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Working Paper

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WIDER Working Paper, No. 2021/41

Provided in Cooperation with:

United Nations University (UNU), World Institute for Development Economics Research (WIDER)

Suggested Citation: Hansen, Henrik; Rand, John; Trifkovic, Neda (2021) : Traditional and modern employee benefits in Myanmar's manufacturing sector, WIDER Working Paper, No. 2021/41, ISBN 978-92-9256-979-2, The United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsinki,
<https://doi.org/10.35188/UNU-WIDER/2021/979-2>

This Version is available at:

<https://hdl.handle.net/10419/243367>

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WIDER Working Paper 2021/41

Traditional and modern employee benefits in Myanmar's manufacturing sector

Henrik Hansen, John Rand, and Neda Trifković*

February 2021

Abstract: Employer-provided benefits are independent elements in the compensation packages that make up firms' payment strategies. Such benefits are aimed at attracting and retaining preferred employees and improving incentives. In Myanmar, there are two employee benefit systems: (1) an unregulated traditional system in which firms offer their employees in-kind benefits such as meals and accommodation; and (2) a modern mandatory system in which firms are required by law to offer payment schemes such as payment-while-absent and compensation for accidents. Using a survey of matched employers and employees in the manufacturing sector in Myanmar, we identify firms and workers that supply and demand the two types of employee benefits. We show that traditional benefits are widely supplied and demanded, while modern benefits are supplied by fewer firms and provided to fewer workers. We analyse the relative importance of a range of observable firm and worker attributes that may be associated with the supply and demand for the benefits. We find that firms that provide accommodation appear to attract young, unmarried, uneducated workers who are often migrants, and who, on average, receive lower wages compared to similar workers who do not receive equal in-kind payments. Large firms are more likely to offer the modern benefits and highly educated workers are more likely to demand them. Moreover, workers who receive modern benefits tend to stay longer with the firm and the benefit appears not to have an adverse impact on their wage level. Our findings indicate that both types of benefits contribute to sorting in the labour market. Therefore, both must be considered when labour laws are amended. Moreover, if increased minimum wages are accompanied by reduced provision of traditional in-kind benefits to low-wage workers, then there is a real risk that inequality in consumption will increase even though wage inequality decreases.

Keywords: compensation packages, employee benefits, labour law, Myanmar

JEL classification: J33, K31, M52, O53

Acknowledgements: This paper was prepared within the context of the UNU-WIDER project on inclusive development in Myanmar. We also acknowledge funding by the Ministry of Foreign Affairs of Denmark (administered by Danida Fellowship Centre, DFC) for the project 'Reintegration through Active Labour Market Reforms', project number 18-M08-KU. We are grateful for productive collaboration with the Central Statistical Organisation (CSO) in Myanmar. The usual caveats apply.

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This study has been prepared within the UNU-WIDER project [Towards inclusive development in Myanmar](#).

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ISSN 1798-7237 ISBN 978-92-9256-979-2

<https://doi.org/10.35188/UNU-WIDER/2021/979-2>

Typescript prepared by Gary Smith.

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The Institute is funded through income from an endowment fund with additional contributions to its work programme from Finland, Sweden, and the United Kingdom as well as earmarked contributions for specific projects from a variety of donors.

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The views expressed in this paper are those of the author(s), and do not necessarily reflect the views of the Institute or the United Nations University, nor the programme/project donors.

1 Introduction

Employer-provided benefits are an important motivator in the exchange between employers and employees, and benefits in the form of in-kind payments such as provision of meals and lodgings are widely used in developing countries. At the same time, international organizations, notably the ILO, show strong interest in securing specific benefits through laws and regulations. For example, the ILO's Convention No. 183, which has been ratified by the Government of Myanmar, provides for 14 weeks of maternity benefit to women to whom the instrument applies. In Myanmar, the labour laws have been reformed substantially since the general election in 2010. Important changes for employee benefits were introduced with the Social Security Law (2012) and the Leave and Holiday Rules (2018). The new and revised laws and regulations have introduced 'modern' benefits and benefit organization, for example in the form of mandatory contributions to the Social Security Fund for employers and employees in firms with more than four employees.¹ Thus, firms and wage workers in Myanmar now have two sets of benefit systems: a traditional unregulated system, in which firms offer their employees in-kind benefits in the form of meals and accommodation; and a modern, highly regulated, system in which firms offer their employees special payment schemes, such as payment-while-absent, and pension savings.

In this paper we describe and analyse how firms and workers in Myanmar's manufacturing sector use the two benefit systems. Despite the mandatory nature of the modern benefits, firms may choose to ignore the rules (i.e. to not comply with the law) and, as such, we argue that the use of both systems is governed by classical motives in the sense that it must be advantageous for both firms and workers if they are to supply and demand the specific benefit scheme.

There is a large literature on employer-provided benefits spanning a broad range of the social sciences, including business and management, economics, sociology, and psychology.² Today, most researchers agree that wages and employer-provided benefits are independent elements in firms' payment strategies. Initially, benefits were viewed as a means to attract and retain desired employees, but some theories suggest that benefits can also improve incentives (or motivation) and thereby productivity (Oyer 2008). Still, business surveys show that attraction and retention are more important than productivity incentives in the choice of payment strategies (Gerakos et al. 2017), although, to our knowledge, such evidence only exists for firms in developed countries.

The economic literature initially focused on the attraction element, and most theoretical models within this literature originate from Rosen (1974), who showed that non-monetary benefits can add value to the employee when firms can purchase goods and services more cost-effectively than can employees. The hedonic wage framework of Rosen (1974), in which workers have homogeneous preferences, leads to a sorting in the labour market with a negative association between wages and benefits because high-wage firms can offer low levels of benefits (and vice versa), keeping the worker's utility constant. Alpert and Woodbury (2000) extend the model to include workers with unobservable differences in preferences and show that in this setting it is optimal for firms to offer a combination of wages and benefits as this induces workers to self-select into the firm that offers the pay scheme giving the highest utility for the worker.

By introducing search frictions in the hedonic wage model, Hwang et al. (1998) bring in the retention element as they show how firms with low wages and few benefits may co-exist with firms offering high

¹ We list the central labour laws for wages and benefits in Appendix A. ILO (2017) gives a more in-depth overview of the labour laws in Myanmar.

² Gerhart and Milkovich (1991) offer an early review of the literature on employee compensation, and the edited volume by Alpert and Woodbury (2000) contains both theoretical models and empirical studies of employer-provided benefits in Canada and the United States. Rosen (1986) surveys the economic literature on compensating differentials in labour markets.

wages and many benefits. The firms can co-exist because the low-wage enterprises have high worker turnover, while the high-wage enterprises have low turnover rates, and both types of firms have equal profit rates.

Oyer (2008) also formulates a model with search frictions that has a positive relationship between benefits and job tenure. Moreover, Oyer explicitly considers situations in which benefits are provided to reduce the employees' cost of effort. If the cost of effort is increasing in hours worked, the firm may aim to buy additional hours that are very costly to the employee. By offering benefits such as meals and accommodation, the firm lowers the employee's cost of effort whereby she or he may be willing to work longer hours with less wage compensation compared to the situation without the benefits. In this way, Oyer formulates a theoretical model that addresses attraction, retention, and incentives. Further, the model implies that larger firms (having larger economies of scale in purchasing benefits) are more likely to provide several benefits. Firms are also more likely to provide benefits that they can buy or create at low cost, indicating that the benefits are related to their sector of production and possibly their location.

Using a survey of matched employers and employees in micro, small, and medium enterprises (MSMEs) in the manufacturing sector in Myanmar (see Hansen et al. 2020b), we characterize the firms that supply and the workers who demand the traditional and modern benefits, respectively. We show that the traditional benefits (meals, accommodation, and transport) are widely supplied and demanded. Almost half of the firms in our sample offer at least one of the three types of benefits, and about one-third (31 per cent) of the firms offer both meals and accommodation. This is countered on the worker side, where 33 per cent of the employees get meals, 32 per cent get accommodation, and 23 per cent get the two benefits in combination. Many of these firms are small family firms in which the employee is a family member, but we have restricted the sample such that we do not include employees who do not receive wage payments.

The use of modern benefits in the form of compensation for accidents in the workplace and payment-while-absent (sick leave, maternity leave, or paid leave) are supplied by fewer firms. The most common modern benefit is compensation for accidents, which is provided by 27.5 per cent of the firms. Paid leave is second, but only provided by 13.3 per cent of the firms, followed by sick leave (10 per cent of the firms). On the worker side we also find lower coverage of the modern benefits, as only 24 per cent of the employees are covered by compensation for accidents and 22 per cent are entitled to payment-while-absent. Considering that about 60 per cent of workers are supposed to be covered according to the new labour laws, it is clear that compliance rates are low, supporting our claim that economic incentives are more important than legal regulations when firms decide if they wish to offer the modern benefits.

We analyse the relative importance of a range of observable firm and worker attributes that may be associated with the supply of and demand for employment benefits. Our main findings include that firms in the food sector have a higher probability of supplying meals. Moreover, outside family members, migrant workers frequently receive accommodation and meals. As such, firms that provide accommodation appear to attract young, unmarried, uneducated workers, who are often migrants. These workers are paid lower wages than their colleagues who do not receive in-kind payments in the form of meals and accommodation. In this sense, the provision of traditional benefits by manufacturing firms in Myanmar is in line with predictions based on classical economic arguments.

The use of modern benefits also has an economic rationale, although the profiles of firms and workers is less clear. We find that larger firms are more likely to offer the modern benefits and highly educated workers are more likely to demand them, in particular the payment-while-absent schemes. In addition, workers who get modern benefits tend to stay longer with the firm and they get the same wage as those who do not get modern benefits, conditional on other factors that determine the wage level. Thus, the results for the modern benefits are in accordance with the theories developed by Oyer (2008).

The remainder of the paper is organized as follows. In Section 2 we present the data and summary statistics for the different benefits. We describe and analyse the firm, owner, and worker characteristics that are correlated with the different benefit types in Section 3, and subsequently we analyse the outcomes of the benefit schemes by looking at the partial and conditional correlations between the benefits, on the one hand, and the employees' prior experience, tenure, and wages, on the other. In Section 5 we offer a few concluding remarks.

2 Data

The Myanmar MSME data is a nationally representative survey of MSMEs (see Berkel et al. 2018). The enterprises are sampled from 35 townships from all 15 regions and states in Myanmar, including the Nay Pyi Taw Union Territory. The sampling frame is based on lists of registered enterprises kept by the municipalities in the townships. The lists have information about firm location and industrial sector. The sampling frame is restricted to the manufacturing sector and the survey sampling is stratified into rice mills and other manufacturing firms. In addition to the formal enterprises, informal firms (i.e. firms that are not on the lists kept by the municipalities) are also surveyed. The informal firms are sampled through on-site identification when the enumerator team is at the location to interview a formal firm. Hence, the informal firms are from the same 35 townships as the formal firms. As such, while the sample of formal firms is representative of the formal manufacturing sector, the sample of informal firms is not representative of 'non-listed' manufacturing firms in Myanmar. Instead, they represent the more established and productive informal entities, and this makes it interesting to include them in an analysis of employee benefits.

The MSME survey questionnaire has both a firm (employer) module and an employee module. The questionnaires were administered by face-to-face interviews with the owner or manager of the firm and with 1–5 workers. The goal was to interview five employees in all enterprises wherever possible but, naturally, fewer were interviewed in firms employing fewer than five workers. In family firms with no external workers, family members working in the enterprise were interviewed.

In 2019 all firms sampled in 2017 and still in operation were re-interviewed, and a subset of firms was selected from updated municipal lists to replace those firms that stopped operating between 2017 and 2019 (Hansen et al. 2020b). In the present study we analyse the firms selected in 2017 and still in operation in 2019 for which we have information from both the main module and the employee module for at least one respondent. However, we exclude firms that do not pay wages to any full-time workers. The resulting sample has 2,011 firms and 4,569 employees, this is a reduction of the original survivor sample, described by Hansen et al. (2020b), of 257 firms and 225 employees.

In the present study we deviate slightly from the standard classification of firm sizes as we split the micro enterprises into firms with 1–4 employees and firms with 5–9 employees. We make this distinction because the firms with fewer than five employees need not register with the Social Security Township office and are thus not covered by the Leave and Holiday Rules or the Social Security Law. Moreover, because the sample only has 11 enterprises with more than 299 employees (the standard upper limit for medium-sized enterprises), we include these 11 firms in the medium-sized category.³ The sample distribution of firms and employees across the modified firm size categories and legal status (formal/informal) is given in Table 1.

³ The largest firm in the sample has 510 employees.

Table 1: The number of firms and employees in the sample, by firm size category

Firm size	Firms		Employees	
	Formal	Informal	Formal	Informal
Micro (1–4)	779	142	1,295	191
Micro (5–9)	486	52	1,214	118
Small (10–49)	407	29	1,239	87
Medium (50–600)	115	1	420	5
Total	1,787	224	4,168	401

Source: authors' calculations based on MSME 2019.

Information about traditional benefits—provision of meals, accommodation, and transport—is from the employee questionnaire. We record a firm as providing these benefits if at least one employee states that she or he receives it. This implies that our estimates of the prevalence of traditional benefits are lower bounds as some firms may offer these benefits to workers who were not interviewed. Table 2 gives the sample frequencies of the provision of traditional benefits. The table is formatted to give information about the percentage share of firms offering either one of the benefits or two in combination. The figures in the diagonal are the percentage shares of firms offering either meals, accommodation, or transport, while the figures below the diagonal are the percentage shares of the firms that offer combinations of at least two of the benefits. As seen, almost 40 per cent of the firms offer either meals or accommodation to their employees, while only 12 per cent offer transport. The table also shows that traditional benefits are typically offered jointly. Specifically, meals and accommodation are offered jointly in more than three-quarters of cases, while transport is almost never the sole benefit provided by a firm.⁴ However, the main information in Table 2 is that provision of traditional benefits is very common among the MSMEs in the manufacturing sector in Myanmar.

Table 2: Percentage of firms providing traditional benefits

	Meals	Accommodation	Transport
Meals	38.8		
Accommodation	31.0	39.2	
Transport	10.3	10.3	12.2

Source: authors' calculations based on MSME 2019.

Turning to the modern benefits, we use information given in the firm questionnaire about provision of compensation for accidents in the workplace, payments-while-absent (sick leave, maternity leave, or paid leave), and contributions to pension savings. Table 3 reports the sample frequencies of firms providing the modern benefits in the same way as we presented the traditional benefits. The table illustrates how modern benefits are used much less than traditional benefits. The most common modern benefit is compensation for accidents, which is provided by 27.5 per cent of the firms. Paid leave is second, but only provided by 13.3 per cent of the firms, followed by sick leave, which is offered by just above 10 per cent of the firms. For pension contributions, we find that this benefit is rarely used.

Table 3: Percentage of firms providing modern benefits

	Sick leave	Maternity leave	Paid leave	Compensation	Pension
Sick leave	10.3				
Maternity leave	7.0	7.7			
Paid leave	8.6	6.9	13.3		
Compensation	8.9	6.8	11.8	27.5	
Pension	0.0	0.1	0.1	0.2	0.3

Source: authors' calculations based on MSME 2019.

⁴ Only 1.1 per cent of the firms provide only transport, while 9.6 per cent offer all three benefits jointly.

As for the traditional benefits, the modern benefits are often offered as a package by many firms and there appears to be a structure of sets and subsets of modern benefits. Specifically, maternity leave is typically offered in combination with paid leave and compensation for accidents. This is also, to a slightly lesser extent, the case for sick leave. Therefore, in the following we look at two sets of modern benefits: (1) *compensation* (for accidents); and (2) *payment-while-absent* (the union set of sick, maternity, and paid leave). Contributions to pensions will only be included when we look at the set of all modern benefits.

Table 4 shows the sample frequencies of firms offering any kind of benefit, either traditional or modern. As seen, 40 per cent of the firms do not provide any kind of benefit, 48 per cent offer traditional benefits, and 30 per cent offer modern benefits, while quite a large fraction (17.5 per cent) offer a combination of traditional and modern benefits to their employees. Looking at Tables 3 and 4, we also find that firms that offer compensation for accidents constitute almost all firms offering modern benefits. This means that when we analyse the provision of payments-while-absent we are in effect looking at firms and employees that provide and receive both compensation for accidents and payments-while-absent.

Table 4: Percentage of firms providing either traditional or modern benefits

Traditional	Modern		
	No	Yes	Total
No	39.6	12.3	51.9
Yes	30.5	17.7	48.1
Total	70.1	29.9	100.0

Source: authors' calculations based on MSME 2019.

3 Determinants of traditional and modern benefits

In this section we describe and analyse the groups of firms and the associated employees that provide and receive benefits. Specifically, we look at the provision of meals, accommodation, or any traditional benefit and compensation for accidents, payment-while-absent (leave), and any modern benefit. We do not seek to make causal claims, but instead aim at exploring the extent to which observable attributes can discriminate between those firms and employees that provide/receive the benefits and those that do not. Our main interest lies in illustrating the extent to which the traditional and modern benefits are supplied and demanded by firms and employees with different attributes.

We start by analysing firm characteristics and thus consider the individual firms (i) located in region/state r and producing goods in manufacturing sector s . The firm may or may not offer benefit b . We model the probability of a firm offering the benefit using the logit model. Thus,

$$\Pr(b_{irs} = 1 | x_{irs}, \alpha_r, \gamma_s) = \Lambda(x_{irs}\beta + \alpha_r + \gamma_s) \quad (1)$$

where x_{irs} are firm- and owner/manager-specific attributes, while α_r and γ_s are region/state and sector fixed effects and $\Lambda(\cdot)$ is the logistic function.

Subsequently, we analyse the characteristics of employees in the same way. For employees we consider worker j who is employed in firm i , located in region/state r , and producing goods in manufacturing sector s :

$$\Pr(b_{jirs} = 1 | z_{jirs}, \tilde{x}_{irs}, \tilde{\alpha}_r, \tilde{\gamma}_s) = \Lambda(z_{jirs}\delta + \tilde{x}_{irs}\tilde{\beta} + \tilde{\alpha}_r + \tilde{\gamma}_s) \quad (2)$$

where z_{jirs} are worker-specific attributes, while \tilde{x}_{irs} are the firm and owner/manager attributes and $\tilde{\alpha}_r, \tilde{\gamma}_s$ are the employee region/state and sector fixed effects.

3.1 Firm and owner characteristics

Table 5 gives an overview of selected firm and owner/manager attributes. Several of the attributes are related to wage setting as both the traditional and the modern benefits are part of a firm's pay strategy. However, we also include attributes that are either relevant because of the institutional set-up in Myanmar or that have been found to be relevant for benefit provision in other countries.

The columns of Table 5 show the frequency of firms with the specified attribute (given in the rows) that provide the benefit indicated in the column heading. For continuous variables, such as the number of employees and the average monthly wage, we report the average for the group of firms that provide the benefit indicated in the column heading.

Table 5: Summary statistics: firm and owner characteristics

	Meals	Accomm.	Any traditional	Comp.	PWA	Any modern
<i>Legal status</i>						
Formal	38.7	39.6	48.5	29.4*	16.5*	31.8*
Informal	39.7	36.6	45.1	12.9*	5.8*	15.2*
<i>Employs family members</i>						
No	30.5*	33.2*	41.9*	29.8*	18.3*	32.9*
Yes	63.9*	57.3*	66.9*	20.8*	6.3*	21.0*
<i>Employs migrants</i>						
No	28.1*	28.6*	38.8*	25.5*	22.8*	32.9*
Yes	59.3*	52.8*	62.1*	18.5*	13.8*	23.2*
<i>Firm size categories</i>						
Micro (1–4)	39.4*	34.9*	44.8*	15.0*	4.2*	16.0*
Micro (5–9)	36.2*	39.2*	45.5*	22.7*	9.3*	24.9*
Small (10–49)	37.8*	45.9*	51.8*	45.4*	29.4*	50.0*
Medium (50–600)	50.0*	49.1*	72.4*	82.8*	78.4*	88.8*
Employees	16.9* (43.6)	16.9* (38.5)	19.5* (50.5)	33.5* (66.5)	55.1* (85.9)	33.7* (66.1)
Firm age	16.2* (11.1)	16.4* (11.5)	16.5* (11.6)	17.2 (11.5)	15.6* (9.7)	17.0 (11.4)
Avg. monthly wage	162.2 (83.7)	163.0 (81.7)	165.5 (78.9)	173.9* (81.5)	186.5* (118.8)	175.1* (94.9)
<i>Characteristics of owner/manager</i>						
Male	38.1	39.4	47.8	28.8	15.2	30.8
Female	40.4	38.8	48.8	25.0	15.6	28.0
No education	47.2	44.4	55.6	17.6*	5.6*	18.5*
Primary school	40.4	37.1	45.9	18.8*	4.9*	20.2*
Middle school	39.7	38.1	47.1	28.1*	12.7*	29.4*
High school	36.7	38.3	46.6	26.2*	14.8*	29.6*
Higher education	36.9	41.0	49.7	35.7*	26.4*	39.3*
Other	36.8	42.1	52.6	10.5*	0.0*	10.5*
Managerial capacity	25.8 (25.8)	26.7* (25.4)	26.5* (25.7)	33.5* (24.7)	40.1* (24.9)	34.1* (24.9)*

Note: asterisks indicate statistically significant differences between overall frequencies/averages and the group frequency/average for each benefit category. For continuous variables the numbers reported are group means. The figures in parentheses below the means are the standard deviations.

Source: authors' calculations based on MSME 2019.

The first entry in the table is the legal status of the firm. The relevance of this characteristic comes from the organization of the modern benefits, as these benefits are, in part, governed by law. Informal firms need not comply with the law and this comes out clearly in Table 5 as only 15 per cent of these firms provide any kind of modern benefit. In contrast, 32 per cent of the formal firms provide at least one of the modern benefits. However, the interesting result for the legal status is that the ratio of firms

offering traditional benefits is equal for formal and informal enterprises. This suggests that the supply of traditional benefits is motivated by forces in the labour market, or possibly a mix of market forces and cultural norms.⁵

The second entry shows whether the firm employs family members. A family member is defined as an employee who is either a member of the firm owner's household or a relative of the owner who is not living in the household. In the sample of firms, 25 per cent employ family members and they are naturally more likely to get either accommodation (as some live in the household) and/or meals. On the other hand, owners who employ family members are apparently less likely to provide any of the modern benefits. However, this may be driven by other factors, such as legal status or firm size.

The third attribute is more strategic than employment of family members. It identifies firms in the sample that employ workers who are born in another state/region than the one in which they are currently working. We consider these workers to be (domestic) migrants. Comparing the provision of benefits by firms that employ family members and those that employ migrants, we find a striking similarity, and even a close match in terms of the order of magnitude. Firms that employ migrants are much more likely to offer traditional benefits and much less likely to offer modern benefits.

Firm size, given as the number of employees (both permanent and temporary), is the fourth entry in Table 5. First, we report the share of firms offering a given benefit within the four firm size categories. Following these frequencies, we report the average number of employees in firms providing the benefit. For all benefit types we find a strong size dependence. Specifically, half of the small firms and just below 90 per cent of the medium-sized firms provide some kind of modern benefit. In contrast, as expected, relatively few micro firms provide the modern benefits, and when they do, it is in the form of payment for accidents, not payment-while-absent. The association between firm size and modern benefits may thus also be driven by the institutional setting, as small and medium enterprises can be expected to be induced to adhere to labour laws and regulations to a greater extent than micro firms.

Firm age is a potentially interesting determinant because of conflicting views and results in the literature. As explained by Brown and Medoff (2003), the partial association depends on the education and experience of the employees. If older firms employ very experienced workers, then provision of benefits may be more likely because such high-wage workers may prefer benefits to wage increases. If, on the other hand, older firms employ more workers with lower levels of education, relative to younger firms, then the association is reversed. However, this line of argument is strongly dependent on a coherent and well-functioning progressive income tax system, and thus not necessarily applicable to the setting in many developing countries. In Myanmar, the association could be both positive and negative for the traditional benefits because of influences from norms and traditions. In contrast, if anything we expect younger firms to be more willing to provide modern benefits, all else being equal. Still, according to the results in Table 5, the firms providing the traditional benefits are slightly younger, on average. Furthermore, firms that provide payment-while-absent are both younger and larger than the average firm. This is in accordance with the findings of Rand and Tarp (2011), who find a negative association between firm age and provision of benefits in their analysis of (modern) fringe benefits in Vietnam.

Wages may also have both a positive and a negative association with provision of benefits. For Myanmar, we find that the average wage in the firm is not significantly different from the overall average for firms providing traditional benefits; it is, however, larger for firms providing the modern benefits. This could support the hypothesis of search frictions in the labour market, as suggested by Hwang et al. (1998),

⁵ In a study of wage contracts in rural Myanmar using household data from 2001, Kurosaki (2006) concludes that food security considerations and thin food markets have resulted in many wage contracts with payment in-kind (food) for casual agricultural workers. Thus, employer-supplied food/meals are well known in both rural and urban areas of Myanmar.

but it could also be a result of differences in the employees' education and experience along the lines discussed for firm age above.

Turning to the attributes of the owner/manager, we start by noting that there is no significant difference in the provision of any of the benefits related to the sex of the owner. Clearly, this may be due to confounding by other factors, as we show below. Yet, the partial association is not significant. The same applies for the educational level of the owner/manager and provision of traditional benefits, whereas there is a strong association between education and provision of the modern benefits. Owners/managers with low education levels are less likely to provide modern benefits relative to their colleagues with higher levels of education.

Finally, Falco et al. (2020) and Hansen et al. (2021) show that the so-called managerial capacity of the owner/manager is strongly correlated with firm productivity. The importance of good business practices is also found in other studies of firms in developing countries (see McKenzie and Woodruff 2017). As in Hansen et al. (2021), who follow McKenzie and Woodruff (2017), we construct a managerial capacity index based on 20 yes/no questions about business practices related to (1) marketing, (2) stock and buying control, (3) record keeping, and (4) financial planning. The index is computed as the percentage share of these 20 questions for which the manager answers *yes*. Thus, by construction, the index lies in the interval [0;100]. The final rows of Table 5 show how owners/managers who have above-average managerial capacity, according to this index, are more likely to offer benefits. This goes in particular for the provision of modern benefits.

Turning to the firm and employee fixed factors, Table 6 gives the percentage shares of firms that provide the different benefits within eight production sectors (top) and 14 states and regions and the Nay Pyi Taw Union Territory (bottom).⁶ The sector distribution is of interest because firms in the food sector can be expected to have a cost advantage in providing benefits in the form of meals, and Oyer (2008) shows how this leads firms in this sector to provide meals more often than firms in other sectors in the United States. We find the same result in Myanmar. It is also interesting to note that firms in the metal and machinery sectors have high frequencies of meal provision. It is more difficult to explain how some sectors may have cost advantages in providing accommodation, but this appears to be the case in the food, minerals, and, to a lesser extent, metal sectors. For the modern benefits there are no obvious sector-related advantages, but the firms in the food sector are also above average here. However, as we show below, this is a result of composition effects.

Finally, the bottom part of Table 6 shows a substantial variation in the provision of both traditional and modern benefits across the regions and states. We record a widespread use of traditional benefits in Kachin State and Yangon. At the other extreme, the traditional benefits are rarely offered by the firms in the sample from Magway and Mandalay. In general, save the position and special situation for the former capital, Yangon, it appears that traditional benefits are more prevalent in the states bordering China and Thailand. In contrast, the firms in these states do not provide modern benefits. As seen, no firms in the samples from Kachin State and Kayin State offer modern benefits. Further, the low prevalence of payment-while-absent also results in us having no firms in the sample that provide this benefit in Rakine and Nay Pyi Taw. In contrast, three out of four firms in Yangon offer this benefit.

⁶ There are no firms with both owner and employee data in Chin State. Therefore, this state is not included in the tables or the analyses.

Table 6: Summary statistics: sectoral and geographical distributions of benefit provision

	Meals	Accomm.	Any traditional	Comp.	PWA	Any modern
<i>Sector</i>						
1063 (rice mills)	44.8	32.9	51.0	25.9	8.4	26.6
10–12 (food)	44.5	45.1	54.2	32.3	23.1	36.2
13–15 (textiles)	27.6	32.0	36.0	27.9	14.0	29.8
16–18 (wood)	33.5	29.8	41.5	22.9	7.4	25.0
19–23 (minerals)	36.3	46.4	53.6	19.6	12.3	21.8
24–25 (metal)	42.6	41.0	48.6	24.6	6.0	25.1
26–30 (machinery)	42.4	34.7	46.6	28.0	11.0	28.8
31–33 (furniture)	23.0	30.2	34.9	20.6	10.3	21.4
<i>State/region</i>						
Kachin	76.9	74.7	84.6	0.0	0.0	0.0
Kayah	54.7	67.2	67.2	3.1	3.1	4.7
Kayin	50.0	51.8	64.3	0.0	0.0	0.0
Sagaing	44.3	41.9	54.3	4.8	3.8	7.1
Tanintharyi	43.6	46.2	53.8	59.0	5.1	59.0
Bago	24.4	27.2	34.4	23.3	3.3	25.6
Magway	9.4	11.9	15.7	11.3	4.4	11.9
Mandalay	15.8	19.4	21.9	25.1	5.0	27.6
Mon	44.5	28.6	45.4	16.8	0.8	16.8
Rakhine	23.4	21.9	26.6	12.5	0.0	12.5
Yangon	61.1	63.2	77.0	74.3	74.7	82.8
Shan	57.9	53.8	66.2	42.1	25.5	45.5
Ayeyarwady	25.3	30.0	36.3	29.5	4.2	29.5
Nay Pyi Taw	46.3	41.3	55.0	1.3	0.0	1.3

Note: there are no firms with both owner and employee data in Chin State. The provision of benefits is not independent of region/state or sector for any of the benefit groups.

Source: authors' calculations based on MSME 2019.

In Table 7 we report results of the firm logit regressions for comparison with the partial results in Tables 5 and 6. The conditional associations are given as odds ratios because of the large variation in the provision of the individual benefits. By looking at the odds ratios we can compare estimates across the different types of benefit.

The main result in Table 7 is that several of the partial associations are driven by common underlying factors. Notably, the education of the owner/manager has no conditional association with provision of either traditional or modern benefits. Other attributes are significant conditional correlates. Not surprisingly, informal firms are less than half as likely as formal firms to provide modern benefits and firms that employ family members are about four times more likely to provide the traditional benefits, illustrating that some conditional associations are larger than the partial associations. Further, the similarity between firms that employ family members and firms that employ migrants carries over to the conditional associations, although the odds of a firm offering meals are somewhat lower for firms with migrants than for firms with family members. Yet, the odds ratios for the other benefits are almost equal.

The effects of firm size are difficult to read because we allow for both discrete changes according to the firm size categories and further allow for continuous change by including the number of employees (in logs) and its square. Thus, we are using a very flexible functional form when it comes to the association with employment. In essence, we find that larger firms are much more likely to offer modern benefits, while the size dependence is less pronounced for traditional benefits.

An interesting result is that managerial capacity is significantly associated with provision of traditional benefits, but not for modern benefits. However, the lack of significant associations with modern benefits is in part the result of a strong correlation between managerial capacity, firm size, and location.

Table 7: Conditional associations with firm characteristics

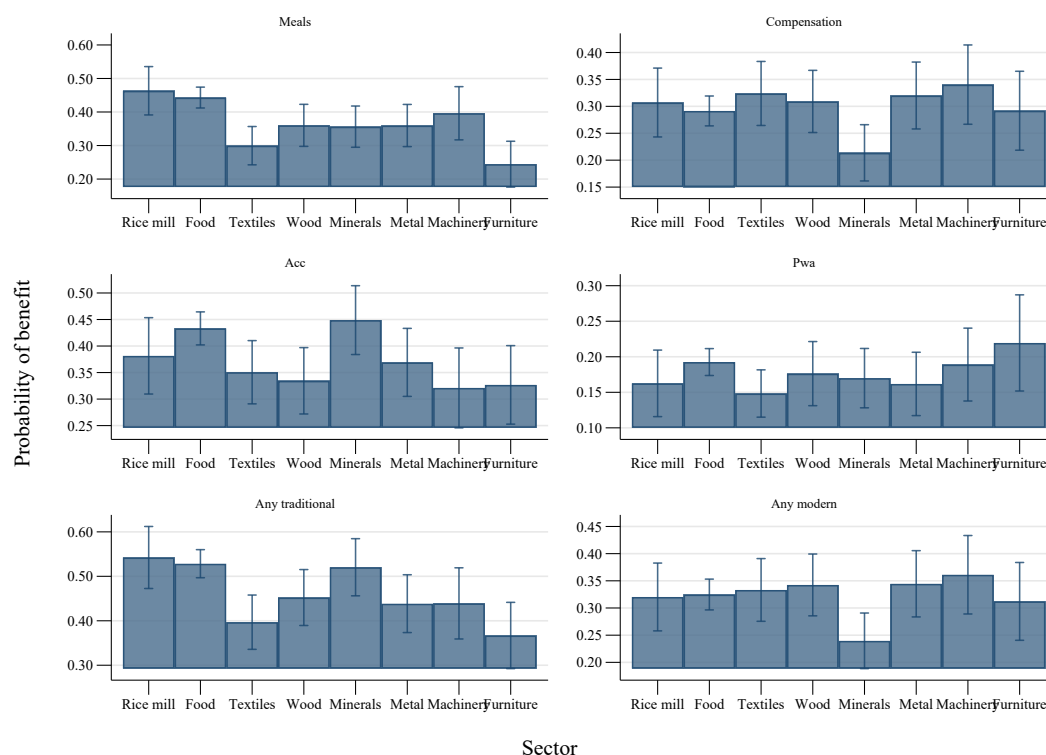
	(1) Meals	(2) Accomm.	(3) Any traditional	(4) Comp.	(5) PWA	(6) Any modern
Informal	0.90 (0.17)	0.76 (0.14)	0.85 (0.15)	0.39*** (0.10)	0.53 (0.22)	0.43*** (0.10)
Employs family	5.08*** (0.69)	4.24*** (0.58)	3.92*** (0.53)	1.18 (0.20)	0.81 (0.23)	1.02 (0.17)
Employs migrants	1.96*** (0.29)	4.33*** (0.64)	3.21*** (0.48)	0.94 (0.17)	1.48 (0.35)	1.00 (0.18)
Micro (5–9)	1.38* (0.27)	1.47** (0.28)	1.35 (0.25)	1.23 (0.28)	1.56 (0.61)	1.16 (0.26)
Small (10–49)	1.24 (0.36)	1.47 (0.42)	1.31 (0.37)	1.72 (0.58)	1.69 (0.93)	1.26 (0.44)
Medium (50–600)	1.47 (0.84)	0.84 (0.48)	1.33 (0.80)	2.32 (1.63)	1.12 (1.10)	0.93 (0.73)
Employment (log)	0.81 (0.11)	0.95 (0.12)	0.94 (0.13)	1.40** (0.23)	1.84** (0.46)	1.87*** (0.35)
Employment (log), sq.	1.04 (0.04)	1.02 (0.04)	1.06 (0.05)	1.05 (0.06)	1.37*** (0.13)	1.18** (0.08)
Age of firm	0.99** (0.00)	1.00 (0.00)	0.99 (0.00)	1.00 (0.01)	0.99 (0.01)	1.00 (0.01)
Avg. monthly wage (log)	0.87 (0.11)	0.89 (0.11)	1.08 (0.13)	1.26 (0.18)	1.59** (0.37)	1.27* (0.18)
Female	1.25* (0.15)	0.99 (0.12)	1.14 (0.13)	0.74** (0.11)	0.92 (0.21)	0.81 (0.12)
Primary school	0.87 (0.22)	0.79 (0.20)	0.78 (0.20)	0.73 (0.23)	0.60 (0.35)	0.77 (0.24)
Middle school	0.91 (0.23)	0.77 (0.20)	0.81 (0.21)	0.82 (0.27)	0.81 (0.46)	0.81 (0.26)
High school	0.92 (0.25)	0.79 (0.21)	0.81 (0.22)	0.69 (0.24)	1.15 (0.67)	0.76 (0.26)
Higher education	0.81 (0.21)	0.82 (0.21)	0.77 (0.20)	0.64 (0.21)	1.14 (0.64)	0.67 (0.22)
Other	1.09 (0.65)	1.19 (0.68)	1.28 (0.73)	0.65 (0.56)		0.66 (0.56)
Managerial capacity	2.29*** (0.60)	1.68** (0.43)	1.70** (0.43)	1.39 (0.40)	1.14 (0.53)	1.57 (0.46)
Pseudo R^2	0.22	0.20	0.22	0.29	0.54	0.32
Observations	2,011	2,011	2,011	1,864	1,709	1,864

Note: the coefficients are odds ratios based on logit regressions with standard errors in parentheses. All regressions include sector fixed effects (eight sectors) and region/state fixed effects (14 regions/states). For the modern benefits the region/state fixed effects uniquely predict failures in several states as seen from Table 6. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Source: authors' calculations based on MSME 2019.

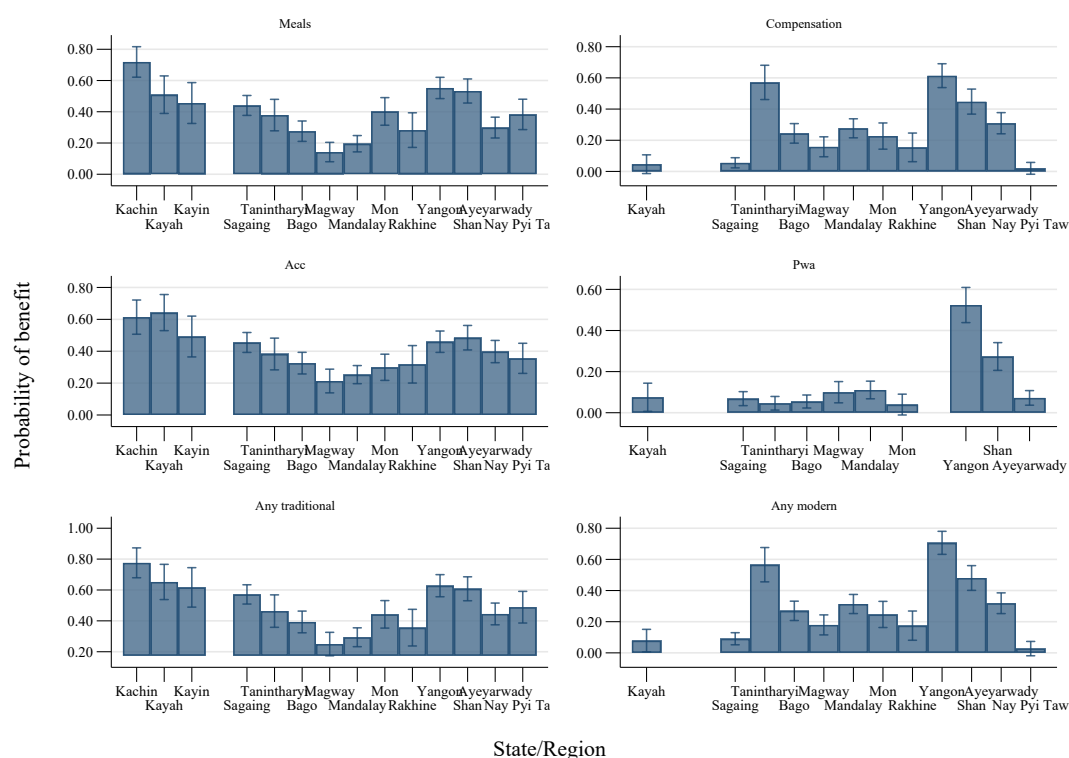
The conditional associations with the sectoral and regional fixed factors are shown in Figures 1 and 2, in which we plot the estimated probabilities of provision of the benefits for firms within the sectors and regions/states instead of odds ratios. In accordance with the prediction of Oyer (2008), firms in the food sector (including the rice mills) are significantly more likely to offer meals than firms in the other sectors. We also find significant sector effects for accommodation. This may be because of the correlation between provision of meals and accommodation. However, we find that firms in the minerals sector have the highest conditional probability of offering accommodation, so the correlation between the benefits is not the whole explanation. For the modern benefits, the conditional sector effects are statistically insignificant, as expected. In contrast, the state/region effects, given in Figure 2, are highly significant in all regressions. The regional effects in the equations indicates that the local labour markets are only loosely connected, although it may also be an indication of significant omitted firm attributes that are picked up by the state/region factors.

Figure 1: The probability of benefit provision across production sectors



Source: authors' calculations based on MSME 2019.

Figure 2: The probability of benefit provision across states and regions



Source: authors' calculations based on MSME 2019.

3.2 Employee characteristics

Our information about the employees is listed in Table 8, which is structured in the same way as the firm information in Table 5. As seen, the sex of the worker is associated with receiving benefits, and this is so in a non-trivial way, as male employees more often receive the traditional benefits while female employees more often receive the modern benefits. Hence, the benefits may be supporting the segregation of the labour markets in Myanmar, which are fairly significantly segregated, as documented by Hansen et al. (2020a).

Table 8: Summary statistics: employee characteristics

	Meals	Accomm.	Any traditional	Comp.	PWA	Any modern
Male	33.9*	33.0	43.1	22.0*	18.2*	28.3*
Female	30.2*	30.3	40.6	29.2*	27.7*	37.6*
Family member	59.3*	52.8*	62.1*	18.5*	13.8*	23.2*
Not family member	28.1*	28.6*	38.8*	25.5*	22.8*	32.9*
Migrant	52.7*	60.4*	70.6*	33.1*	42.1*	47.6*
Not Migrant	26.4*	23.2*	33.4*	21.8*	15.1*	26.5*
Married	26.6*	25.7*	36.7*	24.7	20.1*	31.1
Unmarried	41.2*	41.1*	50.0*	24.1	23.4*	32.1
No education	29.9*	32.1*	40.9*	18.2*	14.6*	23.2*
Primary school	29.7*	31.3*	39.2*	23.3*	18.1*	29.7*
Middle school	33.8*	30.4*	41.3*	24.4*	21.7*	31.4*
High school	35.9*	36.8*	48.4*	27.8*	25.9*	35.1*
College/bachelor	48.5*	37.8*	60.7*	41.5*	54.1*	57.8*
Other	43.2*	40.5*	51.4*	37.8*	32.4*	48.6*

Note: asterisks indicate statistically significant differences between overall frequencies and the group frequencies for each benefit category.

Source: authors' calculations based on MSME 2019.

Next, in alignment with the firm results, family members are much more likely to receive the traditional benefits and less likely to receive the modern benefits. The firm result for migrants also applies—in fact, a migrant is more likely to be the recipient of a traditional benefit than is a family member.

For the traditional benefits there is also a significant split between married and unmarried workers, as the latter are much more frequent recipients of these benefits. For the modern benefits, we record a small difference in receiving payment-when-absent, but no differences in the other modern benefits.

The worker's education level is also associated with both traditional and modern benefits. For both types of benefits there is a general tendency in the sense that higher education is associated with a higher frequency of receiving benefits. This tendency is pronounced for the modern benefits and less so for the traditional benefits. This illustrates how both the traditional and the modern benefits are probably used as payment schemes aimed at attracting workers with certain attributes.

More specific worker profiles emerge from Table 9, in which we show the odds ratios from the worker logit regressions. Based on regression (1) in the table we can now give a reasonably clear description of the employee who receives meals as part of his benefit package. We write 'he' on purpose because the odds show that men are twice as likely to get this benefit compared to women, and there are twice as many men as women in the labour force. Family members (of both sexes) also have very high odds, almost by construction, so it is more interesting to profile the non-family members. A worker profile with a very high probability of receiving meals is an unmarried male migrant working in the food sector, probably in a firm with at least five employees. The odds are slightly higher if he is working for a female owner who has above-average managerial capabilities. Being a migrant, he is probably working in Yangon, and this increases the odds even more.

Table 9: Conditional associations with firm, owner, and worker characteristics

	(1) Meals	(2) Accomm.	(3) Any traditional	(4) Comp.	(5) PWA	(6) Any modern
<i>Worker characteristics</i>						
Female	0.49*** (0.05)	0.51*** (0.05)	0.55*** (0.05)	0.99 (0.11)	1.25* (0.16)	1.03 (0.11)
Family member	3.67*** (0.47)	3.51*** (0.46)	3.04*** (0.39)	1.36* (0.22)	2.16*** (0.42)	1.51*** (0.23)
Female x family	1.92*** (0.41)	2.31*** (0.48)	1.74*** (0.36)	1.03 (0.27)	0.55* (0.19)	0.80 (0.20)
Migrant	1.80*** (0.17)	4.08*** (0.40)	2.75*** (0.26)	0.66*** (0.08)	1.15 (0.15)	0.89 (0.11)
Married	0.52*** (0.04)	0.48*** (0.04)	0.59*** (0.04)	1.13 (0.10)	0.98 (0.10)	1.08 (0.09)
Primary school	1.07 (0.13)	0.94 (0.11)	0.97 (0.11)	1.20 (0.16)	1.19 (0.20)	1.28* (0.17)
Middle school	1.17 (0.15)	0.77** (0.10)	0.92 (0.11)	0.97 (0.14)	0.98 (0.18)	1.00 (0.14)
High school	0.97 (0.16)	0.86 (0.14)	0.96 (0.15)	1.05 (0.20)	1.07 (0.25)	1.09 (0.21)
College/bachelor	1.49** (0.27)	0.90 (0.17)	1.24 (0.22)	1.07 (0.22)	2.29*** (0.58)	1.62** (0.36)
Other	1.63 (0.64)	1.29 (0.51)	1.37 (0.53)	1.33 (0.56)	1.39 (0.70)	1.62 (0.69)
<i>Firm and owner characteristics</i>						
Informal	1.05 (0.15)	0.74** (0.11)	0.86 (0.12)	0.37*** (0.07)	0.53*** (0.12)	0.41*** (0.07)
Micro (5–9)	1.45*** (0.20)	1.57*** (0.22)	1.44*** (0.19)	0.64*** (0.11)	0.98 (0.21)	0.81 (0.13)
Small (10–49)	1.55** (0.33)	2.10*** (0.44)	1.65** (0.33)	0.58** (0.14)	1.47 (0.44)	0.88 (0.21)
Medium (50–600)	2.04** (0.71)	2.46** (0.87)	2.03** (0.69)	0.52* (0.19)	2.88** (1.31)	0.72 (0.29)
Employment (log)	0.56*** (0.10)	0.88 (0.16)	0.60*** (0.10)	1.72** (0.38)	0.81 (0.22)	0.96 (0.21)
Employment (log), sq.	1.06** (0.03)	0.99 (0.03)	1.08*** (0.03)	0.98 (0.03)	1.07 (0.05)	1.10** (0.04)
Age of firm	0.99*** (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Avg. monthly wage (log)	0.87 (0.08)	0.96 (0.09)	1.08 (0.09)	1.04 (0.10)	1.12 (0.13)	0.97 (0.09)
Female owner	1.28*** (0.10)	1.12 (0.09)	1.18** (0.09)	0.85* (0.08)	1.32** (0.15)	1.00 (0.09)
Managerial capacity	2.19*** (0.38)	1.05 (0.18)	1.65*** (0.27)	3.39*** (0.64)	4.75*** (1.09)	4.00*** (0.73)
Pseudo R^2	0.20	0.20	0.20	0.24	0.43	0.32
Observations	4,525	4,525	4,525	4,344	4,237	4,454

Note: odds ratios based on logit regressions with standard errors in parentheses. All regressions include sector fixed effects (eight sectors) and region/state fixed effects (14 regions/states). The base region is Yangon and the base sector is textiles, apparel, and leather. For the modern benefits the region/state fixed effects uniquely predict failures as seen from Table 6.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Source: authors' calculations based on MSME 2019.

The workers who receive accommodation have a slightly different profile. If he is an unmarried migrant the odds are even higher, but in comparison to the worker who receives meals, the odds increase if he has no education. Further, the odds are independent of whether or not the firm in which he is employed is owned/managed by a male or female person who has about average managerial capacity.⁷

For workers who receive modern benefits we record differences between compensation for accidents and payment-while-absent. First, the odds for receiving compensation are equal for male and female workers. But if the worker is a migrant, the odds that he gets compensation are low. For payment-while-absent the odds are a little higher for female than male workers (but this is only marginally significant). Hence, in general, we find very small gender differences for employees who receive modern benefits. For the level of education, we find no differences in compensation for accidents, while the odds for workers with a college or bachelor's degree are clearly in favour of receiving payment-while-absent.

When looking from the workers' perspective, firm characteristics change somewhat compared to the firm perspective in Table 7. Most notable is that high-capability managers increase the odds that workers receive modern benefits. Workers in firms with female owners are more likely to receive payment-while-absent, but less likely to receive compensation for accidents compared to their colleagues in male-owned enterprises. Finally, it should be no surprise that workers in formal firms are much more likely to get modern benefits compared to the workers in informal firms.

4 Benefits and outcomes

The observable firm and worker attributes show that the benefits are not supplied and demanded at random. This illustrates that firms may (to some extent) use the benefits to attract certain types of workers. But we have not shown whether the benefits are also used to retain workers, nor have we looked at whether the benefits are associated with higher or lower wages for the workers. We turn to these issues in this section.

Table 10 shows group means for three variables that we consider to be outcomes of the payment scheme and employer–employee sorting process. The first variable is the number of years of experience the employee has with wage work prior to the current employment (prior experience), the second is the number of years the worker has been employed in the firm (tenure), and the third is the monthly wage.

If the benefits are aimed at attracting either experienced or inexperienced workers, then the prior experience should be higher or lower, on average, for some of the benefit groups. As seen in Table 10, we find that employees who get traditional benefits and payment-while-absent have below-average experience (the overall average is 3.3 years), while workers who get other modern benefits are close to the average level. The average tenure for all workers in the sample is 6.1 years. This is also the average number of years for workers receiving traditional benefits. Employees who receive modern benefits have tenure about one year above the average. Hence, modern benefits may be indicators of pay schemes that are intended to keep workers in the firm. Finally, for wages we find no difference for workers who get the traditional benefits, but above-average wages for workers receiving the modern benefits, but these results are driven by other factors, as we show below.

⁷ There are 284 unmarried male migrants in our sample. Of these, 188 (66 per cent) receive meals, while 208 (73 per cent) receive accommodation. Adding the requirement that they must work in the food sector reduces the number of workers to 153, of which 109 (71 per cent) receive meals and 116 (75 per cent) receive accommodation. The latter shares are more than twice the overall averages.

Table 10: Summary statistics: worker outcomes

	Meals	Accomm.	Any traditional	Comp.	PWA	Any modern
Prior experience	2.4* (4.8)	2.4* (5.1)	2.7* (5.3)	3.4 (5.8)	2.6* (5.5)	3.2 (5.7)
Tenure	6.1 (6.1)	6.1 (6.2)	6.1 (6.1)	7.0* (5.9)	7.3* (5.9)	7.0* (5.9)
Monthly wage	171.5* (78.8)	174.5 (78.7)	178.4 (80.2)	196.2* (76.9)	205.1* (80.0)	196.3* (77.2)

Note: asterisks indicate statistically significant differences between the overall averages and the group average for each benefit category. The figures in parentheses below the means are the standard deviations. Experience and tenure as measured in years while the monthly wage is given in 1,000 Kyat.

Source: authors' calculations based on MSME 2019.

To analyse the conditional association between the benefits and the three outcomes, we formulate a small triangular regression system. Using Greek letters to denote parameters (conditional correlations), the system is formulated as

$$e_{jirs} = b_{jirs}\omega^e + \gamma_s^e + \alpha_r^e + x_{irs}\beta^e + z_{jirs}\delta^e + u_{jirs}^e \quad (3)$$

$$t_{jirs} = b_{jirs}\omega^t + \gamma_s^t + \alpha_r^t + x_{irs}\beta^t + z_{jirs}\delta^t + e_{jirs}\kappa^t + u_{jirs}^t \quad (4)$$

$$w_{jirs} = b_{jirs}\omega^w + \gamma_s^w + \alpha_r^w + x_{irs}\beta^w + z_{jirs}\delta^w + e_{jirs}\kappa^w + t_{jirs}\lambda_1^w + t_{jirs}^2\lambda_2^w + u_{jirs}^w \quad (5)$$

Equation (3) estimates the conditional correlation between prior experience (e_{jirs}) and the benefit (b_{jirs}) for employee j who is working in firm i , which is located in region/state r and producing goods in sector s . To get the partial effect, we condition on worker (z_{jirs}) and firm (x_{irs}) effects and on state and sector fixed effects. Next, Equation (4) estimates the conditional correlation between tenure (t_{jirs}) and the benefit (b_{jirs}) using a model in which we also condition on the worker's prior experience. Finally, Equation (5) is a wage equation in which we regress the log of the monthly wage (w_{jirs}) on the same benefit, the same firm and worker attributes, and on prior experience and tenure (including its square). The system is formulated such that the parameters in each equation can be estimated using ordinary least squares (OLS), and Equation (5) is a (highly saturated) wage regression that includes the standard human capital variables (education, experience, and tenure) in addition to sex and demographic information and sector and firm/owner controls.

The regressions show whether the benefits attract more or less experienced workers, if the workers stay longer, and if the benefits are (conditionally) linked to higher or lower wages for the workers. The full regression equations are given in Tables B1, B2, and B3 in Appendix B, while we report the estimated partial correlations in Table 11. In good accordance with the results in Table 9, accommodation attracts (or is associated with) less experienced workers. We get the same result for provision of payment-while-absent. The latter result could signal that young, educated workers (to some extent) are seeking employment in firms that signal modernity, in the form of professionalism and adherence to the new labour laws and regulations. The other types of benefits have no significant association with the workers' prior experience, neither statistically nor economically.

The results for tenure are also interesting as they show that payment-while-absent benefits are associated with workers who have more tenure—that is, they stay longer in the firm. This supports the hypothesis that this benefit attracts (and keeps) young, educated workers who are seeking employment in professionally run firms. It is in some sense equally interesting to note that provision of accommodation is *not* associated with higher tenure as this indicates that lodging at the employer is not a permanent state, unless the worker is part of the household.

Finally, turning to the wage level, we find no conditional correlation between the provision of modern benefits and the wage levels. This shows that the partial correlation, depicted in Table 10, can be explained by other factors such as human capital differences or simply by higher wage levels in the states and regions where provision of the modern benefits is more widespread.

Table 11: Benefits, worker experience, and wages

Dependent variable	(1) Meals	(2) Accomm.	(3) Any traditional	(4) Comp.	(5) PWA	(6) Any modern
Prior experience	-0.270 (0.177)	-0.452*** (0.171)	0.089 (0.173)	-0.007 (0.209)	-0.507** (0.235)	-0.124 (0.205)
Tenure	-0.043 (0.185)	0.286 (0.185)	0.110 (0.176)	0.207 (0.209)	0.742*** (0.265)	0.475** (0.207)
Wage (log)	-0.073*** (0.014)	-0.037** (0.014)	-0.029** (0.013)	0.023 (0.015)	0.028 (0.018)	0.020 (0.015)

Note: robust standard errors in parentheses. The full regressions are given in Tables B1, B2, and B3. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Source: authors' calculations based on MSME 2019.

The other change from the partial to the conditional correlations is that provision of traditional benefits is correlated with lower wage levels when we account for differences in human capital, firm factors, and sector and regional effects. Thus, meals and accommodation are both traditional and 'classical' in the sense that they are part of a Rosen (1974) type (hedonic) payment scheme, which is composed to attract certain types of workers who value the specific benefits to such an extent that they are willing to forego some monetary remuneration.

5 Conclusion

Myanmar is undergoing rapid transformation involving all parts of society, and since the general election in 2010 the Government of Myanmar has accelerated the reform process in several areas. A central part of the reform programme is a revision of the labour laws. As labour laws are one of the cornerstones of any country's social security system, due diligence is needed when reforms of these laws and regulations are planned and implemented.

The Government of Myanmar has collaborated with the ILO in the formulation of the new laws and the outcomes are the Social Security Law, the Leave and Holiday Rules, and the Minimum Wages Act and Rules. The new and revised laws and regulations have introduced new employer-provided benefits. With the new benefits, firms and wage workers in Myanmar now have two sets of benefit systems: (1) an unregulated traditional system in which firms offer their employees in-kind benefits such as meals and accommodation; and (2) a (modern) mandatory system in which firms must offer their employees payment schemes such as payment-while-absent (sick leave, maternity leave, and holiday payment) and pension savings.

We use a survey of matched employers and employees in Myanmar to identify firms and workers who supply and demand the two types of benefits. We show that about 50 per cent of the firms provide a traditional benefit and almost one-third offer both meals and accommodation. Modern benefits in the form of compensation for accidents in the workplace and payment-while-absent are offered by fewer firms (31 per cent). Compensation for accidents is the most widespread modern benefit. It is offered by about one-quarter of the firms. As about 60 per cent of the workers in our sample work in enterprises that are required by law to offer these modern benefits, it emerges that compliance rates are low and a natural next step would be to increase take-up of already-existing initiatives rather than introducing additional initiatives.

Our empirical analysis shows that accommodation is preferred by young, uneducated, unmarried workers, who are often migrants, and who, on average, get lower wages compared to similar workers who do not receive equal in-kind payments. Our analysis shows that large firms are more likely to offer the modern benefits and highly educated workers are more likely to demand them. In addition, workers who

get modern benefits tend to stay longer with the firm and the benefit appears not to have adverse impacts on their wage levels.

Thus, our findings indicate that both the traditional and modern benefits contribute to the sorting in the labour markets and, therefore, they must be taken into account when the labour laws are amended in the future. Specifically, it is important to ensure that enforcement of the mandatory benefit schemes will not erode the more informal provision of meals and accommodation, which especially benefits low-wage workers.

In the same vein, care must be taken when new minimum wage levels are set and implemented. If increased minimum wages are accompanied by reduced provision of in-kind benefits to low-wage workers, then there is a real risk that inequality in consumption will increase even though wage inequality decreases. The extent to which this has been the case in Myanmar in recent years should be an area of research in the future.

References

- Alpert, W.T., and S.A. Woodbury (eds) (2000). *Employee Benefits and Labor Markets in Canada and the United States*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. <https://doi.org/10.17848/9780880995511>
- Berkel, H., M. Cardona, H. Hansen, J. Rand, P.C. Rodriguez, N. Trifković, E. de Witte, H. Zille, K.S. Latt, and F. Tarp (2018). 'Myanmar Micro, Small, and Medium Enterprise Survey 2017'. Descriptive Report. Helsinki: UNU-WIDER.
- Brown, C., and J. Medoff (2003). 'Firm Age and Wages'. *Journal of Labor Economics*, 21(3): 677–97. <https://doi.org/10.1086/374963>
- Falco, P., H. Hansen, J. Rand, F. Tarp, and N. Trifković (2020). 'Business Practices and Productivity in the Myanmar Manufacturing Sector'. Unpublished Manuscript.
- Gerakos, J.J., C.D. Ittner, and F. Moers (2017). 'Compensation Objectives and Business Unit Pay Strategy'. *Journal of Management Accounting Research*, 30(2): 105–30. <https://doi.org/10.2308/jmar-51829>
- Gerhart, B., and G.T. Milkovich (1991). 'Employee Compensation: Research and Practice'. CAHRS Working Paper 91-35. Ithaca, NY: Cornell University, School of Industrial and Labor Relations, Center for Advanced Human Resource Studies.
- Hansen, H., J. Rand, F. Tarp, and N. Trifković (2021). 'On the Link Between Managerial Attributes and Firm Access to Formal Credit in Myanmar'. *European Journal of Development Research*. <https://doi.org/10.1057/s41287-020-00318-4>
- Hansen, H., J. Rand, and N.W. Win (2020a). 'The Gender Wage Gap in Myanmar: Adding Insult to Injury?'. DERG Working Paper 5. Copenhagen: University of Copenhagen. <https://doi.org/10.2139/ssrn.3740822>
- Hansen, H., B. Sørensen, S. McGill, B. Gibertini, N. Trifković, J. Rand, F. Tarp, S. Myint, T. Zaw, K.M. Moe, P.P. Tun, and M.H. Aung (2020b). 'Myanmar Micro, Small and Medium Enterprise Survey 2019'. Descriptive Report. Helsinki: UNU-WIDER.
- Hwang, H., D.T. Mortensen, and W.R. Reed (1998). 'Hedonic Wages and Labor Market Search'. *Journal of Labor Economics*, 16(4): 815–47. <https://doi.org/10.1086/209907>
- ILO (2017). *ILO Guide to the Myanmar Labour Law*. Yangon: ILO Liaison Officer for Myanmar.
- ILO (2018a). 'Myanmar Labour Law: FAQs for Employers'. Fact Sheet. Available at: www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-yangon/documents/publication/wcms_634853.pdf (accessed 11 February 2021).

- ILO (2018b). ‘Myanmar Labour Law: FAQs for Workers’. Fact Sheet. Available at: www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-yangon/documents/publication/wcms_634852.pdf (accessed 11 February 2021).
- Kurosaki, T. (2006). ‘Labor Contracts, Incentives, and Food Security in Rural Myanmar’. Discussion Paper 134. Tokyo: Hitotsubashi University, Institute of Economic Research.
- McKenzie, D., and C. Woodruff (2017). ‘Business Practices in Small Firms in Developing Countries’. *Management Science*, 63(9): 2967–81. <https://doi.org/10.1287/mnsc.2016.2492>
- Oyer, P. (2008). ‘Salary or Benefits?’. In S.W. Polachek and K. Tatsiramos (eds), *Work, Earnings and Other Aspects of the Employment Relation*. Bingley: Emerald Group Publishing Limited.
- Rand, J., and F. Tarp (2011). ‘Does Gender Influence the Provision of Fringe Benefits? Evidence from Vietnamese SMEs’. *Feminist Economics*, 17(1): 59–87. <https://doi.org/10.1080/13545701.2010.542003>
- Rosen, S. (1974). ‘Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition’. *Journal of Political Economy*, 82: 34–55. <https://doi.org/10.1086/260169>
- Rosen, S. (1986). ‘The Theory of Equalizing Differences’. In O. Ashenfelter and R. Layard (eds), *Handbook of Labor Economics*, volume 1. New York: Elsevier. [https://doi.org/10.1016/S1573-4463\(86\)01015-5](https://doi.org/10.1016/S1573-4463(86)01015-5)

Appendix A: Labour laws and regulations

The central labour laws for wages and benefits are the Leave and Holidays Act (1951), amended in 2006, and the Leave and Holiday Rules (2018) (LHA); the Social Security Law (2012) (SSL); the Minimum Wages Act (2013) and Rules (2013) and the notification on Minimum Wage No. 2/2015 (MWA); the Payment of Wages Act (2016) (PWA), and the Occupational Safety and Health Act (2019) (OSHA).⁸

The MWA (section 2) and the PWA (section 2) define wages to include overtime fees and bonuses paid based on performance or ethics and other benefits which can be regarded as income. But the laws explicitly exclude:

1. travel allowances;
2. work-related expenses;
3. social welfare allowances (social security benefits);
4. contributions by the employer according to any existing law;
5. lodging and meal allowances, charges for electricity, charges for water, and other taxes;
6. medical expenses and recreational expenses;
7. contribution upon dismissal or in accordance with sympathy (severance pay); and
8. pension and reward based on service years upon their retirement.

Apart from this explicit exclusion from wage remuneration, the traditional benefits (lodging, meals, and transport) are not regulated elsewhere, but several of the modern benefits are regulated in other labour laws.

Payment for holidays is stipulated in the LHA, which specifies that all workers earn ten days of paid leave per year after their first 12 months of work. Moreover, the LHA and the SSL prescribe that mothers are provided 14 weeks of maternity leave while fathers are entitled to 15 days of paternity leave. The employer must pay for the maternity/paternity leave unless the worker contributes to the Social Security Board scheme. All firms with at least five workers must register with the Social Security Township office of the Social Security Board and must pay regular contributions. Moreover, workers—both permanent and temporary—must be registered. Both the employers and workers must make contributions to the Social Security Fund. The contributions cover sickness, maternity, death, and work injury. The LHA and the SSL do not apply for family members in small family enterprises, but workers in these firms can register on a voluntary basis.

⁸ See ILO (2017, 2018a,b) for an overview of the labour laws in Myanmar.

Appendix B: supplementary tables

Table B1: Prior experience and benefits

	(1) Meals	(2) Accomm.	(3) Any traditional	(4) Comp.	(5) PWA	(6) Any modern
Benefit	-0.270 (0.177)	-0.452*** (0.171)	0.089 (0.173)	-0.007 (0.209)	-0.507** (0.235)	-0.124 (0.205)
Female	0.091 (0.215)	0.071 (0.215)	0.134 (0.216)	0.123 (0.213)	0.134 (0.213)	0.124 (0.213)
Family member	-0.351 (0.277)	-0.320 (0.274)	-0.443 (0.275)	-0.422 (0.268)	-0.385 (0.268)	-0.414 (0.268)
Female x family	-0.955** (0.437)	-0.914** (0.437)	-0.993** (0.438)	-0.984** (0.439)	-1.010** (0.440)	-0.988** (0.439)
Migrant	-0.090 (0.208)	0.009 (0.211)	-0.142 (0.208)	-0.123 (0.206)	-0.117 (0.205)	-0.125 (0.206)
Married	1.983*** (0.154)	1.955*** (0.153)	2.022*** (0.152)	2.013*** (0.152)	2.012*** (0.152)	2.014*** (0.152)
Primary school	-1.128*** (0.292)	-1.135*** (0.292)	-1.130*** (0.292)	-1.131*** (0.292)	-1.125*** (0.291)	-1.127*** (0.291)
Middle school	-1.774*** (0.302)	-1.801*** (0.302)	-1.779*** (0.302)	-1.781*** (0.302)	-1.783*** (0.302)	-1.781*** (0.302)
High school	-1.934*** (0.341)	-1.947*** (0.341)	-1.931*** (0.342)	-1.931*** (0.342)	-1.925*** (0.341)	-1.930*** (0.341)
College/bachelor	-1.076*** (0.397)	-1.115*** (0.397)	-1.103*** (0.398)	-1.098*** (0.397)	-1.044*** (0.396)	-1.089*** (0.397)
Other	-2.019*** (0.745)	-2.021*** (0.743)	-2.050*** (0.739)	-2.044*** (0.741)	-2.023*** (0.739)	-2.036*** (0.741)
Informal	-0.231 (0.333)	-0.255 (0.331)	-0.230 (0.333)	-0.233 (0.334)	-0.256 (0.334)	-0.246 (0.334)
Employment (log)	-0.128 (0.085)	-0.119 (0.085)	-0.124 (0.085)	-0.122 (0.086)	-0.095 (0.085)	-0.116 (0.085)
Age of firm	-0.009 (0.007)	-0.009 (0.007)	-0.009 (0.007)	-0.009 (0.007)	-0.009 (0.007)	-0.009 (0.007)
Female owner	-0.358** (0.169)	-0.361** (0.170)	-0.372** (0.170)	-0.370** (0.170)	-0.356** (0.170)	-0.369** (0.170)
Managerial capacity	0.146 (0.379)	0.115 (0.378)	0.107 (0.379)	0.116 (0.382)	0.202 (0.384)	0.142 (0.384)
R^2	0.137	0.138	0.137	0.137	0.138	0.137
Observations	4,525	4,525	4,525	4,525	4,525	4,525

Note: robust standard errors in parentheses. All regressions include sector fixed effects (eight sectors) and region/state fixed effects (14 regions/states). * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Source: authors' calculations based on MSME 2019.

Table B2: Tenure and benefits

	(1) Meals	(2) Accomm.	(3) Any traditional	(4) Comp.	(5) PWA	(6) Any modern
Benefit	-0.043 (0.185)	0.286 (0.185)	0.110 (0.176)	0.207 (0.209)	0.742*** (0.265)	0.475** (0.207)
Female	0.323 (0.200)	0.361* (0.200)	0.341* (0.199)	0.328* (0.199)	0.313 (0.198)	0.326 (0.199)
Family member	2.947*** (0.327)	2.872*** (0.325)	2.911*** (0.326)	2.927*** (0.323)	2.881*** (0.323)	2.903*** (0.323)
Female x family	0.055 (0.566)	0.008 (0.565)	0.039 (0.565)	0.052 (0.565)	0.091 (0.565)	0.068 (0.565)
Migrant	-0.346* (0.205)	-0.434** (0.210)	-0.375* (0.208)	-0.338 (0.206)	-0.359* (0.204)	-0.342* (0.205)
Married	1.930*** (0.160)	1.970*** (0.160)	1.946*** (0.160)	1.932*** (0.158)	1.934*** (0.158)	1.929*** (0.158)
Primary school	-0.305 (0.254)	-0.302 (0.254)	-0.304 (0.254)	-0.309 (0.254)	-0.312 (0.254)	-0.319 (0.254)
Middle school	-0.629** (0.269)	-0.615** (0.268)	-0.628** (0.269)	-0.628** (0.269)	-0.624** (0.269)	-0.628** (0.269)
High school	-0.669* (0.345)	-0.657* (0.344)	-0.668* (0.345)	-0.670* (0.344)	-0.675* (0.345)	-0.674* (0.344)
College/bachelor	-0.024 (0.404)	-0.015 (0.402)	-0.034 (0.403)	-0.031 (0.403)	-0.104 (0.403)	-0.061 (0.403)
Other	-1.763*** (0.657)	-1.780*** (0.651)	-1.774*** (0.653)	-1.774*** (0.657)	-1.796*** (0.663)	-1.797*** (0.655)
Prior experience	-0.035** (0.015)	-0.034** (0.015)	-0.035** (0.015)	-0.035** (0.015)	-0.034** (0.015)	-0.035** (0.015)
Informal	-0.117 (0.288)	-0.104 (0.288)	-0.115 (0.288)	-0.095 (0.289)	-0.083 (0.289)	-0.068 (0.289)
Employment (log)	0.497*** (0.089)	0.495*** (0.089)	0.495*** (0.089)	0.488*** (0.090)	0.457*** (0.091)	0.471*** (0.090)
Age of firm	0.135*** (0.009)	0.135*** (0.009)	0.135*** (0.009)	0.135*** (0.009)	0.135*** (0.009)	0.135*** (0.009)
Female owner	0.624*** (0.174)	0.617*** (0.174)	0.619*** (0.174)	0.626*** (0.174)	0.603*** (0.175)	0.621*** (0.174)
Managerial capacity	0.558 (0.364)	0.553 (0.362)	0.543 (0.363)	0.516 (0.363)	0.425 (0.364)	0.451 (0.363)
R^2	0.200	0.201	0.200	0.200	0.202	0.201
Observations	4,525	4,525	4,525	4,525	4,525	4,525

Note: robust standard errors in parentheses. All regressions include sector fixed effects (eight sectors) and region/state fixed effects (14 regions/states). * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Source: authors' calculations based on MSME 2019.

Table B3: Wages and benefits

	(1) Meals	(2) Accomm.	(3) Any traditional	(4) Comp.	(5) PWA	(6) Any modern
Benefit	-0.073*** (0.014)	-0.037** (0.014)	-0.029** (0.013)	0.023 (0.015)	0.028 (0.018)	0.020 (0.015)
Female	-0.242*** (0.014)	-0.237*** (0.014)	-0.237*** (0.014)	-0.233*** (0.014)	-0.234*** (0.014)	-0.233*** (0.014)
Family member	-0.117*** (0.026)	-0.128*** (0.026)	-0.130*** (0.026)	-0.137*** (0.026)	-0.138*** (0.026)	-0.137*** (0.026)
Female x family	0.105** (0.044)	0.104** (0.044)	0.101** (0.044)	0.098** (0.045)	0.100** (0.045)	0.099** (0.045)
Migrant	0.053*** (0.016)	0.055*** (0.017)	0.051*** (0.017)	0.046*** (0.016)	0.044*** (0.016)	0.045*** (0.016)
Married	0.058*** (0.013)	0.061*** (0.013)	0.063*** (0.013)	0.065*** (0.013)	0.066*** (0.013)	0.065*** (0.013)
Primary school	0.007 (0.018)	0.006 (0.018)	0.006 (0.018)	0.006 (0.018)	0.006 (0.018)	0.006 (0.018)
Middle school	0.018 (0.020)	0.014 (0.020)	0.016 (0.020)	0.016 (0.020)	0.016 (0.020)	0.016 (0.020)
High school	0.046* (0.026)	0.045* (0.026)	0.046* (0.026)	0.046* (0.026)	0.046* (0.026)	0.046* (0.026)
College/Bachelor	0.116*** (0.032)	0.109*** (0.032)	0.112*** (0.032)	0.110*** (0.032)	0.107*** (0.032)	0.109*** (0.032)
Other	-0.042 (0.056)	-0.049 (0.056)	-0.049 (0.057)	-0.051 (0.057)	-0.051 (0.057)	-0.052 (0.057)
Prior experience	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)
Tenure	0.014*** (0.002)	0.014*** (0.002)	0.014*** (0.002)	0.014*** (0.002)	0.014*** (0.002)	0.014*** (0.002)
Tenure, sq./100	-0.036*** (0.009)	-0.037*** (0.009)	-0.037*** (0.009)	-0.038*** (0.009)	-0.038*** (0.009)	-0.038*** (0.009)
Informal	-0.007 (0.025)	-0.010 (0.025)	-0.009 (0.025)	-0.005 (0.025)	-0.006 (0.025)	-0.006 (0.025)
Employment (log)	0.089*** (0.006)	0.091*** (0.006)	0.091*** (0.006)	0.090*** (0.006)	0.089*** (0.006)	0.089*** (0.006)
Age of firm	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)
Female owner	-0.011 (0.013)	-0.013 (0.013)	-0.013 (0.013)	-0.014 (0.013)	-0.015 (0.013)	-0.014 (0.013)
Managerial capacity	0.100*** (0.026)	0.091*** (0.026)	0.094*** (0.026)	0.087*** (0.026)	0.087*** (0.026)	0.087*** (0.026)
R^2	0.271	0.268	0.268	0.267	0.267	0.267
Observations	4,514	4,514	4,514	4,514	4,514	4,514

Note: robust standard errors in parentheses. All regressions include sector fixed effects (eight sectors) and region/state fixed effects (14 regions/states). * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Source: authors' calculations based on MSME 2019.