

A Case Study, Analysing Just in Time of Various Banks

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Abstract: Financial Services (FSs) are recently attracting growing interest due to the competitive pressures resulting from the globalization through numerous mergers, the distribution of their products and services through alternative channels and their shift from products to customers. The conducted case study identifies some problems. Survey of these common problems will help to simplify the work in financial services

Keywords— Just in time; banking; Anova; cost

1.1 Introduction

Thus, banks that provide a wide range of financial services, are dealing with complex processes as well as complex systems that impede productivity and increase operational costs[1]. In fact, banks are becoming less efficient than the recent past; the huge investments in Information Technology systems oftentimes increase complexity and may not result in expected ROIs [2]. Many researchers are focusing on this sector in order to improve the performance of financial services and reduce associated costs [3]. Researchers hope that financial services can reap similar benefits to those of manufacturing, and seek to close the gap in productivity between financial institutions and manufacturing industries [4].

1.2 Motivation of Present Work

Detailed list of 26 elements of JIT system derived by JIT implementation which are suitable for banks but all elements of JIT may not be easy to implement. Therefore, there is a necessity to find out those elements of JIT system which are easy and which are difficult to implement in Indian context. Hence a case study of a bank can give useful insights on the basis of listed elements and benefits to achieve the above mentioned objectives. Indian banks can become competitive by successful implementation of JIT. As JIT benefits are visible in all areas such as quality, delivery time, service cost etc. A suitable framework for implementation can be helpful [5]. Before elucidation of such a framework, it is useful to identify problems that may be encountered during implementation [6]. The conducted case study identifies some problems. Survey of these common problems will help to simplify the work in financial services like banks in India. The main purpose of JIT is to eliminate wastage of all types [7]. Present work analyses some vital issues in Indian banks in JIT context on the basis of a questionnaire followed by several visits and conducting interviews with the middle

management and top level executives. Figure 1.1 shows the flow diagram of the methodology adopted.

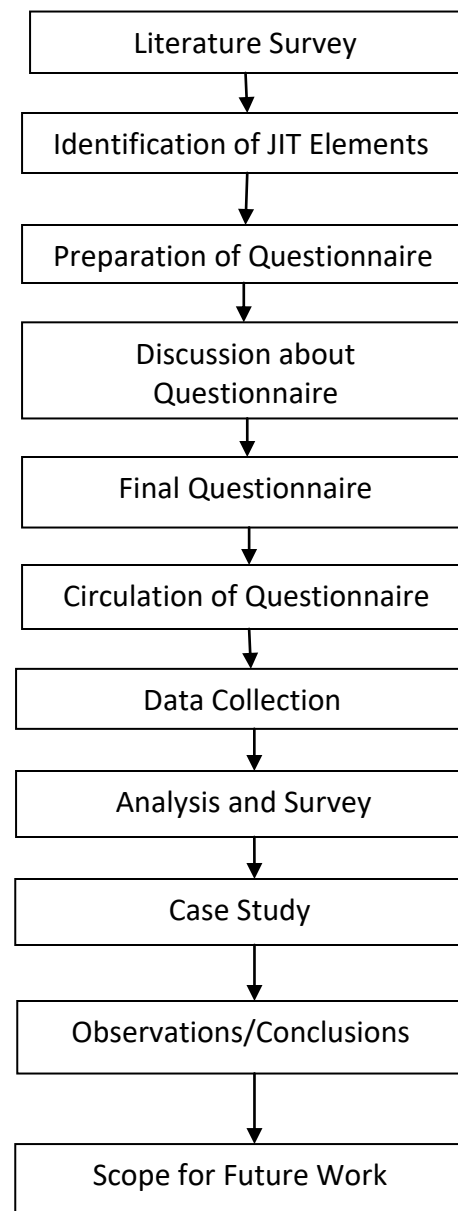


FIGURE 1.1

The objectives of research work with respect to Indian banks are as follows:

1. To find out those elements which are important in Indian banks?
2. To find out those elements which are easy to implement in Indian context?
3. To identify those elements which are highly difficult to implement?
4. To find out the scope of JIT implementation in Indian banks by way of a case study.

1.3 Methodology

Every essential element of JIT may not be easily implemented and some elements are difficult to implement. These problems may be related to in appropriate understanding of JIT methodology or may be related to technical, operational and human problems.

There are some questions related to JIT system:

1. Which are the essential elements of JIT?
2. Which elements are important and difficult to implement?
3. Which elements can be easily implemented?
4. Which elements are highly beneficial in banks?

This section details the procedures for the study in the following subsections:

- Research design,
- Instrument,
- Survey participants
- Data collection, and
- Data analysis.

1.4.1 Research Design

This study employed non-experimental quantitative research. Specifically, the design involves mail survey method, which is the most frequently used descriptive research design. This research design requires responses from the banking personnel and further requires quantitative data analyses. To increase the internal and external validity, the sampling procedure in this study applied the stratified random sampling technique.

1.4.2 Instrument

A survey was designed to find out the most important elements of JIT which are easy to implement in banks. The survey consists of comparison based on following common parameters. The parameters are Organization Policies, Communication and Information Sharing, People Strategy, Team Work, Employee Training, Quality Circles, Group Incentive Scheme, Top Management Support, Employee Empowerment and Customer Satisfaction etc.

1.4.3 Survey Participants

A questionnaire regarding the importance and difficulties of JIT elements was designed and distributed in various banks. This study uses a mail survey to distribute and gather the data. A mail survey provides the most appropriate method to obtain relevant, up-to-date information from a large sample of banks.

1.4.4 Data Collection

Data were collected following the self-administered mail survey method. Self-administered mail survey has the advantages of relatively low cost and easy access to widely dispersed samples. These people were also assumed aware of the general characteristics of the Banks. In mailing, the survey sends with:

- i) The cover letter that informed an overview of the aim of the survey, identification of the researchers,
- ii) Details of the JIT elements chosen for the survey. After sending the questionnaire, a follow-up postcard was sent to the participants one week later thanking for their cooperation.

1.4.5 Data Analysis

The data was analyzed with the help of ANOVA (Analysis of Variance) Technique[8]. The ANOVA technique is important in the context of all those situations where we want to compare more than two population. In such circumstances one generally does not want to consider all possible combination of two populations at a time for what would require a great number of tests before we would be able to arrive at a decision [9].

2.1 Degree of Importance of JIT Elements in Indian Banks

Table: 2.1 Degree of Importance of JIT Elements in Indian Banks

Sr. NO.	JIT ELEMENTS	RESPONSE					Mean Score (0-400)
		4	3	2	1	0	
1	Organization Policies	29	18	6	12	35	194
2	Communication and Information Sharing	45	17	13	16	9	273
3	People Strategy	21	25	16	5	33	196
4	Team Work	44	12	16	16	12	260
5	Employee Training	38	28	20	10	4	286
6	Expert Lectures	13	31	17	16	23	195
7	House Keeping (orderliness, cleanliness, discipline, safety)	35	22	18	14	11	256
8	Infrastructure (Aesthetic Value)	18	26	14	13	29	191

9	Job satisfaction	46	28	11	6	9	296
10	Employee Feedback and Suggestions	19	21	13	11	36	176
11	Judoka (use of modern/automatic age)	29	26	20	12	13	246
12	Quality Circles	15	23	22	6	34	179
13	Schedule Stability	14	20	20	12	34	168
14	Sole Sourcing	12	22	14	16	36	136
15	Group Incentive Scheme	24	24	13	21	18	215
16	Frequent and Reliable Service	50	30	13	6	1	322
17	Error Prevention (Poka Yoke)	17	22	19	14	28	186
18	Top Management Support	35	24	16	12	13	256
19	Value Addition Services (SDP)	18	25	14	6	37	181
20	Standardization	30	27	23	4	16	251
21	Degree of Complexity	7	22	22	12	37	150
22	Employee Empowerment	22	23	9	11	35	186
23	Customer Awareness	45	24	22	4	5	300
24	Ergonomics Design (Working Conditions)	32	27	24	8	9	265
25	Customer Satisfaction	43	25	11	9	12	278
26	Commitment	25	26	20	10	19	228

The following table gives the mean score of Degree of Importance of JIT elements in various banks.

Table 2.1 indicates that Frequent and Reliable Service has got the maximum value (i.e. 322), hence is the most important element of JIT for Banks and Customer Awareness got 300, as mean score, which is second most important element of JIT whereas, Sole Sourcing got 136 as mean, which is the least one, hence it can be termed as least important in banks in Indian context.

From Table 2.1, other most important elements are Communication and Information Sharing, Team Work, Job satisfaction, Group Incentive Scheme, Top Management Support, Customer Awareness, Customer Satisfaction, Ergonomics Design (Working Conditions), Commitment, Employee Training, House Keeping (orderliness, cleanliness, discipline, safety), Judoka (use of modern/automatic age) etc

Table 2.1 also reveals the least important elements and these elements are Degree of Complexity, Employee Empowerment, Value Addition Services(SDP), Schedule Stability, Quality Circles, Expert Lectures, People Strategy, Error Prevention (Poka Yoke) etc.

2.2 Degree of Difficulties of JIT Elements in Banks

TABLE 2.2 DEGREE OF DIFFICULTIES OF JIT ELEMENTS IN BANKS

Sr. NO.	JIT ELEMENTS	RESPONSE					Mean Score (0-400)
		4	3	2	1	0	
1	Organization Policies	12	16	24	10	38	154
2	Communication and Information Sharing	10	15	22	21	32	150
3	People Strategy	20	16	27	16	21	198
4	Team Work	15	12	27	25	21	175
5	Employee Training	19	19	27	23	12	210
6	Expert Lectures	21	20	32	19	8	227
7	House Keeping (orderliness, cleanliness, discipline, safety)	25	24	16	14	21	218
8	Infrastructure (Aesthetic Value)	16	16	22	25	21	181
9	Job satisfaction	24	18	25	29	4	229
10	Employee Feedback and Suggestions	14	19	26	22	19	187
11	Judoka (use of modern/automatic age)	27	21	22	17	13	232
12	Quality Circles	27	18	24	21	10	231
13	Schedule Stability	10	21	30	11	28	174
14	Sole Sourcing	22	25	28	15	10	234
15	Group Incentive Scheme	28	22	22	17	11	239
16	Frequent and Reliable Service	11	12	24	23	30	151
17	Error Prevention (Poka Yoke)	16	18	28	21	17	195
18	Top Management Support	31	23	21	20	5	255
19	Value Addition Services (SDP)	14	20	22	17	27	177
20	Standardization	30	20	24	22	4	250
21	Degree of Complexity	10	20	28	21	21	177
22	Employee Empowerment	25	22	21	16	16	224
23	Customer Awareness	9	18	14	24	35	142
24	Ergonomics Design (Working Conditions)	22	22	23	14	19	214
25	Customer Satisfaction	25	20	22	19	14	223
26	Commitment	10	13	24	20	33	147

Table 2.2 gives the mean score of Degree of Difficulties of JIT elements in various banks.

From the above table the most difficult elements are Top Management Support, Standardization, Group Incentive Scheme, Sole Sourcing, Quality Circles, Judoka (use of modern/automatic age), Job satisfaction, Expert Lectures, Employee Training, House Keeping (orderliness, cleanliness, discipline, safety), Employee Empowerment, Ergonomics Design (Working Conditions) and Customer Satisfaction.

The least difficult elements from Table 2.2 are Customer Awareness, Commitment, Degree of Complexity, Value Addition Services(SDP), Frequent and Reliable Service, Schedule Stability, Employee Feedback and Suggestions, Infrastructure (Aesthetic Value), Team Work, People Strategy, Communication and Information Sharing, Organization Policies and Error Prevention (Poka Yoke).

2.3 XY Scatter Chart

XY scatter chart is drawn between importance as abscissa and difficulty as ordinate. The axis crosses at their relative value of population mean (μ) i.e. for x axis it is 200 and for y axis its value is 200.

In Figure 2.1, the lower right quarter i.e. Part-1 highlights those elements of JIT which are highly important and very easy to implement. These elements are Communication and Information Sharing, Team Work, Frequent and Reliable Service, Customer Awareness and Commitment.

The upper right quarter i.e. Part-2 shows those elements which are highly important but are difficult to implement. These elements are Employee Training, House Keeping (orderliness, cleanliness, discipline, and safety), Job satisfaction, Judoka (use of modern/automatic age), Group Incentive Scheme, Top Management Support,

The upper left quarter i.e. Part-3 depicts those elements which are less important and very difficult to implement in banks. These elements are Expert Lectures, Quality Circles, Sole Sourcing and Employee Empowerment.

The lower left quarter i.e. Part-4 demonstrates those elements which are less important but are easy to implement. These elements are Organization Policies, People Strategy, Infrastructure (Aesthetic Value), Employee Feedback and Suggestions, Schedule Stability, Error Prevention (Poka Yoke), Value Addition Services(SDP) and Degree of Complexity.

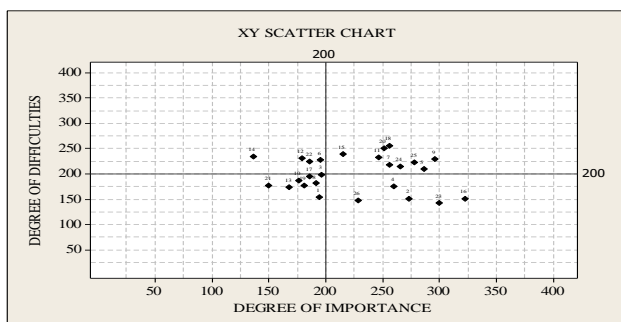


FIGURE 2.1

(1) Organization Policies, (2) Communication and Information Sharing, (3) People Strategy, (4) Team Work, (5) Employee Training, (6) Expert Lectures, (7) House Keeping (orderliness, cleanliness, discipline, safety), (8) Infrastructure (Aesthetic Value), (9) Job Satisfaction, (10) Employee Feedback and Suggestions, (11) Judoka (use of modern/automatic age), (12) Quality Circles, (13) Schedule Stability, (14) Sole Sourcing, (15) Group Incentive Scheme, (16) Frequent and Reliable Service, (17) Error Prevention (Poka Yoke), (18) Top Management Support, (19) Value Addition Services(SDP), (20) Standardization, (21) Degree of Complexity, (22) Employee Empowerment, (23) Customer Awareness, (24) Ergonomics Design (Working Conditions), (25) Customer Satisfaction, (26) Commitment.

2.4.1 Analysis of Variance (ANOVA)

The ANOVA technique is important in the context of all those situations where we want to compare more than two populations such as in comparing the yield of crop from several varieties of seeds. In such circumstances one generally does not want to consider all possible combination of two populations at a time for what would require a great number of tests before we would be able to arrive at a decision.

Professor R.A.Fisher was the first man to use the term 'Variance' and, in fact; it was he who developed a very elaborate theory concerning ANOVA, explaining its usefulness in practical field. Later on Professor Snedecor and many others contributed to the development of this technique. 'ANOVA' is essentially a procedure for testing the difference among different group of data for homogeneity. "The essence of ANOVA is that the total amount of variation in a set of data is broken down into two types, that amount which can be attributed to chance and that amount which can be attributed to specified causes." There may be variation between samples and also within sample items. ANOVA consists in splitting the variance for analytical purposes.

Hence it is a method of analyzing the variance to which a response is subject into its various components corresponding to various sources of variation.

Analysis of Variance is an extremely useful technique concerning researchers in the fields of economics biology, education, psychology, sociology, and business/industry and in researchers of several other disciplines. This technique is used when multiple sample cases are involved.

2.4.2 Principle of ANOVA Analysis

The basic principle of ANOVA is to test for differences among the means of the populations by examining the amount of variation within each of these samples, relative to the amount of variation between the samples. In terms of variation within the given population, it is assumed the values of X_{ij} differ from the mean of this populations only because of random effects i.e., there are influences on (X_{ij}) which are unexplainable, whereas in examining difference between

populations we assume that the difference between the mean of the j^{th} population and the grand mean is attribute to what is called a 'specific factor' or what is technically described as treatment effect. Thus while using ANOVA; we assume that each of the samples is drawn from a normal population and that each of these populations has the same variance. We also assume that all factors other than the one or more being tested are effectively controlled. This, in other words, means that we assume the absences of many factors that might affect our conclusions concerning the factor(s) to be studied.

In short, we have to make two estimates of population's variance i.e. one based on between samples variance and the other based on within sample variance. Then they said two estimates of population variance are compared with F-Test, wherein we work out.

$$F = \frac{\text{Estimate of population variance based on between samples variance}}{\text{Estimate of population variance based on within samples variance}}$$

This value of F is to be compared to the F-limit for given degree of freedom. If the F value we work out is equal or exceeds the F-limit value (to be seen from tables), we may say that there are significant differences between the sample means.

2.4.3 Model of ANOVA Technique

One way ANOVA: - Under the one way ANOVA, we consider only one factor and then observe that the reason for said factor to be important is that several possible types of samples can occur within that factor. We then determine if there are differences within that factor. The technique involves the following steps:-

- (i) Obtain the mean of each sample i.e. obtain

$$\bar{X}_1, \bar{X}_2, \bar{X}_3, \bar{X}_4, \dots, \bar{X}_k$$

Where there are k samples.

- (ii) Work out the mean of the sample means as follows:

$$\bar{\bar{X}} = \frac{\bar{x}_1 + \bar{x}_2 + \bar{x}_3 + \dots + \bar{x}_k}{\text{No. of samples (k)}}$$

- (iii) Take the deviations of the sample mean from the sample means and calculate the square of such deviations which may be multiplied by the number of items in the corresponding sample, and then obtain their total. This is known as the sum of squares for variance between the sample (or SS between). Symbolically, this can be written:

$$\text{SS between} = n_1(\bar{X}_1 - \bar{\bar{X}})^2 + n_2(\bar{X}_2 - \bar{\bar{X}})^2 + \dots + n_k(\bar{X}_k - \bar{\bar{X}})^2$$

- (iv) Divide the result of (iii) step by the degree of freedom between the samples to obtain variance or mean square (MS) between samples. Symbolically, this can be written:

$$\text{MS between} = \frac{\text{SS between}}{k - 1}$$

where (k-1) represents degree of freedom (d.f.) between samples.

- (v) Obtain the deviations of the values of the sample items for all the samples from corresponding means of the samples and calculate the squares of such deviation and then obtain their total. This total is known as the sum of squares for variance and then obtains their total. This total is known as the sum of squares for variance within samples (or SS within). Symbolically this can be written as:

$$\text{SS within} = \sum (X_{1i} - \bar{X}_1)^2 + \sum (X_{2i} - \bar{X}_2)^2 + \dots + \sum (X_{ki} - \bar{X}_k)^2$$

i = 1, 2, 3...

- (vi) Divide the result of (v) step by the degree of freedom within samples to obtain the variance or mean square (MS) within samples. Symbolically this can be written as:

$$\text{MS within} = \frac{\text{SS within}}{(n-k)}$$

where (n-k) represents degree of freedom within samples.

N= total number of items in all the samples i.e. $n_1 + n_2 + \dots + n_k$.

K=number of samples.

- (vii) For a check, the sum of squares of deviations for total variance can also be worked out by adding the squares of deviations when the deviations for the individual items in all the samples have been taken from the mean of the sample means. Symbolically, this can be written:

$$\text{(viii) SS for total variance} = \sum (X_{ij} - \bar{\bar{X}})^2$$

i = 1, 2, 3...
j = 1, 2, 3...

This total should be equal to the total of the result of the (iii) and (v) steps explained above i.e.

$$\text{SS for total variance} = \text{SS between} + \text{SS within}$$

The degree of freedom for total variance will be equal to the number of items in all samples minus one i.e., (n-1). The degree of freedom for between and within must add up to degree of freedom for total variance i.e.

$$(n - 1) = (k - 1) + (n - k)$$

This fact explains the additive property of the ANOVA technique.

- (ix) Finally, F-ratio may be worked out as under:

$$\text{F-ratio} = \frac{\text{MS between}}{\text{MS within}}$$

This ratio is used to judge whether the difference among several means is significant or is just a matter of sampling fluctuation. For this purpose we look into the table, giving the value of F for given degree of freedom at different levels of significance. If the worked out value of F, as stated above, is less than the table value of F, the difference is taken as insignificant i.e. due to chance and the null hypothesis of no difference between sample means stands. In case the calculated value of F happens to be either equal or more than its table value, the difference is considered as significant (which means the samples could not have come from the same universe) and accordingly the conclusion may be drawn. The higher the calculated value of F is above the table value, the more definite and sure one can be about his conclusions.

2.4.4 Result of ANOVA Analysis

ANOVA: SINGLE FACTOR

TABLE 2.3: AVERAGES OF ELEMENTS FOR ANOVA

Groups	Count	Sum	Averages	Average of Averages
Communication and Information Sharing	50	423	8.46	8.16
Team Work	50	435	8.7	
Employee Feedback and Suggestions	50	363	7.26	
Quality Circle	50	473	9.46	
Schedule Stability	50	342	6.84	
Frequent and Reliable Service	50	410	8.2	
Customer Awareness	50	442	8.84	
Commitment	50	375	7.5	

Average of Averages=

$$\frac{8.46 + 8.7 + 7.26 + 9.46 + 6.84 + 8.2 + 8.84 + 7.5}{8} = 8.16$$

TABLE 2.4: CALCULATION OF F-RATIO

Source of Variation	SS	d.f.	MS	F-ratio	10% F limit
Between Groups	276.2	7	39.46	4.54	1.97
Within Groups	3410.9	392	8.70		
Total	3687.1	399			

$$SS \text{ between groups} = 50[(8.46-8.16)^2 + (8.70-8.16)^2 + (7.26-8.16)^2 + (8.2-8.16)^2 + (6.84-8.16)^2 + (9.46-8.16)^2 + (8.84-8.16)^2 + (8.84-8.16)^2]$$

$$SS \text{ between groups} = 276.2$$

$$MS \text{ between groups} = \frac{276.2}{8-1} = 39.46$$

$$SS \text{ within groups} = (444.4 + 698.5 + 401.6 + 446.1 + 202.7 + 198.4 + 420.7 + 598.5) = 3410.9$$

$$MS \text{ within groups} = \frac{SS \text{ Within group}}{n-k} = \frac{3410.9}{400-8} = 8.70$$

$$F - \text{ratio} = \frac{MS \text{ between}}{MS \text{ within}} = \frac{39.46}{8.70} = 4.54$$

From the above table we can say that F- critical is less than the calculated F value. So we can say that the values of elements are significant.

According to the XY scatter chart plotted between importance and difficulties for implementing JIT in Banks of India, important results found can be indicated as in Table 2.5

TABLE 2.5 ELEMENTS WHICH ARE IMPORTANT AS WELL AS EASY TO IMPLEMENT

S. NO.	ELEMENT	VALUE OF MEAN FOR IMPORTANCE (0-400)	VALUE OF MEAN FOR DIFFICULTY (0-400)
1.	Communication and Information Sharing	273	150
2.	Team Work	260	175
3.	Employee Feedback and Suggestions	176	187
4.	Quality Circle	179	231
5.	Schedule Stability	168	174
6.	Frequent and Reliable Service	322	151
7.	Customer Awareness	300	142
8.	Commitment	228	147

Keeping in view the outcomes from the survey conducted in various Banks of India and the output obtained in the form of Table 4.6. A case study in **PNB Bank, Main Market Siyana, Bulandshahar** is conducted. It is advisable that at the initial stage, those elements should be implemented in any organization, which are highly important and relatively less difficult to implement. It is also added that at first instance a pilot implementation project should be started for limited critical parts only, instead of implementing it to the whole range of parts. Less critical items should be considered only after the success of the pilot project. The aim of this case study is to present an example before other Banks so that their misconception that JIT can only be implemented in industry scenario can be overcome. JIT can also be implemented in

financial sector by following the guidelines provided in this case study.

2.5.1 General Information of the Bank

Founded in 1894, **PNB Bank** is an Indian Multinational Banking & commercial bank and Financial Services Company and a Government of India Undertaking. Its Board of Directors consists of government representatives from the Government of India and Reserve Bank of India as well as eminent professionals like accountants, management experts, economists, businessmen, etc. Headquartered in New Delhi, the Bank has 76 Circle Offices spread all over India.

The mission of the bank is to be a Top-class Bank to achieve sustained growth of business and profitability, fulfilling socio-economic obligations, excellence in customer service; through up gradation of skills of staff and their effective participation in making use of state-of-the-art technology.

Global banking has changed rapidly and PNB Bank has worked hard to adapt to these changes. The bank looks forward to the future with excitement and a commitment to bring greater benefits to the customers. PNB Bank, with years of dedicated service to the Nation through active financial participation in all segments of the economy i.e. Agriculture, Industry, Trade & Commerce, Service Sector, Infrastructure Sector etc., is keeping pace with the changing environment. As of 31 March 2017 the bank has over 80 million customers, 6,937 branches, and 10681 ATMs across 764 cities.

2.5.2 Quality Policy

The vision of PNB Bank is to emerge as the most trusted, admired and sought-after world class financial institution and to be the most preferred destination for every customer and investor and a place of pride for its employees. In all our promotional activities, the bank is fair and reasonable in highlighting the salient features of the schemes marketed by it.

2.5.3 Types of Services and Facilities

Quality: This indeed is the most important facility for any service oriented institution. An inbuilt mechanism to continually upgrade the standard of service has been put in place by the Bank.

Choice: The customer is bound to choose among the various alternative products and services being offered by various banks operating in the industry. This makes it all the more necessary for this bank to introduce from time to time innovative ideas and technology which will translate into better services being offered by the bank.

Standards: All the customers are entitled to know the basic standards for the common services which a bank provides. In this regard, it has set down time norms for each of its services. This time norms are displayed in the banking hall in all its branches.

Accountability: It has over the years built up a fairly reliable system fixing accountability for errors/lapses in provision of

services. Most of the complaints are redressed on the spot. In case, the Manager at the grass root level is unable to redress a particular complaint, the same is referred to a higher authority for disposal within 45 days. Details of the redressal system are also available at each and every branch office.

Transparency: There is absolutely no secrecy regarding the services offered by its branches and the procedures that are followed by the Bank. Basic information relating to rules and regulations governing the services are made known to all customers at all points of delivery. This transparency helps in strengthening the bonds with each and every customer.

Zero corruption: The bank is totally committed to provide all its services at charges which are specified and laid down. It honors the above principle and request the customers not to pay any bribe but report the same immediately to the competent authority in case they are being coerced by any of their staff members for any favour.

2.5.4 Suggestions for Optimization of the Existing System

1. Communication and Information Sharing

Existing System: PNB Bank is having a good Communication and Information Sharing system. If a customer wants some information, the employees of the bank help him at various counters. The main problem is that it takes a lot of time for getting the information.

Recommendations: The bank should have Enterprise Resource Planning (ERP) software from any small software company. This will provide all the information about the employees of the bank, services provided by the bank etc. This will decrease a lot of time and man power in preparing the information.

2. Team Work

Existing System: The bank is having many employees for the help of the customer. If a customer is having any query, then he has to follow it for the solution.

Recommendations: There should be customer follow up. If a customer puts any query, then the bank should contact the customer for informing him about the progress regarding the solution of his query.

3. Employee Feedback & Suggestion.

Existing System: The bank is having some offline paper work to do for employee feedback and suggestions. In this world of advancement people are so lazy to write something using pen and paper.

Recommendations: In this era of advancement there should be some digitalization for quick feedbacks so that customers won't feel bothered for doing it.

4. Quality Circle.

Existing System: The bank has quite a nice team for working on the problems and issues related to their work, which make it possible to run the organization smoothly.

Recommendations: Team should be supervised by a superior chief in some time and should change it if needed.

5. Schedule Stability

Existing System: The bank has a stable schedule with respect to other sector works. Working from morning 10 AM to 5 PM is quite a job. All employees work with determination and listen to customer's problem.

Recommendations: The schedule of bank could be changed a little bit that fits customers more.

6. Frequent and Reliable Service

Existing System: The bank provides a good service to the customers. The only problem is that for getting any information or any service it takes a lot of time. If a customer wants to apply for loan, then he has to do a lot of paper work.

Recommendations: By the help of ERP software, a lot of time can be saved. All the information should be provided online. The status of the service for which a customer has applied should be known to him. It can be done with the help of ERP software.

7. Customer Awareness

Existing System: The bank is providing many types of loans and many services. There are different counters for different services. For loan purpose, there are different counters and for deposit, there are different counters. Also there are 4 or 5 counters for depositing the money on the basis of amount of money. But the customers don't know on which counter he should go?

Recommendations: The bank should provide information about new products/services to the customers. The customer should know the channel of the work. He should aware about the types of loans provided by the bank. If there is any bottleneck, he should know whom to meet.

8. Commitment

Existing System: The service of the bank is reliable. If a customer apply for a loan (say car loan) then the bank commit to provide it but does not commit for time. It takes a long time for loan because the procedure is complex.

Recommendations: The bank should provide the services in time. It should make the procedures simple so that the time taken in that is minimized. The bank should provide the right service at the right time to the right customer.

2.6 SUMMARY

In this chapter survey of 50 Banks was carried out. On the basis of the mean calculated for different elements of JIT on 0-400 scale, all the elements were analyzed and plotted on a scatter chart, from where most important and less difficult elements were found out. A comparison of extent of importance and difficulty of JIT elements was carried out. Bar charts were plotted depending upon the data collected from

the survey. After identifying the elements from XY scatter chart, apply the ANOVA analysis on those elements. From the result of the ANOVA analysis, we have checked the value is significant.

The most beneficial elements for the surveyed banks were also traced out. It is suggested that JIT elements should be implemented in a phased manner and after conforming its success, it should be implemented to the whole process. First of all one should implement the most important and less difficult elements to the critical processes only as a pilot project. The most important and highly difficult elements should be implemented after the successful implementation of the pilot project

3. CONCLUSIONS

This chapter presents some important conclusions obtained from present work. In this work, various vital issues of JIT implementation have been analyzed on the basis of a case study. The following conclusions have been drawn:

1. It has been observed from literature that JIT implies doing the job right the first time and permanently solving problems as soon as they appear. It also means efficient use of resources and removing deficiencies in the system.
2. It has been concluded that Banks have different priorities with respect to important and difficult elements for JIT implementation.
3. Most important elements for Banks regarding JIT implementation are as follows:
 - Frequent and Reliable Service (Mean=322),
 - Customer Awareness (Mean=300),
 - Communication and Information Sharing (Mean=273),
 - Team Work (Mean=260),
 - Quality Circle (Mean=179),
 - Employee Feedback & Suggestion (Mean=176) &
 - Schedule Stability (Mean=168)
4. It has been observed that Eight elements are the most important and relatively less difficult to implement. These are Communication and Information Sharing, Team Work, Frequent and Reliable Service, Customer Awareness and Commitment.
5. It has been finally recommended that Indian Banks should practice most important and less difficult elements at the initial stage of JIT implementation.

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