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Performance of Power Loom Textiles: A Resource-based View.

S. R Dulange*, A. K Pundir, L. Ganapathy
National Institute of Industrial Engineering, Mumbai.

Abstract-- ***Despite increasing attention paid to the Resource-based View (RBV), there is a dearth of empirical evidence on the interactions among different RBV performance dimensions and their effect on organizational performance. This paper examines and to extend the literature, by obtaining an understanding of the link between resources, capabilities and organizational performance in terms of operational performance, financial performance and non financial performance by using a survey research in the framework of Resource-based View. The RBV involves the different performance dimensions such as tangible assets, intangible assets and capabilities. Numerous prior studies have sought to examine the links between resources and organizational performance in particular efficiency by secondary data and using quantitative methods.***

This paper involved a quantitative examination of the relationship between tangibles assets, intangibles assets and capabilities and organizational performance of power loom textiles of Maharashtra (India). The primary data of one hundred and sixty power loom textiles of Maharashtra is collected through questionnaire to examine the relationship between tangibles assets, intangibles assets and capabilities with the operational performance. It also examines the relationship between operational performance with the organizational performance. This study finds a positive relationship between performance dimensions and organizational performance. The hypotheses are developed in the framework of RBV and tested by using the statistical method.

Key Words: ***Performance, Power loom, RBV, survey based research***

1. INTRODUCTION

Among many developing countries that actively participate in textiles and apparel trade, the Indian textile industry is exhibiting significant growth potential in the global market with its advantage as low production costs, abundant resources of raw material and cheap labor forces. The textiles and apparel industry is India's second largest industry consists of spinning, apparel, garment and man-made fabrics manufacturing. The country is the largest exporter of terry towels and man-made textile products. However, with an increased level of competition from low cost manufacturers (especially China) around the world, the industry is under tremendous pressure to increase productivity, to improve performance, to improve production quality, and to advance the management systems. Furthermore, competition is much more intense in the textiles and apparel exports business after the quota cancellation as stated by Clark (2005). Therefore, it became crucial for textile product manufacturers to respond to the new challenges with new strategies and solutions.

The power loom textile is one of the most important segments of the textile Industry in terms of fabric production and employment generation. It provides employment to 57.44 Lakh persons and contributes 62 percent of total cloth production in the Country. 60% of the fabrics produced in the power loom sector are of man-made. More than 60% of fabric meant for export is also sourced from power loom sector as mentioned in the Annual Report (2013), Textile Ministry, India. In the economic survey conducted by Government of India (2012-2013) states that, these power looms have flourished prominently at various centers in Maharashtra such as Bhiwandi, Ichalkaranji, Sholapur and Malegaon, these power loom centers work in decentralized sector and play an important role in the growth of power loom industry. India's textile and clothing industry contributes 4% per cent to Gross Domestic Product, 14 percent in industrial production, 18% of total industrial employment and 27% of export earnings. This power loom sector operates in Small to Medium Enterprises (SMEs) in India.

However, the issue of concern here is the sustainability of this achieved competitiveness of the Indian firms. Under the changed scenario sans quota restrictions, firms in these economies are trying to expand their international market competitiveness through various strategies. These strategies involve a mix of productivity enhancing and cost minimizing activities (Zala, 2010).

Bheda (2002) has stated that when the factors associated with productivity are reviewed; it becomes clear that most of the factors are of techno-managerial nature. The manufacturer can improve productivity performance substantially by implementing best practices in the area of operator and management training, industrial engineering, production planning and control, industrial relations and productivity related incentives. He further states that there are hundred percent chances for productivity performance improvement for average textile industry in India.

The present research deals with effect of tangible, intangible assets and capabilities on operational performance of the power looms in Maharashtra state. It also deals with understanding the factors affecting the operational and organizational performance of power looms and attempts to use the available resources efficiently and effectively.

II. LITERATURE REVIEW

The present study is designed to develop a model in the framework of Resource-based View (RBV) of Power loom Industry in Maharashtra and through survey research and the model is tested. A comprehensive review of relevant literature in the area of research is essential as it places the research study in its proper perspective by indicating the amount of work already done in the related area of the study. Review of literature gives background information aid the researcher in designing and analyzing the research work. A large number of studies have examined the various performance dimensions of textile industry. There have been a good number of published works in the form of research papers, reference books, reports, etc. in the area of supply chain performance of textiles. An attempt is made in this part of the research study to give a brief account of research literature related to the topic of performance and power loom textiles in the present research work.

The terms productivity and performance are commonly used within academic and commercial circles; they are however rarely adequately defined or explained. Indeed they are often confused and considered to be interchangeable, along with terms such as efficiency, effectiveness and profitability (Sink and Tuttle, 1989; Sumanth, 1994;).The productivity is a relative term and is the ratio of output to input. Productivity in manufacturing units is defined as follows: quality and quantity enhancement of product to the ratio of spent cost. The productivity view point is the relationship between the outputs of a production system with the data used for production of output (ILO).The term profitability is defined as the ratio between revenue and cost or profit to assets. It is also defined as the ability of the firm to realize financial gains from its operations. Efficiency is used to measure consumption of an input when used in achieving a certain output. The effectiveness is used to validate the goals of an organization or how much utilities are attained because of the outputs (Mohanty, 1992).Efficiency means “doing things right” and effectiveness means “doing the right things” (Sink and Tuttle, 1989). A performance measure is defined as a metric used to quantify the efficiency and/or effectiveness of an action Performance measurement is defined as the process of quantifying the efficiency and effectiveness of action (Tangen, 2005).

2.1 Operational and organizational performance

Operational performance reflects the performance of internal operation of the company in terms of cost and waste reduction, improving the quality of products, improving flexibility, improving delivery performance; and productivity improvement. They are considered as primary measures. Operational performance measure is dependent on several items that measure cost, quality, waste reduction and flexibility which is supported by the manufacturing management literature developed by Ahmad and Schroeder (2003), Rondeau, Vonderembse and Ragu-Nathan (2000), Tu, Vonderembse and Ragu-Nathan (2001), Shah and Schroeder (2006). Operational performance can be measured in terms of product quality, on-time delivery, equipment utilization, production lead time, and scrap minimization. Perry and Sohal (2000) stated that quality and reliability of internal operations in manufacturing companies will improve operational efficiency and enhance operation performance. Goldratt and Cox (1986) and Goldratt and Fox (1986) said that the goal of a factory is to make money, and there are three important measures (which are defined in monetary rather than physical units): throughput, inventory and operations expenses. The first should be maximized and the last two should be minimized.

Organizational performance is an indicator which measures how well an organization accomplishes its objectives (Ho, 2008). Li et al. (2006) defined organizational performance in terms of how well an organization achieves its market orientation and financial goals, business performance and organization effectiveness. (Venkatraman and Ramanujam 1986).Organizational performance is measured by financial measures such as revenue growth, net profits, profit to revenue ratio and return on assets, and non-financial measures such as investments in R&D, capacity to develop a competitive profile, new products development, market development and market orientation. In general, the concept of organizational performance is based upon the idea that an organization is the voluntary association of productive assets, including human, physical, and capital resources, for the purpose of achieving a shared purpose (Alchian and Demsetz, 1972; Barney 2001; Jensen and Meckling 1976; Simon, 1976). Delaney and Huselid (1996), and Lai and Cheng (2005) consider perceived market performance and productivity performance as an important index of organizational performance. Those providing the assets will only commit them to the organization so long as they are satisfied with the value they receive in exchange, relative to alternative uses of the assets. As a consequence, the essence of performance is the creation of value. So long as the value created by the use of the contributed assets is equal to or greater than the value expected by those contributing the assets, the assets will continue to be made available to the organization and the organization will continue to exist. As emphasized by Brah and Lim (2006), the operational performance has a positive correlation with overall organizational performance. This study identifies organizational performance involving multiple dimensions.

2.2 Tangibles, intangible assets and capabilities

The concept of resources was introduced into the management field in the 1970s when Ansoff (1965) categorized skills and resources according to the major logistics area, i.e., research and development (R&D), operations, marketing, general management and finance. But until the mid 1980s did the concept of resources as a source of sustainable competitive advantage become dominant in the strategic field. There has been resurgence of interest in the role of the firm’s resources as the foundation for firm strategy. The firm’s resources can be defined as stocks of

available factors that are owned or controlled by the firm. The final products or services are produced by using a wide range of other firm assets and bonding mechanisms such as technology, management information systems, incentive system, trust between management and labor, and more (Amit and Schoemaker, 1993). Grant (1991) defined resources as the inputs into the production process, which are the basis of analysis. To identify resources, financial balance sheets are inadequate because they disregard intangible resources and people-based skills – probably the most strategically important resources of the firm (Grant, 1991). Barney (1986, 1991) also suggested that not all aspects of a firm's physical capital, human capital, and organizational capital are strategically relevant resources. Logistics competency can really help firm by reducing distribution cost and by improving customer satisfaction by providing product at right place in right condition in right time (Chris et al., 2008; Li et al., 2006; Christopher, 1998).

Resource-based View defines resources as physical assets, intangible assets, and organizational capabilities that are tied semi-permanently to the firm (Wernerfelt, 1984). Those valuable resources can take a variety of forms and many different classifications of resources exist in Resource-based View (RBV) literature. Barney (1991) divided resources into physical capital resources, human capital resources and organizational capital resources. Teece, Pisano and Shuen (1997) distinguished between technological, complementary, financial, reputational, structural, institutional and market assets. Recently, the greatest consensus was achieved on the integrating classification provided by Fahy and Smithee (1999): tangible assets (having a fixed long run capacity and the properties of ownership, relatively easy to measure and relatively easy to duplicate), intangible assets (intellectual property, having relatively unlimited capacity and being relatively resistant to duplication) and capabilities (invisible assets, encompassing the skills of individuals and groups, organizational routines and interactions, having not clearly defined property rights and being very difficult to duplicate). This latest RBV typology of resources will be used in further analysis. Both theoretical and empirical literature provides many different examples of firm's resources which can be classified under these three general headings and Table 1 presents such summary.

Table 1 Tangible, intangible assets and capabilities

Resource type	Examples	Author(s)
Tangible assets	physical technology used in the firm, firm's plant, firm's equipment, geographic	Kapelko (2006), Barney (1991),Grant(2001) Amit and Schoemaker (1993),
Intangible assets	intellectual property rights (trademarks, patents, copyright, registered designs), brand names, contracts and licenses, trade secrets, company reputation, customer loyalty, long-term customer relationships, distribution channels, company networks, know-how of employees, suppliers and distributors, organizational culture, company databases, formal reporting structure, formal and informal planning, controlling and coordinating systems, norms, procedures and guidelines, internal organizational structures	Kapelko (2006),Barney (1991), Grant (2001) Hall (1992, 1993), Collis and Montgomery (1995), Fahy and Smithee (1999, Amit and Schoemaker (1993) Wuttigrai Ngamsirijit(2008),Dave and Shirley (2003),), Pangarkar, (2008),Paul, (2003
Capabilities	low cost, high quality production, high level of innovations, lean manufacturing, fast product development, supplier chain, managerial judgment, teamwork, trust between management and workers, superior engineering skills, superior technical skills, market sensing, customer linking, channel bonding, technology monitoring, financial management, cost control, technology development, integrated logistics, manufacturing processes, human resources management, environment health and safety, customer order fulfillment, pricing, purchasing, customer service delivery, new product/service development, strategy development	Kapelko (2006), Barney (1991), Grant (2001), Day and Wensley (1988), Dierkx and Cool (1989), Amit and Schoemaker (1993), Day (1994), Rangone 1999).Chen Lei (2012), .Razak, and Simun (2004),),Saini, and Budhwar, (2008)

3. Research objective

1. To identify the performance dimensions of power loom textiles.
2. To evaluate the impact of performance dimensions on the operational and organizational performance of power loom textiles.
3. To examine the effects of operational performance (primary measures) on the organizational performance (secondary measures) of power loom textiles.

3.1 Conceptual model and hypotheses

Figure 1 illustrates the conceptual model with the hypothesized relationships between the constructs. These relationships deal with four sets of hypotheses:

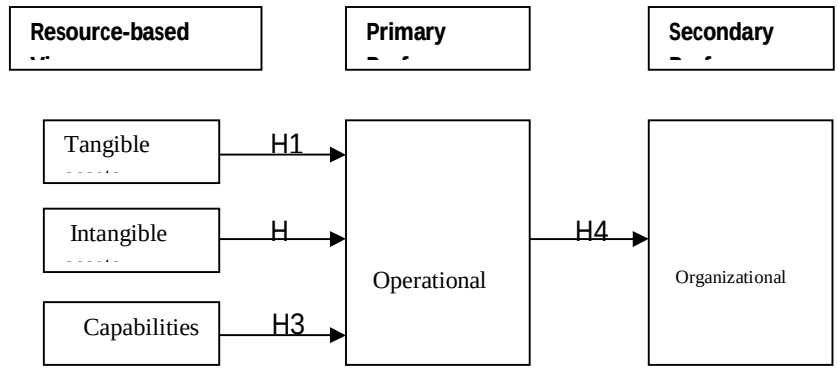

Figure 1 Conceptual model

H1: Tangible assets have a direct and positive effect on operational performance.
H2: Intangible assets have a direct and positive effect on operational performance.
H3: Capabilities have a direct and positive effect on operational performance.
H4: Operational performance has a direct effect on organizational performance.

4. Measurement instrument development

A brief review of literature is done to find out the performance dimensions of power loom textiles followed by a field survey to get acquainted with overall processes of the power loom. Later a discussion was carried out with some of the Owners/Managers, supervisors about the processes, product, suppliers, performance, and important factors affecting the performance. The details of the discussion included the type of performance measures being adopted by the firms. The following dependent and independent variables are finalized. To conduct survey research, an instrument for this study is developed.

4.1 Independent variables

In the present study the following twenty independent variables are identified which affect the performance of power loom SMEs.

1. Competence of workforce (CWF)
2. Brand identity (BI)
3. Organizational culture (OC)
4. Research & development (RD)
5. Information system (IS)
6. Organizational operational procedure (OP)
7. Organizational internal structure (OIS)
8. Organizational external structure (OES)
9. Equipment maintenance (EM)
10. Inventory management (IM)
11. Financial position (FP)
12. Technology adoption (TA)
13. Performance improvement activities (PIA)
14. Product quality improvement techniques (PQT)
15. Leadership/skill of owner (LS)
16. Lead time reduction (LTR)
17. Location (L)
18. Manufacturing flexibility improvement (MFI)
19. Access to raw material (ATR)
20. Vendor relation (VR)

4.2 Dependent variables

The dependent variables for the present study are operational and organizational performance. The key variables adopted for measuring the respective performance are:

a) Operational performance:

1. Cost reduction. (CR)
2. Improving quality of the product. (Q)
3. Improving flexibility. (IF)

b) Organizational performance:

1. Net profit. (NP)
2. ROA. (ROA)
3. Revenue growth. (RG)
4. Competitive profile. (CP)
5. Customer satisfaction. (CS)

4.3 Expert opinion

In order to refine the questionnaire developed by the researcher an expert opinion (Appendix I) has been very useful. The discussion was carried out with the academician, owners/managers about the dependent and independent variables. The expert's opinion helped to further refine the questionnaire.

4.4 Questionnaire instrument

The respondents were asked to response on questionnaire provided to them using a five point likert scale. The first part was related to the critical success factors affecting performance. In this section, a total of twenty statements were used to find out the critical success factors affecting performance and in second part there are nine statements on operational and organizational performance measures. The respondents were asked to indicate the degree to which their firms would employ the practices commonly seen in the performance measures.

4.5 Data collection and target population

This study is focused on the power loom SMEs in the Western Maharashtra region including Solapur, Ichalkaranji and Malegaon. A sample size of 120 power loom SMEs was taken from the western Maharashtra region for the study. The sample comprises of 90 SMEs from Solapur region, 18 from Malegaon and 12 from Ichalkaranji. Owner/Manager, Supervisor was asked to fill the questionnaire.

4.6 The survey

A total of 160 companies were approached personally and telephonically. Out of which 120 companies agreed to participate in the questionnaire survey achieving response rate of 75 %. Total 200 questionnaires were distributed and 167 were received back at a response rate of 83.5%. Total 160 questionnaires were found to be useful achieving respondent rate of 80%.

4.7 Reliability statistics:

4.7.1 Pilot study

A pilot study of thirty firms was carried out to check the reliability of the questionnaire. Table 4.1 shows the reliability of twenty independent variables identified from the survey.

Table 4.1: Reliability of CSFs affecting performance

Construct	Number of items	Cronbach alpha (α)
CSFs affecting OP	20	0.763

Table 4.2: Item statistics of the critical success factors affecting operational performance

Variable	Mean	Std. Deviation	N	Cronbach's alpha if item deleted
Competence of workforce (CWF)	3.0000	1.28654	30	.755
Brand identity (BI)	3.0667	1.22990	30	.784
Organizational culture (OC)	2.8333	1.17688	30	.759
Research & development (RD)	3.1667	1.53316	30	.787
Information system (IS)	3.1000	1.49366	30	.761
Organizational operational procedure (OP)	3.6333	1.15917	30	.772
Organizational internal structure (OIS)	3.1333	1.22428	30	.740
Organizational external structure (OES)	2.6333	1.35146	30	.730
Equipment maintenance (EM)	2.6667	1.18419	30	.740
Inventory management (IM)	2.2333	1.16511	30	.740
Financial position (FP)	3.3667	1.15917	30	.741
Technology adoption (TA)	3.0667	1.55216	30	.736
Performance improvement activities.(PIA)	3.2000	1.12648	30	.732
Product quality improvement technique (PQT)	3.3333	1.37297	30	.729
Leadership/skill of owner (LS)	3.7667	1.10433	30	.728
Lead time reduction (LTR)	2.7333	1.17248	30	.731
Location (L)	3.2000	1.18613	30	.747
Manufacturing flexibility improvement (MFI)	2.8333	1.17688	30	.760
Access to raw material (ATR)	2.7667	1.33089	30	.791
Vendor relation (VR)	3.0333	1.21721	30	.784

Out of twenty, two variables outsourcing and yarn accessibility were deleted which helped improve the reliability of the questionnaire from 0.763 to 0.817 i.e. from adequate level to very good.

Table 4.8 Measures of construct's reliability

Constructs	Number of items	Cronbach alpha (α)
CSFs affecting OP	18	0.817
Operational performance	04	0.842
Organizational performance	05	0.870

5. Hypotheses testing

In statistics, linear regression is an approach for modeling the relationship between a scalar variable y or dependent variable or endogenous variable and one or more explanatory variables or independent variables or exogenous variables denoted with X. The case of one explanatory variable is called simple regression.

Simple regression analysis was performed taking intangible assets as independent variables set against each of the variable of operational performance as a dependent variable thus comprising three different models of improving flexibility, quality of product and cost reduction respectively.

Same regression was carried out by changing the independent variables set by tangible assets then by capabilities. Finally operational performance variables were regressed upon organizational performance variables.

5.1 *(Intangible assets over improving flexibility)*

Model Summary

Model	R	R Square	Adjusted R Square
5.1.	.732[a]	.536	.514

Proposed model 5.1: square R value is 0.536 which indicates that the model explains 53.6% of the total variance.

5.1.2 Coefficients[a]

Model 5.1.2	B	T	Sig	Collinearity Statistics
				VIF
Constant	1.705	10.176	.000	
CWF	.280	5.965	.000*	2.290
OC	-.062	-1.106	.270	2.792
RD	-.123	-2.793	**.006***	2.713
IS	-.284	-5.039	**.000***	2.957
OP	.440	7.899	**.000***	3.606
OIS	-.004	-.066	.948	3.394
OES	.077	1.311	.192	3.280

Significance: p<0.005*

Through the use of regression analysis, Hypothesis Two (H2), which argues that the Intangible assets have an influence on operational performance, was analyzed.

The model (5.1.2) of improving flexibility was significant (R^2=0.536, F=25.060, p=0.000). The findings show that CWF (β=.280, p=0.000) implies that competent work force help to improve flexibility. The IS (β=-.284, p=0.000) implies that if information system is not proper it reduces flexibility. The organizational procedures (β=.440, p=0.000) implies that proper organizational operational procedures followed in the firm help to improve flexibility.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity. The above model can be expressed as:

Y= 1.705 +0.280(CWF) -0.062(OC) -0.123(RD) -0.284(IS) +0.440(OP) -0.004(OIS) +0.077(OES)

Where Y=Improving flexibility.

5.2 *(Intangible assets over Quality of product)*

Model Summary

Model	R	R Square	Adjusted R Square
5.2.1	.514[a]	.264	.230

Proposed model 5.2.1: square R value is 0.264 which indicates that the model explains 26.4% of the total variance.

5.2.2 Coefficients[a]

Model 5.2.2	Coefficients	T	Sig.	Collinearity Statistics
	B			VIF
(Constant)	1.077	3.384	.001	
CWF	.136	1.522	.130	2.290

OC	-.008	-.075	.941	2.792
RD	.067	.800	.425	2.713
IS	-.125	-1.168	.245	2.957
OP	**.548**	5.175	**.000***	3.606
OIS	-.178	-1.373	.172	3.394
OES	**-.268**	-2.411	**.017***	3.280

Significance: p<0.05*

The model of quality of product was significant (R^2=0.264, F=7.786, p=0.000). The findings show that OP (β=.584, p=0.000) implies that proper organizational operational procedures help to increase the quality of product. The organizational external structure (β=-.268, p=0.017) implies that organizational external structure is not much associated with the quality of product.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 1.077 +0.136(CWF) -0.008(OC) +0.067(RD) -0.125(IS) +0.548(OP) -0.178(OIS) -0.268(OES) + Error

Where Y = Quality of product

5.3 ***(Intangible assets over Cost reduction)***

Model summary

Model	R	R Square	Adjusted R Square
5.3.1	.762[a]	.581	.562

Proposed model 5.3.1: square R value is 0.581 which indicates that the model explains 58.1% of the total variance.

5.3.2 Coefficients[a]

Model 5.3.2	Coefficients	t	Sig.	Collinearity Statistics
	B			VIF
(Constant)	1.594	6.110	.000	
CWF	**-.549**	-7.508	**.000***	2.290
OC	**.283**	3.252	**.001***	2.792
RD	**.352**	5.140	**.000***	2.713
IS	.077	.879	.381	2.957
OP	**.386**	4.449	**.000***	3.606
OIS	**.508**	4.783	**.000***	3.394
OES	**-.965**	-10.594	**.000***	3.280

Significance: p<0.05*

The model of improving flexibility was significant (R^2=0.581, F=30.140, p=0.000).The findings show that CWF (β=-.549, p=0.000) implies that if employees do not have proper competent skills they cannot produce product effectively so as to reduce the cost. The OC (β=.283, p=0.001) implies that proper organizational culture in the plant helps to reduce the cost of product. The RD (β=.352, p=0.000) implies that research and development activities carried out in the firm help to achieve cost reduction of the product. The OP (β=.386, p=0.000) implies that if organizational operational standard procedures regarding the processes are followed in the firm then cost reduction can be achieved. The OIS (β=.508, p=0.000) implies that proper internal organizational structure leads to cost reduction. The OES (β=-0.965, p=0.000) implies that organizational external structure is improper then reducing cost is difficult.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 1.594 -0.549(CWF) +0.283(OC) +0.352(RD) +0.077(IS) +0.386(OP) +0.508(OIS) -0.965(OES) + Error

Where Y= Cost reduction.

All the three sets of model are found to be significant and hence the hypothesis one (H1) that the Intangible assets have an influence on operational performance was confirmed.

5.4 ***(Tangible assets over improving flexibility)***

Model Summary

Model	R	R Square	Adjusted R Square
5.4.1	.582[a]	.339	.322

Proposed model 5.4.1: square R value is 0.339 which indicates that the model explains 33.9% of the total variance.

5.4.2 Coefficients

Model 5.4.2	Coefficients	t	Sig.	Collinearity Statistics
	B			VIF
(Constant)	2.746	15.983	.000	
EM	**.401**	8.154	**.000***	1.660
IM	**-.102**	-2.759	**.006***	1.345
FP	.031	.825	.411	1.435
TA	**-.253**	-5.411	**.000***	1.411

Significance: p<0.05*

Through the use of regression analysis, Hypothesis Two (H2), which argues that the Tangible assets have a direct and positive effect on operational performance, was analyzed.

The model of improving flexibility was significant (R^2 = 0.339, F =19.867, and p = 0.000). The findings show that EM has a positive impact on operational performance (B = 0.401, p = 0.000), which implies that proper maintenance of equipments leads to improve flexibility. The IM (*B=-.102, p=0.006)* implies that improper inventory management has a negative effect on improving flexibility. The TA (*B=-.253, p=0.000)* implies that if proper technology required is not adopted it tends to reduce the flexibility.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 2.746 +0.401(EM) -0.102(IM) +0.031(FP) -0.253(TA) + Error

Where

Y= Improving flexibility

5.5 *(Tangible assets over Quality of product)*

Model Summary

Model	R	R Square	Adjusted R Square
5.5.1	.590[a]	.348	.331

Proposed model 5.5.1: square R value is 0.348 which indicates that the model explains 34.8% of the total variance.

5.5.2 Coefficients

Model	Coefficients	t	Sig.	Collinearity Statistics
5.5.2	B			VIF
(Constant)	1.929	7.493	.000	
EM	**.504**	6.847	**.000**	1.660
IM	-.026	-.473	.637	1.345
FP	.062	1.092	.277	1.435
TA	**-.493**	-7.028	**.000**	1.411

Significance: p<0.05*

The model of quality of product was significant (R^2=0.348, F=20.705, p=0.000). The findings show that EM (*B=.504, p=0.000)* implies that proper maintenance of equipment will lead to higher product quality. The TA (*B=-.493, p=0.000)* implies that upgraded technology machines lead to higher quality products, whereas technologically backward machines produce comparatively lower quality products.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 1.929 +0.504(EM) -0.026(IM) +0.062(FP) -0.493(TA) + Error

Where Y= Quality of product.

5.6 *(Tangible assets over Cost reduction)*

Model Summary

Model	R	R Square	Adjusted R Square
5.6.1	.430[a]	.185	.164

Proposed model 5.6.1: square R value is 0.185 which indicates that the model explains 18.5% of the total variance.

5.6.2 Coefficients

Model	Coefficients	T	Sig.	Collinearity Statistics
5.6.2	B			VIF
(Constant)	2.304	7.370	.000	

EM	**.382**	4.272	**.000***	1.660
IM	-.086	-1.270	.206	1.345
FP	**.191**	2.752	**.007***	1.435
TA	**-.280**	-3.284	**.001***	1.411

Significance: p<0.05*

The model of cost reduction was significant (R^2=0.185, F=8.789, p=0.000). The findings show that EM (*B=0.382, p=0.000)* implies that proper maintenance results in cost reduction. The FP (*B=0.191, p=0.007)* implies that proper financial management has a positive effect on cost reduction.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 2.304 +0.382(EM) -0.086(IM) +0.191(FP) -0.280(TA) +Error

Where Y= Cost reduction.

All the three sets of model are found to be significant and hence the hypothesis Two (H2) that Tangible assets have a direct and positive effect on operational performance is confirmed.

5.7 *(Capabilities over improving flexibility)*

Model Summary

Model	R	R Square	Adjusted R Square
5.7.1	.632[a]	.400	.380

proposed model 5.7.1: square R value is 0.400 which indicates that the model explains 40% of the total variance.

5.7.2 Coefficients

Model	Coefficients	T	Sig.	Collinearity statistics
5.7.2	B			VIF
(Constant)	2.336	15.359	.000	
PIA	**-.174**	-3.725	**.000**	1.758
PQT	**.257**	4.413	**.000**	3.220
LS	**-.131**	-2.110	**.037**	2.818
LTR	**.292**	5.348	**.000**	2.420
MFI	-.024	-.532	.596	1.440

Significance: p<0.05*

Through the use of regression analysis, Hypothesis three (H3) that argues capabilities have a direct effect on operational performance, is analyzed. The model of improving flexibility was significant (R^2=0.400, F=20.530, p=0.000).The findings show that PIA (β=-.174, p=0.000) implies that if firm lacks in performance improvement activities then flexibility cannot be improved. The PQT (β=.257, p=0.000) implies that product quality improvement techniques has a positive effect on improving flexibility. The LS (β=-.131, p=0.037) implies that lack in the skill or leadership of owner causes problems in improving flexibility. The LTR (β=.292, p=0.000) implies that reduction in lead time helps to improve flexibility.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 2.336 -0.174(PIA) +0.257(PQT) -0.131(LS) +0.292(LTR) -0.024(MFI) +Error

Where Y= Improving flexibility.

5.8 *(Capabilities over Quality of product)*

Model Summary

Model	R	R Square	Adjusted R Square
5.8.1	.484[a]	.234	.209

Proposed model 5.8.1: square R value is 0.234 which indicates that the model explains 23.4% of the total variance.

5.8.2 Coefficients

Model	Coefficients	t	Sig.	Collinearity statistics
5.8.2	B			VIF
(Constant)	2.488	9.595	.000	
PIA	**-.185**	-2.321	**.022**	1.758
PQT	.083	.837	.404	3.220
LS	-.193	-1.819	.071	2.818
LTR	**.417**	4.480	**.000**	2.420
MFI	**-.305**	-3.976	**.000**	1.440

Significance: p<0.05*

The model of quality of product was significant (R^2=0.234, F=9.403, p=0.000). The findings show that PIA (β=-.185, p=0.022) implies that if performance improvement activities are not practiced then quality of the product reduces. The LTR (β=.417, p=0.000) implies that reduction in lead time helps to improve quality of the product. The MFI (β=-.305, p=0.000) implies that if manufacturing flexibility as and when required is not present then the quality of final product will be reduced.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 2.488 -0.185(PIA) +0.083(PQT) -0.193(LS) +0.417(LTR) -0.305(MFI) +Error

Where Y= Quality of product.

5.9 *(Capabilities over Cost reduction)*

Model Summary

Model	R	R Square	Adjusted R Square
5.9.1	.397[a]	.158	.131

Proposed model 5.9.1: square R value is 0.158 which indicates that the model explains 15.8% of the total variance.

5.9.2 Coefficients

Model	Coefficients	t	Sig.	Collinearity statistics
5.9.2	B			VIF
(Constant)	2.054	6.956	.000	
PIA	.168	1.849	.066	1.758
PQT	**.450**	3.982	**.000**	3.220
LS	**-.358**	-2.968	**.003**	2.818
LTR	-.039	-.372	.710	2.420
MFI	-.006	-.068	.946	1.440

Significance: p<0.05*

The model of cost reduction was significant (R^2=0.158, F=5.775, p=0.000). The findings show that PQT (β=.450, p=0.000) implies that product quality improvement techniques leads to cost reduction. The LS (β=-.358, p=0.003) implies if owner/manager lacks skill regarding leadership, management and processes it has a negative effect on cost reduction.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity. The above model can be expressed as:

Y= 2.054 +0.168(PIA) +0.450(PQT) -0.358(LS) -0.039(LTR) -0.006(MFI) +Error

Where Y= Cost reduction.

All the three sets of model were found to be significant and hence hypothesis three (H3) that capabilities have a direct effect on operational performance is confirmed.

5.10 (Operational performance over Net profit)

Model Summary

Model	R	R Square	Adjusted R Square
5.10.1	.566[a]	.320	.307

Proposed model 5.10.1: square R value is 0.320 which indicates that the model explains 32% of the total variance.

5.10.2 Coefficients

Model	Coefficients	T	Sig.	Collinearity statistics
5.10.2	B			VIF
(Constant)	1.322	4.360	.000	
IF	-.119	-.910	.364	1.614
Q	**.425**	4.497	**.000**	1.920
CR	**.248**	2.954	**.004**	1.784

Significance: p<0.05*

Through the use of regression analysis Hypothesis four (H4) Operational performance has a direct effect on organizational performance, was analyzed. The model of net profit was significant (R^2=0.320, F=24.519, p=0.000). The findings show that quality of product (β=.425, p=0.000) implies improvement in quality of product as a positive effect on net profit. The cost reduction (β=.248, p=0.004) implies that manufacturing cost reduction results in increased net profit.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 1.322 -0.119(Improving flexibility) +0.425(Quality of product) +0.248(Cost reduction)

Where Y= Net profit.

5.11 (Operational performance over ROA)

Model Summary

Model	R	R Square	Adjusted R Square
5.11.1	.578[a]	.334	.322

Proposed model 5.11.1: square R value is 0.334 which indicates that the model explains 33.4% of the total variance.

5.11.2 Coefficients

Model	Coefficients	T	Sig.	Collinearity statistics
5.11.2	B			VIF
(Constant)	1.743	6.502	.000	
IF	-.167	-1.447	.150	1.614
Q	**.443**	5.292	**.000**	1.920
CR	**.191**	2.570	**.011**	1.784

Significance: p<0.05*

The model of ROA was significant (R^2=0.334, F=26.127, p=0.000). The findings show that quality of product (β=.443, p=0.000) implies improvement in quality of product as a positive effect on ROA. The cost reduction (β=.191, p=0.011) implies that manufacturing cost reduction has a positive effect on ROA.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 1.743 -0.167(Improving flexibility) +0.443(Quality of product) +0.191(Cost reduction) +Error

Where Y= ROA.

5.12 (Operational performance over Revenue growth)

Model Summary

Model	R	R Square	Adjusted R Square
5.12.1	.672[a]	.452	.441

Proposed model 5.12.1: square R value is 0.452 which indicates that the model explains 45.2% of the total variance.

5.12.2 Coefficients

Model	Coefficients	t	Sig.	Collinearity statistics
5.12.2	B			VIF
(Constant)	2.724	10.684	.000	
IF	**-.326**	-2.966	**.003**	1.614
Q	**.873**	10.972	**.000**	1.920
CR	**-.263**	-3.727	**.000**	1.784

Significance: p<0.05*

The model of Revenue growth was significant (R^2=0.452, F=42.834, p=0.000). The findings show that improving flexibility (β=-.326, p=0.003) implies improving flexibility has a negative effect on revenue growth. The quality of product (β=.873, p=0.011) implies improvement in quality of product as a positive effect on revenue growth. The cost reduction (β=-.263, p=0.000) implies that if manufacturing cost reduction is not achieved then it has a negative effect on revenue growth.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 2.724 -0.326(Improving flexibility) +0.873(Quality of product) -0.263(Cost reduction) + Error

Where Y= Revenue growth.

5.13 (Operational performance over Competitive profile)

Model Summary

Model	R	R Square	Adjusted R Square
5.13.1	.589[a]	.347	.335

Proposed model 5.13.1: square R value is 0.347 which indicates that the model explains 34.7% of the total variance.

5.13.2 Coefficients

Model	Coefficients	t	Sig.	Collinearity statistics
5.13.2	B			VIF
(Constant)	1.572	5.034	.000	
IF	-.003	-.022	.982	1.614
Q	**.620**	6.364	**.000**	1.920
CR	.031	.356	.722	1.784

Significance: p<0.05*The model of Competitive profile was significant (R^2=0.347, F=27.660, p=0.000). The findings show that quality of product (β=.620, p=0.000) implies improvement in quality of product as a positive effect on competitive profile

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 1.572 -0.003(Improving flexibility) +0.620(Quality of product) +0.031(Cost reduction) + Error

Where Y= Competitive profile.

But only one variable is significant in the model of competitive profile hence model 18.4 is rejected.

5.14 (Operational performance over Customer satisfaction)

Model Summary

Model	R	R Square	Adjusted R Square
5.14.1	.555[a]	.308	.295

Proposed model 5.14.1: square R value is 0.308 which indicates that the model explains 30.8% of the total variance.

5.14.2 Coefficients

Model	Coefficients	t	Sig.	Collinearity statistics
5.14.2	B			VIF
(Constant)	1.214	3.901	.000	
IF	-.088	-.654	.514	1.614
Q	**.403**	4.153	**.000**	1.920
CR	**.256**	2.979	**.003**	1.784

Significance: $p<0.05$*

The model of customer satisfaction was significant (R^2=0.308, F=23.153, p=0.000). The findings show that quality of product (β=.403, p=0.000) implies improvement in quality of product as a positive effect on customer satisfaction. The cost reduction (β=.256, p=0.003) implies that cost reduction has a positive effect on customer satisfaction.

The value of variance inflation (VIF) factor is less than 5 which indicates that analysis is free from multicollinearity.

The above model can be expressed as:

Y= 1.214 -0.088(Improving flexibility) +0.403(Quality of product) +0.256(Cost reduction) + Error

Where Y= Customer satisfaction.

Out of five, four sets of models are found to be significant and hence hypothesis four (H4) that, Operational performance has a direct effect on organizational performance is confirmed. This section analyses the impacts of CSFs on operational performance in terms of cost reduction, quality of product and improving flexibility using a sample of textile SMEs. A theoretical framework RBV (Resource based view) theory was used. This framework shows the importance of CSFs in the form of tangible assets, intangible assets, capabilities and related to operational performance in three categories (cost reduction, quality of product and improving flexibility). Managers and employees are increasingly inclined towards utilizing the resources to improve operational performance.

6. Results of hypotheses

Hypotheses	Description	Result of hypotheses
H 1	Tangible assets have a direct and positive effect on operational performance.	Supported
H 2	Intangible assets have a direct and positive effect on operational performance.	Supported
H 3	Capabilities have a direct and positive effect on operational performance.	Supported
H 4	Operational performance has a direct effect on organizational performance.	Supported

7. Conclusion

The study supports all hypotheses. The aim of this study was to evaluate firm's performance, in the framework of resource-based view of the firm. We also considered traditionally used performance measure, meaning accounting ratio of return on assets (ROA). As our research setting the study compromised the sample of firms in textile industry of Maharashtra. For the explanation of differences in performance we considered three important concepts of RBV theory: intangible assets, tangible assets and capabilities. The results of our analysis confirm the predicted resource-based view model. The level of intangible assets appeared to be positively significant for performance. RBV predictions that level of intangible assets influences performance positively (Barney, 1991) have been confirmed (hypothesis 1). Models for performance for Maharashtra show a positive relationship between the level of tangible assets and firm's performance (hypotheses 2).Similarly model for capability is supported (hypotheses 3).

More importantly, this research contributes to the body of knowledge by proposing and testing a conceptual model that considers operational performance as an antecedent to organizational performance (hypotheses 4). Thus, we

can now confirm that operational performance is an important factor for both financial and non-financial performance i.e. organizational performance.

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About the Authors:

Mr. S R Dulange is currently pursuing Fellow (Doctoral) programme at the National Institute of Industrial Engineering (NITIE), Mumbai. He is working as Assistant Professor at A G Patil Institute of Technology, Solapur. He can be reached at: srdulange@yahoo.co.in.

Prof Ashok K. Pundir is Professor of Operations Management and Dean (Students Affairs & Placement) at National Institute of Industrial Engineering (NITIE), Mumbai, India. He has over sixteen years of industrial experience in the area of Industrial Engineering and Project Management at The Premier Automobiles Ltd., Mumbai. He has over fourteen years of teaching experience and his major interests are in the areas of project management and work systems design. He is a Fellow of Indian Institution of Industrial Engineering and Institution of Engineers (India).He can be reached at ashokpundir@nitie.edu.

Prof L. Ganapathy is a Professor of Operations Management at National Institute of Industrial Engineering (NITIE), Mumbai, India. He has over twenty six years of teaching experience and his major interests are in the areas of project management and operations research. He is a member of IEEE, IIIE, and ORSI. He can be reached at ganapathy@nitie.edu

