

## **The Effect of Cost's on Profitability an Analysis on Small Manufacturing Businesses**

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**ABSTRACT:** *Costing is a major issue or concern for every company. It is very difficult to determine cost as there are different classifications of cost items. Cost of one company varies from cost item of another company. That is why, the profitability issues also depends on company's accounting system and their process of cost identification. Some cost item has large impact on profitability. So, it is a challenge for the company to determine their most important cost items that controls profitability of the company. In this research paper, I have tried to identify some important cost items of small manufacturing company along with their correlation. For identifying the most important factors I have conducted factor analysis and multiple regression analysis for determining the relationships among the variables. I have suggested conducting further research on medium and large company and proposing generalized factors that have impact on profitability. This research would be more successful if the small manufacturing businesses have structured accounting system. I am hoping to conduct a further research about cost and profitability by using actual costing data instead of using categorical data. Hopefully that will serve the ultimate purpose.*

**KEYWORDS:** *Cost, Profitability, Volume, Small Manufacturing Business, Cost Factors Analysis, Multiple Regression Analysis*

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### **I. INTRODUCTION**

Each financial choice, no matter how big or small it is, impacts a company's bottom line. Most of the choices are related to cost and profitability. Profit is the amount of money remaining after all the expenses of running the business are paid--total revenues minus total expenses (Hill, 2017) .An effective cost and profitability analysis is at the heart of great decision making. When company needs to take decision on cost and profitability, it may have inadvertent consequences without fact base data which eventually affect business performance.

Profitability is a reflection of how companies are run given the environment in which they operate. In fact, profitability should mirror the quality of a company's management and the shareholders' behavior, the company's competitive strategies, efficiency and risk management capabilities (García-Herrero, 2009).A company's profitability greatly depends on the accurate selection of the cost factors and the precise decision in cost changes. There are numerous cost related factors that take part in reforming the profitability of a company. For example, firm size, operating expenses, product quantity, management efficiency, reputation and product itself. Firm size is measured with the number of employees, machineries and equipment, subsidiaries and affiliates, etc. Operating expenses are expenses that are incurred in any business but are not directly associated with production. Product quantity means the volume that would be sold in future. Management efficiency means how well the management authority can use the existing resources and produce outputs in a timely and less costly manner. The product itself has an impact on the profitability of a firm. These underlying factors can create significant impact on a firm's profit condition. Many times firms suffer their decision on the cost factors and find it very difficult to cope up with. So, there is an interrelationship between cost and profitability.

The better a company can decide on its costs, the easier it is for the company to see positive changes. But for that, firms must also be able to differentiate between the types of cost. Costs can be of many types-fixed, variable, direct, indirect, manufactured, non-manufactured, operating, etc.

Both fixed and variable costs have a large impact on profitability. Expenses that do not change based on production levels are called fixed cost but, it does not mean these expenses are written in stone – sometimes rent goes up or insurance premiums go down. Common fixed cost expenses are like advertising costs, payroll for salaried employees or those whose wages do not change with production levels, payroll taxes, employee benefits and office supplies. On the other hand, expenses that changes or increase or decrease with the number

of production is called variable cost. Variable cost includes wages of direct labor, shipping cost, sales commission etc.

## **II. OBJECTIVES OF THE RESEARCH**

The overall objective behind this report was to identify the relationship between cost items and profitability of small manufacturing based companies. Specifically, this report intended to focus on the types of changes occurring on profitability and it depended solely on manufacturing industry data. Moreover, in this report, we tried to identify the cost factors related to profitability.

## **III. SCOPE OF THE RESEARCH**

From the above mentioned limitations, it is evident that there is yet scope for people to carry out a further research on this topic. A more detailed and well-explained report can be prepared by considering medium and large scale businesses and also by including the external cost factors that affect the profitability.

## **IV. REVIEW OF THE LITERATURE**

Profitability means the ability to make profit (Sales - All Expenses) from all the business activities of an organization, company, firm, or an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. "Profitability is the 'the ability of a given investment to earn a return from its use (Harward and Upton, 2012)." It also depends on how well the businesses manage to control their cost. Firms need to take important decisions associating the cost factors that directly or indirectly impact the profitability. The research topic is set to describe the impacts of cost factors on the profitability of companies. It is followed by an empirical representation of information to create a strong base for the cost factors that play important roles in changing the company's profitability.

The study importance emerges from the fact that Profitability plays a significant role to make a business survive and remain attractive to market and its investors. The term profitability is intensely related with cost. When company takes any decision, they take it by analyzing cost-benefit and evaluate the risk and rewards of projects under consideration. So, it is a systematic approach to estimate the strengths and weaknesses of a business and whether to pursue the decision. Thus, the importance of our topic relies there. If any factor of cost is calculated in the wrong way, it can affect a very vital aspect of a business which is profitability. We could find only a few suitable journal or report which illustrates the factors that we are going to present further. These thoughts made us choose such a topic which has the utmost importance on any business.

There are many types of costs, and these costs are classified differently according to the immediate needs of management. For example, managers may want cost data to prepare external financial reports, to prepare planning budgets, or to make decisions. Each different use of cost data demands a different classification and definition of costs. So, understanding costs aids the growth of a billion dollar company. Managers who understand how costs behave can predict how costs will change under various alternatives. (Garrison, 2018).

Accounting statements classify all expenses into three categories – operating expenses, financing expenses and capital expenses. Operating expenses are expenses that, at least in theory, provide benefits only for the current period; the cost of labor and materials expended to create products which are sold in the current period would be a good example. Financing expenses are expenses arising from the non-equity financing used to raise capital for the business; the most common example is interest expenses. Capital expenses are expenses that are expected to generate benefits over multiple periods; for instance, the cost of buying land and buildings is treated as a capital expense (Damodaran, 1999).

An increase in costs will decrease profits, this could include labor costs, raw material costs and cost of rent. For example, I) a devaluation of the exchange rate would increase cost of imports; therefore companies who imported raw materials would face an increase in costs. II) If the firm is able to increase productivity by improving technology then profits should increase (Nivin, 2015).

A firm with high fixed costs will need to produce a lot to benefit from economies of scale and produce on the minimum efficient scale, otherwise average costs will be too high. For example in the steel industry, we have seen a lot of rationalization where medium-sized firms have lost their competitiveness and had to merge with others because they could not be cost-effective.

While making decisions about strategy design and strategy implementation, managers must understand which revenues and costs to consider and which ones to ignore. Management accountants help managers identify what information is relevant and what information is irrelevant. Consider a decision about whether to buy a product from an outside vendor or to make it in house. When making strategic decisions about which product to produce, managers must know how revenues & cost vary with changes in output levels. For this purpose managers need to distinguish fixed cost from variable costs (Charles 13th ed).

Besides, the size of a firm plays an important role in determining the kind of relationship the firm enjoys within and outside its operating environment. The larger a firm is, the greater the influence it has on its stakeholders (Babalola, 2013). The size of a firm can be measured in a number of ways: assets, sales, employees and value added are commonly used measures (Becker-Blease, 2010). When a small enterprise wants to expand its business activities as a medium-sized firm, it incurs cost and this incurred cost plays a significant role in determining the profitability of the firm.

Research and development expenses are designed to generate future growth and should be treated as capital expenditures. The treatment of R&D as an operating expense has the immediate effect of lowering both operating and net income (Damodaran, 1999).

Effective training and development requires cost. But since employees are well-skilled and knowledgeable through effective training, they contribute to the reduction of operating cost expenses. Firm's profitability is strongly influenced by T&D (Aragón-Sánchez, 2003). Although training provides many advantages to the company (economic, social and personal), the precise estimation of its monetary effects is not possible in many cases (Buckley and Caple, 1991: 208; Co ´rdova et al., 1993; Kirkpatrick, 1999: 63).

## V. METHODOLOGY

I have conducted this research in a formal way and as a researcher I have no control over the variables in the sense of being able to manipulate them. I have developed a questionnaire to conduct the research under normal field conditions. A non-probability sampling method was followed for conducting the survey. The questionnaire has been circulated among fifty different types of small manufacturing business. Finally thirty six small manufacturing businesses have been agreed to participate in the survey. The respondents have been selected according to their availability during normal office hour. The questionnaire has been prepared with a five point Likert Scale ranging from 1= Strongly Disagree to 5= Strongly Agree.

At the beginning of the analysis, I have conducted KMO and Bartlett's Test to understand the acceptability of data analysis. As we know, if the Kaiser-Meyer-Olkin Measure of Sampling Adequacy is less than 0.50 than factor analysis is not possible. In this test I have found Kaiser-Meyer-Olkin Measure of Sampling Adequacy > 0.50. So we can say that factor analysis can be conducted for determining the relationship between cost and profitability.

<b>KMO and Bartlett's Test</b>		
<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		<b>.599</b>
Bartlett's Test of Sphericity	Approx. Chi-Square	77.922
	df	36
	Sig.	.000

At the beginning of the factor analysis I have observed the **case processing summary** where 35 valid active cases out of 36 cases because of one active cases with missing values. There were no supplementary cases has been used for this analysis.

<b>Case Processing Summary</b>	
Valid Active Cases	35
Active Cases with Missing Values <sup>a</sup>	1
Supplementary Cases	0
Total	36
Cases Used in Analysis	35
a. Excluded case(s): 23.	

Data analysis has been conducted by data reduction to remove redundant (highly correlated) variables from the data file. The purpose of structure reduction is to examine the underlying relationships between the variables. After the structure reduction of the variables two independent variables and one dependent variable has been identified this has been put for multiple regression analysis. Multiple regression analysis helped me to determine the overall fit of the model and the relative contribution of each of the predictor to the total variance explained.

## VI. DATA ANALYSIS AND FINDINGS

*List of the variables that have been used for factor analysis:*

- V1** Advantages of pre production budget on Profitability
- V2** Company Size on increase cost and profitability
- V3** Effective training & development leads to increase profitability
- V4** Change in operating expense will result in similar change in profitability

- V5 Reputation has positive impact on profitability
- V6 Fixed & Variable cost has a large impact on profitability
- V7 Profitability depends on proper allocation of costs
- V8 Impact of Cost Control on profitability
- V9 Research cost on product development

We have analyzed the **correlation** among the above mentioned variables that leads to **communalities** to identify the amount of variance in each variable that is accounted for. Initial communalities are estimated of the variance in each variable accounted for by all components or factors. That is why; the **Extraction** is always 1.0 for correlation analysis. The communalities in this table are all high except **impact of cost control on profitability**. That is why; we have to extract this component.

	Advantages of pre production budget on Profitability	Company Size on increase cost and profitability	Effective training & development leads to increase profitability	Change in operating expense will result in similar change in profitability	Reputation has positive impact on profitability	Fixed & Variable cost has a large impact on profitability	Profitability depends on all costs	Impact of Cost Control on profitability	Research cost on product development	
<b>Correlation</b>	Advantages of pre production budget on Profitability	<b>1.000</b>	.148	.142	-.223	-.137	-.182	-.541	.153	-.168
	Company Size on increase cost and profitability	.148	<b>1.000</b>	.637	.291	-.159	.116	-.117	.410	.277
	Effective training & development leads to increase profitability	.142	.637	<b>1.000</b>	.408	-.106	-.038	-.244	.526	.054
	Change in operating expense will result in similar change in profitability	-.223	.291	.408	<b>1.000</b>	-.084	-.030	.190	.185	.393
	Reputation has positive impact on profitability	-.137	-.159	-.106	-.084	<b>1.000</b>	.076	-.104	.058	-.363
	Fixed & Variable cost has a large impact on	-.182	.116	-.038	-.030	.076	<b>1.000</b>	.413	-.167	.203

profitability									
Profitability depends on proper allocation of costs	-.541	-.117	-.244	.190	-.104	.413	<b>1.000</b>	-.210	.469
Impact of Cost Control on profitability	.153	.410	.526	.185	.058	-.167	-.210	<b>1.000</b>	-.163
Research cost on product development	-.168	.277	.054	.393	-.363	.203	.469	-.163	<b>1.000</b>

Communalities		
	Initial	Extraction
Advantages of pre production budget on Profitability	1.000	.759
Company Size on increase cost and profitability	1.000	.782
Effective training & development leads to increase profitability	1.000	.790
Change in operating expense will result in similar change in profitability	1.000	.741
Reputation has positive impact on profitability	1.000	.769
Fixed & Variable cost has a large impact on profitability	1.000	.900
Profitability depends on proper allocation of costs	1.000	.767
Impact of Cost Control on profitability	1.000	.635
Research cost on product development	1.000	.763

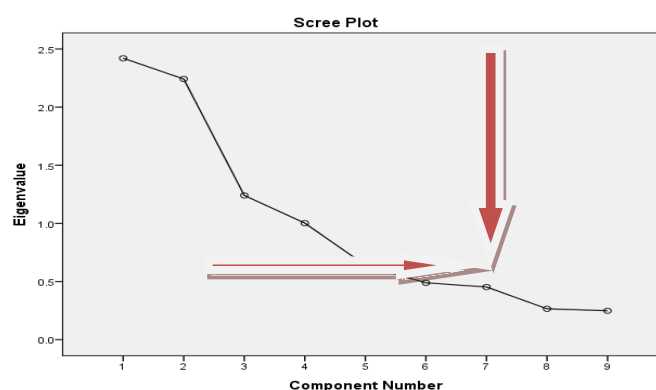
**Extraction Method: Principal Component Analysis.**

After analyzing the **Communalities** we have analyzed **Total Variance Explained** that explained by the initial solution, extracted components and rotated components is displayed. The first section of the table shows the Initial Eigen values. The total column gives the Eigen value or the amount of variance in the original variables accounted for by each component. The % of variance column gives the ratio expressed as a percentage of the variance accounted for by each component to the total variance in all of the variables. For the initial solutions there are as many components as variables and in correlation analysis the sum of the Eigen Values equals the number of components. So, we are accepting the first four principal components **C1 as F<sub>1</sub>, C<sub>2</sub> as F<sub>2</sub>, C<sub>3</sub> as F<sub>3</sub>, and C<sub>4</sub> as F<sub>4</sub>** as their Eigen Values greater than 1.0. The other components are rejected as their total is less than 1.0. The second section of the table shows the extracted components. They explain nearly 77% of the variability of the total nine variables. So we can considerably reduce the complexity of the data set by using these components with only a 23% loss of information. The rotation maintains the cumulative percentage of variations explained by the extracted components but that variation is now spread more evenly over the components. The large changes in the individual's totals suggest that the rotated component matrix will be easier to interpret than the un-rotated matrix.

Total Variance Explained									
Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.420	26.894	26.894	2.420	26.894	26.894	2.313	25.695	25.695
2	2.242	24.912	51.806	2.242	24.912	51.806	1.773	19.704	45.400
3	1.240	13.783	65.589	1.240	13.783	65.589	1.549	17.210	62.610
4	1.002	11.135	76.725	1.002	11.135	76.725	1.270	14.115	76.725
5	.640	7.108	83.832						
6	.489	5.431	89.263						
7	.453	5.033	94.296						
8	.265	2.947	97.243						
9	.248	2.757	100.000						

Extraction Method: Principal Component Analysis.

The **Scree Plot** helps us to determine the optimal number of components. The Eigen value of each component in the initial solution is plotted:



Generally, we want to extract the components on the steep slope. The components on the shallow slope contribute little to the solution. The last big drop occurs between fourth and fifth components. So using the first four components is an easy choice. That is why; we will consider components one, two, three and four.

Component Matrix <sup>a</sup>

	Component			
	1	2	3	4
Advantages of pre production budget on Profitability	.418	-.496	-.485	.321
Company Size on increase cost and profitability	.739	.368	.003	.317
Effective training & development leads to increase profitability	.846	.215	.156	.051
Change in operating expense will result in similar change in profitability	.367	.609	.167	-.455
Reputation has positive impact on profitability	-.153	-.320	.799	.064
Fixed & Variable cost has a large impact on profitability	-.261	.441	.234	.763
Profitability depends on proper allocation of costs	-.491	.715	.116	.007
Impact of Cost Control on profitability	.718	-.057	.338	-.045
Research cost on product development	-.015	.794	-.363	-.019

Extraction Method: Principal Component Analysis.  
a. 4 components extracted.

From the component matrix, we will try to identify the factors that are close to -1.0 to 1.0 The above component matrix table indicates that **C<sub>1</sub>** has high correlation with **company size and effective training & development**. **C<sub>2</sub>** has high correlation with **proper allocation of cost and research on product development**. **C<sub>3</sub>** has high correlation with **reputation** **C<sub>4</sub>** has high correlation with **fixed and variable costs**. The **Rotated**

**Component Matrix** helps us to determine what the components represent by rotating the component matrix. The first component  $C_1$  is most highly correlated with **company size and effective training & development**. However, **effective training and development** is a better representative because it is less correlated with other three components. The second component  $C_2$  is most highly correlated with **changes in operating expense and all costs**. The third component  $C_3$  is most highly correlated with **research cost on product development** and finally, fourth component  $C_4$  is highly correlated with **fixed and variable costs**.

**Rotated Component Matrix<sup>a</sup>**

	Component			
	1	2	3	4
Advantages of pre production budget on Profitability	.154	-.837	.158	-.094
<b>Company Size on increase cost and profitability</b>	<b>.805</b>	-.102	.254	.243
<b>Effective training &amp; development leads to increase profitability</b>	<b>.884</b>	-.044	.066	-.048
<b>Change in operating expense will result in similar change in profitability</b>	.503	<b>.613</b>	.248	-.224
Reputation has positive impact on profitability	-.003	.151	-.857	.113
<b>Fixed &amp; Variable cost has a large impact on profitability</b>	.001	.127	-.012	<b>.940</b>
<b>Profitability depends on proper allocation of costs</b>	-.237	<b>.690</b>	.247	.416
Impact of Cost Control on profitability	.736	-.070	-.243	-.172
<b>Research cost on product development</b>	.092	.405	<b>.735</b>	.225
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 6 iterations.				

So, from the rotated component matrix it has been found that **Factor<sub>1</sub>** has high coefficients for  $V_3$  (**Effective Training & Development**), **Factor<sub>2</sub>** has high coefficients for  $V_4$  &  $V_7$  (**Changes in operating expense and proper allocation of costs**), **Factor<sub>3</sub>** has high coefficients for  $V_9$  (**research cost on product development**) and **Factor<sub>4</sub>** has high coefficients for  $V_6$  (**fixed and variable costs**). So, **Factor<sub>1</sub>** can be labeled as “**Employee Skills Development**”, **Factor<sub>2</sub>** and **Factor<sub>4</sub>** can be labeled as “**All costs**” and **Factor<sub>3</sub>** can be labeled as “**Product development cost**”. Therefore, it can be said that profitability of small manufacturing business depends on three major kinds of costs that is:

- Factor<sub>1</sub> Employee Skills Development**
- Factor<sub>2</sub> Profitability depends on proper allocation of costs**
- Factor<sub>3</sub> Product development cost**

We have categorized the variable under **Factor<sub>1</sub>**, **Factor<sub>2</sub>** and **Factor<sub>3</sub>** where **Factor<sub>1</sub>** and **Factor<sub>3</sub>** are **independent variables** and **Factor<sub>2</sub>** is **dependent variables**. So, now we are going to conduct **regression analysis** to estimate the relationships among the variables. It will help us to understand which among the independent variables are related to the dependent variables. As we know our dependent variable is profitability and independent variables are research cost on product development and effective training and development.

**Variables Entered/Removed<sup>A</sup>:**

Variables Entered/Removed <sup>a</sup>			
Model	Variables Entered	Variables Removed	Method
1	Research cost on product development, Effective training & development leads to increase profitability		Enter
<b>a. Dependent Variable: Profitability depends on all costs</b>			
<b>b. All requested variables entered.</b>			

The variable entered and removed in the regression analysis consists of dependent variable “**Profitability**”. The **Model** column indicates the number of the model being reported. SPSS allows us to specify multiple models in a single regression command. The **Variables Entered** column shows the list all of

the independent variables specified. The column **Variables Removed** lists the variables that were removed from the current regression. Here no variables were removed. The Method column shows the method that is used by SPSS to run the regression. “**Enter**” means that each independent variable was entered in the usual fashion. Because “**Enter**” regression was requested, SPSS first tested a model with variables: technological competencies, analytical competencies, technical competencies, leadership competencies, business competencies and interpersonal competencies.

**Model Summary<sup>B</sup>:**

**R** is the square root of **R<sup>2</sup>** and is the correlation between the observed and predicted values of the dependent variable. **R<sup>2</sup>** is the proportion of the variance in the values of the dependent variable (Y) which can be explained by all the independent variables (Xs) in the equation together. This is an overall measure of the strength of association and does not reflect the extent to which any particular independent variable is associated with the dependent variable.

**R<sup>2</sup>** is a measure of how much of the variability in the outcome (**Profitability**) is accounted for by the predictors (**Employee Skills Development, Product development cost**). In the table **R<sup>2</sup>** value is 0.302 which means that **Employee Skills Development & Product development cost** is accounted for 30.20% of the variation in **profitability**. This suggests that the model is quite significant in explaining the variances. The significant result at  $p < 0.003$  provides support for the relationship.

**Adjusted R<sup>2</sup>** is an adjustment of the R-squared that penalizes the addition of extraneous predictors to the model. Here the adjusted **R<sup>2</sup>** is 0.259 in this case the difference for the final model is 0.043 (0.302-0.259) or 4.30%. This shrinkage means that if the model were derived from the population rather than a sample it would account for approximately 4.30% less variance in the outcome.

**Std. Error of the Estimate** is 0.415. In general, here the standard error is low and any predictions using this model will be good ones.

**F value** shows whether the equation as a whole is statistically significant in explaining Y. F value for the “Change Statistics” shows the significant level associated with adding the variable. The significant level for F value change statistics is 0.003.

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.550 <sup>a</sup>	.302	.259	.415	.302	6.935	2	32	.003
a. Predictors: (Constant), Research cost on product development, Effective training & development leads to increase profitability									
b. Dependent Variable: Profitability depends on all costs									

**Analysis Of Variance (Anova):**

**ANOVA** will assess the overall significance of our model. There are three variables that have been checked: **Regression, Residual and Total**. The total variance is explained by the independent variables (Regression) and the variance which is not explained by the independent variables (Residual). **Sum of Squares** is associated with the three sources of variance: **Regression, Residual and Total**.

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.384	2	1.192	6.935	.003 <sup>b</sup>
	Residual	5.501	32	.172		
	Total	7.886	34			
a. Dependent Variable: Profitability depends on all costs						
b. Predictors: (Constant), Research cost on product development, Effective training & development leads to increase profitability						

**df** is the degree of freedom associated with the sources of variance. The total variance has N - 1 degrees of freedom. **Mean Square** is calculated by dividing the sum of squares by their respective df.

**F-statistic** is the mean square (regression) divided by the mean square (residual). The **p-value** is compared to some alpha level in testing the null hypothesis that all of the model coefficients are 0. By using the ANNOVA we have found that there was a significant effect of research cost on product development and effective training & development on profitability at the  $p < .003$  level {  $F(2, 34) = 6.935, p < .001$  }.

**F-ratio** represents the ratio of the improvement in prediction that results from fitting the model (labeled ‘Regression’), relative to the inaccuracy that still exists in the model (labeled ‘Residual’ in the table).



**Coefficients <sup>A</sup>**

This table indicates the coefficients of multiple regressions. It shows in detail the beta (standardized and unstandardized) value of various independent variables and its associated significance value.

The **Model** column represents two independent variables **Employee Skills Development & Product development cost**.

**B** column shows the values for the regression for predicting the dependent variable from the independent variable. The **B** value for **Employee Skills Development** is -0.321 and **Product development cost** is 0.321. **Std. Error** shows the standard errors associated with the coefficients and **Beta** (standardized coefficients) measures how strongly each predictor variable influences the criterion variable. **T and Sig. (p)** values give a rough indication of the impact of each predictor variable a big absolute **t** value and small **p** value suggest that a predictor variable is having a large impact on the criterion variable. **T and Sig. (p)** value give a rough indication of the impact predictor variable a big absolute **t** value and small **p** value suggest that a predictor variable is having a large impact on the criterion variable. The bigger betas are associated with the larger **t**-values and lower **p**-values.

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4.033	.692		5.824	.000	2.622	5.443
	Effective training & development leads to increase profitability	-.321	.139	-.342	-2.313	.027	-.603	-.038
	Research cost on product development	.321	.105	.451	3.048	.005	.107	.536
<b>a. Dependent Variable: Profitability depends on all costs</b>								

**95.0% Confidence Interval for B** shows the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0. These confidence intervals can help us put the estimate from the coefficient into perspective by seeing how much the value could vary.

$$Y_i = \beta_0 + \beta_1 x_i + \beta_2 x_{ii} + \epsilon_i$$

$$\text{Profitability (Y}_i\text{)} = \beta_0 + \beta_1 \text{Product development cost (x}_i\text{)} + \beta_2 \text{Employee Skills Development (x}_{ii}\text{)} + \epsilon_i$$

**VII. LIMITATIONS OF THE STUDY**

- The research focused only the small businesses and excluded the medium and large scale businesses because of their complex structure.
- The survey respondents were not well educated and so they did not understand most of the survey questions properly.
- The accounting system of the chosen firms are not well organized and the accountants are not experts or experienced for which they did not have a proper idea about cost-profitability relationship.
- Their cost classification process is mostly inaccurate as they do not use any up to date cost related software, there were not many sufficient cost-profitability related journals available which made the works quite challenging.
- In the research I did not consider the cost items related to manufacturing such as direct or indirect materials, direct or indirect labor or manufacturing overhead in details or directly.

**VIII. RECOMMENDATIONS**

We have to conduct further research on medium enterprise and larger enterprise for determining some general cost factors that have impact of profitability as the research has been conducted based on small manufacturing business. This research has been conducted based on only categorical data but it would be more perfect if we could conduct the research by collecting actual amount of cost and profitability. Future researcher

should communicate with the company before the market survey starts. This will make researcher and company comfortable in terms of sharing financial and non-financial information.

This research paper has been prepared based on some general cost items but it would be better if we try to determine the relationship of cost and profitability based on manufacturing cost and non-manufacturing cost. So, the future researchers should think about these issues while they will be intended to conduct research on profitability.

## IX. CONCLUSION

This research will help academicians and accounting professionals to think in depth about the relationship between cost and profitability. There are lots of cost item but not all of them have direct impact on profitability. If a company hires skilled employee or trained their employee to be skilled then their output will be error free and efficient. Although training and development has cost itself but the output would be more than investment. Cost of product development is a negligible issue for the company. A new product development through intensive research leads a quality product with new horizon for the customer or end users. This creates competition in the market and increases market share. That is why; every company should invest on product development research for market expansion. Although cost is associated with research but a unique product or service can leads to enormous profitability for a company.

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