IMPACT OF WORKPLACE CONSTITUENTS ON THE MANUFACTURING PERFORMANCE IN SMALL AND MEDIUM ENTERPRISE: IN CASE OF GONDAR CITY, ETHIOPIA

HAIMANOTE BELAY ALEMAYEH

Assistant Professor, Department of Marketing Management
College of Business and Economics, University of Gondar, Ethiopia

Abstract: *Though the innovations have been recommended for the improvement of workplace environment to all manufacturing sector, the small and medium enterprise should yet to consider it very important for the betterment of products' quality, safety, security and productivity. Firms from certain developing countries like Ethiopia face a lot of challenges by ignoring the management of workplace. The factors of workplace and their impact on the manufacturing performance as the major objective, this study has gone through with a method mix of descriptive research design, qualitative and quantitative approach, stratified random sampling techniques, cross sectional, multi stage data collection and data analysis with coefficients. The results are interesting enough that the factors selected are found significant with the productivity where the rest confirmed unimportant and thereby the suggestions are offered for making the most of workplace elements by identifying and executing the ideal blend in small and medium enterprise.*

Keywords: MSML, Manufacturing Sector, Workplace, Production Performance.

I. INTRODUCTION

The workplace environment impacts employee morale, productivity and engagement - both positively and negatively. The work place environment in a majority of industry is unsafe and unhealthy. These includes poorly designed workstations, unsuitable furniture, lack of ventilation, inappropriate lighting, excessive noise, insufficient safety measures in fire emergencies and lack of personal protective equipment (Chandrasekar K, 2011). People working in such environment are prone to occupational disease and it impacts on employee's performance. Thus productivity is decreased due to the workplace environment. It is the quality of the employee's workplace environment that most impacts on their level of motivation and subsequent performance. How well they engage with the organization, especially with their immediate environment, influences to a great extent their error rate, level of innovation and collaboration with other employees, absenteeism and ultimately, how long they stay in the job. Creating a work environment in which employees are productive is essential to increased profits for your organization, corporation or small business. The relationship between work, the workplace and the tools of work, workplace becomes an integral part of work itself. The management that dictate how, exactly, to maximize employee productivity center around two major areas of focus: personal motivation and the infrastructure of the work environment.

It also gives negative effect on firm value as Qazi S. & Kabir (2009) find that negative workplace announcements are associated with an abnormal decrease in shareholder value. Furthermore, the authors find evidence that negative workplace safety announcements have a more pronounced

negative effect on firm value in the present environment than in any previous time period. Operations managers need to play leading roles in ensuring safe working environments and support is needed to acquire the financial resources necessary to mitigate exposure to unsafe working conditions

Ilias Vlachos (2010) focused only on organizational culture that is associated to the four LP variables (i.e. continuous improvement, waste, ergonomy and product quality). Training and knowledge acquisition offer partially effects on LP with training to contribute mostly to predicting continuous improvements. Knowledge acquisition alone has significant yet negative impact on both continuous improvement and ergonomy. Even more, when training is combined with knowledge acquisition the results are different.

When it comes to the uncertainties such as accidents, Weingarten's research explores that procurement, production, and demand uncertainties do indeed lead to an increase in workplace accidents at the plant level. Furthermore, the negative impact of uncertainty can be significantly reduced through information sharing.

The change in production paradigm is strengthened by the emerging technologies in every sector and form. In small- and medium-sized enterprises (SMEs), this means, for example, the increased use of modern digital manufacturing tools, new additive manufacturing processes and novel engineering intelligence solutions. As a direct result, workers need to develop new skills and competences to effective work. From an educational perspective, it is especially critical that people with few prior successful experiences with fully applying the key information-processing skills need to obtain adequate comprehension to guide them in structural changes in their future working lives **(**Raija Hämäläine et al. 2017).

According to C. L. Geraci and co-authors, Emerging and novel technologies, materials, and information integrated into increasingly automated and networked manufacturing processes or into traditional manufacturing settings are enhancing the efficiency and productivity of manufacturing. Globally, there is a move toward a new era in manufacturing that is characterized by: (1) the ability to create and deliver more complex designs of products; (2) the creation and use of materials with new properties that meet a design need; (3) the employment of new technologies, such as additive and digital techniques that improve on conventional manufacturing processes; and (4) a compression of the time from initial design concept to the creation of a final product.

All the above discussions pertaining to the application workplace environment in line with manufacturing industries are aimed to focus on small and medium enterprise but not to large scale industries since the practice in every country is found implemented. The growth of manufacturing sector is found highly important for Ethiopian policies and practices in the recent times.

Manufacturing sector plays a major role for economic growth in the developed as well as in developing countries. It is now well established in the growth and development literature that there is a strong causal relation between the growth of manufacturing output and the growth of GDP (Pacheco-López & Thirlwall, 2013). Since the late 18th century, the manufacturing sector has been the main engine of growth and catch up (Szirmai, 2009). After all, manufacturing has the highest multiplier effect of any other sector of our economy. The development of emerging country

mainly depends on the performances and structure of manufacturing sector in those countries.

The path to development for economies in the last 200 years that have made the transition to high incomes has often involved the development of significant manufacturing sectors (Gregory, 2006). The increase in the share of the manufacturing sector in the economy witnesses economic growth. It is a well documented empirical fact that economic growth is associated with significant shifts in the sectoral output, employment and consumption structure (Boppart, 2013).

In recent years, African countries have demonstrated renewed commitment to manufacturing development as part of a broader agenda to diversify their economies, build resilience to shocks, and develop productive capacity for high and sustained economic growth, the creation of employment opportunities and substantial poverty reduction (UNIDO, 2011).

According to Kaldor (1966), manufacturing has characteristics which make it the engine of growth for two main reasons. Firstly, manufacturing itself is subject to increasing returns, both static and dynamic, while land based activities and petty services are subject to diminishing returns. Secondly, as the manufacturing sector expands, and draws labor from other sectors where there are diminishing returns, productivity in these activities rises automatically because the average product of labor is above the marginal product. Thus, the faster manufacturing output grows, the faster the growth of productivity in the economy as a whole, which is the major source of GDP growth and living standards. (Pacheco- López &Thirlwall, 2013).

Therefore, conducting such a research on workplace environment in contrast with performance of manufacturing sector of small and medium sector seems essential in the light of the fact that different problems centered in this sector. This study has made an effort to analyze the varied problems of manufacturing enterprises at Gondar city and forwarded possible solutions to the policy makers and business operators.

II. OBJECTIVES

1. To understand the production performance of the manufacturing companies of small and medium enterprise: in case of Gondar city, Ethiopia
2. To identify the factors of workplace environment influencing the growth of productivity, quality of the product and safety & security performance in small and medium enterprise manufacturers.
3. To evaluate the impact of workplace constituents on the manufacturing performance in small and medium enterprise: in case of Gondar city, Ethiopia

III. RESEARCH METHODOLOGY

The research design was mixed research that combines the quantitative and qualitative data to address the research objectives. The data will be both primary and secondary data which was collected from firms, government officials and the community. The design of this study was cross-sectional in which data was shot at a single moment and analyzed to get findings. Questionnaire, interview and observation and focus group discussion were used as data gathering methods on small and medium enterprises found in Gondar city.

Based on the Confidence level of 95%, Degree of variability (sample proportion) 75 % (p) and Maximum tolerable error (sampling error) was 5% (w), the sample size (SS) for very large population and landed at 131 where the sampling technique used was the non-probability and purposive in specific. The methods of data collection used in this study are focus group discussion, semi- structured interview, questionnaire (open ended and close ended) and observation and focus group discussion. Descriptive statistics were used as for the analysis of data to provide detail information about each independent variable's impact on the three dependant variables used.

IV. ANALYSIS AND FINDINGS

The influence of the workplace environment with respect to the elements of convenient working place in terms of transport accessibility, convenient working place in terms social interaction, enough warehouse place for finished products and parts, enough place for raw material storage and enough place for the production process on the production performance elements i.e. products' quality, safety& security and productivity are analyzed with Model Summary, ANOVA and Coefficients as follows.

4.1 The growth of Productivity

Table 4.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.322[a]	.104	.064	1.143

a. Predictors: (Constant), W1, W2, W3, W4, W5.

In the table 4.1, R Square value is 0.104; it means all the levels of items in the variable work place contributing 10.4 per cent in the growth of Productivity. The remaining 89.6 is being contributed by other unknown variables.

Table 4.2. ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	16.831	5	3.366	2.574	.030[b]
1Residual	145.135	111	1.308		
Total	161.966	116			

a. Dependent Variable: The growth of Productivity.

b. Predictors: (Constant), W1, W2, W3, W4, W5.

The table 4.2 shows the relationship among the growth of Productivity to the independent variables W1, W2, W3, W4 and W5. The F value between dependant variable and predictors is 2.574, and the significant value is 0.030 which is significant at 0.05. By this we can also conclude if there is one level in items' increase, there will be the increase of 145.135 in the work place.

Table 4.3. Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.186	.544		5.859	.000
1. You have convenient working place in terms of transport accessibility	.113	.116	.102	.972	.333
2. You have convenient working place in terms social interaction	-.313	.138	-.245	-2.274	.025
3. There is enough warehouse place for finished products and parts	-.084	.126	-.107	-.664	.508
4. There is enough place for raw material storage	.042	.115	.054	.365	.716
5. There is enough place for the production process	.246	.128	.312	1.920	.057

a. Dependent Variable: The growth of Productivity.

According to the result drawn from the table 4.3, it can be inferred that the second item of the work place i.e. "*You have convenient working place in terms social interaction"* is showing the significance on the growth of Productivity, where p = 0.025 which is less than the significance level at 0.05.

Hence it can be concluded that the growth of Productivity can be accelerated through creating good working environment with good social interaction through which the employees may acquire recreation or information sharing while working with respect to the manufacturing units of small and medium enterprises.

4.2. Safety and security improvement

Table 4.4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.247[a]	.061	.018	1.093

a. Predictors: (Constant), W1, W2, W3, W4, W5.

As depicted in the table 4.4, R Square value is 0.018; it means all the levels of items in the variable work place contributing 1.8 per cent in safety and security improvement. The remaining 98.2 is being contributed by other unknown variables.

Table 4.5 ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	8.575	5	1.715	1.437	.217[b]
Residual	132.502	111	1.194		
Total	141.077	116			

a. Dependent Variable: safety and security improvement.

b. Predictors: (Constant), W1, W2, W3, W4, W5.

The table 4.5 shows the relationship among the safety and security improvement to the independent variables W1, W2, W3, W4 and W5. The F value between dependant variable and predictors is 1.437, and the significant value is 0.217 which is not significant at the level of 0.05. By this we can also conclude if there is one level in items' increase, there will be the increase 132.502 in the work place.

Table 4.6 Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.153	.520		4.143	.000
1. You have convenient working place in terms of transport accessibility	.057	.112	.055	.509	.612
2. You have convenient working place in terms social interaction	-.101	.132	-.085	-.768	.444
3. There is enough warehouse place for finished products and parts	-.075	.124	-.102	-.605	.546
4. There is enough place for raw material storage	.105	.111	.144	.946	.346
5. There is enough place for the production process	.145	.123	.197	1.173	.243

a. Dependent Variable: safety and security improvement.

The results from the table 4.6 lead us to understand that all the items of the work place are not significant on the safety and security improvement, where the significant levels of W1, W2, W3, W4 and W5 are 0.621, 0.444, 0.546, 0.346 and 0.243 respectively and more than the significance level at 0.05.

Hence it can be concluded that the safety and security improvement is considered to be influenced at the least possible way by the items of work place by the manufacturing units of small and medium enterprises.

4.3 Quality upgrade

Table 4.7 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.233[a]	.054	.012	1.148

a. Predictors: (Constant), W1, W2, W3, W4, W5.

As regards the table 4.7, R Square value is 0.054; it means all the levels of items in the variable work place contributing 5.4 per cent in quality upgrade. The remaining 94.6 is being contributed by other unknown variables.

Table 4.8 ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression 1	8.397	5	1.679	1.275	.280[b]
Residual	146.184	111	1.317		
Total	154.581	116			

a. Dependent Variable: Quality upgrade.

b. Predictors: (Constant), W1, W2, W3, W4, W5.

The table 4.1.1.8 shows the relationship among quality upgrade and independent variables W1, W2, W3, W4 and W5. The F value between dependant variable and predictors is 1.275, and the significant value is 0.280 which is not significant at the level of 0.05. By this we can also conclude if there is one level in items' increase, there will be the increase of 146.184 in the work place.

Table 4.9 Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.652	.547		4.852	.000
1. You have convenient working place in terms of transport accessibility	.040	.117	.037	.340	.735
2. You have convenient working place in terms social interaction	-.118	.139	-.094	-.846	.399
3. There is enough warehouse place for finished products and parts	.023	.129	.029	.176	.861
4. There is enough place for raw material storage	-.008	.116	-.011	-.072	.943
5. There is enough place for the production process	.169	.127	.218	1.329	.187

a. Dependent Variable: Quality upgrade.

The results from the table 4.9 portrays that all the items of the work place are not significant on quality upgrade, where the significant levels of W1, W2, W3, W4 and W5 are 0.735, 0.399, 0.861, 0.943 and 0.187 respectively and found more than the significance level at 0.05.

Hence it can be concluded surprisingly that quality upgrade is also not considered to be influenced by the items of work place by the manufacturing units of small and medium enterprises.

V. RECOMMENDATIONS

- The manufacturing companies of small and medium sector should focus on the total working place environment for the improvement of quality of work life with respect to the employees directly and

thereby creating a difference in the growth of productivity by catering quality products.

- Since the market expects homogeneous products from small and medium sector, the importance for the workplace is not highly considered as per the research except in the productivity, but the innovations in the product, customer lifestyles and technological revolutions in future may have all the chances to demand unique products and the contribution of workplace will be found imperative then.

- Productivity as a key factor in the small and medium sector has an emphasis on the firm's owner leads to the volume building alone most of the times and the other factors such as quality and safety and security are highly ignored. Manufactures should also focus on these elements which would improve the business competitiveness.

- Improving the workplace for transport accessibility, social interaction, warehouse, raw material storage and production process are to be considered separately for its contribution on the productivity tends to be more for a long run

- It is found that numerous accidents are taken place at the production process in small and medium firms because of certain measures by allocating specific places for specific activities. So firms may allocate the same though the financial barriers prevent them from doing so, otherwise, the growth of the business will definitely be stopped as matter of expansion is blocked through ignoring workplace environment improvement.

REFERENCE

1. Admassu Abera (2012) Factors affecting the performance of Micro and Small Enterprises in Arada and Lideta Sub cities Addis Ababa

2. Alan, B. & Emma, B. 2012. *Business research methods*, Oxford.

3. C. L. Geraci, S. S. Tinkle, S. A. Brenner , L. L. Hodson , C. A. Pomeroy-Carter & N. Neu-Baker., Launching the dialogue: Safety and innovation as partners for success in advanced manufacturing., Journal of Occupational and Environmental Hygiene.,

4. Chandrasekar, K (2011) , Workplace Environment and its Impact on Organisational Performance in Public Sector Organisations, International Journal of Enterprise Computing and Business Systems, January 2011, Vol. 1 Issue 1

5. Ilias Vlachos(2010), An empirical investigation of workplace factors affecting lean performance, International Journal of Productivity and Performance Management, Volume 67, Issue 2

6. Kaldor N (1966). Causes of the Slow Rate of Economic Growth of the United Kingdom: an Inaugural Lecture. Cambridge: Cambridge University Press.

7. Kaplinsky, R. (2000). Globalization and unequalization: What can be learned from value chain analysis?

8. Kebede, S. &Abera, N. (2014).Determinants of micro and small enterprises' access to finance.

9. Koppala Venugopal., Sewhareg Getenet & Firnus Yalew "The Impact Of Marketing Mix Strategies On Micro And Small Business Enterprises Performance" (Case Study of Manufacturing Enterprises in Gondar City Administration, Ethiopia)., 'Forum for Intellectual Academicians and Researchers Publications' First Edition: 2017, Copyright © forum4researchers.

10. Minna Lanz, Kari T. Koskinen (2017) Collaborative Systems and Environments for Future Working Life: Towards the Integration of Workers, Systems and Manufacturing Environments, The Impact of Digitalization in the Workplace, pp 25-38

11. Moti 2011. Micro and Small Enterprises Development Strategy. Addis Ababa. Simeon Nichter and Lara Goldmark. (2009). Small Firm Growth in Developing Countries. World Development, 37(9): 1453–1464.

12. Pacheco-López P, Thirlwall AP (2013). A New Interpretation of Kaldor's First Growth Law for Open Developing Economies, University of Kent School of Economics Discussion Papers ,KDPE.Patton, M. (2002).*Qualitative research and educational methods*. Thousand Oaks: Sage publications

13. Penny, B., Karina, F., Gary, G., and Andrew, G. (2013). Connecting local producers in developing countries to regional and global value chains. OECD trade policy paper no. 160.

14. Porter, M. (1985).*Competitive advantage*. London: Macmillan publishing.

15. Qazi S. & Kabir, Workplace safety events and firm performance Journal of Manufacturing Technology Management, Volume 29, Issue 1

16. Reji, E. M. (2013).Value chains and small enterprise development: Theory and praxis. *American Journal of Industrial and Business Management*, vol. 3 (2), pp. 28-35.

17. Saunders, M. (2009).*Research methods for business students*, 5th ed. Pearson Professional Limited.

18. URGAIA RISSA(2007) The growth of industrial manufacturing in Ethiopia and its contribution to GDP

19. Volume 15, 2018 - Issue 6., Pages D45-D50

20. Venugopal, K & Swathi Konchada (2014) "Materialization of Women Entrepreneurship in Tribal Areas" 'International Journal of Entrepreneurship and Business Environment Perspectives' Pezzottaite journals Publications, Vol: 3 No: 2 ., pp : 5-11.

21. Venugopal, K., Hailu Demissie., Abebe Worku & Haimanote Belay (2015) "Progression of Family Business in Micro And Small Enterprise – A Study in Gondar Region in Amhara State, Ethiopia" ., International Journal in Management &

Social Science (IJMSS), Vol: 3, Issue no: 3, PP: 520-528.

22. Wolfenson, J. D. (2007). 'The Challenges of Globalization: the role of the WorldBank. Paper presented at the address to the Bundestag Berlin, Germany.