

# **The Impact of Inventory Control on Productivity of Steel Firms**

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## **Abstract**

The effect of inventory control on the productivity of manufacturing firms has become topical. Inventory control is an important factor in determining efficiency and effectiveness, thereby achieving productivity of a manufacturing firm. Survival of the manufacturing firms depend on its ability to have uninterrupted production, and effective control of inventory is necessary to achieve an efficient production process. This study was conducted on selected steel firms based in Johannesburg, South Africa. Based on the information obtained from the firms involved, the study established that inventory control has an effect on the productivity of a firm. The study also discovered that inventory control is a problem for larger steel firms compared to small and medium size firms because the larger firms are dealing with big orders. The study also revealed that during the production process, firms tend to use rule-of-thumb when managing inventory control. The survival of the manufacturing firm depends on its ability to have uninterrupted production. Furthermore for the manufacturing firm to be able to achieve an efficient production process, its inventory must be controlled effectively.

## **Keywords**

Inventory control, steel manufacturing firms, productivity, Johannesburg

## **1. Introduction**

In the ever-changing economic environment, manufacturing firms are faced with many challenges and the most noticeable challenge for the majority of businesses is to accomplish productivity in order to have the viable benefit (Kumar and Suresh, 2009). Most manufacturing companies strive to have access to the customers, and easy access to raw resources or suppliers in order to satisfy needs of the market. Inventory plays a key role in manufacturing. Inventory is the stock or resources used to meet customer needs or to support the manufacturing of goods (Krajewski et al., 2012). Inventory control is planning and maintaining of resources in order to meet the competitive needs of the firm (Krajewski et al., 2012). Efficient control of inventory is important for achieving the full potential of the supply chain of any company.

Inventory control allows companies to substantially decrease the charges related with the movement of materials. Inventory control methods are important components in the production process. In the mission to enhance profits on investment, most firms fall short on analysing their investment on inventory. This could be disastrous because refining the way the firm controls and manages inventory may have the potential for improving the firm's bottom line (Schreibfeder, 2006). According to Temeng et al. (2010), firms have constantly overlooked the potential savings from proper inventory control management.

Effective inventory control has become an effective operational tool for firms that want to maintain a competitive advantage and achieve high productivity. For firms to be able to achieve high productivity, they must employ different types of strategies and methods to control inventory. However, inventory control has proved to be a serious challenge for some manufacturing firms (Chen et al., 2005). Steel producers invest a lot of money on keeping the inventory.

Sometimes firms have a bigger amount of money tied up in raw materials because they are struggling to implement good inventory control systems.

Productivity has been utilised by every business as a performance as an assessment method and a pointer (Kumar and Suresh, 2009). Productivity is the percentage of output values to input values, which measures the link between output such as goods and services manufactured, and inputs that comprise workforce, resources, and material. Furthermore, Moseng and Rolstada (2001) characterized efficiency as the capacity to fulfill the market's requirement for merchandise and ventures with at least all out asset utilization. Estimating profitability causes firms to know how productively their assets are being used to get the expected yields. The individuals who use efficiency as a presentation measure for the most part want to have higher figures.

This study aims to evaluate the impact of inventory control on productivity of steel firms in Johannesburg, South Africa. The study highlights the importance of inventory control as the management tool in the production system.

## **2. Literature Review**

In the contemporary economic environment, business has advanced to be more competitive than before. This requires firms to develop superior core capabilities to be able to distinguish themselves from their direct competitors (Aswathappa and Bhat, 2015). This also helps the company to be noticed in the market, while gaining greater customer base that will lead to a bigger market share. In the manufacturing sector, it is important to avoid cost associated with higher levels of inventory. The cost maybe associated with storage due to higher levels of inventory during the manufacturing process. Inventory must be kept at the required levels, which translates to inventory control. In the other hand, the shortage of inventory can cause delay or lead to a complete halt of production (Aswathappa and Bhat, 2015). Inventory control is important in determining the success or failure of the manufacturing firms.

### **2.1 Inventory control**

Kumar and Suresh (2009) explained inventory as the idle reserve of a firm. Inventory is the stock of materials used to satisfy customer demand or to support the production of goods. Inventory are stockpiles of materials used to facilitate production or satisfy customer demands; it can be supplies, components, work in process, and finished goods that appear through a firm's production (Ballou, 2004; Schroeder and Krishnan, 1976). Inventory is divided into four different types: (i) anticipation stock, (ii) pipeline stock, (iii) cycle stock, and (iv) safety stock (Krajewski et al., 2012). It is important to keep the inventories of different types to act as a buffer between supply and demand for effective operation of the firm (Kumar and Suresh, 2009).

Most production firms consider inventory management as a foundation in which firms can attain competitive superiority in the market, rise customer satisfaction, and productivity (Adu-fuso, 2016). Inventory control forms part of inventory management and is a serious challenge in manufacturing. Inventory scarcity affects system productivity, while unnecessary stock increase operation costs (Adu-fosu, 2016). This means that the manufacturing firm must always maintain the balance between keeping the inventory at the required level and avoiding the shortage of inventory.

Hoque et al. (2015) characterize stock control as the arrangement of approaches and working strategies that are intended to augment the association's utilization of stock in order to produce the most extreme benefit for the firm. Stock control is significant for powerful creation and monetary control. Appropriate stock control will diminish costs emerging from the flaws in arranging execution or in other stock capacities. Inventory management is an issue in supply chain because inventory is needed in production but it is not desirable to have too much inventory due to inventory keeping cost. This make inventory control a key issue in production process in ensuring that the inventory is kept at a manageable rate or level. Inventory control assist in reducing inventory cost of the firm (Plinere and Borisov, 2015).

Hoque et al. (2015) further express that stock control is a vital factor for a firm, since stock position and productivity are straightforwardly related. They additionally express that stock control includes the physical products possessed by the firm, which likewise includes the control of the measure of assets put resources into inventories of each kind. Inventory control is important because it is vital aspect of planning which assist in maintaining the optimum levels of

inventory in the firm. Inventory control occurs during the case of raw material availability, finish goods availability, reorder point, bottleneck enhancement and during outsourcing of function.

According to Shen et al. (2017), there is proof of positive connection between stock decrease and profitability development, with 10% decrease in stock is answerable for 1% gain in labor efficiency. They further express that stock decrease can be considered as a significant driver of procedure decrease of a stock and improve rate of return, benefits and profit for sales.

The field of operations management has improved in the modern economy, and numerous approaches are being used in inventory control such as Economic order quantity (EOQ), Material requirement planning (MRP), Just-In- Time (JIT), Enterprise resource planning (ERP), Barcoding and Radio frequency system (Koumanoikos, 2008).

## **2.3 Productivity**

During production process, it is important to convert resources into final product effectively (economically and efficiently). A proportion of the viability of this change procedure is typically called productivity, which quantifies the connection between output, for example, merchandise and ventures delivered, and inputs that incorporate work, capital, crude materials and different assets (Hutton and Eldridge, 2019). Productivity has been commonly explained as the proportion of what is produced to what is required to produce it (Arraia, 2012). Operational proficiency is utilized as a marker that uncovers the degree of viability in utilizing creation assets, for example, crude materials and supplies, labor, land, building, machine, and energy (Duran et al., 2015).

Productivity has become a backbone of all firms, has become a worldwide issue which is connected to company's life span. Productivity is a competitive advantage for the firm wanting to gain the edge over its competitors (Arraia, 2012). It is a volume connection among output and input. On the off chance that more items (outputs) of equivalent or predominant quality are created from similar assets (inputs), it implies that the productivity has expanded. In the event that a similar amount and nature of items or administrations has been created from less assets, it likewise implies that the pr has productivity expanded. In like manner, if more items or administrations of equivalent or predominant quality are created from less assets, it is a considerably more noteworthy increment in productivity. On the off chance that the nature of the items or administrations delivered from a similar volume of assets has been improved, again it is an efficiency improvement in light of the fact that a superior item or administration is plainly a genuine improvement. (Arraia, 2012).

Productivity estimation is significant for any firm. Expanding profitability is one of the significant issues for upgrading more benefit from same sorts of assets. Profitability improvement assists with fulfilling client and lessen time and cost to create, create and convey items. Profitability incorporates powerful relationship to execution measure for technique use, strategy yield, item costs, and work in process stock levels and on time conveyance. Profitability is now and then considered as a development of benefit (Moktadir et al., 2017).

## **2.4 Factors Influencing Productivity**

The factors influencing productivity are as following:

**Product factor:** Productivity implies the degree to which the item meets yield necessities. An item is made a decision by its helpfulness. The money saving advantage factor of an item can be upgraded by expanding the advantage at a similar expense or by diminishing expense for a similar advantage (Amachree et al., 2017).

**Plant and Equipment:** The increase accessibility of the plant through appropriate upkeep and decrease of inactive time builds the efficiency. Efficiency can be expanded by giving legitimate consideration to usage, age, modernization, cost, venture and so on (Amachree et al., 2017).

**Technology:** Innovative and the latest technology improves productivity largely. Automation and information technology also help to achieve improvements in material.

## **2.5 Challenges with Inventory Control**

Inventory control is a very challenging phenomenon in the field of operations. It requires much greater planning in order to be able to balance the equation. Inventory control deals with keeping the balance of bringing stability to the conflicting economies. For an example, when having to deal with not wanting to maintain and keeping too much inventory as holding stock or reserve materials. Inventory control assist with preventing running out of stock. Inventory control also protects the firm against incurring of fees such as storage, spoilage, pilferage and obsolesce and the wish to make items available when required.

Inventory control is needed in operations, especially in manufacturing sector. Manufacturing firms keep bigger size of inventory, which averages around 60% of the current assets (Adu-fuso, 2016). In managing the inventory, there must be a balance in ensuring that the firm does not run out of adequate supply for its customers, at the same time too much inventory causes excessive holding cost and extra storage space is required (Amachree et al., 2017). According to Eckert (2007), the primary principle of JIT involves having only the needed inventory when required. However, it is impossible for the firm to only bring stock when it is needed for production.

Some firms want to exploit profits by maximizing their production and reduce the cost of production. The first problem facing most steel producers is that they are struggling to reduce their production cost. Another issue is the fluctuation in steel market demand, which proves to be a challenge for steel manufactures because they cannot match the raw materials correct quantity, which compromise their price quality (DTI, 2015). Raw material inventory management and control can offer an opportunity to lower the production cost, which can assist in maximising profits (Singh and Mondal, 2016).

Another problem is that steel consumption peak are always linked to infrastructure expenditure programs in South Africa. The South African apparent use of steel stagnated over the past five years at around five million tonnes per year, except for 2013 where the number was 500 kt higher. Domestic supply of steel products by local mills on the other side, steadily dropped from 6.5 million tonnes per year in 2010 to below five million per tonnes in 2016, on average 49% per year. Imports of all steel products, however increased from 657 kt in 2010 to 1.189 million tonnes in 2015, and then dropped slightly to 975 kt in 2016 (DTI, 2015).

According to SAISI (2017), steel imports from China alone increased from 12% in 2000 to 54% in 2016 of total imports. Steel demand in South Africa shrunk by about 10% since 2007. South African steel sector is facing challenges such as under-utilisation of capacity and poor inventory levels, which increase the intermediate cost. Steel mills are going under business rescue; some steel firms are reducing their capacity because there is a reduction in demand in the local market. There is a high volume of import coming in because of over-capacity in China. Steel producers have continuously disregarded the potential benefit from good inventory control and end up having extra funds invested in inventory than they supposed to (Lyson and Farrington, 2006). They are struggling to meet customer demands and satisfaction because of bad distribution of investment among inventory items. Chen et al. (2005) state that firms can potentially save around 6% on cost by implementing effective inventory control.

## **3. Research Methodology**

The study used exploratory research design in order to be able to answer the proposes research question. Exploratory research is necessary when some facts are known and more information is needed for developing a viable framework (Sekaran and Bougie, 2013). Exploratory research is carried out to determine what is happening, to assess the extent of the issue, and to understand the problem better (Sekaran and Bougie, 2013).

The study used mixed method, which included both qualitative and quantitative design. This method is undertaken with the presumption that gathering various sort of information best gives a comprehension of the examination issue (Creswell, 2015). Qualitative design gives motives and views and it goes deeper in to the problem, and helps to analyse the relationship among the concepts of inventory control and productivity (Collins and Hussey, 2009). Quantitative design analyses and explains statistical information, when measuring and comparing as well as analysing cause and effects of the concepts.

Data for the study was collected using both primary and secondary data sources. The study used survey as the research strategy for primary data collection. The study included five steel manufactures registered under the companies that

are members of South African Iron and Steel Institute (SAISI), which represented medium and large size firms from the East, South and Central Johannesburg. About 140 respondents were selected using probability sampling method, targeting 28 respondents per steel manufacturers. The respondents are selected from the supply chain operations, which included supply planners and demand planners, manufacturing department, warehouse, receiving, and dispatch which include managers and their subordinates.

The paper-based questionnaires were hand delivered to the respondents at their workspace during lunch hours. This data collection method was utilised because it permitted data to be comparable and removed the specific information while it decreased the bias (Angrosino, 2006). The questionnaire consisted of both open and closed ended questions that were intended to produce responses for qualitative and quantitative analysis. The questionnaire design was guided by the information gathered from the literature review, and mostly used five point Likert scale. Secondary sources such as historical company data/records financial report, shareholder's reports, internal journals, articles and internal newspapers were also used. Some databases which were used to collect secondary data included: EBSCO, ProQuest and Emerald.

IBM SPSS version 25 was used to analyse data and descriptive statistics such as proportions, percentages, frequencies, mean scores and standard deviation were estimated. Correlation analysis was used to determine the nature and the magnitude of the relationship amongst variables, inventory control and productivity. The results are presented using tables and figures.

#### **4. Findings and Discussion**

The questionnaires were distributed to 140 respondents, out of which 105 completed questionnaire were returned representing a response rate of 75%. This section presents demographic profile of the respondents, followed by statistical analysis and qualitative analysis.

##### **4.1 Demographic Profile of the Respondents**

Among 140 respondents, 77.1 % were males and 17.1 % were females, whereas remaining 5.7 % did not disclose their gender (Figure 1). The dominant gender among these respondents was identified as males. This supports the male dominated history of the steel manufacturing sector due to the physical nature of the work in the steel firms, which is considered to be labor intensive and dangerous for females. Steel sector in South Africa employs limited number of females. The female workers are mostly practitioners, and are not involved in the factory operations. It also goes with the history of work in South Africa where certain jobs were historically reserved for man. This demographic information assisted in determining the level of understanding of the respondents towards the aim of the research and provide quality responses to the questionnaire.

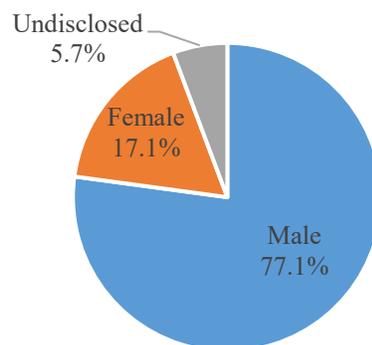


Figure 1: Gender distribution of the respondents

Figure 2 presents the age distribution of the respondents. About 72.4 % of the respondents were at least 36 years old, which indicates that more than two-thirds of the respondents are over 35 years old and signifies the maturity level of the respondents. The majority of the respondents are mostly professionals who are at their prime of their career with vast experience about the content of the topic. Only 1 % of the respondents indicated age of over 64 years, which is

in line with employment laws of the country. South African employment law states that people who are 65 years of age must leave work and go to retirement.

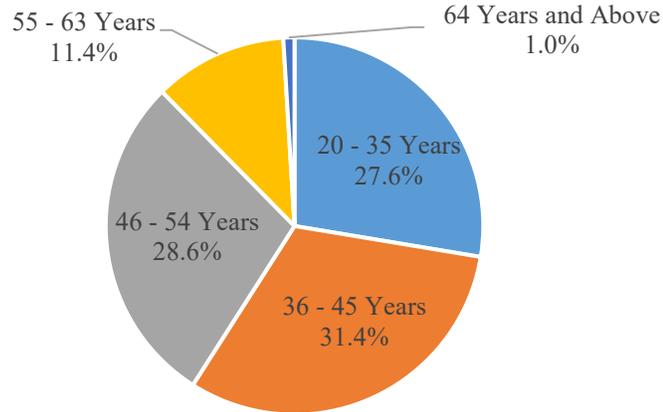


Figure 2: Age distribution of the respondents

The level of employment of the respondents is presented in figure 3, which is dominated by Supervisors/ team leaders group and included almost half of the respondents (45.7%). These respondents are actively involved in the operations within the firms, and are mostly knowledgeable on the practicality of the activities of the firm within the operations and production. Team leaders and supervisors are leading the general employees in terms of work and leadership at the steel firms.

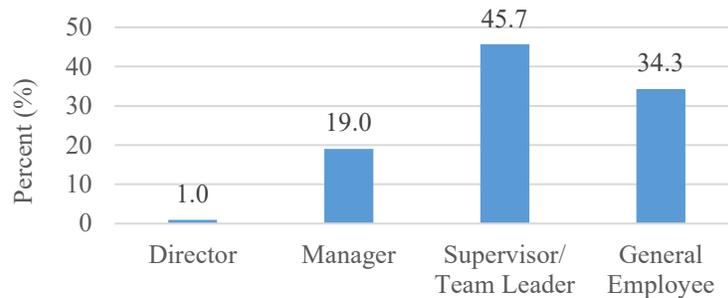


Figure 3: Level of employment of the respondents

The study observed that most respondents had formal education with 59 % of the respondents had post-matric education which reflects that they had certificates and diploma qualifications (Figure 4). Respondents with baccalaureates degree made up to 23.8 %, who were mostly are managers. Only 5.7 % of the respondents had post-graduate degree, who were mostly senior managers. Overall, all respondents that completed the questionnaire were identified to be knowledgeable on the concepts since they are working at the firm and some as the support staff.

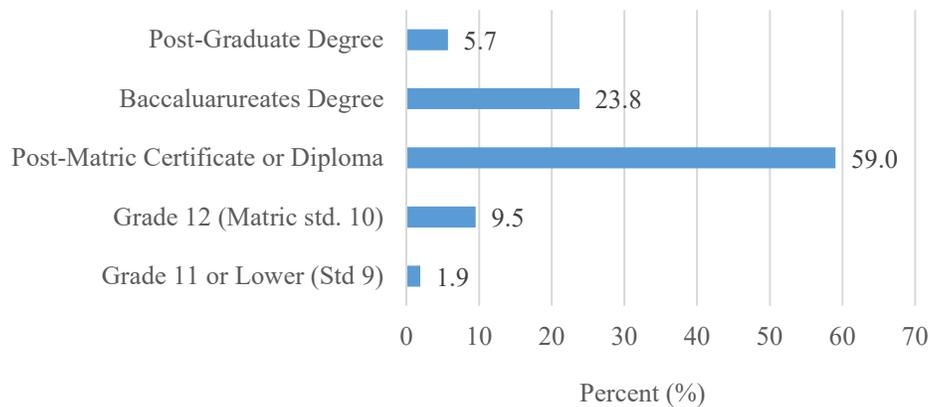


Figure 4: Level of education of the respondents

## 4. 2 Statistical Analysis

This section discusses the reliability test, correlation analysis and regression analysis of the variables. Since, this study aims to investigate the impact of inventory control on productivity, inventory control is considered independent variable and productivity is considered as dependent variable.

### 4.2.1 Reliability Test

Reliability test is known as the method of assessing and analysing a scale's internal consistency (Saunders *et al.*, 2016). The reliability assessment is concerned with whether a scale indicates results that are free from random error (Creswell, 2015). Cronbach's Alpha for individual variables to test the internal consistency of diverse items was done in the scale used for the study. When measuring an internal consistency using a Cronbach Alpha the minimum level of 0.70 for the measure of variables is viewed as being reliable and satisfactory (Ursachi *et al.*, 2015).

Table 1 depicts the Cronbach Alpha's reliability of inventory control and productivity. The Cronbach coefficients for inventory control and productivity were measured to be 0.807 and 0.710, respectively, indicating that the study results can be considered as reliable.

Table 1. Reliability for inventory control and productivity

Variables	Cronbach's Alpha	Cronbach's Alpha Based On Standardised Items	N of Items
Inventory Control	.807	.800	7
Productivity	.710	.708	4

### 4.2.2 Correlation Analysis

In this study, Pearson's Correlation Coefficient method was employed to examine the correlation amongst variables (Table 2). The significance coefficients was set up at  $p = 0.05$  tailed. All the variable were significant at  $p < 0.05$ . There is a strong correlation between inventory and productivity at a significant level .001, similarly there is also a strong correlation between productivity and inventory control at a significant level of.001. This relationship between inventory control and productivity maybe attributed to effective inventory control practice which are implemented by firms.

Table 2. Correlation analysis

		Inventory Control	Productivity
Inventory Control	Pearson Correlation	1	.309**

	Sig. (2-tailed)		.001
	N	105	105
Productivity	Pearson Correlation	.309**	1
	Sig. (2-tailed)	.001	
	N	105	105

\*. Correlation is significant at the 0.05 level (2-tailed).

#### 4.2.2 Regression Analysis

R Square of the productivity model is 0.1 this indicate that the model explains 18.4% of the variance in productivity of production in firms (Table 3). The largest standardized beta is .516 which is contributed by productivity as constant at a significant level of.001 (Table 4).

Table 3. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.429 <sup>a</sup>	.184	.168	.47653

a. Predictors: (Constant), Inventory Control

b. Dependent Variable: Productivity

Table 4:Coefficients of the variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.814	.516		3.515	.001	.790	2.838		
	Inventory Control	.226	.101	.213	2.247	.027	.026	.426	.907	1.102

a. Dependent Variable: Productivity

#### 4.2.3 Descriptive Statistics

Table 5 depicts the means and the standard deviations of the responses towards the inventory control questions. Each respondents were asked to select their preferred response on 5-point Likert scale, where 0 means Strongly Disagree - 5 means Strongly Agree. A mean of 4.44 was observed for the study question: Firms who practice inventory control in their business or daily operations, stand a good chance of achieving higher productivity. This means that the majority of respondents agreed that inventory control has a positive impact on productivity. Similarly, a mean of 4.26 was observed for the study question: Inventory control is an issue in the production systems for production firm, indicating that the majority of respondents agreed that inventory control is an issue such as changes in demand, production schedule changes of raw material and stock, incorrect loading as well as theft.

Table 5. Mean and standard deviation for inventory control

<b>Item</b>	<b>Mean</b>	<b>Standard deviation</b>
1. Inventory control is an important factor in production, since it provides buffer between supply and demand to enable effective production of the firm.	4.39	.580
2. Inventory control is an important aspect in production because it prescribes how to monitor levels of inventory	4.28	.628
3. Inventory control is considered necessary on improving the productivity of the firm.	4.42	.676
4. Inventory control methods are a strategic tool during production in managing the inventory of a firm.	4.37	.669
5. Firms, who practice Inventory control in their business or daily operations, stand a good chance of achieving higher productivity.	4.44	.649
6. Inventory control is an issue in the production systems for production firm. With Issues such as changes in demand, production schedule changes, damages of new raw material and stock, incorrect loading as well as theft.	4.26	.605
7. Inventory control has a positive effect on productivity of your firm.	4.37	.559

Table 6 presents the means and standard deviations of the responses in relation to productivity. The study clearly indicate higher levels of means with the higher mean of 4.35 and the lowest mean being 4.10 on a scale of 1 to 5. A mean of 4.35 was observed for the study question: Productivity is an important on the firm's success for e.g. return on, sales, profitability and investment. This clearly indicates that respondents consider productivity to be important for the success of any firm. Similarly, a mean of 4.10 was observed for the study question: Productivity shows how efficiently resources are being utilised in the production of different products and increased by producing more with fewer amounts of resources. This demonstrates that respondents consider efficient use of resources to be important for better productivity.

Table 6. Mean and standard deviation for productivity

<b>Item</b>	<b>Mean</b>	<b>Standard deviation</b>
1. Productivity is an important factor on the firm's success for e.g. return on investment, sales, and profitability.	4.35	.635
2. There is a link between facility location and inventory control on productivity	4.20	.642

3. Facility location selection processes has an impact on productivity of your firm.	4.13	.666
4. Productivity shows how efficiently resources are being utilised in the production of different products and increased by producing more with fewer amounts of resources.	4.10	.619

#### 4.5 Impact of Inventory Control on Productivity

The issues affecting inventory control on the productivity of steel firms are presented in table 7. The table summarizes the opinions of the respondents regarding the specific factors of inventory control. The size of the firm (large versus small to medium) has influence on the impact of inventory control over productivity. Firms are compared in terms of factors such as inventory procedures, inventory classification, inventory control models, productivity and inventory control.

Table 7. Impact of inventory control on productivity of different steel firms

<b>Factors</b>	<b>Large Firms</b>	<b>Small to Medium Firms</b>
Inventory Control	<p>Inventory control is a big problem for larger steel firms, for instance changes in demand influences planning and forecasting of materials.</p> <p>A firm may run out of stock due to higher demand of the product, while lower demand may result in oversupply of the product causing excessive inventory, which may affect the company budget and profits.</p> <p>Other issues include stock damage, incorrect loading of materials and stock on the system as well as theft.</p>	<p>Inventory control is not an issue for small to medium size steel firms because they are dealing with smaller product range and smaller orders compared to larger manufactures, who happens to deal with various product ranges and much bigger orders.</p>
Inventory procedures	<p>Inventory procedures that are utilized by the companies are bit generic rather than systematic technological advances in controlling of inventory.</p> <p>The companies are doing manual controls, e.g. comparing material received with the material on the receiving slip. They are using loading documents. They do blind checks with the actual demand. They make use of stock checkers. When checking actual size and the weight of an order, they make use of Weighbridge against the loading document.</p>	<p>Small and medium size firms receive inventory on the daily basis and added on to the digital stock list. They also do monthly stock takes.</p>
Inventory Classification	<p>Larger steel firms have no planned stock classification except mentioning of system reserve stock. This mean that companies are not bound by what is prescribed by the literature on inventory control.</p>	<p>Small and medium size steel firms have no clear stock classification except the stock reserve.</p>

Inventory control models	It appears that larger steel firms do follow prescribed methods, the most mentioned method is MRP. Steel firms are mostly using the rule of –thumb in their manufacturing process when managing inventory.	Small and medium size steel firms do not use structured procedural methods prescribed in the literature to control inventory.
Productivity and inventory control	Inventory control may influence productivity. If the firm did not use material planning properly the firm may be short of material for production, which may affect the production capacity and the firm may not be able to meet customer satisfaction due to top stock shortage.	

#### **4.6 Management Implications**

The management of the steel firms must be very knowledgeable and possess special skills on inventory control, for the following reasons:

**Inventory control** - Firms must always strive to build the better distribution networks in order to be able to meet the demand of the market ensuring that they create customer satisfaction. Management must understand firm’s distribution channels to be able to effectively manage the inventory.

**Physical control** - Managers must provide oversight over the physical material or stock. Physical control of inventory includes control of stores; it is important that materials are of correct quantity and are always verified adequately now and then. Managers must mitigate better ways of dealing with shortages of raw materials due to ineffective ways of controlling the inventory.

**Corroboration and stock checking** - Materials or stock need to be verified through physical counting, measuring or weighing the entire range of items in the storages by recording the results in a systematic manner. Physical inventory control is usually taken periodically or continuously.

**Control of Budget and planning** - Firms must do budgeting and control for inventory control. The firm must do production sales and inventory budget on basis of production target budgetary control. Production budget must be done, along with proper planning against demand and supply.

**Productivity** - Every employee must be trained to understand the importance of achieving high productivity. Suppliers play a very critical role in productivity, and managers must develop a better effective ways of managing suppliers to ensure efficiency in production. Proper supply and demand planning must be a daily duty of management. Elimination of waste must be implemented by using inventory control approaches such as MRP and as well as using JIT production.

#### **5. Conclusion**

Existing literature establishes that inventory control has an effect on productivity of the firm. The study conducted on few selected companies establishes that inventory control is a problem for larger steel firms because they are dealing with much bigger orders as their production line is much bigger. The study discovered that there is a positive relationship between inventory control and productivity. The literature reveals that firms who minimize the level of inventory stand a good chance of increasing their productivity. The study discovered that inventory control approaches can assist in elimination of waste in production. The study reveals that firms that do not necessarily follow inventory control approaches struggle with maintaining and keeping inventory during production process. The study discovered that productivity speaks to the company’s production ability being able to reach the process capacity. The study also depicts that productivity improvement helps to satisfy customer and reduce time and cost to develop, produce and deliver products.

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