Assessing the role of the food MSMEs in providing employment for women and youth in Ethiopia

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Abstract

This paper analyzes the employment characteristics of food MSMEs, using survey data collected from 1686 food vendors in Addis Ababa and Butajira, Ethiopia. The data suggest that 74 percent of the enterprises were formal or had tax identification number. The average number of workers across enterprises was 2.3, which varies between 1.2 as in the case of street sellers and 5.3 as in the case of restaurants. Among enterprises with additional worker besides the owner, only about 32 percent of them had part-time workers. The share of youth in part-time and full-time employment was 43% and 28%, respectively. Adults especially women constituted the majority of both full-time and part-time workers. Over 53 percent of the enterprises were owned and operated by women, but the significant majority of them were one-person enterprises, suggesting that women owned enterprises are less likely to create additional jobs. In fact, results from the logistic regressions suggest that the odds of women owned enterprises employing anyone were between 0.53 to 0.62 times the odds of men owned enterprises. Only 17 percent of the enterprises had outstanding loans at the time of the survey. However, the relationship between loans uptake status and the number of workers was not strong. Results also indicate that the number of workers was positively and significantly associated with the size of enterprise revenue but the relationship with profitability was not strong, possibly because the size of profits per worker was quite low. To put this in perspective, the size of profits per worker (for example, for street sellers who are mostly self-employed and rarely take their wages into account during cost calculations) was less than the cost of a healthy diet. Overall, while the food MSMEs in the study sites may have the potential to deliver food at lower cost and contribute to gender and social inclusion through self-employment, the scope of food MSMEs, especially those run by women, to generate additional employment appears to be limited.

Keywords: Employment, gender, youth, food, MSMEs, Ethiopia

1. Introduction

Micro, Small and Medium Enterprises (MSMEs) employ more than two thirds of the global workforce and contribute significantly to GDP growth (UN, 2023). In the context of low- and middle-income countries (LMICs), review of recent studies suggest that MSMEs in the midstream of agrifood value chains facilitate foods to be locally available, accessible and increasingly affordable especially to low-income households (Demmler, 2020). MSMEs are important to overall food security, and to employment, farmers, and the environment (Reardon et al., 2021). MSMEs also help address idiosyncratic market failures, for example, through provisioning of complementary services such as input, credit, information and logistics to small-scale producers through informal arrangements (Liverpool-Tasie et al., 2020). Despite their importance, MSMEs in the midstream of agrifood value chains have been relatively neglected in the agricultural and development economics literature (Barrett et al., 2022), hence they are sometimes referred to as the "hidden middle" (Reardon, 2015; Reardon et al., 2021). However, the role that MSMEs can play to the achievement of the Sustainable Development Goals (SDGs) has been increasingly acknowledged in recent years, and June 27 has been designated by the United Nations General Assembly as MSME day to raise awareness of their contributions (UN, 2023).

Promoting MSMEs and active labor market programs (ALMPs), such as skills training, employment services, or entrepreneurship support, tend to be among the strategies that governments use to attempt to create jobs when faced with high unemployment, especially that of youth and women. A systematic review of youth-focused ALMPs conducted around the world finds that ALMPs significantly improve their employment and earnings prospects, particularly in LMICs (Puerto et al, 2022). For example, an intervention that combined personalized technical assistance with major capital infusion to food SMEs in Kenya resulted in the development of new products and an increased number of employees (Nakasone et al., 2024). In this regard, strategies that the government of Ethiopia put to use over the previous two decades include provision of cheap credit, training on production technologies, training on management and finance, land or working premise provision, one-stop service and clustering (Abebe, 2015), and more recently a youth revolving fund[1] (FNG, 2017). These support were intended to encourage the private sector enterprises to grow to the next larger size categories so that they can better contribute to jobs creation and to overall economic growth and transformation (FDRE, 2020). However, it is not always the case that those strategies would succeed or create sustainable job opportunities. For example, the government of Ethiopia recently acknowledged that its efforts in MSME development has produced little effect; for example, less than 3% of the supported enterprises grew to the next-larger-size category (FDRE, 2020: p.12). Poor policy design, inadequate skills training, lack of targeted financial support, and poor market linkages were reported as the main challenges that undermined the effectiveness of the support extended to MSMEs development.

Notwithstanding, on the one hand, some studies associate the ineffectiveness of the entrepreneurial support programs in Ethiopia to the lack of prioritization in resource distribution to innovative and competitive firms. That is, the support programs were accessible by all entrepreneurs without consideration for innovativeness and competitiveness, potentially resulting in firms to focus on their survival rather than taking risks to expand their operations (Biru et al., 2021; Biru, 2014). According to

[1] The Ethiopian Youth Revolving Fund was established under Proclamation no. 995/2017, with the overall objectives of- ensuring the participation and benefit of youth in economic activities; providing financial assistance for organized income generating activities conducted by youth; and assisting youth to employ their capabilities in creating job opportunities (FNG, 2017).

Biru (2014), focus of the government's support was on the startup phase and the support would be reduced when a firm grows into the next larger size category, leaving firms with little incentive for growth and possibly developing dependency on the support extended to startups. Relatedly, in the case of informal enterprises, a study that uses data from seven African countries finds that small informal firms have higher labor productivity than large informal firms (Amin and Islam, 2015). However, the aforementioned study notes that this does not necessarily mean small informal firms would progress to formality as they grow and narrow the formal–informal firm productivity gap that had been established in the literature. Part of the reason could be that, some entrepreneurs are in the business temporarily until they find alternative wage employment; while others, especially those involved in informal enterprises such as food vending, are in the business for survival since most of them tend to have limited formal education and a related lack of access to the formal employment sector (Raimundo et al., 2020; Ageba and Amha, 2006). Regardless of the motive or formality status, smaller firms would miss out on potential advantages from scale of operations. In addition, smaller firms would have limited access to financial capital from formal sources since financial systems in Ethiopia do not sufficiently cater to the needs of MSMEs (FDRE, 2020). Thus, MSMEs are more likely to face constraints related to access and use of various technologies including ICTs (Andaregie and Astatkie, 2021), energy efficient technologies (Hassen et al, 2018), and would remain more vulnerable to shocks, as was evidenced during the Covid 19 pandemic (Apedo-Amah et al., 2020).

On the other hand, citing evidence from Ethiopia and other countries in Africa, Kefale et al (2023) suggest that some of the job creation schemes failed or were less effective because they were used as political instruments to strengthen political dominance by expanding the support base for the ruling party without properly addressing the economic problems of the target beneficiaries. This seems to suggest that political participation would increase with employment. However, based on a field experiment that randomly assigns qualified women to jobs in large companies in Ethiopia, Aalen et al. (2024) suggest that employment could in fact be politically disempowering. Evidence in the literature on the relationships between employment and political participation is mixed (Aalen et al., 2024).

To fully understand the complexities and the successes and failures of MSMEs related policies and implementation requires a deeper political economy analyses which is beyond the scope of this study. Our review of various policy documents in Ethiopia found that the importance of MSMEs involved in food supply chains were given little attention (Mekonnen et al, 2023). In fact, according to a report by the Ethiopia Jobs Creation Commission, the new plan of action is to "revamp the current support to MSMEs" and gear the support towards those with "high-potential and high-growth" (FDRE, 2020:p.8), which appear to be of small tech companies. To what extent the new strategy would affect MSMEs involved in food supply chains remains to be seen. In this study, we try to draw potential policy lessons for job creation based on the lived experiences of food related MSMEs in Ethiopia. Specifically, we examine differences in employment by business characteristics such as gender of the business owner, type of food outlet, formality (registration status), size of revenue and profitability, supply challenges, and access to loans, infrastructure and technologies.

2. Data

The data used in this report originate from an in-person survey conducted with nearly 2,000 MSMEs in two Ethiopian woredas (districts): Woreda 8 in Kolfe Keranyo within Addis Ababa, and Butajira town of

the Central Ethiopia Regional State.[2] Within each district, a full listing of MSMEs selling food and food commodities to local consumers was conducted.[3] From these lists, MSMEs were randomly selected to be included in the sample, targeting 900 vendors in each district.

The survey took place between October and November 2023. The final number of MSMEs interviewed was 1,806. The number of eligible vendors in the survey site in Addis Ababa fell short of the target of 900. Instead, only 732 vendors were interviewed. This shortfall was compensated for by increasing the sample size in Butajira where the survey team completed 1,074 vendor interviews. Here, we exclude 120 businesses from the analysis because a) they are government owned outlets; b) cooperatives; or c) have more than 100 employees and could be considered as large enterprises. The final sample used in the analysis is formed of 1,686 outlets, unless stated otherwise.

The survey form included questions about staff, business infrastructure, products on sale, formalization, entrepreneurial and business management skills, profits, access, and use of financial services.

The target respondent was the most knowledgeable person present at the time of the interview. In more than 85 % of the cases, the respondent was the owner of the outlet.

3. Descriptive results

3.1. Basic descriptive statistics of enterprises and managers

Tables 1 and 2 present basic characteristic of enterprises and their managers across study sites. According to Table 1, all female managers and 85 percent of male managers were also owners. The average age of managers in the sample was 34 years, and about 11 percent of managers did not attend any education and only a comparable percent of them attended post-secondary education. In general, male managers attended slightly more years of education and have been in the current business a little longer than their female counterparts. The level of education attained by managers/owners in general was quite low, only corroborating earlier research that small enterprises are dominated by those with limited prospects for wage employment besides unskilled wage labor (Raimundo et al., 2020). This signals capacity limitations that most of the enterprises may have for innovation and growth. About 74 percent of enterprises had tax identification number (TIN). The share of male-managed enterprises with TIN was statistically significantly higher than those managed by female counterparts. Also, on average, male-managed businesses were in operation for more years than female-managed enterprises, but close to 50 percent of enterprises were in operation for two years or less. This shows that the majority of the enterprises were relatively new and have not yet passed the risk of dropout stage, which according to Woldehanna et al (2018), was estimated between two to four business operation years in urban Ethiopia. In total, only about 6 percent of the enterprises had a written contract with employees, and the majority (64 percent) of all enterprises did not have any paid employees.

Table 1. Basic characteristics of the enterprises and managers by sex

	Female	Male	Total
Manager is owner (%)*	100	85.2	93.1

[2] These sites were chosen as part of the Seqota Declaration list of targeted sites and were safe for travel at the time of the survey.

[3] We did not consider mobile street vendors or food vendors that only sold cereal-based foods (e.g., bakeries).

Manager's age (years)*	33.7	34.7	34.2
*Education status (%):**			
No education	17.2	2.9	10.5
Primary (1-8 years)	43.5	42.3	42.9
Secondary (9-12)	29.8	41.8	35.4
Post secondary	9.5	13.1	11.2
Experience in the business (%)*:**			
<=3years	57.4	51.8	54.8
4-6 years	21.2	20.7	21.0
above 6 years	21.4	27.5	24.2
Enterprise characteristics			
Registration status (TIN)*	63.81	86.42	74.38
*Years in operation:**			
Less than a year	21.38	16.5	19.1
1-2 years	30.85	28.68	29.83
3-4 years	18.37	22.34	20.23
5-9 years	20.49	19.42	19.99
10 or more years	8.91	13.07	10.85
Business has written contract with employees			
No	25.84	34.14	29.72
Yes	3.12	10.28	6.47
The business does not have any paid employees	71.05	55.58	63.82
Observations	898	788	1,686

* The mean difference by gender of the manager was statistically significant at $p<0.05$.

The food MSMEs in the sample vary by their business activities, type of food commodities they sale, and their place of operations, among others.[4] For example, some enterprises were involved simply with retail of a single food item (e.g. butcher shop) or a mix of food items (e.g. kiosk/small shop) whereas other enterprises added value (such as food processing) before they sale. Those in the latter group includes restaurants and juice shops. To facilitate data analysis and presentation, various food outlets were organized into four main categories as presented in Table 2. Over 68 percent of food outlets were small retail shops. Restaurants and street vendors were the next most prevalent types of food outlets, even though their corresponding shares between the two study sites were slightly different.

Table 2: Type of food vendors across study sites

	Addis Ababa		Butajira		Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Kiosk/small shops	328	49.0	822	80.9	1,150	68.2
Street seller	180	26.9	41	4.0	221	13.1
Restaurant	118	17.6	147	14.5	265	15.7
Juice shop	44	6.6	6	0.6	50	3.0

[4] The types of enterprises include immobile street seller (table top), street food/ food stall/ Arkebe house, kiosk, supermarket/small shop, juice house, milk and dairy products shop (and/or fish/chicken store), restaurant/hotel, butcher, butcher and restaurant, and other type of outlets with multiple services.

Observations	670	100	1,016	100	1,686	100

3.2. Employment by vendor type and registration status

Table 3 indicates the average number of workers by type of food outlet across study sites, gender of the enterprise manager, and tax registration status (TIN). The data suggest that over 45 percent of the enterprises were one-person enterprises and the majority of them (about 65%) were female owned and operated, suggesting that women owned enterprises are less likely to create additional jobs. Among food outlets, restaurants had the largest number of workers, 5 workers on average, which is more than twice the size of the average number of workers in each of the remaining food enterprises. In general, enterprises in Butajira had slightly higher number of workers than those in Addis Ababa and the difference in means were statistically significant for restaurants and street sellers. Similarly, enterprises other than juice shops with male managers had slightly more workers than that of enterprises managed by female counterparts. In terms of registration status or formality, enterprises with tax identification number had more number of workers than those without TIN, on average.

Table 3. Average number of workers by vendor type, location, sex of the manager and registration status

	Addis Ababa	Butajira	Male manager	Female manager	No TIN	Tin	One-person[1]	Total
Street seller	1.1	1.4*	1.7*	1.1	1.1	1.6*	0.86	1.2
Kiosk/small shops	1.7	1.8	1.9*	1.7	1.7	1.8	0.45	1.8
Juice shop	2	2.2	2.2	1.6	1.2	2.3*	0.48	2
Restaurant	3.4	6.8*	8*	2.8	2.2	5.7*	0.08	5.3
Total average	1.9	2.5*	2.9*	1.7	1.5	2.5*	0.45	2.3

* The difference in means by location, gender of the manager, or TIN were statistically significant at $p<0.05$.

[1] Indicates fraction of one-person enterprises.

In general, the average number of workers was 2.3, suggesting that each enterprise created employment to only 1.3 persons besides the owner/manager. When one-person enterprises were excluded from the analysis, the average number of workers including the owner was 3.3. In those enterprises, the majority of the workers, including the owner, were full-time workers (Figure 1); and the share of part-time workers was relatively small and varies between 11 percent (as in the case of restaurants) and 41 percent (as in the case of kiosk/small shops). In general, only about 32 percent of those enterprises had part-time workers. Closely examining the data reveals that adults especially women constituted the majority of both full-time and part-time workers (Table 4). Among youth (ages up to 24 years old)[5], the share of those involved in part-time work (i.e. 43 percent) was higher than those involved in full-time work (28 percent). Further, the share of full- time workers involved in formal Kiosk/small shops and street sellers with TIN was higher than those enterprises without TIN; and, the share of youth among full-time workers involved in juice shops with TIN was higher than those without TIN (Table 5).

[5] The total number of workers less than 15 years of age was 76. Nine of them were involved in full time job and the remaining in part-time job. Since this number is very small for analysis separately from other age groups and across enterprises, they were included in the youth group (ages 15 to 24).

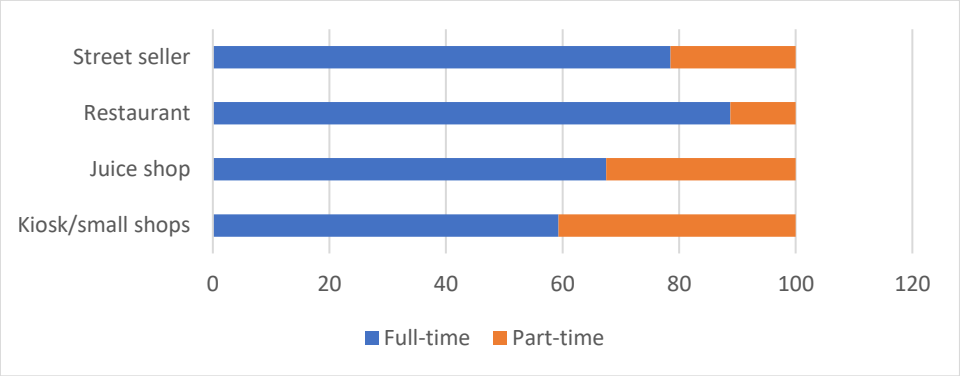


Figure 1. Share of full-time and part-time workers by outlet type, (%)

Table 4. Full-time and part-time workers by outlet type (n=930)

	Share of women full-time (%)	Share of men full-time (%)	Share of youth full-time (%)	Share of adult part-time (%)	Share of youth part-time (%)
Street seller	50[*,]	29	21	53	47
Kiosk/small shops	45[*,*]	31	23	58[+]	42
Juice shop	18	34	47[*]	55	45
Restaurant	44[*]	17	39	51	49
Total	44	28	28	57[+]	43

[*,*] The difference in means between women and men, and between women and youth full-time workers were statistically significant at p<0.05. [+]The difference in means between adult and youth part-time workers was statistically significant at p<0.05.

Table 5. Share of full-time workers by registration status and sex of the manager (n=930)

	Total full-time share		Youth share among full-time workers		Youth share among full-time workers	
	Formal (TIN)	Informal (No TIN)	Formal	Informal	Male manager	Female manager
Street seller	86[*]	54	29	10	32	10
Kiosk/small shops	61[*]	50	23	23	27[*]	19
Juice shop	81	50	100[*]	43	52	30
Restaurant	90	83	45	38	38	41
Total	70[*]	56	28	28	30[*]	25

[*] The difference in means by TIN and sex of the manager were statistically significant at p<0.05.

3.3. Employment by revenue and profit status

Total revenue is an indicator that can be used to determine firm size and employment potential. In this study, last month's total revenue was calculated as the sum of self-reported profit and cost[6], and was used to classify enterprises, including those self-employed, into three firm size categories. As shown in Table 6, the average number of workers was higher for enterprises with larger revenue (i.e. revenue in ETB 5062- 63000/month). However, with higher revenue size, the shares of women and part-time workers are lower and the shares of youth and full-time workers are higher. In terms of profitability across enterprises, the shares of youth workers involved in kiosk/small shops and juice shops which were profitable were smaller than the corresponding shares in similar enterprises which were non-profitable (Table 7). It is worth noting that the available information on last month's revenues and profitability provide a snapshot in their operations, and hence may not accurately reflect the average performance of the enterprises over a longer period. Nonetheless, since the significant majority (over 82%) of the enterprises stated they were profitable, it would be more interesting to look at employment by size of profits per worker.

Table 6. Number of workers, and share of women and youth by size of last month's revenue

Revenue in ETB/month	No. of workers (mean)	Share, women	Share, youth	Share full-time	Share, part-time	Share, youth full-time	Share, youth part-time
Tercile 1 (up to 1700)	1.7	57	20.5	79.9	20.1	14.8	44.3
Tercile 2 (1750 - 5000)	1.7	44.9	26.3	80	20	21.5	41.2
Tercile 3 (5062- 63000)	3.4	31.3	30.8	85.6	14.4	28.5	42.6

Table 7. Share of women and youth workers by last month's profitability, %

	Share of women		Share of youth		Share youth part-time	
	Profitable	Not profitable	Profitable	Not profitable	Profitable	Not profitable
Street seller	76.4	84.2	12	6.1	47.6	0
Kiosk/small shops	40.6	38.2	23.8	29.1*	41.7	43.2
Juice shop	23.8	18.8	27.2	58.3*	55.6	0
Restaurant	40.8	39.2	41.1	43.1	48.7	50

* The difference in means was statistically significant at $p<0.05$.

According to Table 8, the total number of workers does not seem to increase with profitability of the enterprise. In fact, often small entrepreneurs do not take their wages into account when they calculate cost and profits, and the average profit per worker per month in general was 1991 Birr, and specifically for a street seller it was 1227 Birr. To put this in perspective, the cost of a healthy diet in Ethiopia for a single person in December 2022 was 59 Birr/day or 1770 Birr/month (Alemayehu et al., 2023).

The shares of women and youth workers are negatively correlated with the profit per worker, potentially suggesting that enterprises did not reinvest part of their profit to expand their current business. This could be because the size of the overall profit was not large enough to increase the scale of operations

[6] Note, since detailed data on various costs was not available, total cost in this case was approximated by the monthly rent the enterprise paid. In addition, since the reported cost and profits are likely measured with error, it is preferred to rely on profit and revenue categories than the actual average values. However, for reference, the mean values of total revenue and profits per worker are presented in the annex, Table A1.

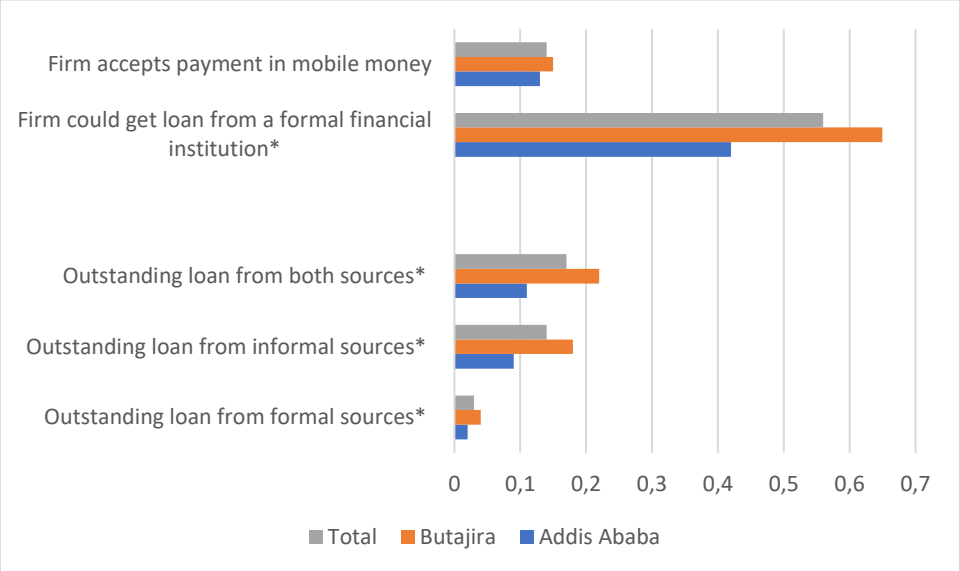
to make it worthy of additional workers. Other potential explanations include: part of the profit was spent on other consumption items, or it was saved or invested on capital goods; or because some of the entrepreneurs were in the business temporarily until they find another job and hence not planning to expanding their operations. Alternatively, it could be because MSMEs in Ethiopia avoid risks and continue to operate at smaller capacities (Biru et al., 2021; Biru, 2014), as enterprises involved in retail and service sectors are more prone to failure due to low barriers to entry and high levels of competition (Coleman et al., 2010). This can be examined further by looking at potential correlations between the number of workers and access to and use of loans and financial services, and whether the potential correlation differs by size of women and youth workers.

Table 8. Employment by last month's profits per worker terciles

Profits per worker/month in ETB	No. of workers (mean)	Share, women	Share, youth	Share full-time	Share, part-time	Share, youth full-time	Share, youth part-time
Tercile 1 (up to 500)	2.2	47.9	26.9	77.4	22.6	21.5	44.1
Tercile 2 (600 - 2000)	2.6	46.6	26.9	78.2	21.8	21.2	43.2
Tercile 3 (2058- 50000)	1.9	38.2	23	91.4	8.6	21.9	36.3

3.4. Employment and access to loans

In general, only 17 percent of the enterprises had outstanding loans at the time of the survey (Figure 2). The majority of these enterprises (over 82%) with outstanding loans obtained the loans from informal sources. The share of enterprises with outstanding loans in Butajira were twice that of the corresponding shares in Addis Ababa. However, the data suggest that, on average, enterprises with outstanding loans did not have a statistically significantly larger work force than those without outstanding loans, and the shares of youth and women workers between enterprises with and without outstanding loans were not statistically significantly different from one another (Table 9).



* The difference in means between study locations was statistically significant at p<0.05.

Figure 2. Source of loans and the share of enterprises with outstanding loans between study sites

Table 9. The number and type of workers by enterprise loan status

	Enterprises with outstanding loans	Enterprises without outstanding loans
Number of workers	2.43	2.21
Any youth (0/1)	0.44	0.40
Any woman (0/1)	0.61	0.65
Share of women	41.87	45.22
Share of youth	29.24	25.07

Interestingly, more than half of the enterprises stated that they could obtain loans from formal sources, suggesting that lack of availability and access to loans alone may not explain why the majority of enterprises did not operate at relatively larger capacities with more workers. However, the data also suggest that 40 percent of enterprises did not take out loans due to one of the following reasons: lack of collateral, the interest rate was too high, there is a lack of loan availability for their business type, and a lack of knowledge on how to obtain loan. These constraints were mentioned respectively by 55 percent, 38 percent, 13 percent, and 11 percent of enterprises that did not take out loans (Table 10).

Table 10. Constraints to access to loan, if no loans were taken, fraction

	n	Loans not available for my business type	Interest rate too high	Lack collateral	Don't know how to obtain loan
Street seller	129	0.38	0.4	0.5	0.08
Kiosk/small shops	426	0.05	0.39	0.57	0.12
Juice shop	24	0.13	0.46	0.5	0.13
Restaurant	99	0.14	0.26	0.55	0.09
Total	678	0.13	0.38	0.55	0.11

3.5. Supply challenges and employment

Factors that affect supply could affect the scale at which enterprises can operate, including the number and type of workers they would have. This is because, for example, loading and unloading of supplies could require physical fitness and hence younger and perhaps more part-time workers. Other activities such as food processing and customer care are traditionally handled by women and younger workers, respectively. Hence, if business operations were affected due to supply challenges, this could be reflected both in the number and type of enterprise workers. According to Table 11, high price/price rising was the main challenge that enterprises faced in sourcing the main three food items for their businesses, followed by variations in product quality (taste, texture, appearance, safety, etc) and seasonal availability. To examine how these supply challenges might be linked with the type and number of workers, we created dummy variables indicating whether the enterprise had any part-time workers or not, and whether the share of youth fulltime workers was above 50 percent or not; and whether the share of women fulltime workers was above 50 percent or not. Results, on average, suggest that there was no statistically significant difference in the prevalence of supply challenges among enterprises

compared by the presence of part-time workers, or the share of youth or women workers as defined above for the full sample, and in each of the two study sites when treated separately.

Table 11. Challenges in sourcing the top three food items by share of full-time youth and women workers, fraction

	Total	Has part-time workers		Youth share>50%		Women share>50%	
		No	Yes	No	Yes	No	Yes
For the first most important food item							
High price/price rising	0.82	0.85*	0.74	0.82	0.82	0.81	0.83
Variations in quality (taste, texture, appearance, safety, etc.)	0.19	0.17	0.23	0.18	0.23	0.18	0.20
Seasonally unavailable	0.14	0.14	0.19	0.13	0.14	0.14	0.14
Observations	707	500	207	534	173	330	377
For the 2nd most important food item							
High price/price rising	0.84	0.85	0.81	0.84	0.83	0.82	0.85
Variations in quality (taste, texture, appearance, safety, etc.)	0.16	0.16	0.16	0.17	0.13	0.16	0.16
Seasonally unavailable	0.11	0.12	0.09	0.11	0.09	0.1	0.11
Observations	588	413	175	451	137	262	326
For the third most important food item (n=478)							
High price/price rising	0.80	0.83	0.73	0.79	0.81	0.78	0.81
Variations in quality (taste, texture, appearance, safety, etc.)	0.18	0.17	0.19	0.18	0.17	0.17	0.18
Seasonally unavailable	0.10	0.11	0.08	0.1	0.11	0.12	0.09
Observations	445	298	147	322	123	213	232

* The difference in means was statistically significant at $p<0.05$.

3.6. Infrastructure challenges and employment

We examined if there were significant differences in infrastructure challenges faced by group of enterprises whose share of youth workers or women workers were above 50 percent, or between formal and informal enterprises. According to Table 12, lack of electricity was the most prevalent challenge in general, especially to those enterprises with TIN, but there was no statistically significant difference between enterprises whose share of workers was above 50 percent youth or above 50 percent women compared to those with the corresponding shares were below 50 percent. Lack of water was more prevalent among enterprises whose share of youth workers was above 50 percent compared to those with the share of youth workers was below 50 percent. When the data was further disaggregated by study locations, lack of water remains an important challenge among enterprises in Butajira whose share of workers was above 50 percent youth compared to those below 50 percent youth; and correspondingly of those enterprises with the share of women workers was above 50 percent than those with below 50 percent women workers. Furthermore, when data was disaggregated by type of enterprise across study sites, lack of electricity and lack of water were significantly more important challenges to each type of enterprise in Addis Ababa than that of Butajira (Table 13).

Table 12. Infrastructure challenges by share of youth and women workers, fraction

	Total	Has TIN		Has part-time workers		Youth share>50%		Women share>50%	
		No	Yes	No	Yes	No	Yes	No	Yes
Lack of electricity	0.47	0.41	0.49*	0.48	0.45	0.46	0.49	0.48	0.46
Lack of water	0.28	0.27	0.28	0.31	0.21*	0.25	0.36*	0.29	0.26
Run out of cold storage	0.27	0.19	0.27	0.27	0.27	0.25	0.3	0.28	0.26

* The difference in means was statistically significant at p<0.05.

Table 13. Infrastructure challenges by type of enterprise across study sites, fraction

	Street seller		Kiosk/small shops		Juice shop		Restaurant	
	AA	But	AA	But	AA	But	AA	But
Lack of electricity	0.53*	0.34	0.63*	0.34	0.50*	0.00	0.75*	0.52
Lack of water	0.39*	0.17	0.36*	0.13	0.45*	0.00	0.81*	0.34
Run out of cold storage	0.25	1.00	0.25	0.31	0.10	0.00	0.16	0.24

* The difference in means was statistically significant at p<0.05. AA and But denote Addis Ababa and Butajira, respectively

4. Multivariate analysis

Results of the descriptive analyses in the preceding section show that, on average: women owned enterprises were mainly self-employed or created very little jobs; the number of workers increased with revenue but not with profitability; and the number of workers did not increase with loans uptake (or having had outstanding loans), among others. In this section, we check whether some of these correlations hold in a multivariate context, after controlling for indicator variables for different outlet types, location of the enterprise, and age and education status of the enterprise manager. Key variables of interest are the gender of the enterprise owner, revenue, profitability, and loans uptake status of the enterprise. We fit ordinary least squares (OLS) or logistic regressions depending on the indicator variable for employment being continuous (i.e. number of workers) or binary outcome (i.e. having any employee or not besides the owner), respectively. Results are presented in Table 14.

There is a negative and statistically significant relationship between employment and women enterprise ownership in all of the specifications (Table 14). For example, results of the logistic regressions (Columns 1, 3, 5, 7, 9) suggest that the odds of women owned enterprises employing anyone are between 0.53 to 0.62 times the odds of men owned enterprises. Put differently, results suggest that women owned enterprises are 38 to 47 percent less likely to employ anyone. Similarly, results of the OLS estimations (Columns 2,4,6,8) suggest that women owned enterprises employ between 0.82 to 1 person fewer workers than men owned enterprises. Since the average number of workers in general is very small (only 2.3), the results suggest that women owned enterprises are less likely to create additional jobs compared to men owned enterprises.

Results also indicate that enterprises with the largest revenues (those in the highest revenue tercile) are more likely to create jobs than that of enterprises with the smallest revenues (columns 3 and 4).

However, there seems to be no strong relationship between enterprise profitability and employment in general (Columns 5 and 6). In fact, when disaggregated by profits per worker terciles, the odds of enterprises in the highest profits tercile employing anyone are 0.32 times the odds of those in the lowest profits tercile (Column 7); or enterprises in the highest profits tercile employ 0.49 less workers than those enterprises with the smallest profits category (Column 8).

Furthermore, there seems to be no strong relationship between loan uptake and employment in general (Columns 9 and 10). Among channels through which loan uptake could increase employment is through increased revenues and profitability resulting from increased scale of operations. However, the data suggest that enterprises with outstanding loans had an average of 668 ETB and 844 ETB lower revenues and profits, respectively than that of enterprises without outstanding loans. To examine this further, and having controlled for the same set of covariates described above, OLS results suggest that there were no statistically significant correlations between enterprise loans uptake status and revenues and profits per worker (see annex Table A2).

Looking at the covariates, results suggest that education status and experience (proxied by age) of the enterprise manager are positively associated with the likelihood the enterprise employing additional worker. Similarly, results suggest that enterprises including kiosk/small shops, restaurants, and juice shops are more likely to employ than street sellers, and enterprises in Addis Ababa are less likely to employ than those in Butajira. Overall, the key results are in agreement with those implied by the bivariate analyses presented above.

Table 14. Correlates of employment (Dep. variable: 1 if the enterprise has any employees, 0 otherwise; or the number of workers)

	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.	Odds Ratio	Coef.
	1	2	3	4	5	6	7	8	9	10
Female owned	0.59***	-1.01***	0.62***	-0.82***	0.59***	-1.00***	0.53***	-1.05***	0.59***	-1.00***
	(0.07)	(0.19)	(0.07)	(0.16)	(0.07)	(0.19)	(0.06)	(0.19)	(0.07)	(0.19)
Revenue in ETB[1] (Tercile 1, up to 1700, ref.)										
Tercile 2 (1750 – 5000)			0.92	-0.22***						
			(0.12)	(0.08)						
Tercile 3 (5062- 63000)			1.34	0.97***						
			(0.21)	(0.22)						
Profitable (0/1)					0.80	-0.08				
					(0.11)	(0.11)				
Profits/worker in ETB (Tercile 1, up to 500, ref.)										
Tercile 2 (600 – 2000)							0.79	0.13		
							(0.11)	(0.22)		
Tercile 3 (>2058)							0.32***	-0.49***		
							(0.05)	(0.14)		
Has outstanding loan (0/1)									0.79	0.00
									(0.12)	(0.26)
Age of manager	1.00	0.02**	1.01	0.03***	1.00	0.02**	1.00	0.02**	1.00	0.02**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Education status (*no education, ref.)*										
Primary (1-8 years) (0/1)	1.29	0.13	1.26	0.06	1.29	0.13	1.40	0.18	1.29	0.14
	(0.27)	(0.13)	(0.27)	(0.13)	(0.27)	(0.13)	(0.30)	(0.13)	(0.27)	(0.13)
Secondary (9-12) (0/1)	1.24	0.50	1.21**	0.40	1.24	0.50**	1.40	0.55**	1.25	0.51**
	(0.28)	(0.24)	(0.27)	(0.22)	(0.28)	(0.24)	(0.32)	(0.24)	(0.28)	(0.24)
Post secondary (0/1)	1.61	1.41	1.54***	1.22***	1.62	1.41***	1.95**	1.50***	1.66	1.42***
	(0.43)	(0.49)	(0.41)	(0.46)	(0.43)	(0.49)	(0.52)	(0.50)	(0.44)	(0.49)
Outlet type (Street seller, ref.)										

Kiosk/small shop (0/1)	5.03***	-0.40	4.70***	-0.63**	4.96***	-0.41	6.02***	-0.33	4.93***	-0.42
	(1.17)	(0.21)	(1.11)	(0.26)	(1.15)	(0.21)	(1.45)	(0.20)	(1.14)	(0.22)
Juice shop (0/1)	4.76***	0.10	4.17***	-0.35	4.83***	0.11	7.33***	0.29	4.66***	0.10
	(1.73)	(0.25)	(1.54)	(0.31)	(1.76)	(0.25)	(2.90)	(0.24)	(1.69)	(0.25)
Restaurant (0/1)	56.77***	3.27***	49.96***	2.78***	56.85***	3.27**	71.53***	3.30***	56.12***	3.26***
	(18.00)	(0.37)	(16.20)	(0.29)	(18.01)	(0.37)	(23.17)	(0.37)	(17.79)	(0.36)
Addis Ababa (0/1)	0.78**	-0.73***	0.70***	-1.03***	0.76**	-0.74***	0.94	-0.61***	0.76**	-0.74***
	(0.10)	(0.18)	(0.09)	(0.24)	(0.10)	(0.18)	(0.13)	(0.17)	(0.10)	(0.19)
_cons	0.23***	1.66***	0.23***	1.65***	0.28***	1.73***	0.29***	1.68***	0.25***	1.64***
	(0.09)	(0.38)	(0.09)	(0.39)	(0.11)	(0.39)	(0.11)	(0.38)	(0.09)	(0.37)
Observations	1,683	1,683	1,683	1,683	1,683	1,683	1,683	1,683	1,679	1,679
Log pseudolikelihood	-970.87		-967.35		-969.64		-936.88		-968.09	
Pseudo R2 or R2	0.16	0.17	0.16	0.18	0.16	0.17	0.19	0.17	0.16	0.17

Note: [1] ETB denotes the local currency. ** p < 0.01, * p < 0.05. Robust standard errors in parenthesis.

5. Conclusions

This study explores the potential of food related MSMEs to bring about employment for the marginalized population, especially women and youth, and contribute to food systems transformation in Ethiopia. The data suggest that over 53 percent of the enterprises were owned and operated by women, but the significant majority of them were one-person enterprises suggesting that most of women led enterprises were relatively smaller in size and did not create additional jobs besides for oneself. The negative relationship between employment and women owned enterprises was further confirmed with multivariate analyses that control for important covariates including the different outlet types, the location, and age and education status of the enterprise manager. Results suggest that the indicator variable for female owner was negative and statistically significant, suggesting that women-owned enterprises are less likely to employ.

When one-person enterprises were excluded from the analysis, the average number of workers was 3.3, suggesting that each enterprise created employment to 2.3 additional persons. Only about 32 percent of those enterprises had part-time workers, and adults especially women constituted the majority of both full-time and part-time workers. The share of youth workers was relatively small i.e. 28% among full time workers and 43% among part-time workers. Even though the share of youth part-time workers was higher than that of the share of youth full-time workers, this in absolute terms does not seem a lot since only 32 percent of enterprises had part-time workers.

By merely looking at enterprise ownership and worker characteristics, one may argue that food MSMEs in Ethiopia indeed contribute to social inclusivity goals, especially to that of gender equality and women and youth employment. However, the average size of revenue or profits per worker was quite low to provide decent and sustainable livelihoods for those involved in food retail. Even without accounting for inflation and budgetary needs for non-food expenditures, the cost of healthy diet during the survey period was already greater than the average profit of street sellers who are mostly one-person enterprises and are women owned. Further, due to low barriers to entry and high levels of competition, enterprises involved in retail and service sectors are more prone to failure (Coleman et al., 2010). This suggests that targeted supports to food MSMEs, especially to those run by women and less educated, could potentially be justified not just for gender and social inclusion goals, but also because they have

the potential to deliver foods at lower cost especially for lower income people, and are likely to remain in the business, given survival, since they have less opportunity in more formal wage sectors.

Clearly there is heterogeneity among enterprises. For example, enterprises that add value before retailing, such as restaurants and juice shops, tend to have more workers. Restaurants had more than twice of the number of workers of each of the other types of enterprises, but juice shops appear to be the most profitable. Nonetheless, the data seem to suggest that the number of workers does not increase with profitability of enterprises. Future studies should examine the reasons behind the lack of strong relationships between profitability and employment size. Other findings of the survey include:

- Close to 50 percent of enterprises were in operation for two years or less, suggesting that survival of these enterprises is unknown yet since the risk of failure for MSMEs in general is between two to four years, according to previous research in Ethiopia (Woldehanna et al, 2018). There is need for further study on the drivers of entry and exit of food MSMEs and their success factors.
- 74 percent of the MSMEs were formal enterprises (or had tax identification number), and formal enterprises had more workers than informal ones, on average.
- Only 17 percent of the enterprises had outstanding loans and the majority of them obtained the loans from informal sources. Lack of collateral, high interest rate, lack of loan availability for their business type, and lack of knowledge on how to obtain loan were some of the reasons mentioned by 40 percent of enterprises that did not take out loans. However, it seems that availability and access to loans alone may not explain why the majority of enterprises did not operate at relatively larger capacities with more workers. This is because more than half of the enterprises stated that they could obtain loans from formal sources, and yet they operate at smaller capacities and without taking out loans. In addition, having controlled for relevant covariates, results do not seem to show statistically significant correlations between loans uptake status and revenues and profits per worker of enterprises. Further research on the drivers of employment size and loans uptake from formal sources is warranted.
- High price/price rising was the main challenge that enterprises faced in sourcing the main three food items, followed by variations in product quality (taste, texture, appearance, safety, etc) and seasonal availability. However, these supply challenges did not seem to have affected the number and type of workers enterprises have. This is because there was no statistically significant difference in the prevalence of supply challenges among enterprises compared by the presence of part-time workers, or the share of youth or women workers.
- Lack of electricity was the most prevalent challenge in general, but there was no clear pattern linking it with the size and type of enterprise workers. However, lack of water was more prevalent among enterprises whose share of youth workers was above 50 percent compared to those with the share of youth workers was below 50 percent.

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7. Annex

Table A1: Total revenue and profits per worker of past month

	Total revenue		Profits per worker	
Type of outlet	Mean	Std. Dev.	Mean	Std. Dev.
Kiosk/small shops	5011	6962	2057	3669
Street seller	1955	4687	1227	2224
Restaurant	12495	15427	1747	2365
Juice shop	15390	16556	5125	6200
Total	6094	9656	1991	3493

Table A2: Correlations between loans uptake and past month's total revenue and profits per worker

Dependent variable	Log(Revenue)	Profits per worker
	Coef.	Coef.
Has outstanding loan (0/1)	-0.01	-315.87
	(0.07)	(166.91)
Female owned (0/1)	-0.56***	-762.31***
	(0.05)	(160.16)
Age of manager	-0.01***	-16.56*
	(0.00)	(7.02)
Education status (no education, ref.)		
	0.25**	360.53*
Primary (1-8 years) (0/1)	(0.09)	(166.97)
	0.47***	554.72**
Secondary (9-12) (0/1)	(0.10)	(197.91)
	0.69***	1173.52**
Post secondary (0/1)	(0.12)	(367.73)
Outlet type (Street seller, ref.)		
	0.97***	895.60***
Kiosk/small shop (0/1)	(0.10)	(201.22)
	1.67***	380.35
Restaurant (0/1)	(0.11)	(216.51)
	1.42***	2769.68***
Juice shop (0/1)	(0.17)	(699.45)
	0.80***	1236.94***
Addis Ababa (0/1)	(0.06)	(186.92)
	7.25***	1352.48**
_cons	(0.17)	(435.30)
	-0.01	-315.87

** $p < 0.01$, * $p < 0.05$. Robust standard errors in parenthesis.