

Technology and Its Role in Driving Sales in The Textile Sector:

A Case Study of Leading Textile Companies in Pakistan

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Abstract

The purpose of the study is to investigate the impact of technological advancement on sales of the textile industry in Pakistan. The two factors of sales and technological advancements are studied by reaching customers and communicating with the managers of the companies. The problems that are acting as a constraint in the industry are power shortage, devaluation of the currency, unskilled labour and old techniques. The study includes insights into the industry, its power and its contribution to the economy. It includes the analysis of three stock exchange-registered companies, Nishat, Sapphire and Gul-Ahmed is evaluated on the basis of variables. The primary and secondary data are analysed, and the result from the study reveals that sales are positively affected by technological advancements and significantly improve performance. The objective of the research is to find out the speed of technology adaptation in Pakistan's textile sector and its impact on the manufacturing of clothes and their sales of it. The research shows that many attributes of fabric that define its strength, quality and sustenance of prints.

Keywords: Textile industry, sales, technological advancements, devaluation of the currency, unskilled labour.

Introduction

The objective of this research is to assess the impact of technological advancement on sales in the textile industry. The integration of technology is influencing sales in the textile sector.

The textile industry is the largest and major contributor to economic growth among other sectors in Pakistan. It is among the largest manufacturing industry, which contributes 8.5 per cent of the total GDP of Pakistan (FactsheetPakistan, 2014). According to 2021 data, the total number of textile units running in the country is 517, out of which 40 are composite, and 477 belong to spinning units (Baloch, 2022). The ranking of the country in textile product export is eight, which shows that the country is powerful and has a hold on this sector (invest, 2020). The textile industry of Pakistan provides job opportunities to the majority of people; it makes up 45 per cent which constitutes the labour force working in the sector (Fahim, 2023). The country has the fourth number on the list of producers of cotton, which shows that Pakistan has a larger capacity for cotton production, which is the reason that it has an opportunity to grow further (Shuli et al., 2018).

Literature Review

Pakistan has the experience and holds over many sectors in the textile industry, cotton is its pride, and the country has the edge over its production and manufacturing. The power of the textile industry lies in its productivity, quality maintenance and efficiency over operations. The country's largest and most well-established division is manufacturing which is the third largest sector operating in the country, and this sector plays playing a vital role in economic development by sharing in GDP (Usman, Hassan, Mahmood & Shahid, 2014). The textile sector comes in manufacturing, and textile is the largest division of the manufacturing industry. The textile itself has further divisions and sub-sectors.

Top textile exporting countries worldwide 2021
(in billion U.S. dollars)

Country	Export value in billion U.S. dollars
China*	146
European Union (27)	73
India	22
Türkiye	15
United States	13
Viet Nam**	11
Republic of Korea	9
Chinese Taipei	9
Pakistan	9
Japan	6

Figure 1: Top textile exporting countries worldwide 2021

According to global data, Pakistan comes 9th among the textile exporting countries (Sabanoglu, 2022), which shows that the industry has the capacity to succeed. The research by Kanat, Abbasi, Peerzada & Atilgan (2018) highlights the strength and weaknesses of the textile industry of Pakistan. The data revealed shows that 62 per cent of the export comes from textile, and it also is the source of employment for 40 per cent of the public (Wadho & Chaudhry, 2018). The country has power over the resources, the self-sufficiency over cotton production, which is a great factor that contributes to the progress of the textile industry. The strengths that the country has included a low-cost labour force. The industry is serving as a gateway to support public life by giving them job opportunities so that they can earn and modify their living standards. The industry has deep-rooted excellence in exports, which allows it to expand its routes. The textile industry is highly dependent on cotton production; if the cotton yield decreases, it will directly impact the textile sector, which means that cotton production and textile manufacturing go hand in hand (Abbas, Hsieh, Techato & Taweekun, 2020). Dividing the textile market inside Pakistan consist of different cities that have textile industries operating. In Karachi, 38 per cent of and in Faisalabad, 28 per cent of textile factories are running (haidertex, 2023). In Pakistan, a ministry is functioning to handle and take appropriate action for the textile industry (haidertex, 2023); the Ministry of Textile industry is operating to solve the issues of the sector. Through the analysis of Pakistan's textile

industry, it was observed that the country is facing competition from neighbouring countries, including India and Bangladesh. The other barriers in the way of the progress of the industry are increased power shortages which are bringing severe crises (Haider, 2015), production costs, unqualified labour and poor technology.

Research Methodology

The study is based on finding out the impact of technological advancements on the sales of the textile industry in Pakistan. The data collection is done by using a questionnaire filled by 500 customers using the convenience sampling method. The data was analysed by using SPSS software. The customers were reached through an online questionnaire developed using the Likert scale. Interviews were conducted with the managers of the textile companies to know their points of view on the research topic.

Hypothesis

Technological advancements have a significant impact on the sales of the textile industry.

Research Problem

Pakistan's textile industry is constantly under external and internal pressures which are affecting the growth of the industry. The lack of new technology and the use of old methods are significantly impacting the production of textiles (Muhammad Fahim et al., 2021). The adoption of modern technology is very slow in Pakistan, but the espousal of technology in companies has provided positive outcomes; the industry has accepted the technology, but the adoption rate is slow, which should be accelerated to increase productivity and meet the demand. The problem with technology adoption is due to economic instability, social factors and environmental pressures (Baig et al., 2020).

Conceptual Framework

There are two types of variables one is dependent, and the other is independent (Bulturbayevich & Abdulkholik, 2022). The dependent variable is the one that is influenced by the other indicator (Prentice & Miller, 2016), while the independent variable will affect the dependent variable. For the research, the sale is dependent on technological advancement in the textile industry. Sales is the interchange of products or services and receiving money (indeed, 2023). Technological advancement is an independent variable. New technology and machinery allow for to speed of the process and generate a large number of units at a time (Allwood et al., 2016).



The two variables have direct and strong relations; the investments in technology improve sales in general. In Pakistan, the technology and its contribution are discussed, and the improvements in sales are researched by analysing the textile industry of Pakistan.

Findings

Secondary Data Analysis

Nishat linen.

In the year 2010, Nishat recorded a visible increase in sales; the rise in total sales was 32 per cent compared to the previous year, 2009. In 2011, the sales increased to 54 per cent. In 2012, the profits and sales dropped because of low economic conditions and a rise in the costs of materials. 2013, the profits of the company were raised to 65.70% because of the positive



Figure 2: Nishat Sales Growth

changes in sales, production and performance. 2014, sales sustained it was not dropped severely nor raise but remained at a maintained position as compared to the last year. 2015, the sales record showed a decline; the reduction in sales was of RS. 3,267 million. The sales difference between 2016 and 2017 was 6.25 per cent, and 2017 showed improvements in sales (Annual report, 2017). 2020 was a falling year because of the emergence of the pandemic and Coronavirus, and the performance of the company was affected badly. 2021 was a transforming year; Nishat linen sales showed an encouraging increase; the 17 per cent growth was due to local sales and foreign sales.

Nishat, throughout ten years, has increased its investments in technology, property, plant and equipment through the past data raised. The graph shows the rise in investment in Nishat on the technology side. The dryer, stitching, dying, spindle, looms, digital printing machines and Rotary Printing Machines have increased with the expansion in business and rise in its sales. The investment of Nishat in technology and advancements have resulted in an increase in sales, quick production, on-time fulfilment of demands and meeting targets.

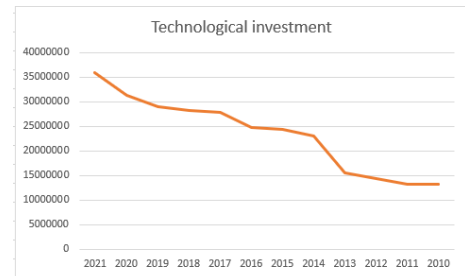


Figure 3: Nishat Technological Advancements

Sapphire.

The company has acquired a weaving plant to expand and enlarge its functions and develop in the sector. The graph shows the sales of the company. The year 2010 witnessed a rise in sales from Rs.14.428 to Rs.22.937 billion (Annual report, 2010). As the cost of power was increased, the gross profit declined, and the sales suffered (Annual report, 2012). The sales of the year 2014 were raised to 0.51% (Annual report, 2014). Afterwards, in the years, the textile sector has gone through difficult situations due to economic downturns and political



Figure 4: Sapphire Sales Growth

disturbances. The international pressure and competition rise in 2017, which impacted domestic sales and the cotton production was low, and the cotton price was high (Annual report, 2017). 2020 sales were highly affected due to the emergence of Covid-19, many industries have faced a downfall, and the gross revenue was a tad shifted too low. The sales in 2021 increased as compared to the last year because the sale price and volume were increased, and it supported the annual sales, to be raised.

Through the data, it is found that Sapphire has shown increased consideration towards technology adoption through spending on property, plant and equipment, which made a 55 per cent rise in the past six years from 2015 to 2021 (Annual report, 2021). The emphasis was on

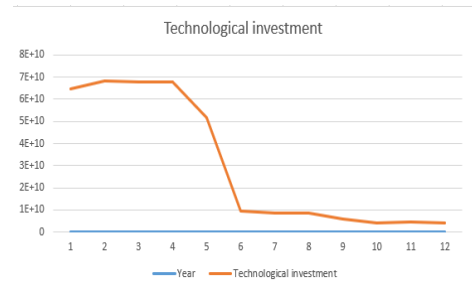


Figure 5: Sapphire Technological Advancement

strengthening the stitching, printing and dyeing departments to create value from it.

Gul Ahmed.

Summing up the sales of the last past six years, Gul Ahmed has seen sales reaching highs and lows; in 2011, the sales were RS. 25.46 billion, which reached 32,38 billion in 2016, the change in sales in the last six years 26.74 per cent value (Annual Report, 2016). In comparison to sales of 2017, the local and foreign sales are raised, and the profits are also

maximised (Annual Report, 2017). The sales engrossed and amplified to 26 per cent (Annual Report, 2018). Gul Ahmed even tough maintained the sales in the year 2019 to 2021. The company's grip over production through data in figures identifies that it has the most

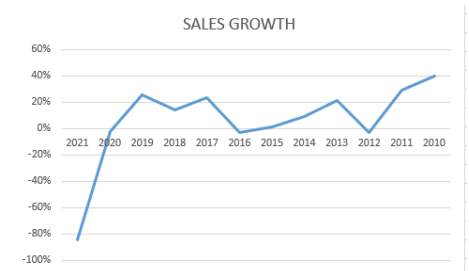


Figure 6: Gul Ahmed Sales Growth

recent machines for stitching and printing, 51,840 spindles and tools for 300 state-of-the-art weaving (gulahmed, 2022).

According to the annual report (2013), the spending by the company on technology and land is estimated to rise from 1,304 million to Rs. 7,132 million in the past six years. The improvement in sales is because of modern technology, as the company is able to compete with other big textile firms operating globally, and the export sales increase throughout the year.

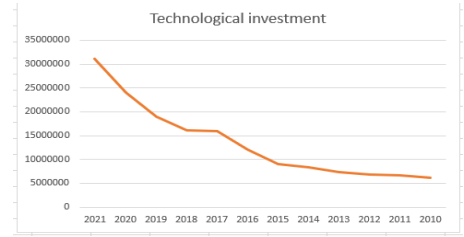


Figure 7: Gul Ahmed Technological Advancement

Primary Data Analysis

Questionnaire.

Table 1: Statistics

	Mean	Median	Mode	Standard Deviation
Fabric quality improved	3.9540	4.0000	4.00	.80820
Prints losing color	3.6640	4.0000	4.00	1.09247
Quality is improved	3.7700	4.0000	4.00	.97107
Not Imprinted while washing	3.5740	4.0000	4.00	1.15724
Cloth strength while wearing	3.8380	4.0000	4.00	.91511
Quality after stitch	3.8360	4.0000	4.00	.95442
Do not shrink in water	3.3126	4.0000	4.00	1.15229
Embroidery up to standards	3.7760	4.0000	4.00	.96524
In stock articles and Sales	3.5992	4.0000	4.00	.97955
Textile Technology	3.9260	4.0000	4.00	.91772

The statistics show that the mean values of all the variables are less than 5, which means that the mean values are positive and significant. The mode values are 4, and the median values are 5 for all the variables. The maximum mean value is 3.5992 for sales, and the minimum is 3.3126 for shrinking fabric. The values of standard deviation are less than the plus and minus two, which means that the variables have a strong relationship and support the hypothesis. The highest value of SD is 1.15724 for imprint factor, and the lowest value is 0.80820 for improved fabric quality.

Table 2: Frequency Table

S.NO	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Fabric quality improved	6	32	43	317	102
2	Prints losing color	9	98	62	214	117
3	Quality is improved	11	63	51	280	95
4	Not imprinted while washing	15	115	51	206	113
5	Cloth strength while wearing	17	38	40	319	86
6	Quality after stitch	11	52	53	276	108
7	Do not shrink in water	20	149	53	209	69
8	Embroidery up to standards	18	44	61	286	91
9	In stock articles and Sales	12	79	70	274	65
10	Textile Technology	13	36	44	289	118

Frequency Table readings include all the factor's frequencies and percentage values. The figures of all the factors mostly responded

in agreement, which shows that the customers have positive responses to questions they were asked through a questionnaire. The frequency table provides analyses of the textile industry should deal

with imprint issues, and the main variables of sales and technology also received acceptance from customers.

Through correlation, it is revealed that the Pearson Correlation value of sales and textile technology with all variables falls under moderate and strong relations.

The values of Pearson correlation are between 0.2 to 0.4, *Table 3: Correlation*

are moderate, and above 0.4 are strong. On the other hand, the significance value is found to be 0.000 (p-Value less than .05), which confirms the presence of statistically the

		Fabric quality improved	Prints losing color	Quality is improved	Not Imprinted while washing	Cloth strength while wearing	Quality after stitch	Do not shrink in water	Embroidery up to standards	In stock articles and Sales	Textile Technology
In stock articles and Sales	Pearson Correlation	.146**	.181**	.208**	.138**	.224**	.269**	.249**	.401**	1	.400**
	Sig. (2-tailed)	.000	.000	.000	.002	.000	.000	.000	.000	.000	.000
	N	500	500	500	500	500	500	500	500	500	500
Textile Technology	Pearson Correlation	.190**	.175**	.284**	.267**	.303**	.174**	.162**	.468**	.400**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	500	500	500	500	500	500	500	500	500	500

variables are statistically significant and supports the hypothesis to be true.

Interview.

The interview was conducted with the sales managers of textile companies, who discussed their views about the two variables and their impact on the industry.

I have asked them about their views regarding the sufficiency level of the country over technology. M2 shared his views as, *yes, the Pakistani textile industry has the latest machines and digital technology in terms of production and testing too.*

Talking about technological investment and its optimistic impact on the industry, M2 said, *definitely, with the development of technology comes productivity.* Whereas as per M1's opinion, *Reforms in Pakistan's textile industry are slow even though there are opportunities to bring big change, but due to pressures, this is difficult.*

In an interview on January 06, 2023, the manager said, “Local industry is slow in progress because the labour is either not skilled enough or they do not have access to the equipment and machines to operate in a convenient manner.”

Interview conducted on January 11, 2023, “in the terms of our production plants we are opting new technology at satisfactory speed.”

I have asked them about the factors that are affecting technology innovations in the textile industry. Both managers have shared their views respectively;

M1 said that *the cost of making goods is increased in Pakistan, and a major part of the company spend on buying raw material, processing and turning them into the final product.* On the other hand, M2 shared *for advance technologies rest of the world doesn't trust us in that way; they trust other countries like India, Germany, Japan etc., because they are good at elaborations and storytelling, but once we will guide them that we can do it this will be a game changer.*

And in the end, I have taken their opinion on the subject of the research that, as per their views, technological advancement has improved sales in the textile industry.

M1 shared his opinion *technology that is utilised in the industry has improved not only the sales but also the cost of production, production capacities, quantity and margins are increased which supports the sales to grow.*

According to M2, *indeed, as much as we get into such textile advancements, we capture a good market share.*

Conclusion

The current research purpose is to find out the impact of technological advancement on sales in the textile industry. For this, the study information and data collection are on the textile companies that are on the list of the Pakistan stock exchange (PSX). The article includes the analyses of three registered and recognised companies, Nishat linen, Sapphire and Gul Ahmed. The data was collected by the customers for having the quantitative data. The hypothesis results are positive; it means that technological advancement has a significant impact on sales. The quality, print and life of clothes are improved with the help of technology which help in raising the sales.

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APPENDIX

Topic: Impact of technological advancement on the sales in textile industry.

Assalamualaikum,

Sir, I am a student of MS program at KIUBS – University of Karachi. I am conducting research for which I have developed the following questions. Please share your views and insight about the subject and help me in completing my research. These are my questions, please share other information that relates and can help me in adding to my thesis. Your views will be part of my thesis, I will be thankful for your contribution.

Questions for Interview:

- 1- Sir, as we all are aware about the condition of Pakistan and the reasons due to which many industries in Pakistan are lagging behind in the race of success. I want to ask you is there any solution or way to implement so that we may run at the speed and make rapid development as the rest of the world is doing in textile.
- 2- The modern technology and digitization are supporting the textile sector, the production and availability of product and also the quality can be maintained through it. Do you feel that Pakistan is sufficient and has power over technology use in textile sector.
- 3- Do you think that every time the Technological investment, the machines and equipment's bring positive changes and multiplies the productivity? Is there any negative impact of it?
- 4- As per your views, what is the real cause that country like India and Bangladesh are becoming sufficient and receiving recognition worldwide. And why Pakistan has low sufficiency.
- 5- The developmental cycle or speed of transformation of Pakistan textile industry is slow or going at safe speed, share your views please.
- 6- Staff are the players that make the product and give it a final shape, do you think that illiterate staff is also a factor that is causing delay in technological advancements in the sector?
- 7- What are the factors that are affecting technology innovations in textile industry?
- 8- Do you think that the operations and techniques used in textile industry is favoring sales to boost up or in industry we are still using old techniques?
- 9- Do you think that Technological advancement has improved the sales in textile industry.

Questionnaire:

Questionnaire for Customers

I am a student of MS program at KIUBS University of Karachi. I am conducting research on "Impact of technological advancement on the sales of textile industry in Pakistan". For which I have developed the following questionnaire. I am very keen to collect your views and insight about the subject and help me in completing my research. These are my questions, please share other information that relates and can help me in adding to my thesis. Your views will be part of my thesis, I will be thankful for your contribution.

Please provide your suggestions.

How do you rate the impact of following statements on the sale of the company?

Name: _____

Your name: _____

Gender: _____

Age: _____

Your income: _____

Occupation: _____

Your company: _____

Industry: _____

Year of establishment: _____

Country: _____

State: _____

City: _____

Phone No: _____

Mobile: _____

Zip Code: _____

Occupation: _____

Your income: _____

Your company: _____

Industry: _____

Year of establishment: _____

Country: _____

State: _____

City: _____

Phone No: _____

Mobile: _____

Zip Code: _____

Occupation: _____

Your income: _____

Your company: _____

Industry: _____

Year of establishment: _____

Country: _____

State: _____

City: _____

Phone No: _____

Mobile: _____

Zip Code: _____

Occupation: _____

Your income: _____

Your company: _____

Industry: _____

Year of establishment: _____

Country: _____

State: _____

City: _____

Phone No: _____

Mobile: _____

Zip Code: _____

Occupation: _____

Your income: _____

Your company: _____

Industry: _____

Year of establishment: _____

Country: _____

State: _____

City: _____

Phone No: _____

Mobile: _____

Zip Code: _____

Occupation: _____

Your income: _____

Your company: _____

Industry: _____

Year of establishment: _____

Country: _____

State: _____

City: _____

Phone No: _____

Mobile: _____

Zip Code: _____

Occupation: _____

Your income: _____

Your company: _____

Industry: _____

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

The quality of products is improved.

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

The design is not implemented when clothes are made.

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

The design does not match with the color.

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

The design does not match with the pattern.

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

Investment in the design is not considered and poor design.

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

Your brand is not well known in the market.

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

Do you think that Pakistan textile industry is following fashion trend?

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree