



A STUDY ON IMPACT OF MINIMUM WAGE ON SUSTAINABILITY AND COMPETITIVENESS OF THE TIMBER INDUSTRY

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Abstract

In recent years, the minimum wage has become an increasingly popular for reducing inequality in many emerging markets. The aim of the minimum wage is to allow low income workers to maintain a decent standard of living without unduly limiting the flexibility of employers to allow Malaysia to remain competitive at the global level. In setting the minimum wage, the government took into account social and economic considerations: cost of living, productivity, competitiveness and employment. The timber industry in Malaysia is one of long-standing prominence, garnering much attention as one of the economy's core components of growth. Malaysia is among the world's largest exporter of tropical logs, plywood, sawn-timber and furniture to international markets. This survey aimed to reveal the impact of minimum wage on sustainability and competitiveness of the timber industry. This paper will emphasize on the comparison between wood and wood based product sector firms and furniture sector firms in the timber industry. The targeted respondents are the owners or the managers who have knowledge on the financial information and the operation details of the company. Overall, SMEs in the furniture sector seem to be more ready towards the implementation of the minimum wage policy in comparison to their counterparts in wood and wood-based products sector. Their operational performance ratings are generally higher for majority of the different performance aspects.

Keywords: Timber Industry; Minimum Wages; Sustainability and Competitiveness.

1. Introduction

As recommended by the National Wage Consultative Council (NWCC), the government has set a minimum wage of RM900/month for Peninsular Malaysia and RM800/month for Sabah, Sarawak and Labuan. The aim of the minimum wage should be to allow low income workers to maintain a decent standard of living without unduly limiting the flexibility of employers to allow Malaysia to remain competitive at the global level. In setting the minimum wage, the government took into account social and economic considerations: cost of living, productivity, competitiveness and employment. In Malaysia, almost 33.8% of about 1.3m private sector workers still earned less than RM700/month in 2009, well below the RM800/month that is considered the poverty line (CIMB Economic Updates May 2, 2012). From 1st July 2016, the monthly minimum wage increased from RM900 to RM1, 000 for peninsular Malaysia and from RM800 to RM920 for Sabah, Sarawak and Labuan. These factors, to a certain extent, contribute to cost escalation in timber evacuation and transport.

Many believe that if the minimum wage is set at the right level, it helps the poorest workers meet their basic needs, reduces poverty in the short run. Since the poorest have high marginal propensity to spend, eventually the raise on wage will be channeled back to the economy. The timber industry in Malaysia is one of long-standing prominence, garnering much attention as one of the economy's core components of growth. As Malaysia is well-blessed with an abundance of rainforest and land, the steady supply of trees and logs highlight the importance of this resource-based sector, ranking it among the likes of agriculture, oil and gas, mining and manufacturing. Malaysia is among the world's largest exporter of tropical logs, plywood, sawn-timber and furniture to international markets. As the world's second largest industry after food, timber is a material with a wide range of uses, providing employment opportunities and raw materials with further flexible functions. Malaysia is aggressively promoted downstream

activities to become a manufacturer of higher quality and value-added products. Malaysia Timber Industry Board (MTIB) believes that Malaysia can achieve a target of RM53 billion in the export of timber and timber related products by the year 2020.

In recent years, the minimum wage has become an increasingly popular for reducing inequality in many emerging markets. This survey aimed to reveal the impact of minimum wage on sustainability and competitiveness of the timber industry. Even though there will be probably a rise in labour costs for the timber industry given the high percentage of labour involved, competitive pressure should not be driven by labour cost but instead by factors such as technological adoption, productivity and innovation.

2. Literature Review

Multifactor productivity is a measure that relates output to the combined inputs of labour, capital and intermediate purchases. This measure takes into consideration the effects of capital investment and intermediate purchases (materials, fuels, electricity and purchased business services) on labour productivity. According to Muth II and Falk (1994), household furniture manufacturing industry in the United States experienced average annual multifactor productivity gain of 0.5% over the period 1958-1991, accounted for approximately one-third of the average annual labour productivity gain of 1.8%. Wood-based household furniture establishments contributed approximately 40% of the total output in the overall household furniture manufacturing industry, the largest in comparison to others in the same industry. Factors that positively influence multifactor productivity gain are technological change, change in skills and effort of the workforce and economies of scale.

In Malaysia, a questionnaire survey on 150 workers conducted by Razak et al (2014) found that motivation from higher wages, close supervision and application of technological aids on the job, are the three factors that have positive relationship with labour productivity. Based on these results, increasing minimum wages and adopting more automation should have positive impact on labour productivity.

Although there is growing presence of foreign workers in Malaysian manufacturing sector due to industrialization of the Malaysian economy and cheaper cost of foreign workers, Zaleha et al (2011) found that foreign workers are neither substitutes nor complements for domestic workers. Using the Cobb-Douglas production function to derive the model specification, their results also revealed that foreign labours have significant positive impact on labour productivity. Therefore, based on these results, we can infer that by increasing minimum wages, it will prompt manufacturing firms in Malaysia to hire more foreign labours and enjoy the benefits of rising productivity.

Productivity is the ratio of outputs (goods and services) divided by one or more inputs such as labor, capital, and management, which are integrated into a production system. Only through increases in productivity can labour, capital and management receive additional payment. Hence, increases in productivity can improve the standard of living for people in a country (Heizer & Render, 2014). However, productivity measurements are very challenging as it required specific inputs and outputs; external elements may indirectly impact the productivity and then quality may be affected while inputs and output remain constant. Heizer et al. (2014) further discussed about three factors which are critical to improve productivity. Labor contributes about 10%, capital contributes 38% while management contributes about 52% of the annual increase in productivity.

Rizov, Croucher & Lange (2016) found that implementation of new minimum wage (NMW) in Britain has positively affected the aggregate low-paying sector productivity. This is supported by Riley & Bondibene (2015) where they investigated that the NMW in Britain increased average labour costs for companies that tend to employ low paid workers. The companies then responded to these increases in labour costs by raising labour productivity. On the contrary, a study done by Sabia (2015) states that increases to the minimum wage redistribute the composition of industry-specific productivity in ways that harm some low-skilled workers rather and redistribute gross domestic product towards higher skilled industries.

Meanwhile Wolfers & Zilinsky (2015) revealed through various studies found by other authors relating to higher wages, will increases productivity due to higher motivation to work harder, ability to attract capable and productive workers, lower turnover cost, enhance quality and customer service; and further lower monitoring cost and absenteeism rate.

In a study by Bush & Sinclair (1989) they found that labour productivity in softwood sawmills are significantly higher as compared with hardwood sawmills; and labor productivity increases with mills size due to economies of scale. Rufolo, Bronfman & Strathman (1989) stated that the labor productivity in wood product manufacturing has improved mainly associated with the direct substitution of the capital with the labour resources as more technologies were available in this industry. This has been reported by Lehner (2012), that revealed productivity and output in wood product manufacturing has been increased in Oregon due to technology with less workers employed. Technology such as Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), and Computer Numeric Control (CNC) router have revolutionized the commercial woodworking industry and it is

viable for small custom workshops to maximize their productivity and profits as to remain competitive in the industry (Peter, 2007). The government spending for productivity is beneficial as it will help the company towards improving production and efficiency. Competitiveness among companies would certainly make new companies which have just started to sustain so that companies will have a good ground for their growth. It also creates a stand towards anti- poverty strategies which combats a social stigma. The government’s assistance could reduce poverty at the same time reduce social problems among the citizens in the district. (Stephen Chukwuma, 2017). The sustainability of the industry also will be noted if the government can have a program that can support the industry, be it natural resource or also the company itself. This will help the company to be competitive and then grow the profits for better grounding towards the company growth. (Cécile Bessou et al, 2017). It is acknowledged that without the support of the international laws, government support also can protect the citizens against poverty. The lower and middle income group where agricultural crops are the main source of income will suffer. Without the support of the government in terms of funds, expertise and advice, recipients cannot improve their productivity, address the risk factors and grow their assets. (FAO, 2015).Through evidence that members of community being protected through communities or Government bodies will survive the test of time (Norton et al., 2001).

3. Methodology

This paper will emphasize on the comparison between wood and wood based product sector firms and furniture sector firms in the timber industry. The targeted respondents are the owners or the managers who have knowledge on the financial information and the operation details of the company. The analyses are performed based on a total of 107 responses which comprises 60 from wood and wood-based product sector (44%) and 47 from furniture sector (56%). Most of the respondents are from Johor followed by Perak and Sabah. For wood and wood based product sector, highest respondents are from Sabah while for furniture sector most of the respondents are from Johor. Majority of the respondent in wood and wood based product sector are managers which consists of 43% followed by directors 26% and senior executive 21%. Meanwhile for furniture sector, managers consist of 58% followed by senior executives and junior executives which consist of 18% of the respondents each as shown in figure 1 below:

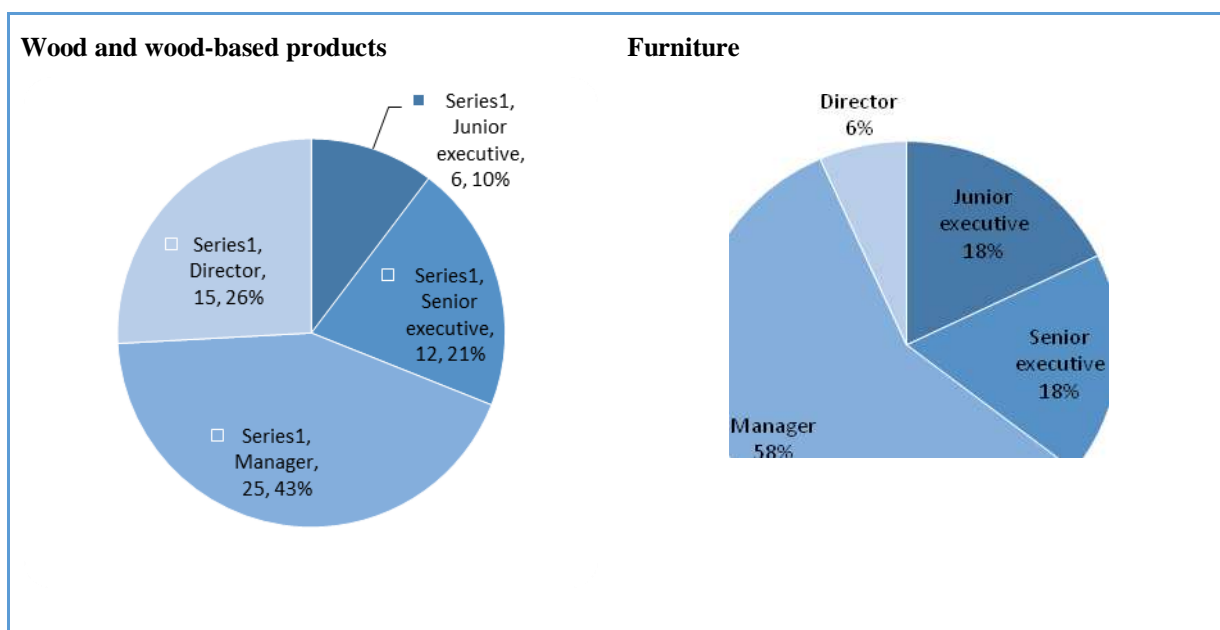


Figure 1: Respondents by sector and position

4. Analysis

Table 1 shows that only 7.5% percent of the respondents of timber industry indicate that the minimum wage policy have no impact on labour cost. This could be due to the labours working in these enterprises having been paid more than the minimum wage rate before the enforcement of the policy. However, majority of the respondents (31.7%) indicates that labour cost has increased by 11 to 20 percent whereby out of this 19.6% are from wood and wood based product sector firms and 12.1% are from furniture sector firms. Followed by 22.4% of the timber industry respondents indicates that labour cost has increased by 21 to 30 percent.

For wood and wood based product sector firm, 35% of the respondents are facing rise in labour cost of 11% to 20%, followed by 18.3% for labour cost impact of 6% to 10% increase and 16.7% for labour cost rise of 21%-30%. Whereas for the furniture sector firm, 29.7% of the respondent facing labour cost rise of 21% to 30%, 27.6% of the

respondents are facing the rising cost of labour of 11% to 20%, followed by 21% for labour cost impact of 6% to 10%.

	Wood and wood-based products	Furniture	Total
No impact	6	2	8
1-5%	6	5	11
6-10%	11	10	21
11-20%	21	13	34
21-30%	10	14	24
31-40%	2	1	3
Above 40%	4	2	6
Total	60	47	107

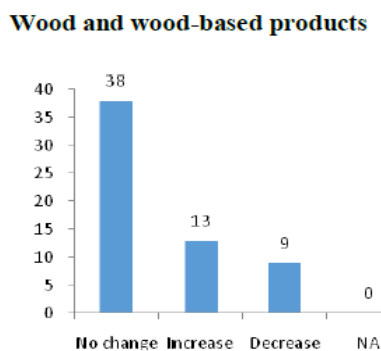
Table 1: The impact of minimum wage implementation on firms' labour cost

The followings the actions taken by the timber industry to mitigate the impact of minimum wage policy (refer to figure 2):

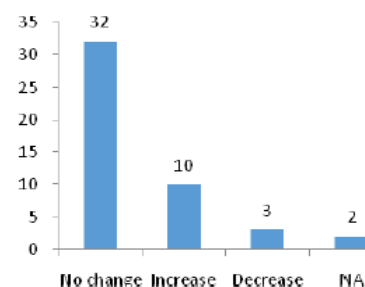
- a) **The number of Malaysian workers.** 63% of the wood and wood-based products sector firms and 68% of the furniture sector firms indicated that there is no change in the number of Malaysian workers. 21.6% of the wood and wood-based products sector indicates that they have increased the number of Malaysian workers, while 15% of the firms indicate the opposite. Around 21.3% of the furniture sectors have increased the number of Malaysian workers while 6% have reduced them.
- b) **The number of foreign workers.** Majority of the respondents which are 45% from wood and wood-based products sector and 40.2% of furniture sector firms indicate no changes in number of foreign workers. 18.3% of the wood and wood based product firms indicate that the number of the foreignworkers has increased. While 21.7% of the firms reported decrease in number of foreign workers. Meanwhile 10.6% of the furniture sector firms indicate that the number of the foreignworkers has increased. While 17% of the firms reported decrease in number of foreign workers.
- c) **The number of part-time workers.** The majority of the responses are 'no change' in this aspect, across the timber firms which are 23% in wood and wood based product sector and 21% in furniture sector. For wood and wood based product sector firms, there is 8% respondents agree that there is an increase and 5% indicates reduction in part time workers. While 8.5% of furniture sector agrees there is an increase in part time workers while the around 4.2% indicate there is reduction.
- d) **Recruitment of skilled-workers.** Only 5% of the respondents in wood and wood based products sector firm and 2% out of furniture sector firms' respondents indicates that they will reduce the recruitment of skilled-workers. Oppositely, 18% of the wood and wood based products sector firms and 19% of the furniture sector has increased the recruitment of skilled workers.
- e) **Automation or improvement in the production method.** Rising labour cost definitely increase the effort of timber industry to enhance the level of automation and to improve their production method. 43% from wood and wood based products sector firm and 36% of furniture sector firms indicates no changes in the level of automation and improvement in production method. 33% of the wood and wood based products sector firm and 44.6% of the furniture sector firm has made improvement in this aspect.
- f) **Training of existing workers.** These firms also increased allocations to train workers to be more productive. The wood and wood based products sector firm and the furniture sector firms dramatically increase the training for their workers (23.3% and 29.8% respectively). Only 1 out of 47 respondents from furniture sector has indicated reduction in training while none in wood and wood based products sector firm.
- g) **Non-wage benefits.** The majority of the firms do not change the non-wage benefits which are 58% and 57% respectively. However, 3% of the wood and wood based products sector firm firms and 4% of the furniture sector firms indicate a reduction in this matter.

- h) **Selling price of goods and/or services.** Most of the impact of rising labour cost is transferred to the consumer. 33.3% of the wood and wood based products sector firms and 46.8% of the furniture sector firms have indicated an increase in pricing.
- i) **Overtime pay for full-time workers.** 33.3% of wood and wood based products sector firms and 38.3% of furniture sector firms have revealed an increase in overtime. These firms could have limited the number of workers and increase the overtime during peak season. However, the 15% of wood and wood based products sector firm and 10.6% from furniture sector have cut the overtime. The possible reasons are an improvement in automation and training.
- j) **Night shift.** 40% of wood and wood based product sector firms and 31.9% of furniture sector have indicated no changes in night shift while only 1.6% and 6% have reduced night shift due to the same reasons given earlier.
- k) **Other benefits and healthcare of workers.** 68% of wood and wood based product sector firms and 63.8% of furniture sector have indicated no changes in other benefits and health care of workers while only 1.6% and 4.2% have indicated reductions in such benefit.
- l) **The introduction of the productivity-linked wage system.** There are more firms indicated 'yes' to introductions of this system as opposed to those which indicated 'no'. 48% of wood and wood based product sector firms and 48.9% of furniture sector firms indicated there is an introduction of productivity linked wage system
- m) **Relocation of your operation.** This is a long term plan and expensive option. There is 55% of the wood and wood based product sector firm's respondents and 42.5% of the furniture sector firm's respondents did not initiate operation relocation. Due to limited resources, 26% and 40.4% of respective sector firms have no action on this aspect.
- n) **Ceased operation.** 75% of the wood and wood based product sector firms and 53% of furniture sector firms did not have any ceased operation.
- o) **Curtailed/reduced operation.** Only 25% of the wood and wood based product sector firms and 21.3% of furniture sector firms agreed that there is some reduction in operation. 58% of wood and wood based product sector firms and 42.6% of furniture sector firms are not affected by reduced operation.

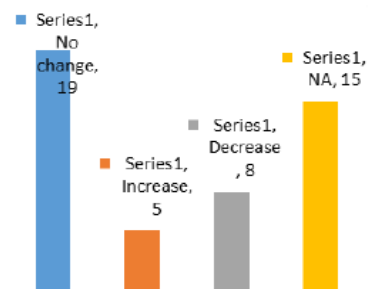
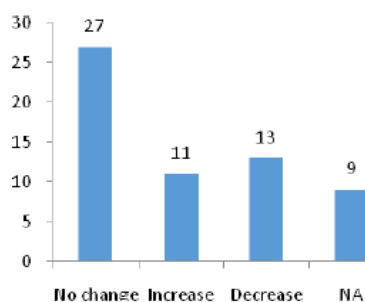
a) Number of Malaysian workers



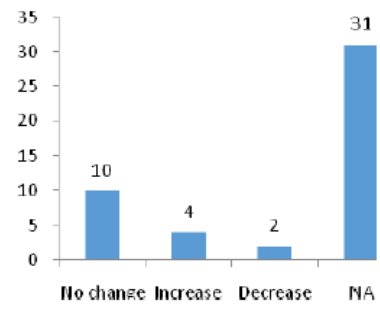
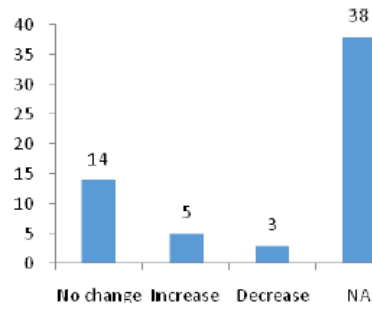
Furniture



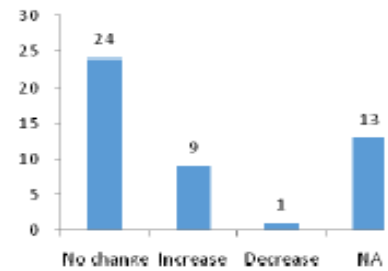
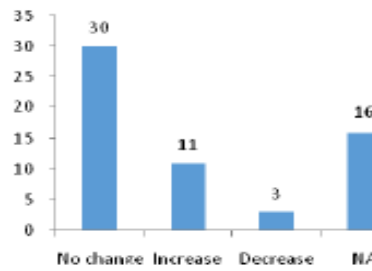
b) Number of foreign workers



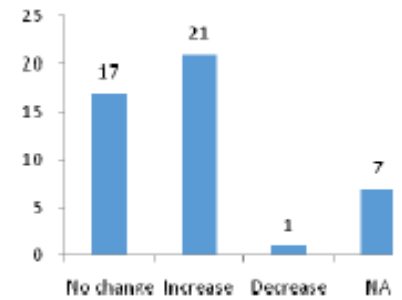
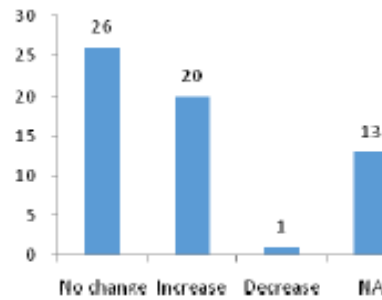
c) Number of part-time workers



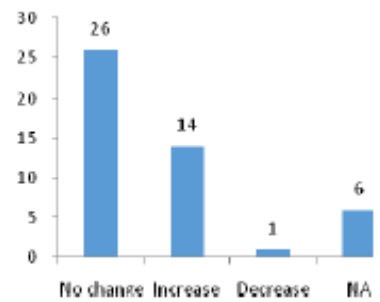
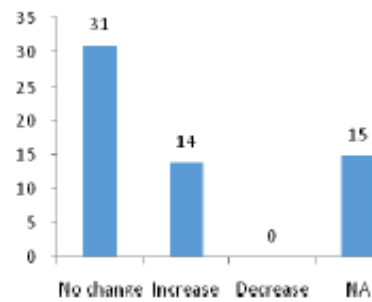
d) Recruitment of skilled workers



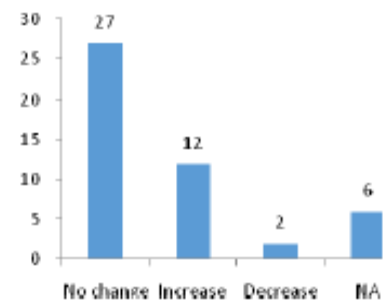
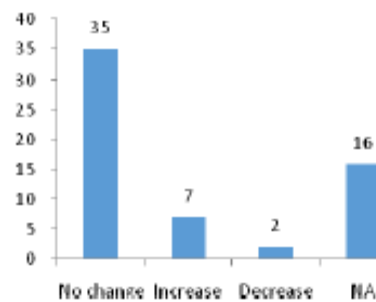
e) Automation or improvement in production method



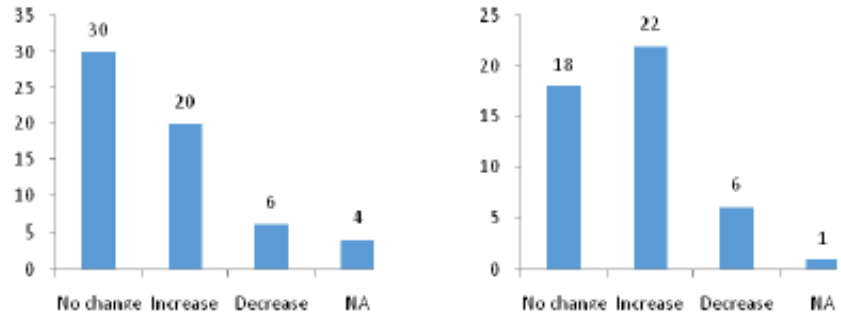
f) Training of existing workers



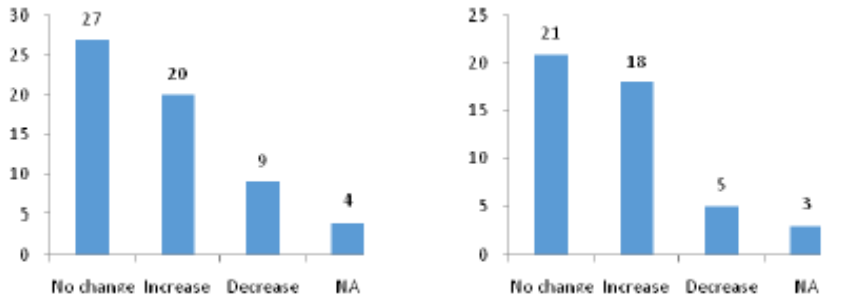
g) Non-wage benefits



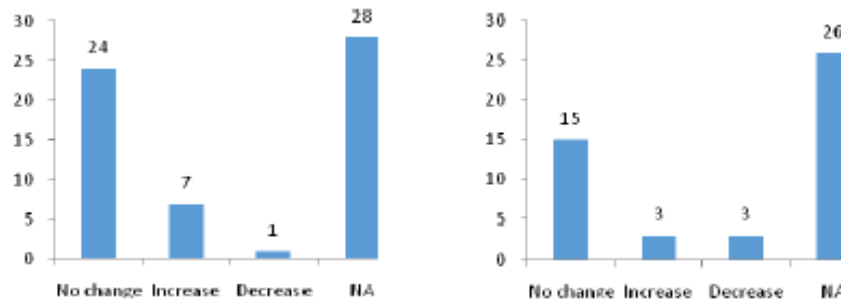
h) Selling price of goods



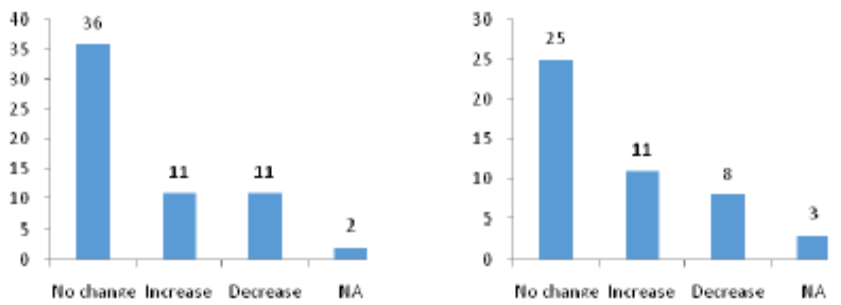
i) Overtime for full-time workers



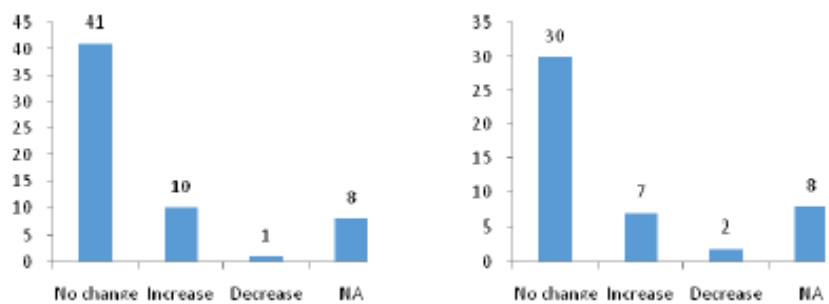
j) Night shift



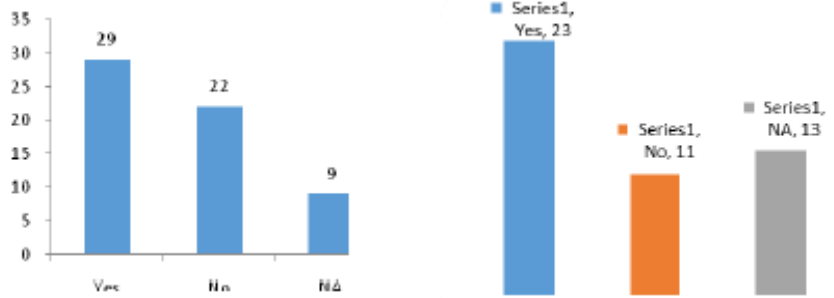
k) Total number of workers



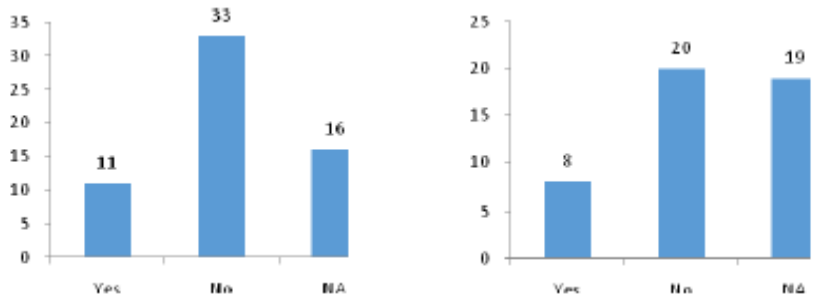
l) Other benefits and healthcare of workers



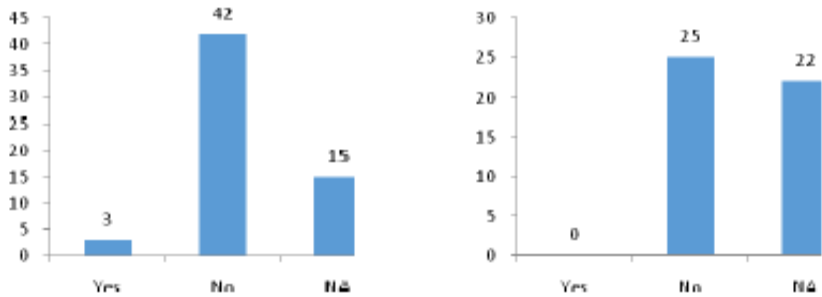
m) Productivity-linked wage system



n) Relocation operation of



o) Ceased operations



p) Curtailed/reduced operation

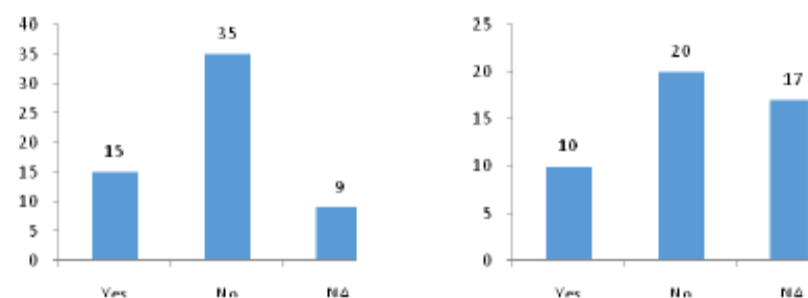


Figure 1: Action taken following the implementation of minimum wage policy

In conclusion, the intention of the government to raise minimum wage rate are reasonably justified and achieved. The timber industry firms indicated some initiatives taken to improve productivity by the adoption of capital-intensive production processes and provide training to workers. At the same time, more skilled workers are recruited. However, there is a higher tendency for timber industry firms to increase the selling price and pass on the burden to consumers. However, there is little evidence to show that the timber industry firms have reduced or cut down the benefits of workers.

Impact of minimum wage on productivity

For the wood and wood based product sector firms, 63% of the respondents indicate a decrease in productivity while 12% indicate increase of the impact on minimum wage policy on productivity (Figure 3). While for furniture sector industry, a majority of 58% of the respondents indicates decrease and only 21% claimed that there is an increase in productivity. These decreases in labour productivity arose not because of reductions in employment, but

were associated with reduction in total factor productivity, the efficiency with which firms convert labour and capital into outputs.

The mechanisms of such productivity decreases are not explored in the report, but could be explain through the effects of minimum wages on the number of hours worked, firm profits, level of work effort, human resource practices, operational efficiencies, internal wage structures, and other parameters. Meanwhile, employers are likely to feel the pinch in paying higher salaries, resulting in increased cost pressures which may lead to companies passing on increased cost to consumers. However, effected employers would have to re-examine their business processes in order to become more efficient and productive. The timber industry in Malaysia has to move higher up in the economic value chain and attaining a high income economy.

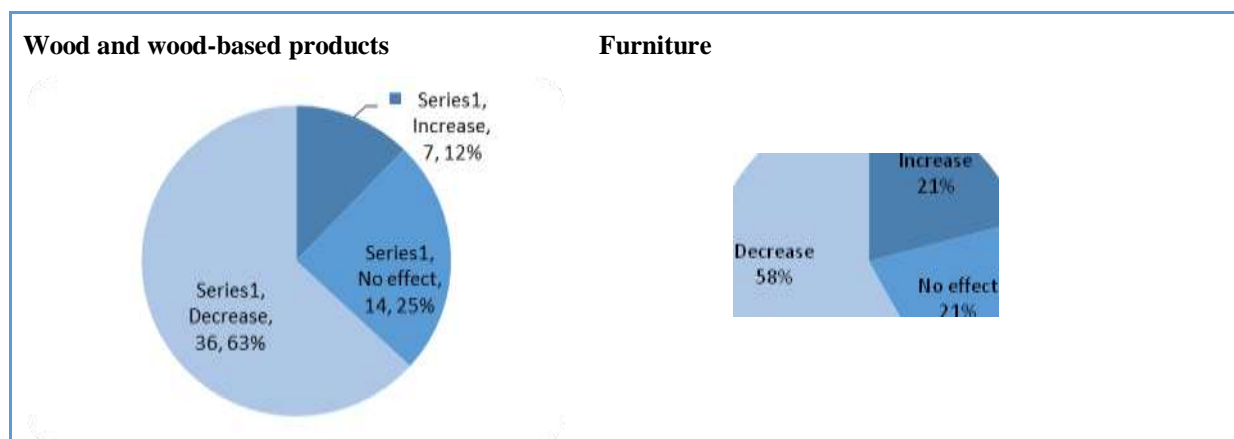


Figure 2 Impact of minimum wage on productivity

5. Discussion

5.1 Expectations on government's assistance for productivity improvement

The expectations vary among the SMEs in different sectors. For SMEs in wood and wood-based products sector (Figure 4), 83.3% expects government to provide incentives on corporate tax reduction. Assistance to access more export markets (71.7%), and financial assistance for automation and mechanization (68.3%), are the two other most common forms of government assistance that respondents wish to receive. Expert hotline is the least preferred form of government assistance (33.3%). In addition, less than 40% of respondents in this sector welcome assistance in the forms of consultancy service and solution workshop respectively.

Similar to wood and wood-based products sector, SMEs in furniture sector (Figure 5) most commonly expect government to provide incentives on corporate tax reduction. Over 70% of respondents in furniture sector hope government to provide financial assistance for automation and mechanization, incentives for improving standard and quality, as well as incentives for training workers. Over half of the SMEs in furniture sector (53.2%) think that expert hotline is helpful. Solution workshop is the least favoured form of government assistance in this sector (42.6%), which is also the only form with less than 50% expectation rate.

More than half of the SMEs in both furniture sector as well as wood and wood-based products sector indicate that they experience a decrease in the profit or profit margin (Figure 6). Given the current economic situation, SMEs are unable to pass on the increased labour cost to their customers as higher selling price for products because they fear that this would lead to an acute fall in sales volume or even loss some customers forever.

Only six out of thirteen aspects of operational performance have improved, but the extent of improvements are quite minor. The top three aspects of improvement, delivery reliability (5.92), employee satisfaction (5.75) and delivery speed (5.73), score slightly above the mid-point rating of 5.5. On the other hand, operational performance measured in terms of unit manufacturing cost (4.47) and manufacturing overhead cost (4.21) deteriorate most significantly after the implementation of minimum wage policy. Unlike wood and wood-based products sector, furniture sector not only experience improvement in eleven out of thirteen aspects of operational performance after the implementation of minimum wage policy, the magnitudes of improvement are also relatively larger. Top three aspects of improvement include employee satisfaction (6.52), product mix flexibility (6.28), and product quality and reliability (6.18). Similar to wood and wood-based products sector, manufacturing overhead cost (4.98) is the most significantly deteriorate performance indicator in the furniture sector. Unit manufacturing cost (5.47) is the only other weakening performance indicator in this sector (Figure 7 and Figure 8).

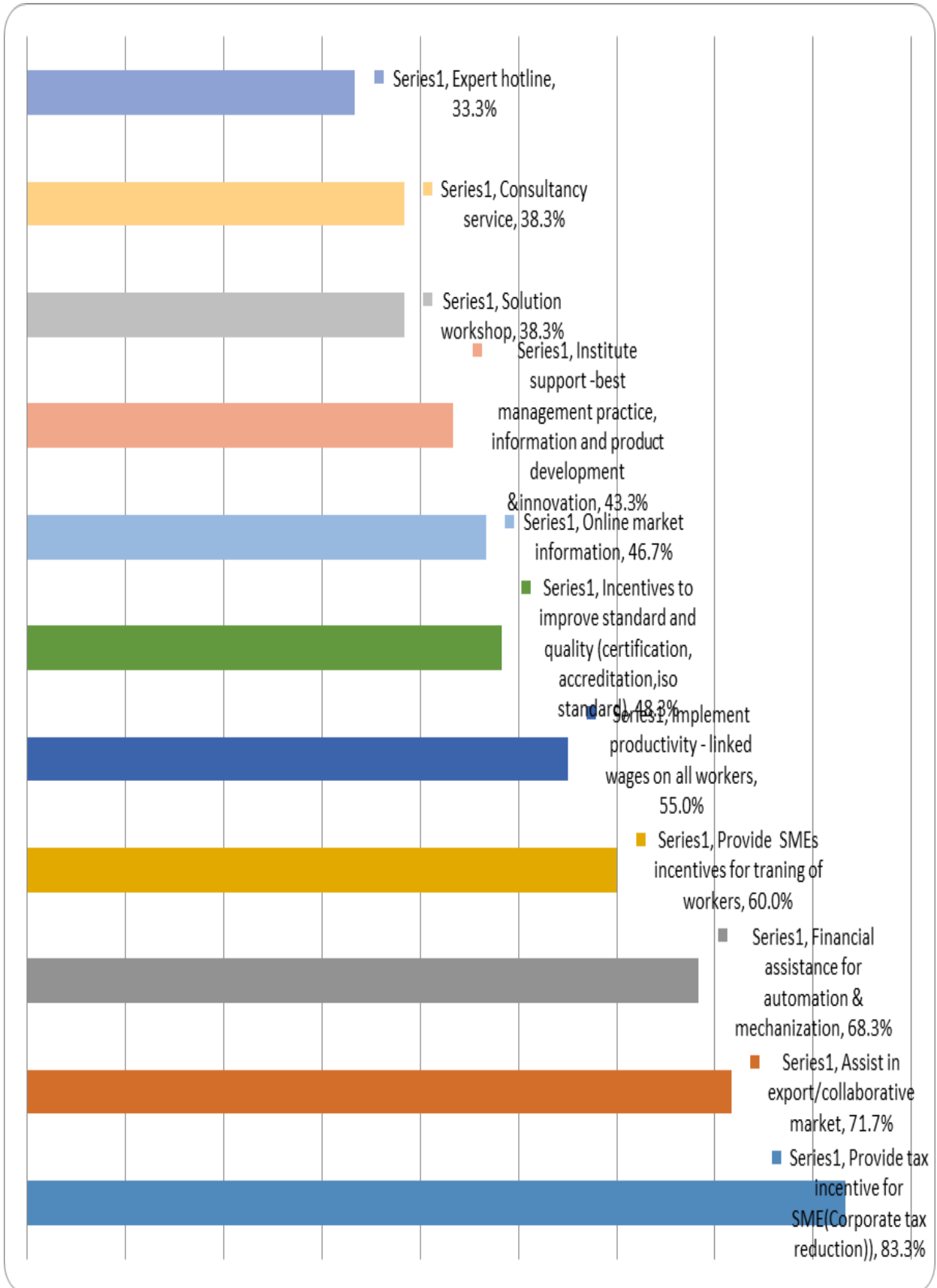


Figure 3 : Expectations of Wood and Wood-based Products Sector on government's assistance for productivity improvement

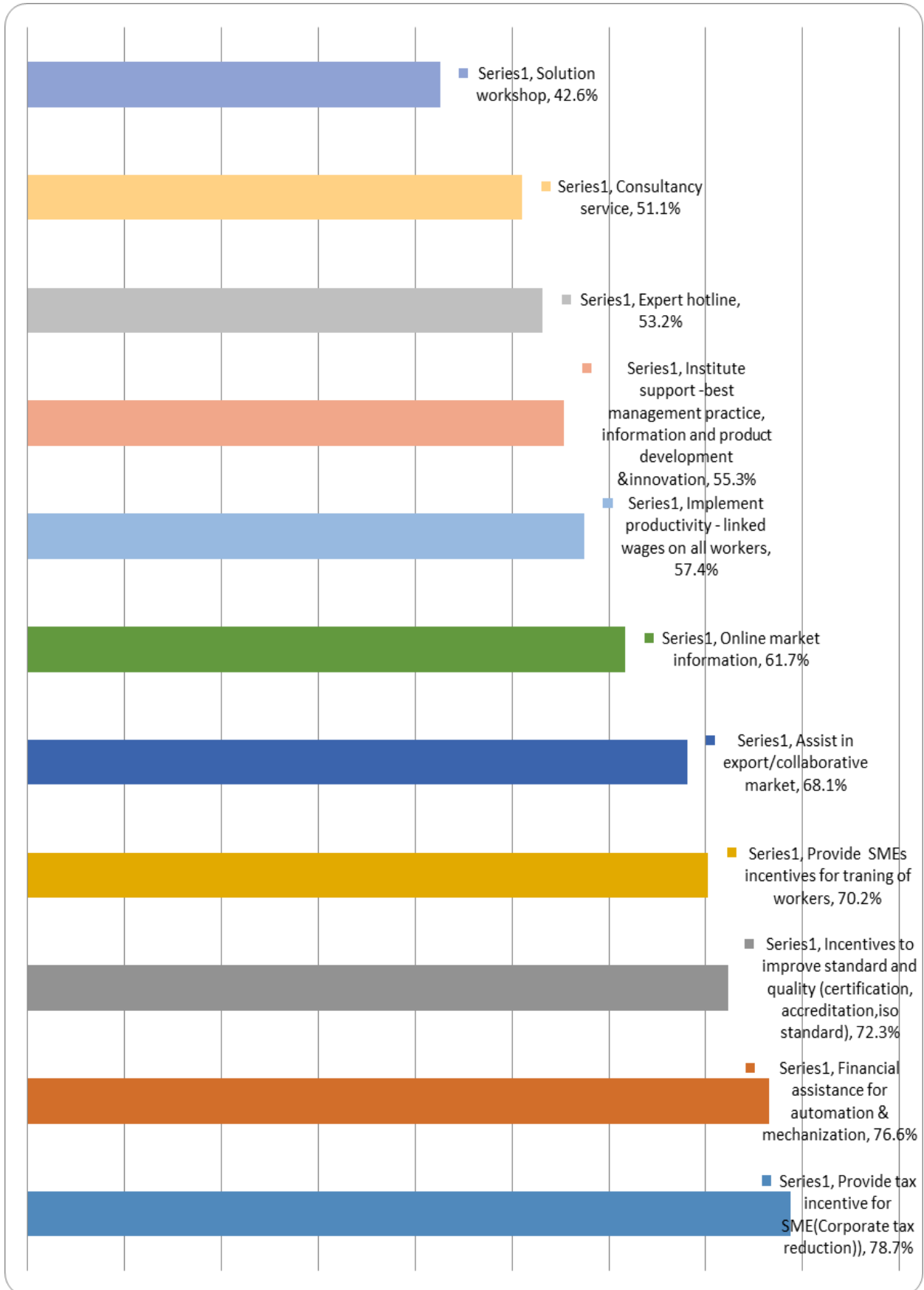


Figure 4 Expectations of Furniture Sector on government's assistance for productivity Improvement

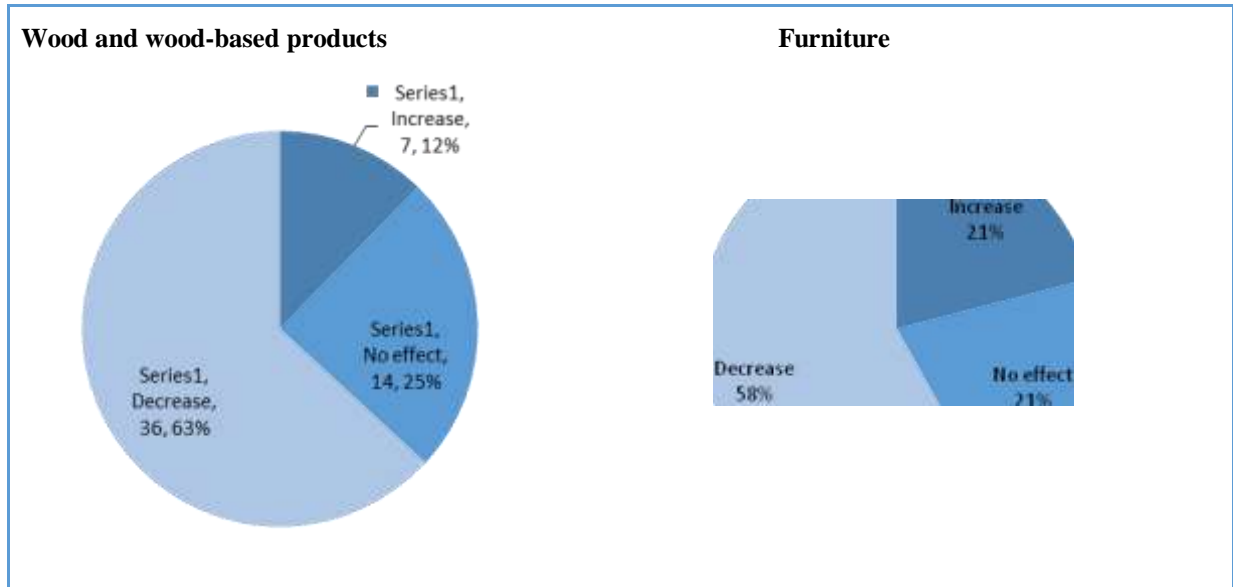
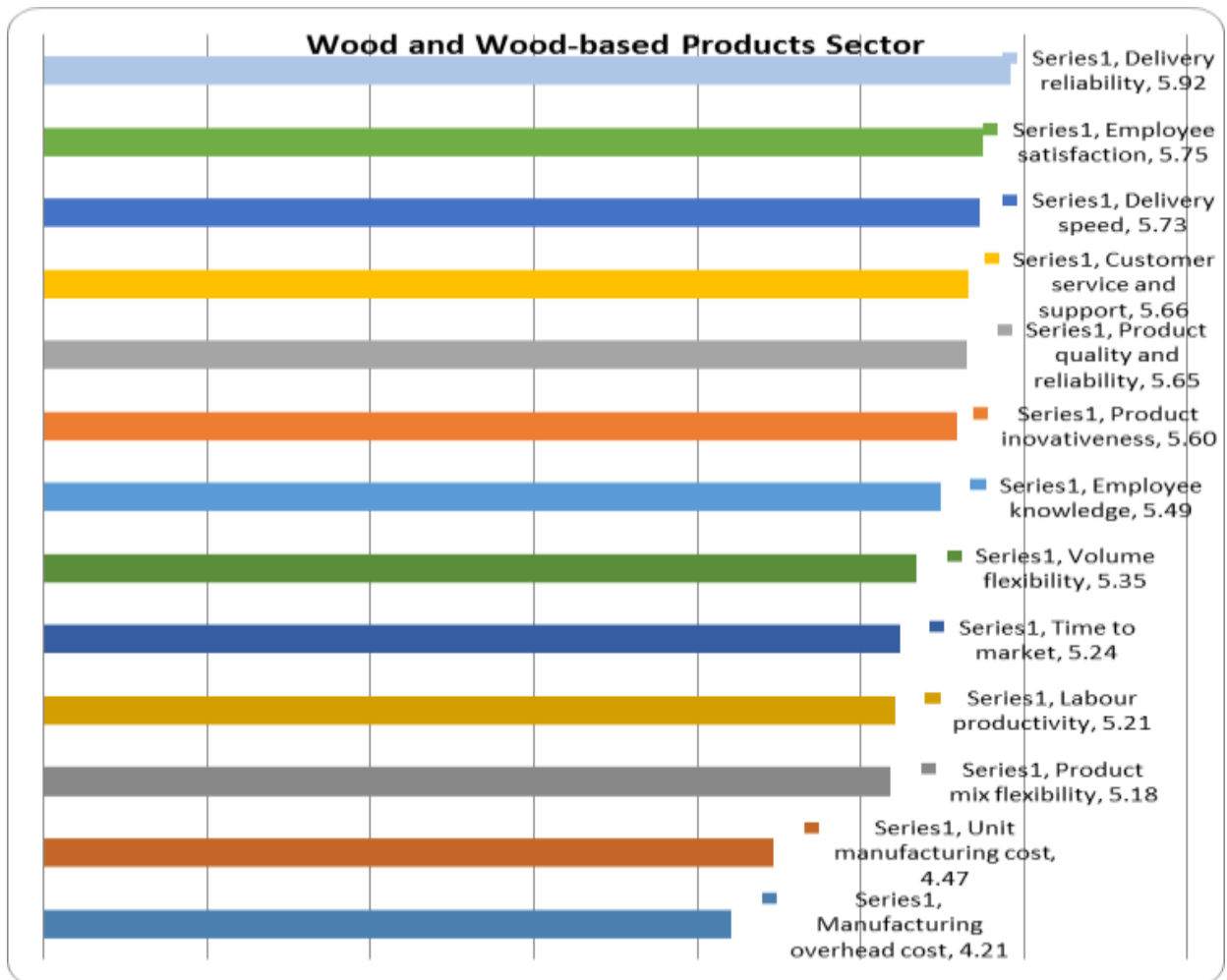
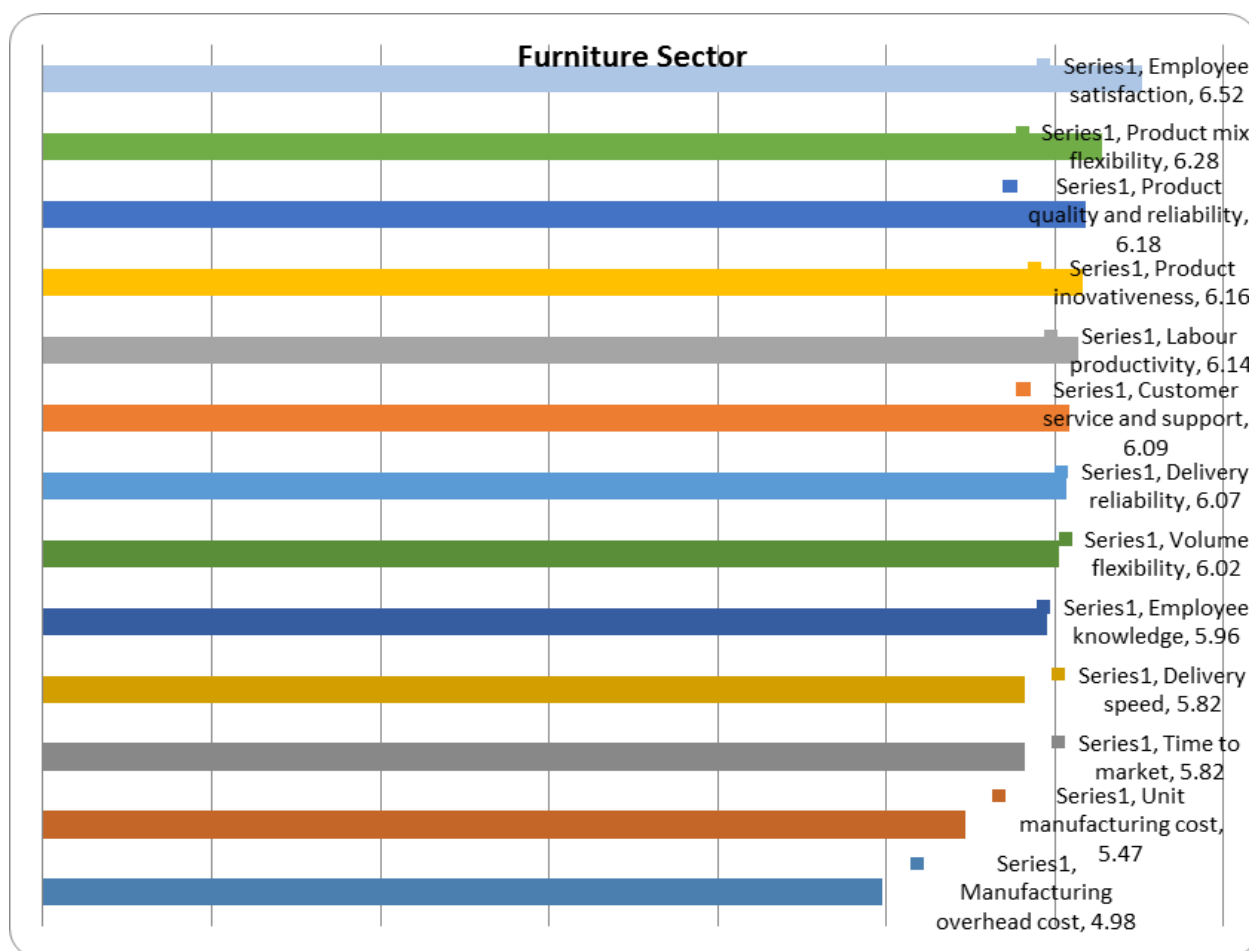


Figure 5 Change of productivity after implementation of minimum wage



Note: 1 = Much Worse; 10=Much better

Figure 6 Change of operational performance of Wood and Wood-based Products Sector



Note: 1 = Much Worse; 10=Much better

Figure 7 :Change of operational performance of Furniture Sector

6. Conclusion

There is a debate heating up over how the rise in the minimum wage will affect businesses especially the small-sized businesses which are typically in highly-competitive industries with low profit margins. In the short run, the minimum wage policy may subject firms to higher costs, especially those that have been highly dependent on low-wage workers. Some business groups have opposed local pushes to bump up wages for hourly workers, arguing that employers cannot afford the added overhead and will have to pass on the increased overhead costs to consumers or cut jobs in response. This could result in adjustments through several possible means, including by absorbing the increased costs through a reduction in margins, increasing productivity, reducing the overall costs through improved efficiency, and reducing the amount of labour used. More approaches must be undertaken in respect of small-sized businesses, i.e., combining minimum wage increases with other initiatives to help businesses be more productive and competitive. Firms may be encouraged to invest in automation and newer technologies that could enhance production capacity, rather than rely on low-cost foreign workers. Government should provide tax incentives such as higher rate of capital allowances as well as subsidies when firms spend on automation. Besides that, firms may also be rendered incentives to provide training to enhance the skills and productivity of their employees. With lower reliance on low-cost unskilled labour, firms may in turn be encouraged to move up the value chain to be more competitive.

In addition, MATRADE and other government agencies should help furniture and wood-based products exporting firms to access and penetrate more foreign markets. With a potential larger demand base for their products as well as adoption of automation in their production process, these firms could enjoy economies of scale through mass production. Lower per unit manufacturing cost enable them to set more competitive pricing for their products in an increasingly intensified competitive domestic and global markets, especially manufacturers from mainland China.

In order to help businesses in a more effective manner, government has to ensure facilitators and trainers who provide solution workshop, consultancy services and expert hotline services are well-qualified and fully understand the unique problems and needs of firms as well as their employees in a specific industry, such as timber industry.

Overall, SMEs in the furniture sector seem to be more ready towards the implementation of the minimum wage policy in comparison to their counterparts in wood and wood-based products sector. Their operational performance ratings are generally higher for majority of the different performance aspects.

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