LABOUR PRODUCTIVITY IN SOUTH AFRICA

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Abstract
Research shows that worker output is not a constant and that labour productivity is internationally an important component of agricultural production. Labour productivity plays a prominent role in creating the competitiveness of a specific farming business and even the whole economy. This situation became a concern for farmers as the pressure to increase minimum wages escalated in recent times. In 2006, the South African Government announced a total increase in wages of 34, 59% over a three year period (2006–2008). It is basically impossible to increase productivity of labour to the same extent over this period. This paper examines labour productivity, the influence of increasing labour costs on profitability and sustainability, as well as how farmers must take this issue into account when production planning is done.

Keywords: Labour productivity, minimum wages, profitability, competitiveness

Introduction

This paper focuses on the improvement of labour productivity to the same percentage that minimum wages are increasing. It also focuses on how to improve worker productivity. Kendrick (1993) defines productivity as the ratio of output to inputs of labour and other resources, in real terms. This means to increase productivity output grows faster than the increase in inputs used in the production process (Kendrick, 1993). Labour productivity must increase according to the extent of the competitiveness of a farming business measured against that of other farming businesses of the same enterprises. In other words, if R1,00 is spent on labour input, it must generate more than R1,00 worth of output (Nell, 2007).

The problem in South Africa is that at the beginning of 2006 the Minister of Labour, Mr Membathisi Mdladlana, announced an increase of 34,59% in minimum wages to be implemented over a three year period. The increase in minimum wages in the country will have far-reaching effects on the profitability, competitiveness and sustainability of commercial agriculture, and specifically emerging agriculture. It is basically impossible to increase labour productivity to the same extent as the percentage that minimum wages has to be increased over this period. This increase in minimum wages will force the farmer to consider mechanisation in order to be sustainable. Mechanisation means more time for management and less time for things to go wrong. It will especially have a big influence on labour-intensive farms, such as cash crop, vegetable, fruit and vineyard farming, of which the product prices are under pressure in real terms (Nell, 2007).

Globally the remuneration of labour is supposed to be based on the productivity of labour. This means the income generated with every rand spent on labour. When this ratio becomes too high, it has a negative effect on the profitability of a farming business, with accompanying long-term financial difficulties. The

long-term financial difficulties will result in a disadvantage on competitiveness to other similar farming businesses (Nell, 2007).

Approach Methods of Measurement

As farmers strive towards world-class performance and face rapid change, the traditional methods of measuring labour productivity become a hindrance (Maskell, 1994). These methods no longer apply; they measure the wrong aspects of labour productivity (Nell & Napier, 2005). Farming businesses need a new approach to performance measurement. The traditional methods of measuring labour productivity refer to the following:

- Labour productivity can be measured by unit output obtained from unit input of labour. Many businesses, however, use this method for the measuring of labour efficiency (Pratten, 1976). The term *labour productivity* is reserved for measurement of output per unit of labour input (Pratten, 1976).
- Julia Kedrova (2004) measured labour productivity in the relative amount of output to hours of labour input. The output of production can be subdivided in different segments to productivity or efficiency of labour. In practice, farming businesses compare output and productivity in diverse ways, though these measures only provide approximate indicators of the real differences in labour productivity.
- Some businesses measure output in terms of the units produced per worker or per worker hour (Pratten, 1976). For example, a small stock farmer calculates the kilogram meat produced per worker per hectare or per production period.
- Some farming businesses only estimate direct production worker hours required for the manufacturing of the products (Pratten, 1976). For example, a grain farmer that calculates the number of workers needed for planting one hectare a day, and the number of hectares that must be planted in a specific time.
- The majority of the methods used, measure labour productivity in relation to the production cost (Pratten, 1976).

This paper focuses on measuring productivity to the income that is being generated by the input spent on labour. This means the income generated by every rand spent on labour. It is transformed to a percentage of the total gross production value (GPV) of the enterprise. This ratio must be within certain limits. When this ratio trend becomes too high, it has a negative effect on the profitability of the farming business, with accompanying long-term financial difficulties.

These ratios (labour cost as percentage of GPV) have been informally researched by Nell and Napier (2005) for different types of farming businesses in the important agricultural countries (Australia, Brazil, Canada, Europe, New Zealand, South Africa and the USA), and these ratios are applicable to all these countries. These ratios are presented in Table 1:

Table 1: Norms for Labour Cost Ratios

Type of farming business	Labour cost: farming income
Livestock farming businesses	6 – 8%
Cash-crop farming businesses	8 – 10%
Irrigation and other labour intensive farming businesses	10 – 15%
Dairy farming businesses	10 – 11%

Source: Nell & Napier (2005).

Studies that have been done by Nell and Napier (2005) over 30 years showed that if the ratio is higher that the above norms, the farming business can aspect to experience financial difficulties, but when the

labour cost ratio is within the above norms, the business's financial position can be improved over time.

When looking at the labour cost ratio in South Africa, the rand:dollar exchange rate has a big influence on the profitability of the farming business. For example, if the rand:dollar exchange rate improves, most of the businesses outside agriculture that produce for the export market, will either retrench workers or start with a four- or three-day workweek. This cannot be done in agriculture; because if a four- or three-day workweek is instated, it can lead to major losses because farming businesses need to operate continually.

The question can now be asked what effect the increase of minimum wages in South Africa will have on the labour cost ratio. If the example of a mixed farming business (50% livestock and 50% cash crop) is used and different price levels of products are used, it will have the following effect on the labour cost ratio as illustrated in Table 2.

Table 2: Effect on Labour Ratios

Price levels of maize, soybeans & wheat[1] (R/ton – farm price)	Labour cost ratio before the 12,63% increment of 2006	Labour cost ratio after the 12,63% increment of 2006	Labour cost ratio after the 11,75% increment of 2007	Labour cost ratio after the 10,21% increment of 2008
1 100, 2 000, 1 600	9	11	12	13
850, 1 450, 1 400	11	12	14	15
600, 1 350, 1 300	12	14	16	17

Source: Nell (2007)

1 Maize is used as main crop, but the price of soybeans and wheat is adjusted accordingly. Sheep and beef prices are kept constant at levels of R14,00/kg for lamb en R13,00/kg for weaners.

It is clear form the example above that the increase of minimum wages will have a big influence on the profitability of a farming business. This kind of influence on the profitability will force the farmer to invest more into mechanisation to employ less labour if they want to stay sustainable.
What is the effect of minimum wages on labour intensive businesses (vegetables, fruit and vineyards) over the next three years if the price levels stay at the levels of early 2006? The effect is shown in Table 3, with the exchange rate remaining the same as at the beginning of 2006.

Table 3: The Effect of Labour Cost on Labour Intensive Businesses

Ex-change rate	Labour cost ratio before the 12,63% increment of 2006	Labour cost ratio after the 12,63% increment of 2006	Labour cost ratio after the 11,75% increment of 2007	Labour cost ratio after the 10,21% increment of 2008
R6,80:$	28%	32%	35%	39%

Source: Ferrandi (2006)

This example is based on a tablegrape farm situated in the Northern Cape Province of South Africa. Every labour intensive farm (vegetables, fruit and vineyards) will experience the same effect on the labour cost ratio. From the example above, it means that these farming businesses spend about a third of their total income on labour cost, and at the end of 2008 it will be close to 40% due to the increase announced by the South Africa government. There is no farming business that will survive these circumstances if the business is not going to increase labour productivity by the same percentage. Most of

the labour intensive farmers are making more and more use of seasonal labour to combat this trend of uneconomical wage increases.

After looking at the influence that labour cost has on profitability and sustainability, it is clear that labour in a farming business must be productive to generate more value than every rand that is spent on labour. Labour productivity must increase according to the extent of the competitiveness of a farming business, measured against that of other farming businesses with the same enterprises. In other words, if R1,00 is spent on labour input, it must generate more than R1,00 worth of outputs (Nell, 2007). Labour cost contributes only to a percentage of the total production cost ratio of an enterprise. The total cost ratio can be divided in different components, for example, labour cost, fuel cost, feed cost, medicine cost and other miscellaneous costs.

Improvement of Labour Productivity

There are different methods to improve the productivity of the workforce to maintain a competitive advantage in production. The skills required to improve productivity are much simpler than people think. The main phrase is "time is money", and money can make things happen. Businesses always speculate on how to earn more, save more, manage it better and how to get more value out of the money that they invest. The phrase "time is money" refers to the fact that businesses should be more efficient with labour time in order to spend their labour money more efficiently.

The motivation of workers comes down to one thing: it is about the money that each worker expects to be paid for a day's work. On the one hand, the farmer wants to spend less on labour cost, but on the other hand, he expects from their labourers to be more productive. When an increase in minimum wages is forced down on farmers such as the minimum wages announced by the South African government in 2006, the only solution is that productivity must be increased by the same percentage as the minimum wage has increased.

Example 1

The first example is based on a vineyard farmer in the Northern Cape Province of South Africa producing raisins. The farmer, Ms Coetzee, managed to improve the productivity of her labour during harvesting, as she managed to do the same work later in the harvesting season with less workers than at the beginning (Personal communication, 12 April 2007).

During the first season of involvement in the production of raisins, Ms Coetzee employed 40 workers to do the harvesting (23 in the vineyard, 5 tractor drivers, 5 at the dipping tray and 7 at the drying trays). These workers harvested five tons (or 125 kg per labourer) of grapes on the first day. The norm for all vineyard farms in the area is ± 600kg per labourer per day. When she calculated the labour cost ratio, she realised that she would experience a financial crisis as this labour cost ratio was much too high. She then decided to do an observation of the workers in the vineyard to identify the unproductive workers. At the end of the first day she dismissed 20 of the workers that have not worked efficiently during her observation period. She dismissed 9 that work in the vineyard, 2 of the tractor drivers, 4 at the drying trays and 5 workers at the dipping tray, because the tractor drivers are now doing the work at the dipping trays.

The next day the remaining 20 workers (14 in the vineyard, 3 tractor drivers and 3 at the drying trays) harvested seven tons of grapes per hectare. By dismissing the unproductive workers, she inspired the others to work harder, bringing the fact to them that if they were not doing their work efficiently, they may lose their jobs. She, however, saw that her labour cost ratio was still too high. The workers were observed again and it was noticed that they walked too far for drinking water during the day, so she decided to supply them with cold water in the morning and again later during the day in the vineyards. It

was also noticed that the workers were wasting a lot of time by smoking during working hours. The workers were not allowed any more to smoke during working hours. During her observation she also noticed that there were some workers that harvested more crates per day than the others. By the observation a movement study was done on the most productive worker. The walking distance of the workers were then structured such a way that the minimum distance be covered in the vineyards to accomplish more work in less time. After three days, another eight workers were dismissed from the vineyard and only 12 workers (6 in the vineyard, 3 tractor drivers and 3 at the drying trays) were used for the rest of the harvesting season. They were now also paid per crate harvested per day. These 12 workers harvested between six and 10 tons per day or 500 to 833 kg per labourer per day. This means that the farmer managed to improve labour productivity by between 400% and 666%.

This approach can only work with high quality control. The farmer must know her or his business by heart and know where a control system can be side-stepped by workers, because when workers have side-stepped a control system once, they will always do so and improve on it. If the farmer pays them by the number of crates harvested per day, there must be a system in place to control it and also that the crates are full. The example farmer has structured her own controlling system for the farming business that works the best.

Ms Coetzee also allowed the workers to become more part of the business. After each day's work she let them calculate how much they must be paid for the day's work. She also asked them what they have learned and whether everything was still in order. At the end of the day she compared her wages to what they have said they must be paid. By paying the workers per crate they could decide what they want to be paid by the end of each day. Many of them could see by Wednesday that they were not going to make their targets for the week, so they had to work harder for the rest of the week. She also subtracted money from their wages if they did not reach their target for each day that she has set according to an hour's observation of each worker's ability. So every worker must achieve his or her target to be paid enough at the end of the day. This keeps the productivity of each worker on a higher level.

Influence on the Financial Part

Uncontrolled labour cost that is not within the set ratios that as given in Table 1 can put pressure on the financial position of the farming business over time. It is necessary that the farmer does not have too many workers for the work that has to be done. That is why it is important that the farm manager does a labour planning for every enterprise of the farm. This planning will help the farm manager to see whether there are too many or too little workers for the work to be done. A labour and kilowatt planning for your farming business can be obtained on the website: www.ufs.ac.za/agriman.

Example 2

The second example explains how a too high labour cost ratio influenced a sheep farmer over a period of 10 years. This farmer's labour cost ratio was too high (12%) and ran into a financial problem. The farm consists of 7 000 Merino sheep which was kept on different farms over an area of 90 km. The farms were big enough to be managed by one worker each. The problem was that the workers did not want to stay alone on a farm with his family. This forced the farmer to employ two workers on every farm, but there were not enough work for both of the workers. This caused that the labour cost was 12% of GPV instead of 6%, an over-spending of R60 000 per year, which gives an amount of ±R1,5 million (future value) at 15% interest compounded over 10 years. This continuous cash flow problem on the farm's cheque account caused that the bank started to return the farmer's cheques. The situation was rectified by means of a restructuring of the land. The farmer had half of the labourers retrenched and after four years the cheque account was running within the limit set by the bank.

From this example one can see the influence of over-spending of the labour costs on the finances of a farming business. Every percent that the labour cost ratio is too high, is a percent off the profit that is over-spent on labour because of productivity that is too low.

Conclusions

Labour cost is not supposed to exceed the prescribed percentages in Table 1. Otherwise it is taking some of the farming business's profit and after some time the business will encounter financial problems. It is very important that the farmer works out his labour productivity so that it can be seen on which days the productivity is lower. All of these things can only be achieved if the control system of the farming business is in place. Control is the most important factor to improve labour productivity. Every aspect of the worker's activities must be controlled, namely his or her needs for accomplishing the work, the workplace and understanding between worker and the employer. Then, finally, the productivity must be calculated in terms of expressing labour cost as percentage of GPV and not as percentage of total inputs. In other words, if R1,00 is spent on labour input, it must generate more than R1,00 worth of outputs.

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