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Impact of Operational Constraints on Quality and Productivity of Handloom Products

Vijaya Bharathi Gali, K. Anjaneyulu

Abstract*: *The handloom industry is India's largest cottage industry representing and preserving the vibrant and beautiful Indian culture and traditions. Indian artists are now known worldwide for their spinning weaving and hand-printing techniques. The handicraft industry is the second-largest source of employment in the country after agriculture. It employs 12.5 million people and is the largest supplier to rural businesses outside of agriculture. The success or failure of the handloom industry largely depend on the quality in this competitive world. The quality and the quantity of the handloom products purely derive from operational constraints which were adopted. The present study aimed to identify the impact of operational constraints like raw material availability, credit facility, functioning, and welfare constraints on the quality and productivity of handlooms in the Kadapa district. The data were collected from a total of 120 weaver entrepreneurs operating in different locations of the Kadapa district. A stratified random sampling technique has been adopted for the sample responses collection. Suitable tools like multivariate multiple regression with structural analysis were carried out to analyze and interpret the data. The study results revealed that all the four operational constraints like raw material availability, credit facility, functioning, and welfare constraints were positively and significantly influencing the quality of the handloom products. These operational constraints also influence the productivity of handlooms positively and significantly. A total of eight hypotheses were formulated with the support of the literature and all are supported. The raw material was found as an important predictor of the quality and productivity of the handloom products as it captured the maximum level of influence than other parameters.

Keywords*: *Operational Constraints, Handloom Weavers, Multivariate Multiple Regression Analysis, Kadapa Weavers.

I. INTRODUCTION

The handloom industry is India's largest cottage industry, representing and conserving the vibrant and beautiful Indian culture and traditions. Indian artists are now known all over the world for their hand spinning, weaving, and printing techniques. The handloom industry is the second-largest source of employment in the country, second only to agriculture. It employs 12.5 million people and is the largest rural business supplier, aside from agriculture (Md Mohsin Khan, 2020) [6]. Clothing is a human's most fundamental requirement. It is on par with food and shelter in terms of importance. In the past, the handloom industry was the only source of clothing for the entire world's population. The word handloom derives from the process of manual operation of a country wooden structure called the loom (Rao, D. S., & Sreedhar, N, 2017) [8]. The handloom sector has a very rich tradition that has been passed down over the centuries from the Indus valley civilization's lively culture. The handloom industry is a significant economic necessity because it sustains the economy of a primarily reveal-based society. It employs millions of craftspeople around the country, either directly or indirectly.

The Indian handloom industry is a centuries-old and largest cottage industry in the country. This traditional rural and most populous semi-urban sector has extended throughout the country. Handloom production accounts for one-fourth of total fabric output in the country. It ranks second only to agriculture in terms of employment, employing about 40 million people (Rao, K. R. M., & Kumar, K. K. n.d) [9]. The sector has rightly been termed as an art and craft sector. Handloom accounts for over 40% of cloth produced in the country. Although a very large number of cloth varieties are produced in handlooms, the major items are viz., sari, dhoti, gamchalam, bed sheet, lungi, shirting, and towel. Production of cloth is concentrated in many states of the country, but Andhra Pradesh stood second in the list with the largest cloth concentration of India (Rao, D. S., & Sreedhar, D. N., 2017) [10]. For promoting the handloom industry, various central and state government schemes, programs, and incentives have been initiated. Programs like Mudra, Loan, training schemes intended to improve the operational efficiency of the handloom weavers by purchasing advanced equipment, employing skilled workers, adopting innovativeness in production, design, and style of the handloom products (Kumar, A., 2014) [5].

But practically this is not happening. Even though many government provisions are provided to weavers, they are facing several issues like, availability of raw material, skilled workforce, lack of innovativeness, lack marketing skills, traditional work processes, etc have become a major concern for the country, and Kadapa is no exception to this issue. To make the sector profitable, it is required to identify the existing operational constraints and their influence on product quality and productivity. Therefore, the objective of this paper is to identify the core constraints of business operation and their influence on the quality and productivity of Handloom products.

II. LITERATURE REVIEW

Pandit, S., Kumar, P., & Chakrabarti, D. (2013), have aimed to observe the Ergonomic Problems Prevalent in Handloom Units of North East India [7]. This qualitative approach has explained the perceptions of the weavers through Subjective assessment, direct observation, interview.

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* Correspondence Author
Vijaya Bharathi Gali*, Department of Commerce, Yogi Vemana University, Kadapa, India. Email: vijayabharathi_yvu@yahoo.co.in
K. Anjaneyulu, Department of Commerce, Yogi Vemana University, Kadapa, India. Email: anjikoppala64@gmail.com

The study identified four broader problem areas related to seating, treadling, flying shuttle, and cloth rolling operations where design modifications are required to improve work efficiency with reduced manual efforts. Solving the problem by examining the ergonomic aspects of existing workstations will have a direct impact on the quality and quantity of results, improving productivity as well as overall happiness in the workplace. Rari john and Kamini (2015), have made an investigation to assess the entrepreneurial behaviour of the entrepreneur handloom weavers [4]. A purposive sampling technique was adopted and picked the Thiruvananthapuram (TVPM) and Kannur (KNR) districts of Kerala. A total of 150 sample responses were drawn from each district. The entrepreneurial behaviour was measured through the parameters proposed in the previous literature. The study results state that the entrepreneurs were having a moderate level of risk-taking ability, achievement motivation, production and planning, and market orientation. It was also found that there was no difference between the two districts with respect to the entrepreneurial behaviour of the entrepreneurs. Balasubrahmanyam, N., & Muthumeenakshi, M. (2018) [1], have also concentrated on studying the socio-economic conditions of the handloom weavers in the Nellore district of Andhra Pradesh. A total of 80 respondents were chosen to collect the data Out of the total population of 5549 in the district. The collected data were analyzed using appropriate statistical tools and techniques. the demographic characteristics like age, area, religion, caste, educational qualification, type of family, size of family, kind of occupation, type of house, type of ration card, land owned, assets owned, loan status, monthly weaving, number of family members involved in weaving, purchase of raw material, type of loom and experience of the profile are considered as the parameters to measure the socio-economic condition of the weavers. It was found that the weavers were having a moderate level of economic conditions. Md Mohsin Khan (2020), has conducted a study on the socio-economic conditions of the weavers in Andhra Pradesh. The data were collected from 70 weavers spread across the Chirala Mandal of Andhra Pradesh. The result of the study revealed the major problems which have been engaged by the weavers both at the economical and non-economical causational ground. The results of the study also detail their expenditure on merit and demerit goods and services such as education, health, food, non-food items, liquor consumption smoking, etc during the study period. Based on the literature, a study has proposed the following research model. Hypotheses are formulated for the study:

H 01 Raw material availability influences the quality of handloom products

H 02 Credit facility influences the quality of handloom products

H 03 Welfare constraints influence the quality of handloom products

H 04 Functioning constraints influence the quality of handloom products

H 05 Raw material availability influences the productivity of handloom products

H 06 Credit facility influences the productivity of handloom products

H 07 Welfare constraints influence productivity of handloom products

H 08 Functioning constraints influence the productivity of handloom products.

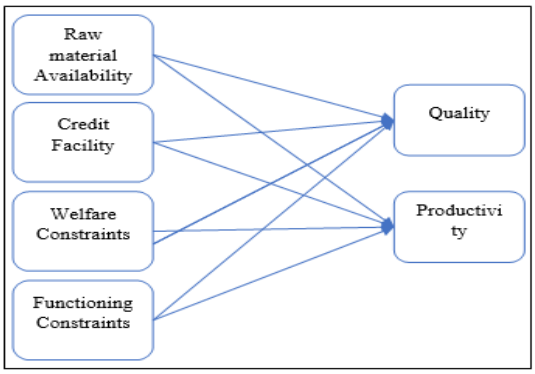

Figure 1 Conceptual Model

III. MATERIALS AND METHODS

The present study target is to identify the operational constraints of handloom weavers and measure the influence of operational constraints on product quality and productivity by taking Kadapa districts weavers. A stratified random sampling technique has been adopted for the study to collect the data from the weavers belonging to Madhavaram village in the YSR Kadapa district. A structured questionnaire is used to collect the data. A total of 120 responses are recorded and analyzed with the help of statistical applications like multivariate multiple regression model and simple structural model through the suitable software Smart PLS.

IV. RESULTS AND DISCUSSION

Structural Equation Modeling (SEM) is used on the theoretical framework. The partial least squares (PLS) method can handle many independent variables even with multicollinearity. PLS, can be implemented as a regression model predicting one or more dependent variables from a set of one or more independent variables or it can be implemented as a path model. The method of Partial Least Squares (PLS) can relate a set of independent variables to several dependent variables.

Consistency and Reliability

Before proceeding to the analysis reliability and validity analysis is carried out with help of Cronbach alpha, AVE, and composite reliability values. The results of the reliability analysis are presented in Table 1

Table 1 Reliability and Validity Statistics

Dimension	Cronbach's alpha	Average Variance Extracted	Composite Reliability
Raw material Availability	0.821	0.553	0.798
Credit facilities	0.880	0.618	0.762
Welfare constraints	0.847	0.750	0.857
Functional constraints	0.832	0.853	0.921
Product quality	0.796	0.517	0.761
Productivity	0.906	0.501	0.710

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The study contains operational constraint dimensions as an independent variable in the form of raw material availability, credit facility, welfare constraints, and functional constraints, and product quality & productivity as dependent variables. Table 1 shows that the Cronbach alpha value for all the constructs is greater than 0.7. Composite reliability is also a measure of reliability. It is calculated because sometimes the Cronbach alpha misestimates scale reliability. Composite reliability values range between 0.710 and 0.921 which is above the standard criteria of >0.7. AVE values are considered for estimating the convergent validity. It is declared from the table1 that, the model possesses reliability, validity, and internal consistency (Hair, J. F., Bush, R. P., & Ortinau, D. J., 2008; Hair, J. F. 2009) [2].

Measurement of linear relationships

After attainment of reliability and validity, the study proceeded to estimate the effects of operational constraints on the dependent variables, product quality, and productivity. For this purpose, structural equation Modeling using smartPLS is applied. Operational constraints like raw material availability, credit facility, welfare constraints, and functional constraints are treated as independent variables. The dependent variables for the study are productivity and product quality. The results pertinent to the issue are presented in the following figure 2 and table 2.

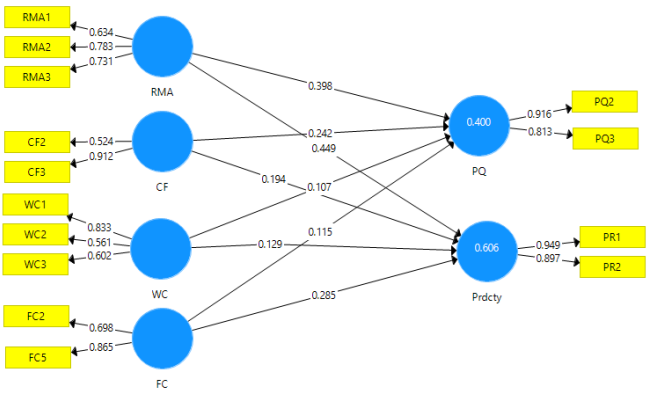

Figure 2 Empirical Model

In bootstrapping, resampling methods are used to compute the significance of PLS coefficients. The output of significance levels can be retrieved from bootstrapping option.

Impact of operational constraints on quality of handloom products

Table 3 shows the results of hypotheses related to the impact measurement of operational constraint dimensions on product quality. All four hypotheses are supported because the p values for all these path hypotheses are less than 0.05 (Hair et al, 2008) [3]

Among all relationships, the beta value for the path from RMA->PQ is 0.398, which means that almost 40% of the effect is captured from raw material on product quality. Beta value (0.242) for the path CF->PQ stood next. All these results denote that, the availability of the raw material and the availability of the credit provider for the weavers strongly lead to improved product quality.

Table 3 Hypothesis Results

Hypo	Path	Beta value	SE	t- value	P-value	Result
1	RMA->PQ	0.398	0.048	0.412	0.003	Supported
2	CF->PQ	0.242	0.077	0.299	0.009	Supported
3	WC->PQ	0.107	0.040	0.118	0.012	Supported
4	FC->PQ	0.115	0.090	0.124	0.016	Supported

Table 4 Hypothesis Results

Hypo	Path	Beta value	SE	t- value	P-value	Result
5	RMA->Prdcty	0.449	0.021	0.499	0.001	Supported
6	CF-> Prdcty	0.194	0.047	0.196	0.000	Supported
7	WC-> Prdcty	0.129	0.051	0.134	0.008	Supported
8	FC-> Prdcty	0.285	0.087	0.298	0.011	Supported

Impact of operational constraints on productivity of handloom products

Table 4 shows the results of hypotheses related to the impact measurement of operational constraint dimensions on productivity. All four hypotheses are supported because the p values for all these path hypotheses are less than 0.05 (Hair et al, 2008)

Among all relationships, the beta value for the path from RMA-> Prdcty is 0.449, which means that almost 45% of the effect is derived from raw material on productivity. Beta value (0.285) for the path FC->PQ stood after. All these results denote that, the availability of the raw material and functional constraints for the weavers strongly lead to improved productivity.

V. CONCLUSION

The study is carried out to identify the impact of operational constraint dimensions on product quality and productivity. A total of eight hypotheses are formulated and supported evidently. Among all the hypotheses, the path from the impact of raw material availability to productivity (beta value 0.449) and product quality (beta value 0.398) has been proven strongly. After this, functional constraints influence productivity much (beta value 0.285) and later credit facility influencing product quality (0.242). other operational constraints also influence the product quality and productivity but to a little extent.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Unlike all other research, the present study also has some limitations. The study is limited to covering the Kadapa district, further studies can aim at the other geographical areas. The study enclosed major operational constraints like raw material availability, functional, welfare, and credit facility constraints only. Supplementary studies can look up into other operational constraints like weaver skills, abilities, behavioural constraints, market-oriented constraints, etc.

REFERENCES

1. Balasubrahmanyam, N., & Muthumeenakshi, M. (2018). Socio-economic conditions of handloom weavers in Andhra Pradesh: A study of Nellore district. International Journal of Mechanical Engineering and Technology, 9(7), 189-197.
2. Hair, J. F. (2009). Multivariate data analysis.
3. Hair, J. F., Bush, R. P., & Ortinau, D. J. (2008). Marketing research. New York, NY: McGraw-Hill Higher Education.
4. John, K. R., & Kamini, S. (2015). Dimensions of entrepreneurial behaviour of handloom weavers in Thiruvanathapuram and Kannur districts. Asian Journal of Home Science, 10(2), 424-431.
5. Kumar, A. (2014). MARKETING HANDLOOMS: INCREASING COMPETITIVENESS. Rural Marketing, 182.
6. MdMohsin Khan (2020), Socio-Economic condition of Handloom weavers-A case study of ChiralaMandal, Andhra Pradesh, IOSR Journal of Economics and Finance (IOSR-JEF), e-ISSN: 2321-5933, p-ISSN: 2321-5925.Volume 11, Issue 4 Ser. I (Jul. – Aug. 2020), PP 66-75, www.iosrjournals.org
7. Pandit, S., Kumar, P., & Chakrabarti, D. (2013). Ergonomic problems are prevalent in handloom units of North East India. Age (yrs), 26(2), 18-35.
8. Rao, D. S., & Sreedhar, D. N. (2017). Socio-Economic Conditions of Handloom Weavers in Gannavaram Mandal of Krishna District In Andhra Pradesh. IOSR Journal of Humanities and Social Science, 22 (9), 42-49.
9. Rao, D. S., & Sreedhar, N. (2017). Problems of Handloom Weavers in Andhra Pradesh: A Study of Krishna District. International Journal of Humanities and Social Science Invention (IJHSSI), 6(11), 01-08.
10. Rao, K. R. M., & Kumar, K. K. (n.d) Impact of Integrated Handloom Cluster Development Scheme (IHCDS) on Working Conditions of Weavers.

AUTHORS PROFILE

Dr. Vijaya Bharathi Gali is presently working as an Associate Professor at Yogi Vemana University, Kadapa. She received a Doctoral degree and a Master's degree from Sri Venkateswara University. She has more than 20 years of experience in academics and industry. Her areas of expertise include Women Entrepreneurship, Agriprenuership, Financial Econometrics, Financial Analytics. She is a prolific researcher and has more than 30 research papers published in the national and international journal of repute. She presented 72 research papers in national and international seminars and conferences and chaired various seminars. She carried out UGC Major Research Project on Women Exuberance.

K. Anjaneyulu is a doctoral research scholar in commerce from Yogi Vemana University, Kadapa. He obtained a Masters' degree in Commerce from Yogi Vemana University. His research interests are Entrepreneurship, Weaver's entrepreneurial skills, financial management, accounting, and finance. He has teaching experience at under Graduate and Graduate level for teaching Commerce and management students. His teaching experience includes Fundamentals of Accounting, Advanced Accounting, Management Accounting, Entrepreneurship, Communication skills, Business Statistics, Principles of Marketing, Consumer Behavior. He presented various research papers at national and international seminars and conferences. He was positioned in different administrative designations at Undergraduate and post graduate levels.

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