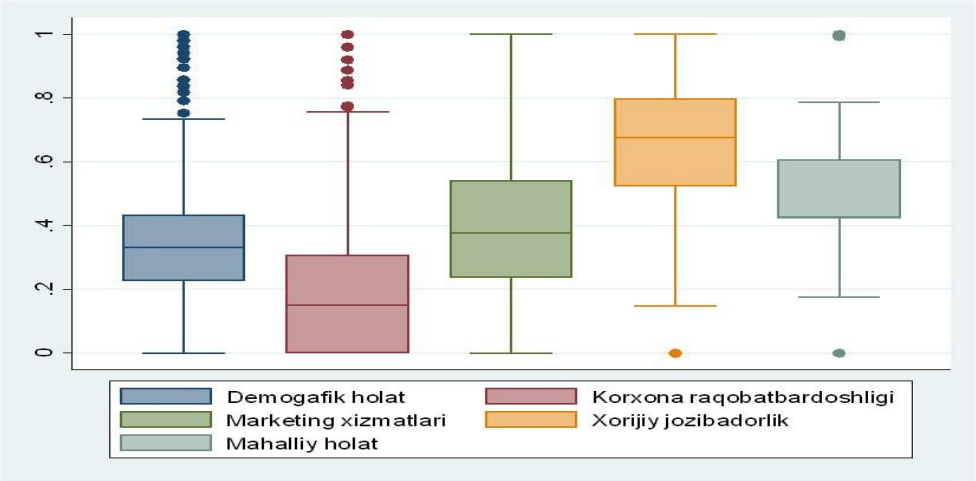

Figure 3. Boxplot of latent variables between 0 and 1

(Author's development based on survey data)

We used a boxplot to more graphically represent the strongly correlated Latents. This tells us that outliers, which explain 75 percent of the respondents' opinions between 0 and 1, indicate that the survey data is problematic. Therefore, the reforms in marketing services and foreign attractiveness implemented at the enterprises of the textile and garment and knitwear industry of our country were considered to be of high quality (Figure 3).

However, it is being identified that there are a number of problems with the current demographic situation of the population, namely the age, gender, and high salary indicators of consumers, as well as with the competitiveness of enterprises and the local situation, in particular, with the purchase of national brands, the cost of design changes, and product quality.

Table 13. Calculated Latent Relationships for Assessing the Competitive Potential of Sewing and Knitting Enterprises

Linear regression

Enterprise competitiveness	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Demographics	.065	.055	1.17	.242	-.044	.174	
Marketing Services	.059	.06	0.98	.328	-.06	.178	
Foreign Attractiveness	.083	.065	1.27	.206	-.046	.212	
Local Situation	-.084	.059	-1.43	.154	-.2	.032	
Constant	.139	.068	2.04	.043	.005	.273	**

Mean dependent var	0.199	SD dependent var	0.218
R-squared	0.022	Number of obs	277
F-test	1.553	Prob > F	0.187
Akaike crit. (AIC)	-54.441	Bayesian crit. (BIC)	-36.320

*** p<.01, ** p<.05, * p<.1

(Author's elaboration based on survey data)

According to the results of the analysis, the number of observations is 277, and the N0-scientific hypotheses of the F-test and t-test are found to be statistically insignificant (Table 13).

Therefore, by increasing the importance of the quality of textile and garment and knitwear

products in enterprises by one unit, it is possible to develop competitive potential by an additional 0.36 units;

by increasing the importance of product design by one unit, competitive potential can be developed by an additional 0.40 units;

by increasing the importance of advertising by one unit, competitive potential can be developed by an additional 0.088 units;

by increasing the importance of product purchases by one unit, competitive potential can be developed by an additional 0.062 units;

By increasing the importance of foreign products by one unit, the competitiveness of a country can be developed by an additional 0.044 units.Enterprise competitive potential=$-1.643+B_1 \cdot x_1+B_2*x_2+B_3*x_3+e$

However, other variables in the model are found to be statistically insignificant in the range of r<0.05 values of the t-test. In this regard, they cannot be solutions in the model. It is possible that the model we have chosen does not fully obey a simple linear relationship.

Conclusion

In conclusion, quality indicators are of particular importance in developing the competitive potential of textile enterprises in more accurately analyzing the marketing characteristics of products.

According to the results of the study, only product quality, advertising, product design, and textile components produced abroad are statistically significant in assessing the competitive potential of our country's sewing and knitting enterprises. At the same time, it was found that the variables of satisfaction with product price, product purchase and product comparison, and consumer preference for foreign brands were insignificant. Also, when assessing the competitive potential of industry enterprises, the issues of low purchase of national brand products, the cost of currently implemented reforms, and product quality remain relevant.

References

1. Sh. Shodmonov, M. Rakhmatov. Economic Theory: Textbook.-T.: "Zamin Nash", 2021-856p. 194-196 p.
2. M.R. Boltaboev. Marketing strategy in the textile industry: Monograph.-T.: "Fan Nashyoti", 2004. -224 p.
3. E.M. Rogova, E.A. Tkachenko, E.A. Fiyaksel. Venture management: Uchebnoe posobie, /Izdatelsky dom, Moscow, 2011.- 437 p., 17 p.
4. R.R. Nazarova, G.Sh. Karabaeva, Konceptual'nie osnozi strategii innovatsionnogo razvitiya promislennex predpriyatiy. Monograph, T.: Lesso press, 2019-196 str. 10 p.
5. MacCallum RC, Austin JT. 2000. Applications of structural equation modeling in psychological research. Annu. Rev. Psychol. 51: 201–26.
6. Basic Econometrics, Damodar N. Gujarati, McGraw-Hill, New York, 1995, ISBN 0-07-025214-9
7. Mamasoatov, D. (2024). Foreign experiences in using digital platforms in developing the export of business entities and ways to use them.

8. Ravshanovich, M. D. (2023, November). THE CONCEPT, ADVANTAGES AND PRACTICAL SIGNIFICANCE OF THE DIGITAL ECONOMY. In Conferences (Vol. 1, No. 1, pp. 731-734).
9. Vafoeva D.I., Issues of improving modern management strategies to increase the competitiveness of textile industry enterprises. International Journal of Scientific & Engineering Research Volume 12, Issue 5, May-2021, 1084 – 1092 pg.
10. Vafoeva D.I. Increasing the export potential of enterprises of the textile and garment industry. Asian Journal of Research in Business Economics and Management ISSN: 2249-7307 Vol. 12, Issue 1, January 2022 SJIF 2021 = 8.075 A peer reviewed journal, 13 – 18 pg.