

# CUSTOMER PREFERENCE ON EXPANSION OF ACCESSORIES TO FABRIC DYEING PROCESS

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**Abstract:** Dyeing in textile is a process in which color is transferred to a finished textile or textile material (like fibers and years) to add long-lasting color. It can be done by hand or by machine. Dyes can come as powders, crystals, pastes or liquid dispersion, and they dissolve completely in an aqueous solution like water. When the textile and the dye come into contact, the textile is completely saturated by the dye and colored. Dyeing is normally done in a special solution containing dyes and particular chemical material. After dyeing, dye molecules have uncut chemical bond with fiber molecules. After running of 10 years of accessories dyeing there is willingness to expand the next level process, fabric dyeing. In subsequence part this research, we will now move on discuss the core of this research which is analyses the customer preference on fabric dyeing. As a result of this study gives an idea regarding our business expansion. The customer have different behavior are constantly changing as a result of availability of best alternative. Hence, the present study is conducted to explore the extent of the impact of customer perception and preference towards the dyeing process in Tirupur city.

**Keywords:** - *Entrepreneurs, Economic development, Employment, Challenges, emerging economies.*

## Introduction:

Dyeing is the process of adding color to textile products like fibers, yarns, and fabrics. Dyeing is normally done in a special solution containing dyes and particular chemical material. After dyeing, dye molecules have uncut chemical bond with fiber molecules. The temperature and time controlling are two key factors in dyeing. There are mainly two classes of dye, natural and man-made. After running of 10 years of accessories dyeing there is willingness to expand the next level process, fabric dyeing. In subsequence part this research, we will now move on discuss the core of this research which is analyses the customer preference on fabric dyeing. As a result of this study gives an idea regarding our business expansion. The customer have different behavior are constantly changing as a result of availability of best alternative. Hence, the present study is conducted to explore the extent of the impact of customer perception and preference towards the dyeing process in Tirupur city.

Descriptive sampling method was to select 68 respondent living in the city and who makes a dying process in our concern. The finding of the significant relationship between the variables which affects customer preference on fabric dyeing process

**Overview of Tirupur Knitwear industry** - Tirupur, the heartland of the knitwear industry in India has a supplier base which consists essentially of manufacturer who are mostly integrated forward or backward if not vertical. There are number of spinning of yarns integrating forward to set up knitting plant; textile process house and then further integrating forward to become makers of garments. Such forward integrated exporters who have grown forward from yarn spinners are Eastman, Centwin, Poppy's Tube Knits Fashions, KPR etc .and those who have grown forward from leading process house are Victus Dyeing (Geena Garments, Reliance Dyeing, SCM, PKP, etc. The amount of investments in terms of plants & machinery and overheads in the integrated garment industry is quite high as compared to other knitwear clusters and thus requires efficient management for timely Returns on Investment. Tirupur textile industry has units all along the value chain of knitwear starting from spinning, knitwear wet processing, printing, garments, manufacturing and exports. In addition there are ancillary units supplying buttons, laces, embroidery, cones and yarn processing etc. Despite being late entrant, Tirupur's annual production far exceeds that of other knitwear clusters. There are more than 500 production units which are involved in exports of knitwear from Tirupur.

## Conceptual Framework:

Dyeing in textile is a process in which color is transferred to a finished textile or textile material (like fibers and years) to add long-lasting color. It can be done by hand or by machine. Dyes can come as powders, crystals, pastes or liquid dispersion, and they dissolve completely in an aqueous solution like water. When the textile and the dye come into contact, the textile is completely saturated by the dye and colored. Dyeing is normally done in a special solution containing dyes and particular chemical material. After dyeing, dye molecules have uncut chemical bond with fiber molecules. The temperature and time controlling are two key factors in dyeing.

**Forms of Dyeing** - In the dyeing process, fiber, yarn or fabric is impregnated with dye stuff. In direct dyeing and mordanting, the dye is fixed to the material to be dyed by the addition of a chemical agent, called a mordant, which may be applied to the material or added to the dye. The material to be dyed is then immersed in the dye solution, and the dyed material is exposed to air from which the oxygen acts on the dye to produce the desired color. The various forms of dyeing are stock dyeing, dope dyeing, top –

dyeing, Piece dyeing , cross dyeing, union – dyeing, cross dyeing, union – dyeing, beck dyeing, Jig dyeing, pad dyeing , Beam dyeing, Jet dyeing, Foam dyeing, Solvent dyeing.

**Types of dyes** - There are many different types of dyes used in dyeing process and we're only going to discuss the few of them. Now let's review two primary categories before moving on to dye types. **Natural dyes** come from sources like plants, minerals and animals. **Synthetic dyes**, made in a laboratory, are chemicals often derived from sources like coal tar or petroleum- based substances. **Basic dye** dissolves in water and requires a mordant, a chemical that forms a bond with the dye to make it insoluble. **Direct dyes**, on the other hand, don't require a mordant, and they are used to dye natural fibers like wool, cotton and silk. **Vat dyes** made of materials like indigo, a plant that provides a deep blue color and is one of the substance (something that reduce acid) to allow them to be used as a dyes.

**Textile dyeing process**- There are mainly two classes of dye, natural and made. In which a dye molecule gets thoroughly dissolved and dispersed in the carrier. It can be in water or some other carrier also, but it must be able to penetrate and color the textile materials in the process. In the textile dyeing process the dyeing is carried out at different stages like polymer, yarn, fabric and garment or even at the product stage. Process flow diagrams the whole operation of finishing processes and how the dyeing process is a part and parcel of the process of textile making.

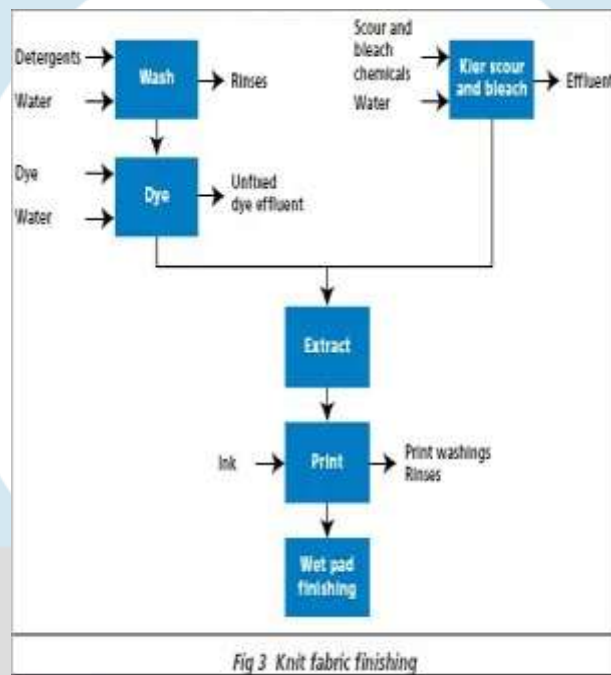


Fig 3 Knit fabric finishing

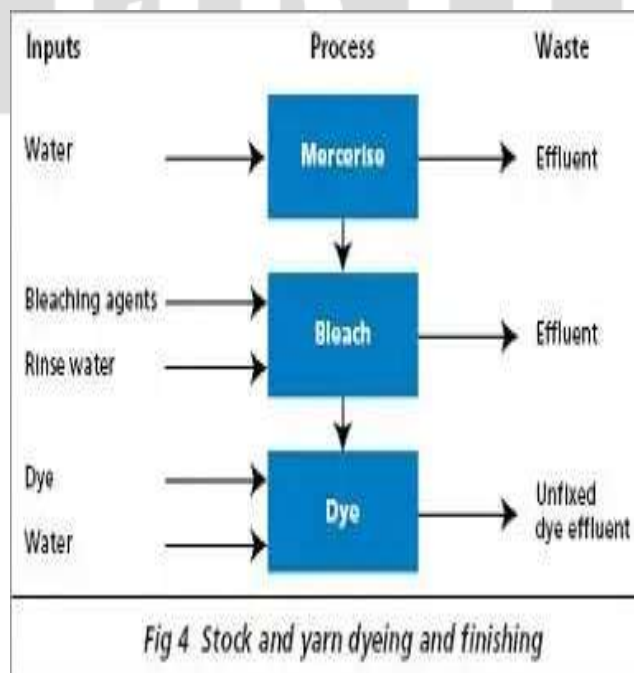
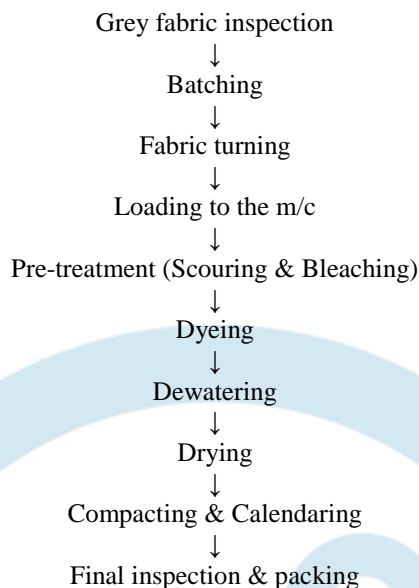


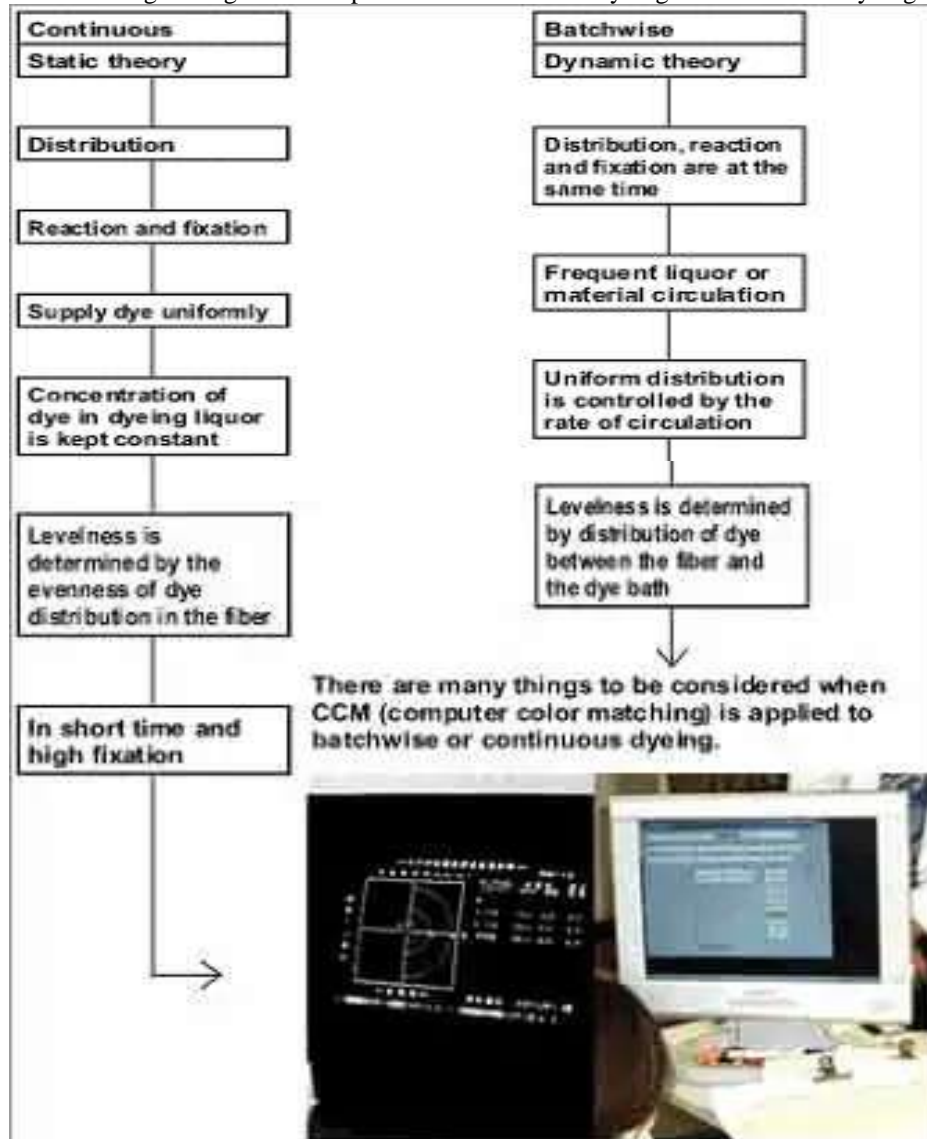
Fig 4 Stock and yarn dyeing and finishing

**Sequence of operation for knit fabric dyeing**

**Materials used in the Textile Dyeing Process-** The materials that are used as inputs in textile dyeing and finishing process may include water, fiber, yarn or cloth. Examples are of wool, cotton, polyester, and a host of process chemicals that includes: Acids, e.g. acetic, formic, Alkalis- NaOH, potassium hydroxide, sodium carbonate, Bleaches- Hydrogen peroxide, sodium hypochlorite, sodium chlorite etc, Dyes, for example direct, disperse, pigment, vat, Salts, e.g. NaCl, Size, e.g. PVA, starch, Stabilisers from sodium silicate, sodium nitrate also organic stabilizers, Surfactants, Auxiliary finishes, like fire retardant, softeners.

**Methods of Textile Dyeing** -In selecting the method of textile dyeing the type of process used depends on several factors that include type of material like fiber, yarn, fabric, fabric construction, and garment. Generic type of fibers, quality standards used in the dyed fabric, sizes of the dye lots etc. Textile materials are generally dyed using two processes. The Batch dyeing process & Continuous or semi- continuous process

The following chart gives a comparison between batch dyeing and continuous dyeing



#### Researchers Views:

GRANZIN, E.K AND MILLER E.K, (1979) suggest that retailers can consider the shop loyalty of consumers to be an added advantage to ensure customer retention. So the shop loyalty of customers can effectively be utilized as marketing input to meet the competition. Loyalty segmentation can also be successfully applied to retail store customers'. It seems to be more result-fetching, if the retailer is able to identify the segment-wise distribution of loyal customers for arranging merchandize that can comply with the specific requirements of such customers.

PEPPERS & ROGERS, (2005) The review reveals the emergence of customer value and several insights. In particular, managing customer value is about understanding different value perspectives, components, and dynamics. Potential economic values play an important role in the various conceptualizations of customer values.

SHAMEY AND NOBBS reviewed various factors that influence the outcome of the dyeing process, the history of automation and the use of computer control in the dyeing industry. Due to use of controlled dyeing system it results in high levels of production and lower costs while maintaining or increasing production standards.

SHYAM R GUPTA AND CHETAN P. VORA had presented work on a review on pressure vessel design and analysis, The study of effect of change in size, position, location of the opening in pressure vessel to study the stress concentration is essential, the position and location of the opening on cylinder is not studied in past by A Review of Package Dyeing System

ABU SHAID mentioned that Package to Package and within package shade variation problem is the major technical difficulty for all the yarn dyeing factories engaged in dyeing of double ply yarn packages in cheese form. In most cases the density variation results in unevenness of dyed package. Reverse tension mechanism on cheese dyeing can ensure uniform density which is the basic rock for the foundation of level dyeing.

NOBUTAKA ONO describes the method of dyeing yarn cheeses which comprises winding up laments or yarns on press bobbins, mounting and stacking the resulting yarn cheeses one upon another on a spindle, pressing the yarn cheeses and dyeing them. In a method of dyeing yarn cheeses stacked on a spindle and pressed to a definite compression degree by flowing a dye liquor through the yarn layers, the dye liquor is flowed while undergo pulsation in a minimized flow rate and a minimized flow pressure, thereby enabling even permeation of the dye liquor into yarn layers and accordingly, even dyeing.

BELTRAMELLO ET AL., (2013); TEECE, (2010), In this paper, a business model is defined by three main elements; the value proposition, value creation and delivery and value capture. Value creation is at the heart of any business model; Businesses typically capture value by seizing new business opportunities, new markets and new revenue streams.

ZOTT ET AL, 2011; BEATTIE AND SMITH, (2013) the business model may be viewed as a new unit of analysis in business, which takes into account these collaborative ties. Sales Promotion to the sales of the individuals and households, "Who buy The goods and services for personal consumption. Consumers around the world are different in various factors such as age, income, Education leveled preferences which may affect the way they avail of goods and services. This Behaviors then impacts how products and services are presented to the different consumer Markets."

KOTLER AND ARMSTRONG (2001), Sales promotions include "incentive offering and interest creating activities which are generally short term marketing events other than, personal selling advertising, publicity and direct marketing. The purpose of sales promotion is to stimulate, motivate and influence the purchase and other desired behavioral responses of the firm's customers".

#### Methods and Procedures of the study:

These study both primary and secondary data was used. Primary data for this study is freshly obtained from the 74 respondents through survey the structured questionnaire consists of standard questions relevant to the topic of the study. *Percentage analysis* was used to display the frequency distribution of the respondents of the selected sample. In order to test the association between variables *Chi square test* was employed and *Regression* was performed to know the impact of factors influencing the switch over on preference of dyeing company. *Weighted average ranking* was used to evaluate the ranking of attribute determining the preference of dyeing company.

#### The main objective of the study

- To study the customer preference on accessories dyeing process to fabric dyeing process in local market.
- To examine the company loyalty of the respondents
- To evaluate the impact of promotional strategy in dyeing process
- To interpret & suggest accessories dyeing to fabric dyeing process

#### Limitation of the study-

The limited time span has been recognized as a major limitation to this study. It having more time and resources available, I should have been able to collect more data by focusing on customer in Tamilnadu. The research findings, that are based on only 74 questionnaires conducted in specific region of Tirupur, cannot be generalized. The preference and perception of consumer will change day by day. Hence the results of the project may be applicable at present. The study is restricted to Tirupur city only and the results may not be applicable to other places.

### Analysis and Results

#### 1. The quantity dye per year

Quantity dye per year	Frequency	Percent
500 Kg - 1500 kg	1	1.4
1501 kg – 2500	11	14.9
2501 kg - 3500 kg	22	29.7
>3500 kg	40	54.1
Total	74	100.0

More than half of the respondents (54.1%) are required to process more than 3500 kg quantity for dye per year. Only 1.4% of the respondents among 74 are required to process 500 kg to 1500 kg per year.

#### 2. Attributes consider while dyeing

Attributes consider while dyeing	Frequency	Percent
Standard Fastness	39	52.7
Shrinkage	17	23.0
Softness	4	5.4
Bio wash	11	14.9
Others	3	4.1
Total	74	100.0



Majority (39) of them preferred Standard Fastness as the best attributes, Shrinkage as the second important attributes, only 4 from 74 respondents preferred softness and 3 respondents other than the stated attributes. It is advisable to keep the standard fastness attribute when expansion of dying process in future.

### 3. Machine Preferred for Dyeing

Preference in Machine	Frequency	Percent
HT HP	15	20.3
Soft flow	41	55.4
Cheese Machine	4	5.4
Winch	14	18.9
Total	74	100.0

The type of machine preferred for dyeing is varied from different respondents, 41 respondents preferred Soft flow machine for dyeing. Only 4 respondents have preferred Cheese Machine for dyeing process.

### 4. Consideration & Influence the Promotional Schemes while dyeing

All the 74 respondents are very much considered for the promotional schemes offered during the dyeing process. It deliberates the promotional strategy adopted by the dyeing unit will have multiple chance to attract more customers in future.

Influence of Promotional Scheme	Frequency	Percent
Discount	22	29.7
Free Compacting	23	31.1
Free Accessories Dyeing	12	16.2
Transport	17	23.0
Total	74	100.0

Majority of the respondents preferred Free Compacting as the most preferable promotional scheme, the second majority of the respondents have preferred Discount as the major promotional scheme, followed by Transport as preferred by 17 respondents and 12 respondents out of 74 respondents have preferred Free Accessories Dyeing as free.

### 5. Price for dyeing per kilogram

Price per Kilogram	Frequency	Percent
<Rs. 100	28	37.8
Rs. 100 - Rs. 150	17	23.0
Rs. 151 - Rs. 200	9	12.2
Rs. 201 - Rs. 250	9	12.2
Rs. 251 - Rs. 300	11	14.9
Total	74	100.0

Only 9 respondents each preferred the prices ranges between Rs. 151 – Rs. 200 per kg & Rs. 201 and Rs. 250 per kg. 11 respondents among 74 respondents have preferred the price between Rs. 251 to Rs. 300 per kg. 28 respondents preferable price lies below Rs. 100, so proper technology has to be chosen in future to reduce the dyeing process price in future

### 6. Awareness of Eco-Friendly Chemicals & Quality Standard

Awareness of Eco-friendly chemicals	Preference of Quality Standard Company	Frequency	Percent
Yes	Yes	73	98.6
No	No	1	1.4
Total		74	100.0

All the respondents are completely aware about the Quality Standard followed in Dyeing process.

It is deliberated that 73 respondents state that they are completely aware about the eco-friendly chemicals used for dyeing. Only one respondent is showing the ignorance. They are like to prefer only the company having quality standard certificates and pollution control certificates.

### 7. Influence factor for switch over dyeing company

Influence factor for switch over	Frequency	Percent
Price	18	24.3
Quality	24	32.4
Reference	5	6.8
Promotional Scheme	6	8.1
Stable of the Company	8	10.8
Convenience	13	17.6
Total	74	100.0

So many factors are influencing the respondents to switch over between dyeing Process Company. Among them, 32.4% of respondents are switch over based on quality concern, 24.3% price factor, 17.6% respondents are like to switch over based on their convenience, 10.8% refer the stable of the company ,8.1% by promotional scheme and 6.8% respondents are switch over based on the reference. It is further noted that, Quality and Price are the dominating factors which will influence the switching decision of the respondents

### 8. Factor wise changes in Prefer of the respondents to switch over:

The chi-square test was performed to test the association between the factors and the decision towards switch over between dyeing company with the following hypothesis.

- H<sub>0</sub> : There is no significant association between (Factors) and Prefer to Switchover  
 H<sub>1</sub> : There is a significant association between (Factors) and Prefer to Switchover

Factors	Chi square	Result (H <sub>0</sub> )
Quality	.775	Rejected
Price	.412	Rejected
Service	.558	Rejected
Reference	.720	Rejected
Stability of the Company	.008	Accepted
Promotional schemes	.000	Accepted
Convince	.302	Rejected

It is inferred from the chi-square test that, e value for Quality, Price, Service, Reference, and Convince is more than the significant value. It is concluded that, there is a association between above factors and prefer to switch over between dyeing company. Where Stability & Promotion schemes are the factors which influence switchover preference.

### 9. Weighted Average Ranking of Attributes determining the Dyeing Company

Factors	Rank								Weight	Rank
	1	2	3	4	5	6	7	8		
Price	7	6	23	9	13	6	2	8	303	2
Quality	16	14	2	16	14	2	1	9	275	1
Reference	13	2	10	10	10	11	10	8	337	4
Convenience	4	18	5	14	13	5	11	4	315	3
Promotional schemes	8	4	16	7	3	14	9	11	342	5
Service	18	5	3	3	6	13	11	15	354	6
Quality standard certificate	8	12	7	3	1	16	16	11	366	8
Eco friendly	0	13	8	12	14	7	13	7	357	7

It is inferred from the above weighted average table that, Quality stands the first place, Price reserved the second rank followed by convenience at the third rank. Reference, promotional schemes and service are ranked by the respondents at the fourth, fifth and sixth position respectively. Eco-friendly deserves the seventh rank and Quality Standard certificate as the eighth rank. It is deliberate that all the company engaging in dying process business necessarily is adopt the eco-friendly feature and should obtain the quality standard certificates necessarily. So these factors do not influence much on the ranking pattern of the respondents.

### 10. Regression Analysis -impact of attributes on preference decision

There are so many attributes have been included in studying the selection of dyeing company. The attributes consists of Price, Quality, Reference, Convenience, Promotional schemes, Service, Quality standard certificate and Eco friendly feature of the dyeing company. In order to study the impact of these attributes on preference decision of the respondents, regression analysis was used. This analysis will enhance to ascertain the level of impact of each attribute on the preference decision of the respondents.

#### ANOVA

Model	Variables Entered	Variables Removed	Method
1	Convince, Reference, Promotional schemes, Service, Price, Stability of the Company, Quality <sup>b</sup>	.	Enter

a. Dependent Variable: Prefer to Switch over

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.322	7	.189	2.144	.049 <sup>b</sup>
	Residual	5.813	66	.088		
	Total	7.135	73			

a. Dependent Variable: Prefer to Switch over

From the ANOVA table, it is inferred that the model built with independent variables Price, Quality, Reference, Convenience, Promotional schemes, Service, Quality standard certificate and Eco friendly and dependent variable prefer to switch over is significant.

**Table 4.4.4 Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.900	.254		3.548	.001
	Quality	-.492	.193	-1.340	-2.555	.013
	Price	.070	.138	.162	.505	.615
	Service	.422	.144	1.022	2.923	.005
	Reference	-.016	.043	-.051	-.385	.702
	Stability of the Company	-.291	.138	-.688	-2.101	.039
	Promotional schemes	.030	.099	.080	.304	.762
	Convince	.334	.160	.803	2.096	.040

a. Dependent Variable: Prefer to Switch over

The regression analysis enhances to know the influence of each and every independent variables and its impact on independent variable. The equation attempts to explain the influence of each one of the independent variable on the dependent variable prefer to switch over.

**Regression Equation:** Prefer to Switch over = .900 - .492Quality + .070Price + .422 Service - .016Reference - .291Stability of the Company + .030Promotional schemes + .334 Convince

From the above regression equation it was clearly understand that there are three independent variables namely quality, reference and stability are inversely affect the prefer to switch over decision, it means that poor quality, less reference and low stability of the company will leads high influence on switch over decision. Improved service, better convince, affordable price, and attractive promotional schemes will influence prefer to switch over decision in positive and direct way.

#### CONCLUSION

The purpose of this study was to evaluate the perception of our valuable customers. After this study we know that our customers are having knowledge about quality standard & Eco-friendly certificate. It also deliberates the Promotional strategy adopted by our dyeing units will have multiple chance to attract more valuable customers. It also gives the note that Quality & Price are the main dominating factors which influence the customers. If we maintain good quality & reasonable price, can attract more customers. This study also gives the positive idea about expanding of our business in Tirupur city.

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