



**EFFECTS OF COLLECTIVE ACTION ON
PERFORMANCE OF WOMEN-OWNED MANUFACTURING
ENTERPRISES IN SELECTED COUNTIES IN KENYA**

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Abstract:

Micro, Small, and Medium Enterprises (MSMEs) are imperative in boosting manufacturing in Kenya. Stakeholders including the government have advanced initiatives to promote MSMEs by providing affordable loans and developing policies to help them thrive. Despite these efforts, there is sluggishness in the way manufacturing enterprises owned by women perform. Collective action could be employed to reverse this situation considering that most women are good at networking. This study's objective is to determine the effect of collective action on the performance of women-owned manufacturing enterprises. The study uses the primary data collected by interviewing 55 women who owned enterprises. The women were selected through a simple random sampling technique and a structured questionnaire administered. This data was complemented by published data from government policy documents. Descriptive statistics, correlation, and regression analyses were done to establish the degree to which collective action influenced how women-owned manufacturing enterprises performed in Kenya. Spearman's Rank correlation analysis established that collective action was strongly and positively correlated with the performance of women-owned manufacturing enterprises. This was further investigated through regression analysis and it was found that collective action positively affected those enterprises' performance. The study recommends that women who own enterprises in the manufacturing sector should embrace networking through belonging to a group(s) or business organization(s) in order to improve the performance of their enterprises.

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1. Introduction

Collective action can enable women to mobilize themselves around common or shared concerns (Meinzen-Dick, Di Gregorio, & McCarthy, 2004), which in this case is owning manufacturing enterprises. Since collective action contributes to women's self-worth and self-confidence by offering access to spaces and networks, apart from family and kin, it is an important ingredient in owning and running a business, especially in manufacturing that needs a lot of skills in networking and sharing information. Lazo (1998) suggests that women's empowerment can be maximized through collective action. Collective action could be in the form of advocacy groups, for example, the Action for Sustainable Change (AFOSC) in Kenya. In 2018, AFOSC (2018) advocated for the advancement of local action to neutralize and relieve the negative effects of deforestation, drought, and insecurity by bringing together stakeholders from the national, county, and community levels. The same strategy can be used by women in manufacturing to advocate for starting and owning enterprises.

Collective action in the form of business associations in Kenya includes but is not limited to the Kenya Association of Manufacturers (KAM), Kenya National Chamber of Commerce and Industry (KNCCI), and Kenya Private Sector Alliance (KEPSA). They, among other things, lobby on behalf of their members, act as the link between industrialists/ business people and the government and also carry out high-level public-private dialogue (PPD). KAM for example, launched the Women in Manufacturing (WIM) Programme in 2017 to encourage women to participate in the industry. The programme's goal is to enhance the accessibility of the market by women's MSMEs in Kenya and provide an environment to help them to grow their enterprises, provide a platform for policy advocacy from the relevant institutions and also offer entrepreneurship development and management programs to equip women manufacturers hence making them competitive (KAM, 2017).

Another example of collective action is the establishment of cooperatives used in some instances by governments to reduce poverty, for example in Ethiopia (Baden, 2013). In 2005, Ethiopia had approximately 14,423 co-operatives. A considerable percentage of the members of the co-operatives were women who headed their households and who constituted 21 percent of all the households (Baden, 2013). Over 11,200 cooperative societies are registered in Kenya. They have over 6.1 million members and have massed savings worth more than KSh. 125 billion. These cooperatives have provided jobs to more than 300,000 people apart from creating avenues for self-employment. About 63 percent earn a living from cooperative enterprises (Republic of Kenya, 2007 and International Monetary Fund, 2007). Cooperatives owned and run by women have the potential to embolden women as they are powerful social inclusion, economic empowerment and political vehicles of their members (Lodiaga, 2020).

The government also promotes collective action through the registration of women groups who come together to run businesses such as milling maize; processing honey and making handcrafts among other projects (Wawire & Nafukho, 2010). Others are registered as women's organizations such as the National Council of Women of Kenya (NCWK), *Maendeleo ya Wanawake* and several Women's Groups spread all over the country. *Maendeleo ya Wanawake* and the NCWK may be termed as apex organizations for they affiliate with many other women's organizations. These organizations are expected to contribute to changing public policy, promote social welfare and improve the economic and physical status of the members (Ouko, 1985).

Evidence shows that collective action influences how small enterprises perform here in Kenya (Ng'ang'a, Onyango & Kerre, 2011; McCormick, 1999; Schmitz, 1995). Participation in collective action forms of enterprise can help women producers to access resources, network, access markets and conquer gender limitations hence improve their enterprises' performance (Jones, Wills & Smith, 2012). Social networking is another aspect of collective action that positively correlates with the performance of women-owned enterprises (Obiero, Njeru & Muriithi, 2018).

Social, gender, and cultural norms hinder the active involvement of women in mixed-gender groups and hence may not gain from the empowerment potential of the groups (Netsayi, Ted, Eliya, Tafadzwa & Paul, 2015). These societal norms in the groups may lead to biasness, hence hindering the capability of women to be empowered. It is, therefore, necessary for the inherent social-related issues resulting in gender [disparity](#) to be attended to (Netsayi et al., 2015), including the lack of awareness and in-depth information on the existence of such organizations. Sometimes membership fees and time-to-time contributions lead to many women being locked out of belonging to some of these organizations (Ouko, 1985). Furthermore, men's and women's interests often differ due to different responsibilities, rights, and resources. Therefore, women's involvement in collective action than men is tied to the above differences (Pandolfelli, Meizen-Dick and Dohrn, 2008).

According to past studies, it is of importance to note that collective action is more prevalent in the agricultural sector than it is in the manufacturing sector. This is because, at its inception, forms of collective action were prevalent in the agricultural sector (Zezeza, 1990). There are therefore more evidence of how collective action influences the performance of women in agriculture than in the manufacturing sector (Luis and Nuno, 2018), and yet this is a high-value sector in Kenya.

The paper notes that the MSMEs are imperative in boosting manufacturing in Kenya. Stakeholders including the government have therefore advanced initiatives to promote MSMEs owned by women through providing affordable loans (Women Enterprise Fund, Uwezo Fund, and Youth Fund), facilitating Access to Government Procurement Opportunities (AGPO), and developing policies to help them thrive. Despite these efforts, there is sluggishness in the performance of manufacturing enterprises owned by women. Considering that most women are good at networking, collective action could be employed to reverse the poor performance of women-owned

manufacturing enterprises. It is against this background, that this current paper sought to determine the effect of collective action on the performance of women-owned manufacturing enterprises. This paper is significant in that it provides much-needed information to policymakers as they review the Industrialization and other related policies for inclusivity and networking.

2. Literature Review

Jones et al. (2012) carried out research in Kenya, Tanzania, and Uganda. The focus was to bring together proof to show that by organizing in collective enterprises, women could participate in markets globally hence transforming them. The research noted considerable benefits though not universal, as sometimes male dominance saw women's income being confiscated by husbands and relatives leaving the women with almost nothing to reinvest into their enterprises so as to boost performance. Collective action was found to make it possible for women to access productive resources which improved their performance. The study found out that by working in teams, women producers realized economies of scale in purchasing their inputs, got solutions to the challenges affecting their production, and managed huge supplies. All of these attracted a lot of buyers to them.

Wambua (2013) conducted a study on how women are empowered through women's associations in Mwingi District, Kenya. A descriptive survey was employed where both qualitative and quantitative data were gathered by use of questionnaires and document analysis. The study targeted 20 women's groups which had a total of 500 members. Quantitative data analysis was carried out and the findings revealed that these organizations empowered women through resource mobilization from the group activities. This was in agreement with Jones et al. (2012) who investigated the advantages of collective forms of enterprise on women producers in seven countries on different continents. The results showed that the participation of women in forms of collective enterprises with linkages to Fair Trade markets helped them access markets, network, access resources and conquer gender norms. This then helped them so much in their growth and performance.

Obiero et al. (2018) did a study to find out the influence of social networks on how SMEs owned by women in Migori County performed. Applying descriptive survey design, 1400 women were sampled out of a population of 7,000 women owning SMEs, using stratified random sampling. Structured questionnaires were used for data collection. It was discovered that social network positively correlates with how SMEs owned by women perform.

Similarly, Mutonyi (2019) conducted a study on how smallholder income and asset holdings in Kenya can be affected by collective action. The purpose was to find out the effect of belonging to a farmer's group on smallholder welfare. The study assessed members and non-members who grow mangoes from eastern Kenya. The sample size was 600 households consisting of 400 non-participants and 200 participants. To collect

data, interviews were administered. Propensity score matching was used to approximate the average treatment effect of participation on smallholder welfare. The study found out that membership greatly boosts the total income and assets of households and leads to a reduction in poverty.

3. Material and Methods

This study embraced a descriptive research design to find out the effect of collective action on the performance of women-owned manufacturing enterprises. Cross-section data on collective action variables were collected from a sample of 68 respondents to determine the performance of these enterprises.

The following is the specified model:

$$\pi_i = \beta_0 + \sum_{j=1}^k \beta_j \Psi_{ji} + \varepsilon_i \quad (3.1)$$

Where:

π_i – the measure of performance for i^{th} woman-owned business.

Ψ_{ji} is j^{th} observed characteristics of the i^{th} women-owned enterprises.

This Ψ_{ji} was a vector of control variables and the variables of interest. The specific equation that was estimated from the specified model is as follows:

$$\pi = f(\text{Sz, EL, A, MS, CA, Ag, PR, CU, L, Ex, AB}) \quad (3.2)$$

$$\ln \pi = \beta_0 + \beta_1 \ln \text{Sz} + \beta_2 \text{EL} + \beta_3 \ln \text{A} + \beta_4 \text{MS} + \beta_5 \text{CA} + \beta_6 \text{Ag} + \beta_7 \text{PR} + \beta_8 \text{CU} + \beta_9 \text{L} + \beta_{10} \ln \text{Ex} + \beta_{11} \ln \text{AB} + \varepsilon \quad (3.3)$$

Where:

A is age of entrepreneur,

Sz is size of the business,

EL is education level,

Π is profit,

Ex is experience,

CU is credit utilization,

L is land,

MS is marital status,

CA is collective action,

AG is agency,

PR is access to productive resources,

AB is age of the business,

β_0 to β_{11} are coefficients.

The model was estimated in the log-linear form to derive elasticities for all variables except for the dummy variables.

The table that follows defines the variables and their measurements.

Table 1: Definition and Measurement of Variables

Variable	Definition	Measurement
Dependent Variable		
Profit (π)	Revenue minus costs. In this study, the monthly income was used as a proxy for profit because most of the respondents were not comfortable enough to share information about their profits.	Kenya shillings
Independent Variables		
Collective action (CA)	Business owner belongs to KAM or any other business organization/ group.	1 = belongs to KAM or any other business organization/ group, 0 = otherwise.
Agency (AG)	Business owner makes independent decisions.	1 = makes independent decisions, 2 = jointly, 3 = partner, 4 = others.
Access to productive resources (PR)	Business woman has access to productive resources	1 = access, 0 = otherwise.
	Level of access to productive resources	1 = easily, 2 = moderately, 3 = not very difficult, 4 = difficult, 5 = extremely difficult,
Size of the business (SZ)	Number of employees	number
Education level (EL)	Highest education level of the business woman	1 = primary, 2 = secondary, 3 = tertiary, 4 = university.
Age (A)	Age of the woman entrepreneur	years
Experience (Ex)	Number of years in business by the women entrepreneurs	years
Land (L)	Woman entrepreneur owns land	1 = owns land, 0 = otherwise
Credit utilization (CU)	Woman financed her business activities through loan	1 = utilized credit, 0 = otherwise in a year
Age of the business (AB)	Number of years the business has been operational	years

This study covered three counties in Kenya namely: Nairobi City County, Kisumu City County and Kakamega County. The population comprised of women-owned manufacturing enterprises from Nairobi City County, Kakamega County and Kisumu City County. The three counties were purposively selected due to the high population of women-owned enterprises. The technique that was used to identify 68 respondents was simple random sampling.

Data was gathered by means of structured questionnaires dispensed through interviews. Closed and open-ended questions were used to capture data for the variables under study. Administering them through interviews allows for probing and also allows data collection through observation. A pilot randomized trial was done in Kiambu County where data was collected from 15 women-owned manufacturing enterprises. Both descriptive and inferential statistical analyses were done using the STATA. In tackling the effect of collective action on the performance of women enterprises, a regression analysis was of essence. Heteroscedasticity and multicollinearity checks were carried out through the Breusch-Pagan test and the Variance Inflation Factor (VIF) respectively, to ascertain non-violation of Ordinary Least Squares (OLS), hence the validity of the model.

4. Results and Discussion

The following table shows the number of women respondents who own manufacturing enterprises in the three counties under study.

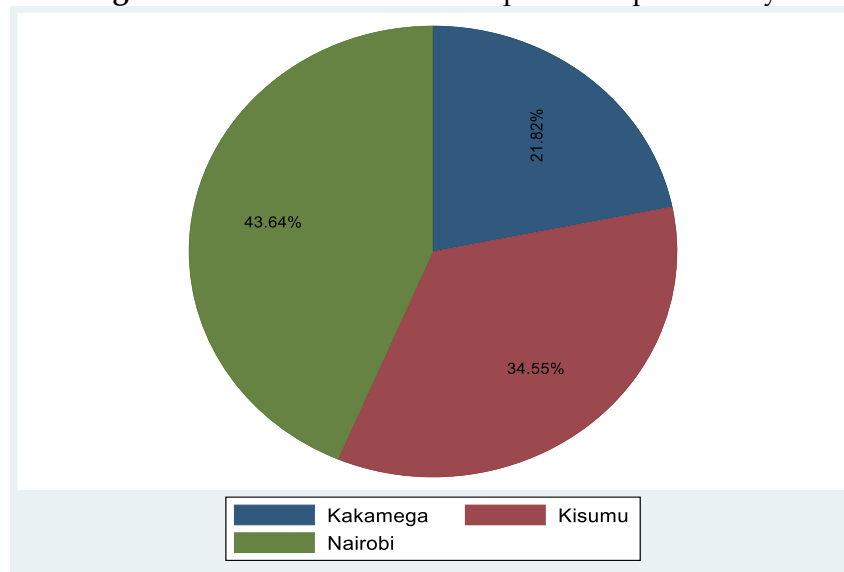
Table 2: Number of Women Respondents who own Manufacturing Enterprises per County

County	Frequency	Percentage
Kakamega	12	21.82
Kisumu	19	34.55
Nairobi	24	43.63
Total	55	100.00

Source: Own computation from the study data.

A total of 55 out of a sample of 68 women who own manufacturing enterprises were interviewed representing an 81 percent response rate. Kakamega County had 12 (21.82 percent) respondents which was the least number of respondents followed by Kisumu City County from which 19 respondents were interviewed. Out of all respondents under the study, 43.64 percent were from Nairobi City County as shown in the table above. This County had the highest number of respondents at 24 in number. This was envisaged because the County had more MSMEs than Kisumu and Kakamega Counties (Republic of Kenya, 2016). To see the true picture of the distribution of the respondents per county, the following pie chart is used.

Figure 1: Distribution of the Respondents per County



Source: Owner’s computation from the study data.

The majority of the respondents (43.64 percent) were from Nairobi followed by Kisumu which formed 34.55 percent of the total respondents and finally Kakamega County which produced 21.82 percent of the respondents. Nairobi City County had the highest number of respondents because it has the highest number of MSMEs among the three counties (Republic of Kenya, 2016).

4.1 Descriptive Statistics

Under this section, the collected data was described to indicate its behaviour and then presented in the form of charts and tables. The following table shows descriptive statistics for selected variables.

Table 3: Descriptive Statistics for Selected Variables

Variable	Observation	Mean	Std. Dev.	Min.	Max.
Age of woman entrepreneur (years)	54	45.1	12.5	22	79
Experience of woman entrepreneur (years)	55	8.24	6.67	1	42
Age of business (years)	50	6.56	4.5	1	20
Size of business (no. of employees)	47	10	20.77	1	5,000
Monthly income	52	113,528.8	116,537.9	1,000	500,000

Source: Owner’s computation from the study data.

The variables in the above table are important as they give some information concerning the woman owning the manufacturing enterprise and the enterprise itself. The mean age of the women respondents was 45 years. The minimum age was 22 years and the maximum age was 79 years. Those enterprises whose owners are between the age of 18-

35 are expected to perform well because this is a very active age group (Rono, 2009 and Mwathi, 2018).

Experience is very key as those with more experience in terms of the number of years in that kind of manufacturing business are expected to be efficient in their operations hence better performance of their enterprises (Anyango, 2015). Out of the 55 women respondents, most of them have an experience of 8 years in the businesses that they run which could indicate that women have recently started participating the manufacturing sector (Mugenyi et al., 2020). Although this is still not impressive, at least there is an effort towards solving the underrepresentation of women in this sector.

The business' age is the total period in terms of number of years that an enterprise has been operational. The mean age of the businesses is 6 years indicating that most of these enterprises have been in operation for less than 10 years. This result is similar to a study by Shibia and Barako (2017) which found out that the mean age of the businesses was 5.8 years. In addition, these results are the same as those reported in one of the Kenya Association of Manufacturers' reports: In Kenya, most women-owned enterprises are 10 years old or less, meaning women have been operational in the sector for not so long (KAM, 2020). The fact that the mean business age (6 years) was less than the mean number of years of experience (8 years) means that most enterprises closed down during their first initial years of operation (Mead and Liedholm, 1998). The mean age could also be an indication that most enterprises aren't handed over to successive generations (Mead and Liedholm, 1998).

The size of the business in terms of the number of employees gives an idea of whether the enterprise is a medium, small or micro-enterprise. The mean number of employees is 10 indicating that most of the enterprises are micro in nature. Out of all the licenced business establishments that were under survey, 99.3 percent were micro and small enterprises (Republic of Kenya, 2016).

Monthly income was used in the study as a proxy for profit. This is because one, most of the respondents were not comfortable enough to share that kind of information and two, most of them earned income right from their enterprises. The average income of the respondents was Ksh. 123,011. The maximum amount was Ksh. 500,000 while the minimum amount was Ksh. 1,000. The table below shows the distributions of the monthly income. Contrary to this finding, Rono (2009) found out that the majority of the respondents earned below Ksh. 100,000 because of the low education level which meant that the women lacked entrepreneurial skills. There is therefore an improvement as women in this study were found to be more educated and had control over their earnings.

The study also investigated the effect of other variables on the women-owned enterprise such as education level and marital status. The education level of the respondent could be either primary, secondary, tertiary or university. This is important to this study as it can explain the performance of a woman-owned enterprise to some extent as it tends to increase as the level of education increases (Kimuyu, 2001). This study's findings are shown in the table that follows.

Table 4: Education Level of the Respondents

Education Level	Frequency	Percentage
Primary	4	7.27
Secondary	4	7.27
Tertiary	20	36.36
University	27	49.09
Total	55	100.00

Source: Owner's Computation from the study data.

4 respondents had attained primary education even as an additional 4 other respondents had secondary education, each representing 7.27 percent of the total respondents under the study. 20 respondents (36.36 percent) had tertiary / college education while 49.09 percent which is the highest, represent respondents that had attained university education. This is in line with what Karadag (2017) found, that the higher the level of education of the respondent, the better the performance of their respective enterprises. These results contrast with those of Rono (2009) since the study discovered that the majority of the women (57 percent) had acquired secondary education. Shibia and Barako (2017) found out that the mean number of years of schooling of the respondents was 12.3 years indicating that most of them had only attained secondary education. Furthermore, Kimanzi (2016) found out that 125 out of 212 respondents representing 58.96 percent had only attained secondary education. This, therefore, shows that there has been an improvement in the literacy levels of women in Kenya. This means that these educated women have developed or rather acquired skills apart from the exposure that education gives someone. They are perceived to have critical thinking skills that are important when it comes to problem-solving and also effective communication skills which positively affect the profitability of their enterprises.

Marital status was thought to be one of the variables that affect the performance of women-owned enterprises. This argument is shared with Anyango (2015) and Rono (2009). A married entrepreneurial woman may not get the liberty to travel and spend a night(s) out for training or business meetings and also make independent decisions. The woman also has house chores and childcare to take care of and hence has limited time for her business (McCormick *et al.*, 2001). The marital status variable in this study was a categorical variable captured as married, divorced, single, separated, and widowed. The following table shows the results for marital status.

Table 5: Marital Status of the Respondents

Marital Status	Frequency	Percentage
Divorced	1	1.82
Married	25	45.45
Single	16	29.09
Separated	9	16.36
Widowed	4	7.27
Total	55	100.00

Source: Owner's Computation from the study data.

Most of the respondents were married (45.45 percent), 29.09 percent were single/ never married, 16.36 percent were separated and 7.27 percent were widowed. Out of the 55 respondents, only 1 was divorced representing 1.82 percent of the total respondents. The fact that the majority were married means that the performance of their enterprises will be affected negatively (Rono, 2009). In addition, the respondent who was divorced had lost so many assets as a result of the divorce and had to start all over again. This not only affected the performance of her enterprise but also had a toll on her emotionally.

4.1.1 Collective Action

Women who belong to collective forms of networking have the advantage of access to markets, networking, exposure, access to resources, and they are also empowered enough to conquer gender norms (Jones et al., 2012; Wambua, 2013 & Obiero et al., 2018). They also get access to information that helps them make better decisions (Baden, 2013). This variable was captured in terms of KAM or any other group/ organization's membership. The following table shows the results of collective action obtained from the survey.

Table 6: Membership of KAM or any other Group/ Organization

Response	Member of KAM		Member of other Groups/ Organizations	
	Frequency	Percentage	Frequency	Percentage
Yes	24	43.64	31	57.41
No	31	56.36	23	42.59
Total	55	100	54	100

Source: Owner's computation from the study data.

43.64 percent are members of the Kenya Association of Manufacturers (KAM) while 56.36 are not members of KAM. KAM among other things promotes investment, trade and innovation and also engages in policy advocacy with the relevant institutions and authorities. In trying to solve the problem of underrepresentation of women in the manufacturing sector, KAM unveiled the Women in Manufacturing Program in 2017 to facilitate market linkages, networking and mentorship and entrepreneurship development among women owning manufacturing enterprises in Kenya (KAM, 2017). Therefore, a woman entrepreneur who is a member is expected to perform better than the counterparts. Those who weren't members of KAM yet said that they either didn't know about KAM or had no information about the benefits of being a KAM member. In addition, the membership/ subscription fees were too high for them. Their non-membership is expected to influence their performance negatively.

57.41 percent of the women who own manufacturing enterprises belonged to other business organizations/ groups while 42.59 percent did not belong to any business organization/ group. Most of the respondents had multiple memberships. Some of the groups/ business organizations mentioned include KEPSA, Cereal Growers Association (CGA), Kenya Association of Women Business Owners, Chamas, KNCCI, Kisumu County Innovators Association and Women in Business. Those who belonged to other

groups or organizations are expected to perform better than those who did not belong to any organization due to available opportunities for networking and training, among others.

These results are similar to those of Jones et al. (2012) in that women believe belonging to a social or business network helps them in solving most of the production challenges. One of the respondents clearly stated how belonging to a business association has helped her to understand the other sex better, has increased her self-esteem, confidence, and her firmness in decision-making. She has been able to “go beyond the Islamic belief” that women are not supposed to talk where men are and has been able to seize every opportunity she gets to articulate herself and her ideas. This was found to be consistent with the results from a study by Jones et al. (2012) which showed that participation of women in forms of collective enterprises helped them access markets, network, access resources and conquer gender norms all of which resulted in their growth and performance.

4.2 Results of the Diagnostic Tests

Various diagnostic tests, Spearman’s Rank correlation and regression analyses were done. The diagnostic tests were performed to gauge the reliability of the estimating model. Spearman’s Rank correlation analysis was done to reveal the degree of association and course of the relationship between the dependent and the independent variables and to check whether the explanatory variables correlated with each other. Regression analysis on the other hand was meant to show the impact of the explanatory variables on the explained variable.

Spearman’s Rank correlation Analysis found the following variables to positively and strongly correlate with profit: number of employees, education level, control earnings from the business, member of KAM/ business organization/ group, land ownership, and experience.

The Variance Inflation Factor (VIF) is a multicollinearity test that measures how strongly correlated the independent variables are in a regression analysis. A VIF of 1 show that there is no multicollinearity, a VIF greater than 4 shows that there is potential multicollinearity and finally a VIF greater than 10 shows that there are signs of multicollinearity (Wooldridge, 2013). The findings of this test reveal a mean VIF of 3.38 indicating that there is no potential multicollinearity in the model.

To test for heteroscedasticity, the null hypothesis of no heteroskedasticity was tested via the Breusch-Pagan test. The probability associated with the F statistic was 0.8795. Therefore, the study failed to reject the null hypothesis that there is no heteroscedasticity and concluded that the variance of the error term is constant, *ceteris paribus*.

4.3 Regression Results

Regression analysis was carried out to capture the effects of collective action on the performance of women-owned manufacturing enterprises in selected counties in Kenya. The results of the log-linear model are presented in the table that follows.

Table 7: Regression Results

Dependent Variable: Log of Profit				
Variable	Coefficient	Std. Error	t-statistic	P-value
Log of No. of Employees	0.389***	0.129	3.01	0.006
Education Level	0.297**	0.125	2.37	0.027
Control Business Earnings	0.172**	0.061	2.82	0.015
Member of Group/ Business Org	0.605**	0.240	2.52	0.020
Level of Access	0.064	0.138	0.47	0.646
Loans/ Credit Utilization	-1.237**	0.512	-2.41	0.025
Land Ownership	0.625***	0.158	3.95	0.001
Property Ownership	-0.461***	0.128	-3.61	0.002
Log of Experience	0.556**	0.207	2.69	0.019
Constant	11.694***	1.099	10.63	0.000
Adjusted R-Squared	0.735		Prob(F-statistic)	0.0000

Note: ***, **, * implies that the coefficient is statistically significant at 1%, 5% and 10 % respectively.

Source: Owner's computation from the study data.

The study found that the R squared was 0.735 implying that 73.5 percent of the changes in the performance of women-owned manufacturing enterprises as measured by profit could be attributed to the combined effects of the explanatory variables. The p-value of the F statistic was found to be 0.000 indicating the overall significance of the model at 99 percent confidence interval.

From the results in Table 7 above, the size of the business (captured by the number of employees), education level, and control of the business earnings, membership of business organization / group, credit / loan utilization, land ownership, property ownership and experience had statistically significant coefficients implying that they had an effect on the performance of women-owned manufacturing enterprises. However, the level of access had a statistically insignificant coefficient. This means that the level of access to productive resources did not affect the performance of the manufacturing enterprises owned by women.

For the size of the business (captured as number of employees), the coefficient was 0.389, which was positive and statistically significant at the 1 percent level since the p-value was 0.006. This means, an increase in the number of employees by one percent would increase the profits by 38.9 percent, if the optimal number of employees has not yet been reached, all other things held constant. The implication is that more employees increase efficiency to some extent, such that more work is done in less time hence raising the profits. This result supports the findings of Rono (2009) who showed that if a woman entrepreneur employed more people, she would earn more profits. In addition, it could

also mean that the enterprises that are doing well can afford to employ more workers in order to expand.

The coefficient of education level (0.297) was positive and statistically significant as a 5 percent level with a p-value of 0.027. This means that the more a woman advanced in her education, the more she earned more profits from her enterprise. This could be explained by the fact that education brings exposure and helps one to have skills like communication and decision-making skills that if applied could make an enterprise perform better. This result is similar to that of Shibia & Barako (2017) who found out that a higher education level of a business owner positively affected the performance of the business. This is also in line with the theory of the growth of a firm (Penrose, 1959). However, this result is contrary to that of Kiriti *et al.* (2008) who found out that education level had no effect on the performance of women-owned businesses.

Control of business earnings was captured as independence in decision-making by the respondent. Its coefficient (0.172) was positive and statistically significant at the 5 percent level. This result showed that the more independent a woman entrepreneur is in decision-making, the more profits she earned. This was contrary to the study of Ojong and Moodley (2005) who found out that men, especially who were in joint business with their wives still expected all daily sales to be given to them or be deposited into their personal accounts leaving the woman with absolutely no control over the enterprise earnings. This definitely negatively affected the performance of those enterprises.

The coefficient of membership in a group or business organization was found to be positive and statistically significant at a 5 percent level. This means that belonging to a group or a business organization gave women an upper hand hence increasing their profits. The benefits of joining a group ranged from creating new networks, market linkages, entrepreneurship development, enjoying economies of scale when it comes to accessing productive resources, to boost the self-esteem and self-confidence of the women entrepreneur. Obiero *et al.* (2018) found out similar results and the conclusion was that social networks positively impacted the performance of women-owned SMEs.

The coefficient of the level of access to productive resources was positive but statistically insignificant. This means that the easier it was for the woman entrepreneur to access resources the more profits she earned. Lack of resources also hindered some women respondents from accessing loans since most resources act as collateral. Mugenyi *et al.* (2020) established that most women largely accessed resources through parentage or marriage. Mbogo (2017) established that most women-owned just about 1 percent of resources and had access to just about 10 percent of natural resources.

The coefficient of credit utilization was negative and statistically significant at 5 percent level. This means that those who took credit/ loans did not experience an increase in profits, instead profits went down. This is because many who took loans did not use the funds to expand their businesses but rather used them for other purposes like paying school fees for their children, spending on household needs, and settling medical bills among other things. This result was contrary to that of Kiriti *et al.* (2008), Oketch (1999), Obebo *et al.* (2018) and Macharia (2003) who found a positive relationship between credit

utilization and performance of enterprises. In their studies, the credit was used for the intended purpose of being capital for the business. The fact that the coefficient was negative could also mean that probably the interest rates for the loans were so high (Wawire, 2008), hence increasing the costs, such that most of the earnings could go into servicing the loans instead of being realized as profits. This then resulted in the reverse of what the loans were intended for.

For land ownership, its coefficient was positive and statistically significant at 1 percent level. This means that a woman who owned land and had her enterprise situated on it made more profits than her counterparts. These results were similar to those of Alene (2020) and Awoke (2019) who found that women who had their premises situated on their own land didn't have rent as part of their costs and hence made more profits. Therefore, this positively affected their performance.

The coefficient of ownership of other properties other than land was negative but statistically significant. This means that those women who owned properties earned less profits than their counterparts hence affecting business performance negatively. This is contrary to the general expectation that those women entrepreneurs owning properties would do much better than those who didn't have properties. It is therefore clear that those who owned these properties did not use the same for the benefit of their manufacturing enterprises.

The coefficient of experience in the manufacturing business (0.556) was positive and statistically significant at a 5 percent level. This meant that a 1 percent increase in the number of experiential years would increase the profits of an enterprise by 55.6 percent, *ceteris paribus*. The results corroborate the fact that the woman respondent had been doing the same thing for a long time, growing in the necessary skills hence increasing her efficiency. This would then lead to a positive effect on performance. This result was in line with those of Rono (2009) and Kiriti *et al.* (2008).

5. Recommendations

Business organizations should raise the public's awareness of their existence and of the benefits of women manufacturers being members. This is because the study found out that most of the women manufacturers were either not aware of the existence of these organizations or the benefits thereof. Moreover, the organizations' membership and/or subscription fees were too high for the women manufacturers. They should therefore make these fees affordable so as to accommodate small and micro-manufacturing entrepreneurs. This will see more women joining groups or business associations hence improving their performance.

All financial institutions and business associations should offer credit utilization training to women entrepreneurs belonging to collective forms of enterprises, to ensure the credit is utilized as per the intended purpose. Training them collectively will also make them accountable to each other. This will equip them with the necessary skills to properly manage the loans so as to achieve their objective(s). They should also increase

accountability among the women entrepreneurs by following up with these enterprises after giving the loans just to make sure the money is being used for the intended purpose. This is because the study found that women who own manufacturing enterprises take loans but instead use it for other purposes.

The government should also consider setting mechanisms in place to lower interest rates for women participating in the manufacturing sector and belong to collective forms of enterprises. This will encourage more women to take loans to expand their businesses and improve their enterprise performance. They will also be encouraged to join business associations and other social networks, eventually benefitting from their membership.

Women should consider pooling resources together to help each other acquire land on which to operate their enterprises. This is because the study established that land ownership positively impacted the performance of women-owned manufacturing enterprises.

The study suggests that further research be carried out to find out the effect of collective action on the performance of men-owned manufacturing enterprises.

6. Conclusion

From the findings, this study concludes that collective action positively affects the performance of women-owned manufacturing enterprises. This is attributable to the many benefits of collective action among them: enjoying economies of scale when it comes to productive resources, building social networks, boosting the self-esteem of members, advocacy, market linkages, training, and mentorship among other benefits.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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