

# A MODEL FOR RECRUITMENT PROCESS COSTS IN THE INDIAN IT INDUSTRY

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**Abstract** *The present study analyses the costs associated with the recruitment process in Indian information technology companies. Recruitment costs include all the expenditure that organisations make towards hiring candidates as employees, including cost of contacting candidates, travel costs of the human resource unit, the direct and indirect logistics involved, the cost incurred to conduct tests, interviews, and so on.*

*This study contributes to the literature in two ways. First, it proposes a model for recruitment process costing using the beta distribution, akin to the project evaluation and review technique (PERT) model. Second, it suggests that the overall recruitment process time also follows a beta distribution, due to the high correlation between the sub-process times.*

*The proposed model is used to compare the overall recruitment process times for different target profiles using data collected from a sample of 50 Indian information technology companies.*

**Keywords:** *Recruitment Costs, Recruitment Sub-Processes, Normal Distribution, Beta Distribution, PERT Modelling*

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*“The purpose of business is to create a customer. Therefore, the business enterprise has two -and only two - basic functions: marketing and innovation. Marketing and innovation produce results; all the rest are costs.”*

- Peter F. Drucker

## INTRODUCTION

Human resource costs, in general, include all the costs that an organisation would incur in the process of recruiting and retaining, training and developing of employees (Cascio, 1991). Sometimes companies calculate these costs as an audit requirement, and at other times, human resource costing is done to understand the cost-benefit analysis, the returns derived from making an investment in a particular cost centre, and to understand where the process can be reengineered in order to reduce the human resource costs (Boudreau, 1990).

The central concept of costing suits a manufacturing concern better than a service organisation, particularly IT and ITeS companies. However, activity-based costing has emerged as a useful technique to understand cost-related data about products and services.

Activity-based costing is a technique of assigning the cost incurred by organisation towards various products and/or services, in order to understand which of them is more profitable to the organisation. One way of monitoring profitability of all its operations is to establish profit-centres and identify separately costs and revenues of each of these profit-centres, thus ensuring that all costs that relate to a profit-centre have actually been charged to it and recovered through the price of the service provided.

A major qualitative difference between cost systems in a service and a manufacturing organisation is the need to model the customers' behaviour when analysing the source of demand for service functions. Analysing customer profitability in services is as important as analysing product profitability. Activity-based costing will become indispensable as organisations will be hard put to maintain their competitiveness and ensuring, at the same time, that all transaction costs are passed on to the product or the service in respect of which they were incurred (Cooper, 1988a, 1988b).

As such, the most important cost centres in the information technology and information technology enabled services

sectors today are recruitment and training. These are the two main human resource functions requiring attention, in absence of which the organisation may suffer direct and indirect losses due to attrition (Abowed & Kramarz, 2003).

Recruitment and selection costs include all the expenditure that organisations make towards hiring candidates as employees - this includes cost of contacting candidates, travel costs of the HR unit, the direct and indirect logistics involved, the cost incurred to conduct tests, interviews, joining formalities, and so on (Christofferson, 1977; Dolfin, 2006).

Recruitment is the function that deals with sourcing, screening, and selecting people for a job or vacancy within an organisation. As per activity-based costing, costs are to be determined by the concept of time spent on each activity or sub-process, then recruitment costs would be determined by the time spent on maintaining and updating files on job seekers, time spent on sourcing and screening them, cost of placing advertisements in local newspapers and magazines, etc, time spent on taking their enquiry calls and replying, reference checks and so on and so forth. Then, there are the hidden costs of productivity loss in the process of filling in vacancies, and possible morale loss. Even recruitment delay causes loss of market which becomes a hidden recruitment cost. In case a wrong choice is made, then costs are again higher because of training costs or even attrition costs. At all levels, it is also observed that the employees' turnover costs are very high and indeed, so high that it can make companies undergo huge losses at times (Phillips, 1990; Hansen, 1997; Bliss, 2001; Sanford, 2005).

If recruitment is done effectively, organisations are most likely to get in the best candidates for its various functional departments, thereby enabling companies to save on their additional training costs which are incurred in cases of employee-job mismatch (Lin and Kleiner, 1999; Garcia & Kleiner, 2001).

## LITERATURE REVIEW

Several studies have focused on the various HR costs incurred in terms of recruitment, training and development, compensation, and so on in the Indian IT and ITeS sector. However, there are virtually no studies addressing the distribution of different HR costs. The literature on recruitment metrics addresses the related concepts of time to fill and time to hire, but there are no studies examining the distribution of these metrics.

According to the Nasscom (2015) report on HR trends in the Indian IT and ITeS sector, at one point in time, the sector had witnessed an upswing in compensation costs, but the trends are quick to change and now, the industry is on a rather different curve when it comes to compensation. The

report noted that most companies these days are spending much more in order to ensure good work-life balance, safe and healthy working conditions for its employees, career and advancement, and so on, and to do so, companies spend towards many aspects right from the recruitment and training of employees until their retirement, and beyond.

Hewitt Associates position paper (Borland, Frost, & Wright, 2009) proposed that companies follow the concept of activity-based costing in order to understand the human resource costs incurred and also to understand how they can be reduced. It proposed that companies need to determine what they are actually spending, isolate opportunities for value creation in their programs and services, and create strategies for quick and high-yield cost savings.

Mercer's (2015) 'total remuneration survey' identified several issues related to compensation, and emphasised compensation planning in order to beat the increasing costs. It pointed out that there are many emerging cost centres, which indicate the areas where the companies are going to invest in the near future and in the long term: training and career development (55%), non-cash recognition (46%), work-life flexibility (37%), annual cash incentives (33%), long-term stock options (16%), healthcare benefits (14%), and retirement benefits (9%). The report also discussed the issues of staffing and staff turnover ratios. If staffing is done effectively, then obviously staffing turnover is reduced and so also for the costs. Career development is another area of increased expenditure of companies. Another area of increasing costs is the allowances and incentives given to expatriates and repatriates. Most companies today are going global and thus, training their workforce thereof. This further adds to costs.

Cerebrus Consultants (2009) IT-HR report presented various surveys in the area of compensation, and analysed the reasons for increasing and/ or decreasing compensation costs. They have identified a link with recruitment, performance management, rewards and recognition, and retention strategies. Thus, the various human resource costs are closely interrelated. Unless companies spend adequately towards one cost centre, other costs tend to increase.

Further, organisational effectiveness, productivity, and efficiency are closely related to the human resource costs. Therefore, organisations need to understand the close link and differences that exist between the various cost centres - viz. recruitment costs, training costs, compensation costs, and so on - and to study the trends followed by organisations towards these expenditures in order to develop strategies that would help reduce costs and increase/ maintain productivity, efficiency and overall effectiveness in the organisational performance (Cania, 2014).

ERE Media Benchmarking (2015) defined time-to-fill as the time an organisation takes to identify and recruit a candidate

to fill a position within an organisation, after clearing the background checks. The time to fill is a measure of the speed of an organisation's recruitment process. Howden (2016a) defined time to hire as the time elapsed between engaging a candidate and them accepting an offer. The time to hire is a measure of efficiency of an organisation's recruitment process. Sabel (2016) argued that tracking time to fill is critical for organisations, because it directly impacts their ability to hire the most lucrative talent; the average time to hire is about 42 days, varying between 27 and 68 days, while the best candidates tend to be hired within 10 days.

Qualigence (2012) suggested that time to fill metrics often result in manipulation of the process, whereby recruiters select candidates that are faster and cheaper but may not be the best fit for the company, so that the focus shifts from quality to immediate cost of vacancy, and may result in a greater turnover rate and additional recruitment costs. Howden (2016b) suggested that organisations may face problems if they underestimate the time it will take to complete the entire recruitment process, from opening a job vacancy through to getting an offer accepted.

The study addresses the gap in the literature pertaining to the distribution of recruitment process time/ costs.

## MODEL FOR THE DISTRIBUTION OF HR COSTS

As suggested by activity-based costing, human resource costs are modeled in terms of the time spent on each activity or sub-process. Thus, if a human resource process is analysed into its sub-processes, with random sub-process times  $t_1, \dots, t_k$ , then the overall process time is given by

$$T = \sum_{j=1}^k t_j. \text{ Further, the expected overall process time and its variance are given by } E(T) = \sum_{j=1}^k E(t_j) \text{ and } V(T) = \sum_{j=1}^k V(t_j) + \sum_{j=1}^k \sum_{i<j} COV(t_i, t_j).$$

There are several possible models for the sub-process times  $t_1, \dots, t_k$  - for example, the uniform distribution, the triangular distribution, the gamma distribution, the beta distribution, and the normal distribution are some commonly-applied models. The present study proposes that the sub-process times are modeled using the beta distribution, as in project evaluation and review technique (PERT) modeling, with three time estimates: an optimistic time  $a_j$ , an expected time  $m_j$ , and a pessimistic time  $b_j$ . The expected sub-process time and its standard deviation are given by  $E(t_j) = \frac{a_j + 4m_j + b_j}{6}$  and

$$\sigma(t_j) = \frac{b_j - a_j}{6}.$$

Clearly, the mean of the overall process time does not depend on the correlations of the sub-process times; however, the

variance of the overall process time does. The extreme cases are when all sub-process times are perfectly correlated (in which case  $V(T)$  is maximum), when all sub-processes are independent (in which case all covariances are zero), and when some sub-processes are negatively correlated (in which case  $V(T)$  is minimum). When the sub-process times are independent, the overall process time is usually taken to be approximately normally distributed, with mean  $E(T)$  and variance  $V(T)$ ; however, when the sub-process times are correlated, a beta distribution may be more appropriate.

## METHODOLOGY

The objective of the study is to describe the overall recruitment process time/ cost distributions for different target profiles in the information technology industry using the model proposed above.

To this end, the recruitment and selection process is analysed into the following sub-processes:

- **Human Resource/ Manpower Planning:** This is the step where the various departments in the organisation lay down their requirements in terms of human resources or manpower.
- **Job Analysis:** Here, the departments and human resource heads together design a job description and job specification. The former deals with specific requirements of the job and the roles and responsibilities, while the latter deals with the qualifications and skills required for the job.
- **Receipt of Applications**
- **Screening of Applications**
- **Preliminary Tests:** This could include one or more written or other tests like the aptitude test, psychometric test, behavioural test, etc.
- **Interviews:** Here, various interviews might be conducted before a candidate is finally selected. Sometimes there are two interviews – technical and human resource interviews. The various types can be panel interviews, stress interviews, etc.
- **Physical Examinations:** Here, the companies send the selected or shortlisted candidates for a medical examination to ensure the health status of their prospective employees.
- **Background Checks:** This may at times be done before the joining and at times even later. The references as offered by the candidates are confirmed and their opinion of the candidate is taken to gain a better understanding of the candidate and his job fit.
- **Job Offer:** Every step until this one could be followed by a rejection. If the candidate has passed all the aforementioned stages then the obvious result is the job offer.

The data for the study was collected from a sample of 50 Indian information technology companies, through direct personal interviews with the human resource managers of the sample companies. The data collected from the respondents pertained to the time spent by the human resource on each of the sub-processes of the recruitment process in their company for different target profiles: entry-level developers, entry-level business development/marketing, entry-level financial consultants, middle-level executives, and senior-level executives.

The proposed model is used to compare the overall recruitment process times for the different target profiles.

Also, the distribution of the overall recruitment process time was tested using simulation. For ease of presentation, the simulation results are kept in the Appendix.

## ANALYSIS & FINDINGS

In order to identify which of the proposed models is appropriate as a model for the recruitment process, the correlations between the sub-process times were calculated from the sample data. The correlation results are presented in Table 1.

**Table 1: Correlation between Sub-Process Times of the Recruitment Process**

	Manpower Planning	Job Analysis	Applications	Screening	Preliminary Test	Interviews
Job analysis	0.9678					
Applications	0.9778	0.9755				
Screening	0.9119	0.9851	0.9410			
Preliminary test	0.9300	0.8873	0.9558	0.8411		
Interviews	0.9011	0.9671	0.9187	0.9649	0.7647	
Background checks	0.9435	0.9923	0.9771	0.9903	0.8946	0.9631

It was found that all of the sub-process times were highly positively correlated with each other. The physical examinations and job offer sub-processes were found to be of constant duration, and so were uncorrelated with the other sub-processes.

The sub-process cost/ time profiles for each of the target profiles are presented in Tables 2-6, as estimated from the sample data.

**Table 2: Recruitment Process Analysis for Entry-Level Developers**

	Optimistic	Modal	Pessimistic	Mean	Std. Dev.	Coeff. Var.
Manpower planning	15.00	17.00	20.00	17.17	0.83	4.85%
Job analysis	10.00	13.00	20.00	13.67	1.67	12.20%
Applications	10.00	12.00	15.00	12.17	0.83	6.85%
Screening	3.00	5.00	7.00	5.00	0.67	13.33%
Preliminary tests	2.00	3.00	4.00	3.00	0.33	11.11%
Interview rounds	2.00	4.00	7.00	4.17	0.83	20.00%
Physical examinations	2.00	2.00	2.00	2.00	-	0.00%
Background checks	7.00	10.00	15.00	10.33	1.33	12.90%
Job offer	2.00	2.00	2.00	2.00	-	0.00%
	53.00	68.00	92.00	69.50	6.50	9.35%

The overall recruitment process time for entry-level developers ranged between 53 and 92 days, with a mean value of 69.5 days and a standard deviation of 6.5 days (9.35% variability). The manpower planning sub-process was found to contribute towards 24.7% of the expected overall process time, followed by job analysis (19.7%),

applications (17.5%), and background checks (14.9%). In terms of variability, the sub-process with highest variability was interview rounds (20.0%), followed by screening (13.3%), background checks (12.9%), job analysis (12.2%), and preliminary tests (11.1%).

**Table 3: Recruitment Process Analysis for Entry-Level Business Development/ Marketing**

	Optimistic	Modal	Pessimistic	Mean	Std. Dev.	Coeff. Var.
Manpower planning	18.00	20.00	25.00	20.50	1.17	5.69%
Job analysis	10.00	15.00	20.00	15.00	1.67	11.11%
Applications	10.00	14.00	25.00	15.17	2.50	16.48%
Screening	3.00	5.00	7.00	5.00	0.67	13.33%
Preliminary tests	2.00	3.00	5.00	3.17	0.50	15.79%
Interview rounds	2.00	4.00	7.00	4.17	0.83	20.00%
Physical examinations	2.00	2.00	2.00	2.00	-	0.00%
Background checks	7.00	10.00	15.00	10.33	1.33	12.90%
Job offer	2.00	2.00	2.00	2.00	-	0.00%
	56.00	75.00	108.00	77.33	8.67	11.21%

The overall recruitment process time for entry-level business development/ marketing ranged between 56 and 108 days, with a mean value of 77.3 days and a standard deviation of 8.7 days (11.21% variability). The manpower planning sub-process was found to contribute towards 26.5% of the expected overall process time, followed by applications

(19.6%), job analysis (19.4%), and background checks (13.4%). In terms of variability, the sub-process with highest variability was interview rounds (20.0%), followed by applications (16.5%), preliminary tests (15.8%), screening (13.3%), background checks (12.9%), and job analysis (11.1%).

**Table 4: Recruitment Process Analysis for Entry-Level Financial Consultants**

	Optimistic	Modal	Pessimistic	Mean	Std. Dev.	Coeff. Var.
Manpower planning	20.00	25.00	35.00	25.83	2.50	9.68%
Job analysis	15.00	20.00	25.00	20.00	1.67	8.33%
Applications	15.00	20.00	30.00	20.83	2.50	12.00%
Screening	7.00	9.00	15.00	9.67	1.33	13.79%
Preliminary tests	2.00	4.00	5.00	3.83	0.50	13.04%
Interview rounds	3.00	5.00	10.00	5.50	1.17	21.21%
Physical examinations	2.00	2.00	2.00	2.00	-	0.00%
Background checks	7.00	10.00	15.00	10.33	1.33	12.90%
Job offer	2.00	2.00	2.00	2.00	-	0.00%
	73.00	97.00	139.00	100.00	11.00	11.00%

The overall recruitment process time for entry-level financial consultants ranged between 73 and 139 days, with a mean value of 100.0 days and a standard deviation of 11.0 days (11.00% variability). The manpower planning sub-process was found to contribute towards 25.8% of the expected overall process time, followed by applications (20.8%), job

analysis (20.0%), and background checks (10.3%). In terms of variability, the sub-process with highest variability was interview rounds (21.2%), followed by screening (13.8%), preliminary tests (13.0%), background checks (12.9%), and applications (12.0%).

**Table 5: Recruitment Process Analysis for Middle-Level Executives**

	Optimistic	Modal	Pessimistic	Mean	Std. Dev.	Coeff. Var.
Manpower planning	30.00	40.00	50.00	40.00	3.33	8.33%
Job analysis	20.00	25.00	30.00	25.00	1.67	6.67%
Applications	20.00	30.00	45.00	30.83	4.17	13.51%
Screening	10.00	13.00	15.00	12.83	0.83	6.49%
Preliminary tests	2.00	3.00	5.00	3.17	0.50	15.79%
Interview rounds	15.00	20.00	30.00	20.83	2.50	12.00%
Physical examinations	2.00	2.00	2.00	2.00	-	0.00%
Background checks	10.00	15.00	20.00	15.00	1.67	11.11%
Job offer	2.00	2.00	2.00	2.00	-	0.00%
	111.00	150.00	199.00	151.67	14.67	9.67%

The overall recruitment process time for middle-level executives ranged between 111 and 199 days, with a mean value of 151.7 days and a standard deviation of 14.7 days (9.67% variability). The manpower planning sub-process was found to contribute towards 26.4% of the expected

overall process time, followed by applications (20.3%), job analysis (16.5%), and interview rounds (13.7%). In terms of variability, the sub-process with highest variability was preliminary tests (15.8%), followed by applications (13.5%), interview rounds (12.0%), and background checks (11.1%).

**Table 6: Recruitment Process Analysis for Senior-Level Executives**

	Optimistic	Modal	Pessimistic	Mean	Std. Dev.	Coeff. Var.
Manpower planning	40.00	50.00	60.00	50.00	3.33	6.67%
Job analysis	30.00	35.00	40.00	35.00	1.67	4.76%
Applications	30.00	45.00	60.00	45.00	5.00	11.11%
Screening	15.00	17.00	20.00	17.17	0.83	4.85%
Preliminary tests	7.00	10.00	15.00	10.33	1.33	12.90%
Interview rounds	35.00	40.00	45.00	40.00	1.67	4.17%
Physical examinations	2.00	2.00	2.00	2.00	-	0.00%
Background checks	20.00	25.00	30.00	25.00	1.67	6.67%
Job offer	2.00	2.00	2.00	2.00	-	0.00%
	181.00	226.00	274.00	226.50	15.50	6.84%

The overall recruitment process time for senior-level executives ranged between one hundred and eighty-one days and two hundred and seventy-four days, with a mean value of 226.5 days and a standard deviation of 15.5 days (6.84% variability). The manpower planning sub-process was found to contribute towards 22.1% of the expected overall process time, followed by applications (19.9%), interview rounds (17.7%), job analysis (15.5%), and background checks (11.0%). In terms of variability, the sub-process with highest variability was preliminary tests (12.9%), followed by applications (11.1%).

There were significant differences in the process times for the different profiles, with senior-level management recruitment taking significantly longer than middle-level management recruitment, in turn taking significantly longer than entry-level recruitment. Also, at entry level, recruitment for financial consultants takes significantly longer than marketing or developers. Further, the recruiting process time distributions were all positively skewed and platykurtic.

The variability of some sub-processes is moderate (about 20%); however, the overall variability was relatively low. The overall variability can be reduced further by making sub-processes independent of each other. The greater the extent of independence of the sub-processes, the closer the overall process distribution can be approximated by a normal distribution, and skewness and kurtosis would simultaneously be reduced.

## DISCUSSION

This study contributes to the literature in two ways. First, it proposes a model for recruitment process time/ costs

using the beta distribution, akin to the project evaluation and review technique (PERT) model. Second, it suggests that the overall recruitment process time also follows a beta distribution, due to the high correlation between the sub-process times.

The results of the study are related to those of Sabel (2016), viz. that the average time to hire was about 42 days, varying between 27 and 68 days. Based on the study results, the estimated time to fill for entry-level developers, business development, and financial consultants were 28-38-52, 28-40-63, and 38-52-79, respectively, which are quite similar to Sobel's (2016) findings.

## IMPLICATIONS

The results of the study suggest that if all recruitment sub-processes are perfectly correlated, the beta model is appropriate for the recruitment process. The results of the study also highlight the differences in the overall recruitment process time at different levels and for different profiles, with longer recruitment process at higher levels.

An implication of the study is that information technology companies should carefully analyse their recruitment cycles using a systematic process break-up approach, so that the time and costs can be understood in a step-by-step approach. This would enable them to identify bottlenecks and dependencies among the sub-processes. In particular, the study shows that manpower planning is a major bottleneck in the recruitment process. This explains why information technology companies follow continuous recruitment cycles, even when there may be no immediate requirements; they prefer to keep surplus resources on bench, so reducing the recruitment cycle time when the need actually arises.

Companies also may consider identifying how to parallelise some of the sub-processes, thus reducing the overall recruitment process time. In particular, if the manpower planning and job analysis sub-processes can run concurrently, the overall process time can be reduced by at least 20%. Similarly, tests and interviews may be conducted parallelly, but with less impact on the overall process time.

## LIMITATIONS

The study has some limitations. It is based on a small sample size, and may not be representative of the industry. The study is also carried out in a limited region, Bangalore, which may not reflect industry trends in other regions. Further, the data used for the study is perception-based, and so may be biased; in particular, the pessimistic sub-process times are underestimated, as delays in each of the sub-processes are difficult to foresee and estimate. Transactions-level data may give an unbiased, more detailed picture of the recruitment process. Moreover, the study assumes that sub-process times follow a beta distribution. This needs to be tested empirically, and other possible distributional assumptions for the sub-process times may need to be considered.

## SCOPE FOR FURTHER RESEARCH

There is great scope to extend the study to other human resource processes, particularly training and development, and also to compensation and performance management. In particular, it is difficult to obtain a consistent process break-up for the latter processes across the information technology industry. The study can also be extended to other industries, apart from the information technology industry. Another important area of research would be that of understanding the relationship different human resource process costs, particularly recruitment and training costs, in order to understand how to optimise human resource costs.

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## APPENDIX

The high correlations in Table 1 suggest that the beta distribution would be more appropriate for modeling the overall recruitment process time than the normal distribution.

To test which of these distributions explains the overall recruitment process time better, a simulation was conducted using the data for the entry-level developer profile, with the assumption of perfectly correlated sub-process times. The data for the simulation is summarised in Table A1.

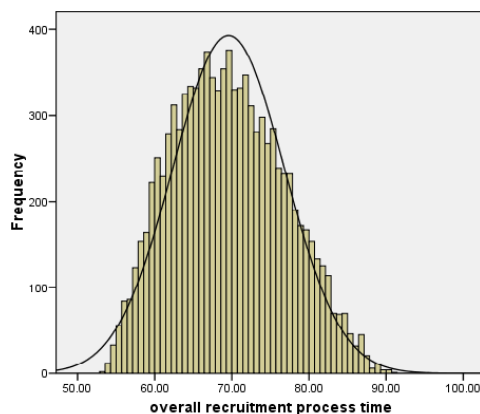
**Table A1: Beta Model for Sub-Process Times for Entry-Level Developers**

	Optimistic	Modal	Pessimistic	Alpha	Beta
Manpower planning	15.00	17.00	20.00	2.60	3.40
Job analysis	10.00	13.00	20.00	2.20	3.80
Applications	10.00	12.00	15.00	2.60	3.40
Screening	3.00	5.00	7.00	3.00	3.00
Preliminary tests	2.00	3.00	4.00	3.00	3.00
Interview rounds	2.00	4.00	7.00	2.60	3.40
Physical examinations	2.00	2.00	2.00	-	-
Background checks	7.00	10.00	15.00	2.50	3.50
Job offer	2.00	2.00	2.00	-	-
	53.00	68.00	92.00	2.54	3.46

The descriptive statistics of the simulation results for 10,000 runs are presented in Table A2 and the corresponding histogram is presented in Fig. A1. The Kolmogorov-Smirnov goodness-of-fit test results for the normal distribution and for the beta distribution are presented in Table A3 and Table A4, respectively.

**Table A2: Descriptive Statistics of Simulated Process Times**

Mean	69.5691
Std. Dev.	7.2531
Skewness	.221
Kurtosis	-.593
Percentiles	64.0600
Lower quartile	69.2000
Median	74.7975
Upper quartile	



**Fig. A1: Histogram of Simulated Process Times**

The mean of the simulated process times was found to be 69.57, approximately equal to the mean value of 69.5, as

obtained from the beta distribution formula; similarly, the standard deviation of the simulated process times was 7.25, as compared to the standard deviation of 6.5, as obtained from the beta distribution formula. The distribution of simulated process times was moderately positively skewed and moderately platykurtic; also, the histogram indicates a difference from the normal curve.

**Table A3: Kolmogorov-Smirnov Test for Normality**

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
Simulated process times	0.033	10000	0.0000

(with Lilliefors significance correction)

The Kolmogorov-Smirnov test for normality was found to be significant, suggesting that the simulated process times were not normally distributed.

**Table A4: Kolmogorov-Smirnov Test for Beta Distribution**

Sample size		10000
Parameters	Alpha	2.5385
	Beta	3.4615
	Min	53.00
	Max	92.00
Most Extreme Differences	Absolute	0.007080
	Positive	0.007080
	Negative	0.000000
Kolmogorov-Smirnov Z		0.7080
Asymp. Sig. (2-tailed)		0.6978

The results of the Kolmogorov-Smirnov test for the beta distribution was found to be not significant, suggesting that the beta distribution is more appropriate for modeling the simulated process times than the normal distribution.