

Can Firms be Clean, Green and Profitable? -Evidence from Textiles Industry of Bangladesh

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Abstract

This study will be helpful for companies those are reluctant to adopt Eco-friendly technology. This paper shows that profitability of companies which use green technology does not differ notably compare to companies which are not using green technology. In this paper, this study used financial performance measurement tools ((ROS, ROA, ROE) to find out companies' profitability. This study has taken data of 40 listed companies of Dhaka Stock Exchange. Then it divides the data into two groups, a group accustomed to green technology and a group unaccustomed to green technology. The independent samples test shows that there is no significant difference between the profitability of two groups. It means profitability of two groups is almost similar. From studying this paper readers will be able to understand that by adopting Eco-friendly technology company will not incur any fundamental loss or sacrifice a great amount of profit. So it will encourage companies to adopt Eco-friendly technology.

Keywords

Green, Textile, Profitability, Technology, Environment

1. INTRODUCTION

Green technology can be defined as an umbrella term encompassing the investment asset class, technology and business sectors which include clean energy and environmental, sustainable or green products and services. It often includes activities such as water purification, eco-efficient production techniques, and renewable energy. Green Technology is the development and application of products, equipment and systems used to conserve the natural environment and resources, which minimize and reduces the negative impact of human activities (Bhardwaj, 2015). Green inventions are environmentally friendly inventions that often involve: energy efficiency, recycling, safety and health concerns, renewable resources, and more. The world has a fixed amount of natural resources, some of which are already depleted or ruined. For example, household batteries and electronics often contain dangerous

chemicals that can pollute the groundwater after disposal, contaminating our soil and water with chemicals that cannot be removed from the drinking water supply and the food crops grown on contaminated soil. The risks to human health are great. Therefore, the need of the hour is that every investor should think green. They should know that green inventions and clean technologies are good business. These are fast- growing markets with growing profits. From the viewpoint of consumers, they should also know that buying green inventions can reduce their energy bills and that green inventions are often safer and healthier products (Banerjee, 2014).

Green technology helps to reduce adverse effects on the environment as well as improving productivity, efficiency and operational performance of the technology itself.

2. RATIONALE OF THE STUDY

Today, more and more organizations, industries, and regulatory bodies look serious about Green Technology, as it becomes imperative today. Environmental technologies use non-polluting practices to produce things and materials which are non- toxic. Green technology is environment-friendly rather than harm. We have come to a point, where we need to pause and reflect on the growing green technology importance and why it is going to be important for humanity. With plentiful reasons behind green technology importance, perhaps volumes can be written and spoken on the subject. Whether it is the growing importance of green technology in the industry or at homes, it is obvious that things need to be done fast. But in our country, we see the reluctance of using environment friendly technology in our industry. It has happened because we think if company invest or adopt eco-friendly technology then it will incur loss or profit will reduce substantially. In this study, we will try to find out whether profitability of a group (adopt green technology) significantly differs with another group (do not adopt green technology) or not.

3. LITERATURE REVIEW

Marchi (2012) defines Green innovation, which is also called environmental innovation or eco- innovation in literature, is defined as “new or modified processes, techniques, systems, and products to avoid or reduce environmental harm”

Cainelli, Maichi and Grandinetti (2015) argue Green process innovation is purposefully focused on the production process. Although it is novel to the focal firm, it can be exploited or Companies need to realize these unseen benefits, and become leaders in the clean energy movement. They need to look into the future and see the benefits these technologies can have not only on the environment, but on their business as well. Sustainable strategies are smart business strategies. Addressing environmental and sustainability issues give companies a sustainable competitive advantage and the benefits are quantifiable (Willard, 2012).

Instead of focusing mainly on environmental costs and risks, or corporate responsibility, more and applied to duceenvironmental risk, pollution emission, and other negative impacts.

As economic entities, firms’ managers and shareholders may pay more attention to their benefit when they devote to green innovation (Mitchell, Agle, and Wood, 1997).

To capture different aspects of the benefits derived from green process innovation, the timeframe should be considered (Richard, Devinney, and Yip, 2009).

Clean or green technology is the improvement and application of equipment, systems, and products utilized to save the natural environment and resources which minimize and decrease the adverse effect of human activities (Monu Bhardwaj et al., 2015)

Increasing the cost of energy for unseen benefits is hard for corporations to see as favorable for their business (Menanteau, 2003).

more companies have come to see opportunities for growth and profit through a focus on environmental sustainability (Etsy and Winston, xi, 2006).

The business world and the natural world are inevitably linked, and smart businesses are beginning to realize this. Companies that bring an environmental lens to their business strategy are generally more innovative and profitable than their competitors (Etsy and Winston, 11, 2006).

If the world continues to move in this direction, it will eventually destroy its natural support system. The long-term solution to this problem is to apply ecological principles of sustainable economic development (Brown & Mitchell, 1999).

However, after experiencing international ecological problems, countries came up with a variety of regulations to prevent further environmental degradation. After requirements became legitimate, organizations were forced to accept the responsibility to protect the surroundings they were operating in. Eventually, some of them realized that complying with environmental standards and following eco best practices can be beneficial to the organization as well. Thus, more and more companies started turning “green” not only to reduce pollution but also to increase profits (Hart, 1997).

The literature highlights several benefits that can arise from integrating environmental sustainability issues into product development and business operations: increased efficiency in the use of resources, return on investment, increased sales, development of new markets, improved corporate image, product differentiation, and enhanced competitive advantage (Fraj-Andre’s et al., 2008; Miles and Covin, 2000; Miles and Munilla, 1993; Pujari et al., 2003; Shrivastava, 1995; York, 2009)

Chen et al. (2006) found that the performance of both green product and green process innovation is positively correlated to competitive advantage.

4. HYPOTHESIS BUILDING

Based on the valid arguments and empirical studies shown by the literature we can develop the following hypothesis-

H0: Profitability of two groups not differs considerably.

H1: Profitability of two groups is significantly different.

5. METHODOLOGY

A quantitative approach is employed in this study to find the desired result from published data (Annual report). The study will be based on secondary data. The financial information of forty listed textiles entities of the Dhaka stock exchange has been used for economic analysis. The information is categorized into two groups-

Group 1- Green technology is adopted

Group 2- Green technology is not adopted

This study compares data of these two groups for financial analysis.

5.1 Sources of data collection

While preparing this, Data will be taken from the following sources:

- Annual report of selected textile companies of Bangladesh
- Publications regarding environment-friendly activities of companies
- Different publications regarding eco-friendly technology from other sources

5.2 Data analysis

This analysis will be based on financial data mainly. As we are going to measure profitability so we decided to use three profitability measurement tools those are ROS (Return on Sales), ROA (Return on Assets) and ROE (Return on equity). Return on sales is calculated by net profit (after tax) divided by total sales, return on assets is calculated by net profit (after tax) divided by total assets of the company, return on equity is calculated by net profit divided by total equity. The Statistical program IBM SPSS Statistics 26 is used for data analysis.

6. OBJECTIVES OF THE STUDY

The broad objective of this study is to find out whether profitability of group-1 significantly differs from profitability of group-2. To accomplish this broad objective some Supportive objectives must be achieved and those are –

- Compare the return on sales of selected companies of the textile industry.
- Compare the return on investment and return on equity of selected companies of the textile industry.

7. SCOPE OF THE STUDY

This study sought to find out whether companies who are using green-technology performing better (in terms of profitability) compare to companies that are not using green technology. The focus of this study will be on the textile industries of Bangladesh. Specific emphasis will be given on listed textile companies of the Dhaka stock exchange. The scope of this study limited to forty DSE listed textile companies in Bangladesh. There are 55 listed textile companies in the Dhaka stock exchange. The data of 40 companies are found and used for analysis. No relevant data is found for the remaining 15 companies. From the annual report of these companies we have found 28 companies follow eco-friendly technology and 12 companies are unaccustomed to eco-friendly technology.

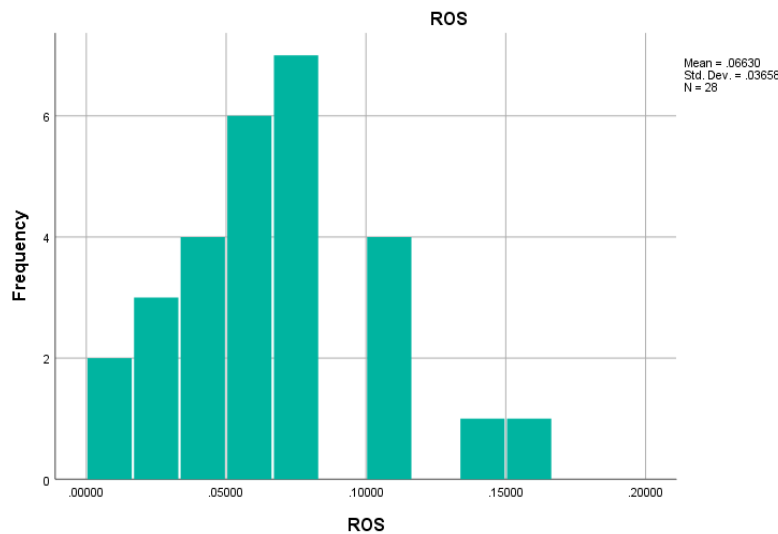
8. DATA ANALYSIS AND FINDINGS

8.1. Descriptive Statistics of Group-1

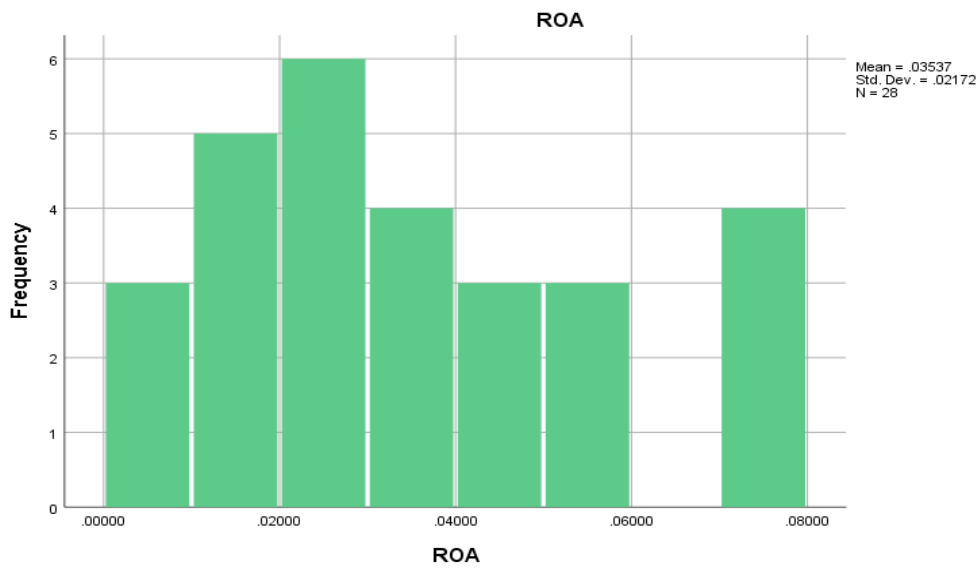
		Descriptive Statistics		
		ROS	ROA	ROE
N	Valid	28	28	28
	Missing	0	0	0
Mean		.0663027	.0353739	.0622594
Std. Error of Mean		.00691253	.00410427	.00670204
Median		.0623654	.0299681	.0549525
Mode		.01089 ^a	.00460 ^a	.00585 ^a
Std. Deviation		.03657765	.02171773	.03546386
Variance		.001	.000	.001
Minimum		.01089	.00460	.00585
Maximum		.15981	.07814	.15878

a. Multiple modes exist. The smallest value is shown

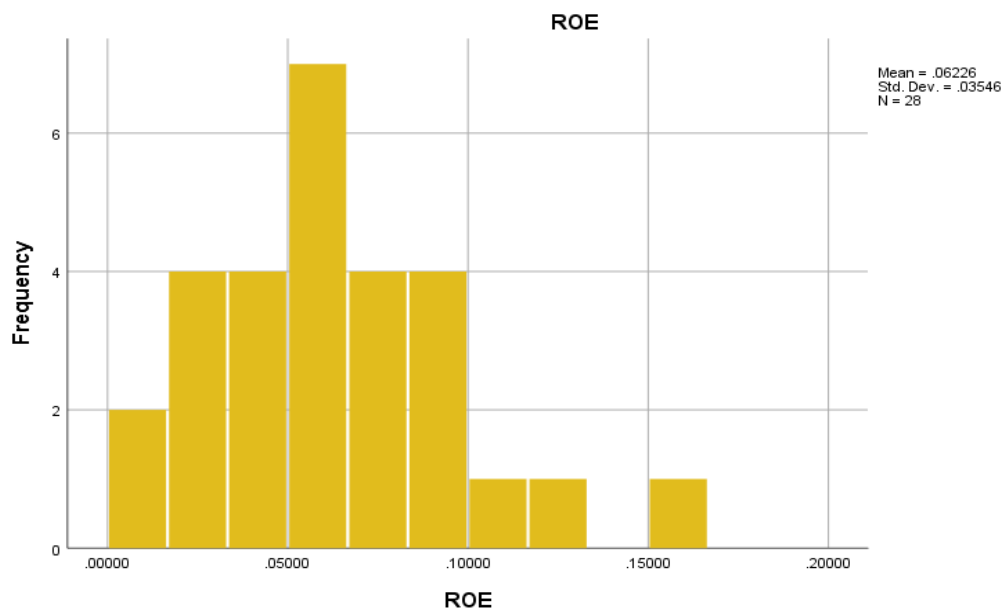
Table 1: Descriptive Statistics of Group-1



Graph 1: ROS Group-1



Graph 2: ROA Group-1



Graph 3: ROE Group-1

Ratio Statistics		
Ra- tios	Coefficient of Variation	
	Mean Centered	Median Centered
ROS	.552	.590
ROA	.614	.748
ROE	.570	.659

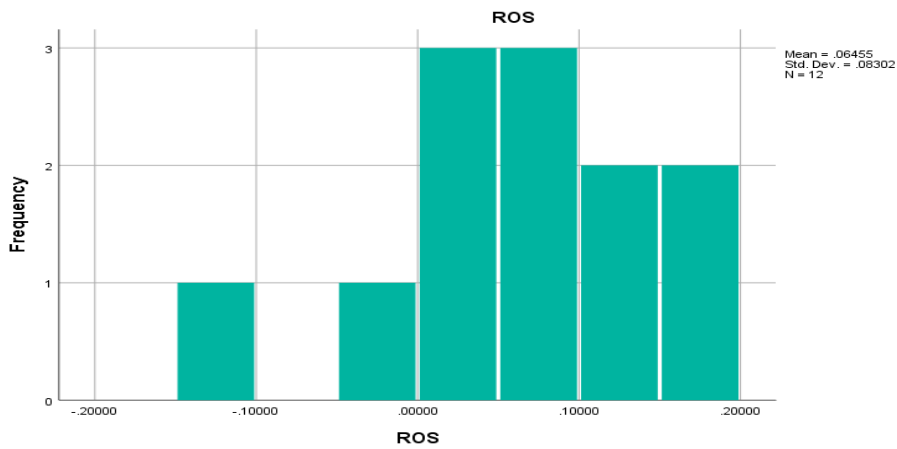
Table 2: Ratio Statistics

8.2. Descriptive Statistics of Group-2

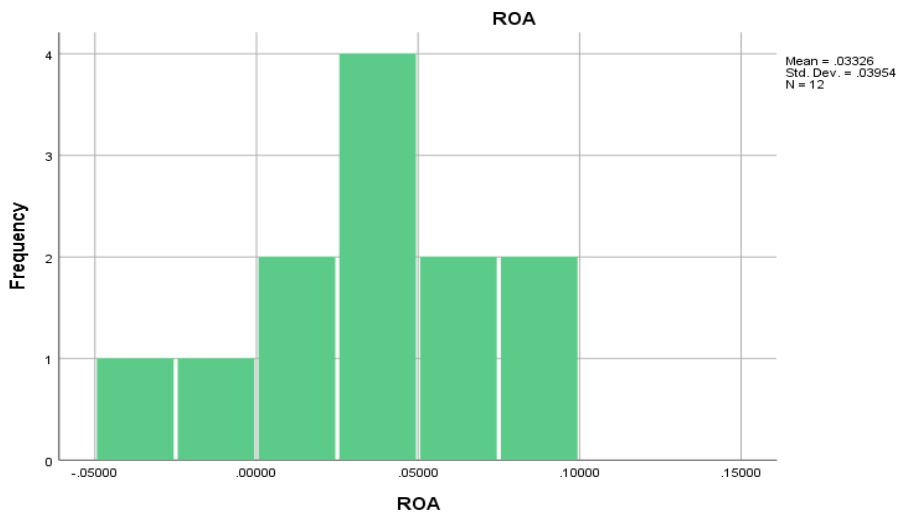
		Descriptive Statistics		
		ROS	ROA	ROE
N	Valid	12	12	12
	Missing	0	0	0
Mean		.0645532	.0332551	.0536236
Std. Error of Mean		.02396440	.01141334	.01646626
Median		.0765636	.0300750	.0590494
Mode		-.12052 ^a	-.04978 ^a	-.06561 ^a
Std. Deviation		.08301510	.03953697	.05704080
Variance		.007	.002	.003
Minimum		-.12052	-.04978	-.06561
Maximum		.17955	.08494	.11463

a. Multiple modes exist. The smallest value is shown

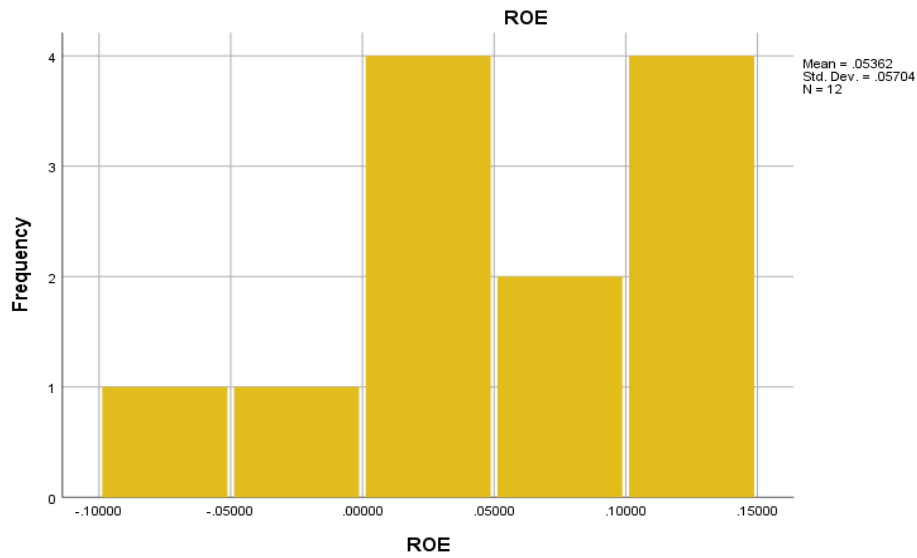
Table 3: Descriptive Statistics of Group-2



Graph 4: ROS Group-2



Graph 5: ROA Group-2



Graph 6: ROE Group-2

Ratio Statistics		
Ratios	Coefficient of Variation	
	Mean Centered	Median Centered
ROS	.604	.608
ROA	.608	.867
ROE	.510	.460

Table 4: Ratio Statistics

8.3 .Independent samples test results

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
ROS	G1	28	.0663027	.03657765	.00691253
	G2	12	.0645532	.08301510	.02396440
ROA	G1	28	.0353739	.02171773	.00410427
	G2	12	.0645532	.08301510	.02396440
ROE	G1	28	.0622594	.03546386	.00670204
	G2	12	.0536236	.05704080	.01646626

Table 5: Group Statistics

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
				Lower		Upper				
ROS	Equal variances assumed	7.925	.008	.093	38	.926	.00174950	.01872591	-.03615911	.03965812
	Equal variances not assumed			.070	12.870	.945	.00174950	.02494144	-.05218843	.05568744
ROA	Equal variances assumed	17.442	.000	-1.752	38	.088	-.02917937	.01665489	-.06289543	.00453669
	Equal variances not assumed			-1.200	11.651	.254	-.02917937	.02431331	-.08233023	.02397148
ROE	Equal variances assumed	5.430	.025	.584	38	.563	.00863583	.01478201	-.02128879	.03856044
	Equal variances not assumed			.486	14.781	.634	.00863583	.01777794	-.02930587	.04657752

Table 6: Independent Samples Test

8.4. Results interpretation

Firstly, this analysis provide descriptive statistics for two groups. The descriptive statistics for group-1 is shown on Table-1. This research has used three different tools to measure profitability of these companies, therefore it has shown descriptive statistics for these three tools separately. In Table-3 it has demonstrated descriptive statistics for group-2. To understand the distribution of data histogram is used in this study. From the histogram it can be said data is approximately normally distributed. The coefficient of variation for this two groups is shown on Table-2 and Table- 4 separately. The group statistics is shown on Table-5 for these three tools.

Secondly, to compare the performances of this two group independent samples test is used. As the data is approximately normally distributed and sample is independent, therefore this research used independent sample test. The null hypothesis is tested using 5% level of significance. The results of independent sample test is given on Table-6.

Return on Sales (ROS): Return on sales is a ratio that is used to measure the operational efficiency of an organization. It measures the performance of the company by analyzing the portion of revenue converted into profit. Return on sales is useful for conducting trend analysis and compare efficiency over some time. ROS should be used within the same industry. From Table-6- F value is 7.925 and p value-.008 which means variances are significantly different. The analysis demonstrated our t statistic of .093 and df-38 and p value of .926 which is greater than .05 (level of significance) that means H0 should not be rejected. So it implies that profitability of two groups not differs considerably.

Return on assets (ROA): Return on assets is a performance measurement tool that is used to evaluate the efficiency of assets. ROA deals with the money you invest in the organization and the benefit you realize on that investment. ROA indicates how efficiently an organization using its resources to generate earnings. ROA can be used in different ways to gauge the profitability of the business. The study demonstrated F value 17.442 and p value-.000 which means variances are not equal. The t statistic for ROA is -1.752 and df -38. By comparing the p value with level of significance, it has been shown that p value is .088 which is bigger than predetermined significance level (.05) that means there is not enough evidence to reject H0. So in terms of ROA profitability not differs significantly.

Return on equity (ROE): ROE presents simple means for assessing return. Return on equity denotes how good the entity is in generating returns on the money it received from its shareholders. Return on equity (ROE) reckoned good or bad will depend on what's normal for an investor. Reasonably high or low ROE ratios will vary remarkably from one industry group or sector to another. When used to judge one entity to another similar entity the comparison will be more meaningful. In this case F value is 5.430 and p value is .025 which means significant difference exists in variance. On the other hand t value is .584 and p value for test of means .563 which is greater than significance level (.05). So it can be concluded that ROE of both group almost similar. So the research cannot reject the null hypothesis.

So from the above analysis it can be said p value is greater than significance level in all three cases

Therefore it should be written as such-

ROS _p	>.05
ROA _p	>.05
ROE _p	>.05

Table 7: Summary of p value

Hence, the analysis conclude that there is not enough evidence to reject null hypothesis which means profitability of this two group almost similar. So firm can be clean, green and profitable at the same time.

9. LIMITATIONS OF THE STUDY

Although this study is conducted carefully, there are some unavoidable limitations.

- No primary data is used, only secondary data is used for analysis.
- Sufficient books, publications, and figures were not available. If these limitations were not been there, the study would have been more useful.
- Only financial data of listed textile companies of DSE of 2018 is considered.

10. CONCLUSION

Customers' demand for green products is on a sharp increase. Generally, companies try to provide goods that are demanded by consumers. But the organization will not go for green products or use green technology unless it knows the benefit of green technology. Another important aspects is generally company never ever want loss. This paper shows that company still be profitable by adopting eco-friendly technology. They don't need to sacrifice any substantial amount of profit for adopting green technology. From this study, we can draw several conclusions on the matter.

First of all, Companies that are using green technology (Group-1) will not differ in terms of profitability (ROS, ROA, ROE) in comparison to those that are not using green technology (Group-2).

Secondly, companies do not need to incur any substantial losses or give up profit for adopting green technology.

Thirdly, this study will also encourage other business concerns to adopt green technology.

To conclude, this study is a purely quantitative character. Moreover, it cannot be forgotten that other financial performance determiners may be useful for further research. Thus, it is advised to pay great attention to other financial variables.

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