

## **Influence of Duration of Coopetition on the Profitability of Micro and Small Enterprises: A Case of Tanzania Handicraft Industry**

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### **ABSTRACT**

*The objective of this study was to investigate the influence of the duration of coopetition on the profitability of MSEs in the handicraft industry operating in Arusha, Tanzania. It employed the theories of coopetition and resource dependence as theoretical frameworks. Data collected by survey approach were quantitatively analysed using the moderated Multiple Linear Regression (MLR) model to test the hypotheses. The results demonstrated that the duration of coopetition positively and significantly influenced the MSE's profitability before and after moderation. The resource interdependence showed a statistically significant moderating influence on strength of the relationship between the duration of coopetition and MSEs' profitability. The results mean that more profitability is assured if the firms cooperate for an extended period and that resource interdependence increases the coopetition propensity of the firms. It is recommended that longitudinal studies be done on the handicraft industry in both urban and rural setting to see if similar results would be obtained with those of cross-sectional studies. In addition, more empirical data from industry-specific MSEs other than handicrafts would substantiate the findings and would add to the coopetition theory's knowledge and understanding.*

**Keywords:** *Duration of Coopetition, Handicraft, Micro and Small Enterprises, Profitability Resource Interdependence*

## **INTRODUCTION**

One of the major drivers of the economy in any country is small and medium enterprises (SMEs) which account for nearly 95% of all businesses in different countries (Appiah *et al.*, 2018). They contribute to about 30% of the Gross Domestic Product (GDP) and absorb over 60% of all employees in developed economies (Woźniak *et al.*, 2019) while in developing economies like most countries in Africa, they contribute over 60% and 70% of the GDP and total employment respectively (Zafar and Mustafa, 2017), and generate almost 80% of all employment (Santos, 2015). In Tanzania, SMEs generate over 50% of their GDP (Argidius, 2017; Nkwabi and Mboya, 2019). This illustrates that SMEs are one of the most important economic drivers worldwide (Ghalke *et al.*, 2018). In Tanzania, like many developing nations, Micro and Small Enterprises (MSEs) make up the bulk of SMEs (Argidius, 2017; Granata *et al.*, 2018; and Mzomwe and Mutarubukwa, 2015). According to (Feela, 2020), around 97 percent of these MSEs are not profitable, owing to the global economic crisis, a lack of government and business development assistance, inadequate management, and competition from medium and larger enterprises in the industry.

While each form of SME influences individuals, society, and the country's economy (Wayan *et al.*, 2021), the handicrafts industry is particularly important in developing economies since it is both pro-poor and utilizes the homestead economy (Tambwe, 2017). According to research, the handicraft industry is badly affected by a lack of external support as well as stiff competition from medium and larger firms (Yasa *et al.*, 2017); which retard their performance and growth (Tambwe, 2017). Feela (2020) asserts that economic crises, a lack of support, unskilled staff, and intense competition not only accounted for MSEs' poor performance but were also major drivers behind businesses' desire to pool resources together to counter large corporations' dominance in the competitive market. In the current shifting market landscapes, the cooperation of competing enterprises may be the only successful survival strategy remaining for most enterprises, according to Cygler *et al.* (2018). Cooperation between competing firms is termed coopeitition, which can be horizontal (competing and cooperating on the same activities, in the same market, and/or for the same product) or vertical (rival firms involved in a supplier-retailer relationship for a specific product and market). Horizontal or vertical coopeitition may help a company's innovativeness, market position, and profitability (Feela, 2020). Beata (2012) argued that for competing firms' cooperation to provide value in a certain value-chain sector, time must be a factor. However, the effectiveness of coopeitition as a strategy for a company's sustainable growth and the connection between the duration of coopeitition and advantages in sales and logistics were both examined by Cygler *et al.* (2018). This relationship is

traditionally termed as a strategic alliance, a specific form of coopetition which, according to Cygler *et al.* (2018), is often unstable and transient agreement. There is inherent friction within the coopetition which is a function of time and has a detrimental impact on the productivity and financial success of the coopeating businesses, according to Cygler *et al.* (2018). The inherent friction in coopetition may also be caused by the power imbalance between the firms, which is caused by resource interdependence. According to Chai *et al.* (2019) and Fredrich *et al.* (2019), one of the antecedents and drivers of coopetition is resource interdependence. Inter firm resource interdependence has a positive influence on the level of inter firm collaboration (Chai *et al.*, 2019), and hence can moderate the influence of the duration of coopetition on the firm's profitability. The handicraft industry's coopetition in emerging nations received little attention. No empirical investigations have been conducted to determine how the time component of coopetition affects the profitability of the involved MSEs and how this effect is moderated by resource interdependence. The findings of this study need to be supported by more empirical evidence from industry-specific examples, such as handicrafts since this would help one to grasp and further understanding of the coopetition theory. The study focused on handicrafts MSEs in Arusha city centre Tanzania. This was done so since it is one of the top three cities in Tanzania with the most significant density of handicrafts and sales marketplaces compared to areas along tourism routes (Synovate, 2012). Arusha is one of the hubs of tourism in Tanzania and a key hub in the northern tourism circuit where the handicraft industry is flourishing (Charles, 2019).

### **Literature Review**

The study on the influence of coopetition duration on handcraft MSE profitability focused on competing handicraft enterprises that cooperate for a certain duration to get enough market share for their crafts to profit. Cygler *et al.* (2018) proposed that the duration of a coopetition affects profitability since coopetition is founded on trust, future uncertainty, and competing partner impulses. The firms are forced to cooperate since they are unsure about what the future holds for them. Whether coopetition is short-term or not depends on how much the parties' interests clash (Cygler *et al.*, 2018). The study showed that the sort of advantages provided to the cooperating firms was correlated to the length of the coooperative relationship in various sectors of the firm's operations. Extant research suggested that when small and big enterprises interact, the small one favours long-term ties more than the large one (Gomes-casseres, 1997). The small business does this to improve its reputation, address resource investment obligations, and boost market security. The findings suggested that the longer the length of coopetition in sales, distribution, and logistics between coopeating enterprises,

the more profitable the involved firm becomes. In this research, resource dependence theory (RDT) and the theory of coopetition (TOC) were used as theoretical frameworks. The two theories contributed to the theoretical understanding of the duration of coopetition as a variable that influences MSEs' profitability and resource interdependence as the variable that moderates the influence. The same theories were used in the development of the study's conceptual framework.

### **The Theory of Coopetition (TOC)**

The TOC is thought to originate back in the 1980s when Raymond John Noorda first coined the coopetition concept (Bouncken *et al.*, 2015). The theory was developed by Brandenburger and Nalebuff (1995) from the game theory platform. Coopetition is built on the value proposition that cooperation is value creation, whereas competition is value appropriation (Bengtsson and Kock, 2000; Brandenburger and Nalebuff, 1996). The foundation of coopetition's value proposition is the value-net framework where players in the business are the suppliers, substitutors (traditionally called competitors), complementors, and customers (Brandenburger and Nalebuff, 1995, 1996). Complementors and competitors may be defined differently on either the supplier side or the customer side of the value net. Cooperative and competitive attributes work simultaneously to produce the fundamental performance benefits of coopetition.

Coopetition has the simultaneity of competition and cooperation occurrence, paradoxical nature of co-opetition, value creation intention, and value appropriation goal as the main constructs (Bengtsson and Raza-ullah, 2017; Gnyawali and Charleton, 2018). These constructs yield two main variables: coopetition in value creation and profitability in value appropriation (Mufutau *et al.*, 2021; Santoso *et al.*, 2020). The TOC presents a theoretical model that implies that coopetition will add more value and produce better results when it operates for a length of time than when it operates for a short duration (Cyglaret *et al.*, 2018) and where cooperation and competitiveness models operate independently (Robert *et al.*, 2018). Therefore, the duration of coopetition is an independent variable whereas profitability is a dependent variable, a value appropriation outcome (Bapuji *et al.*, 2017). The trust between competing firms builds with coopetition duration, which results in each enterprise getting more access to and better exploitation of resources from another which improves market efficiency, and assures high profitability, among other things (Bouncken *et al.*, 2015; Cyglaret *et al.*, 2018). As the duration of coopetition increases, the focus shifts from the threat posed by the competitors to the customers' demands. The competitor is no longer perceived as a liability in the relationship but as a complement or a co-value producer to bring in more customers, resulting in increased

profitability (Cygler *et al.*, 2018). With cooperation time, the customers appreciate the firm's products more when the customer has the competitor's products rather than when the customer has the firm's products alone (Brandenburger and Nalebuff, 1996). The duration of cooperation, therefore, contributes to the profitability among the players (Beata, 2012; Cygler *et al.*, 2018). In the context of this study, MSEs use the experience and mutual trust gained with time in the cooperative aspect of cooperation to gain access to critical resources to win more consumers and sell more products at better prices. The competitive aspect of cooperation is critical for avoiding complacency and maintaining a culture of creative friction among the firms involved.

### **Resource Dependence Theory (RDT)**

The RDT investigates bilateral resource exchange for power through mutual reliance and power imbalance between two participants, as well as a circumstance in which bilaterally connected actors have power over a third-party actor due to dependency. In the first situation, RDT conceptualizes a way for actors to exchange and share resource and use them to obtain power that can be used to influence one another. In the second situation, the RDT conceptualizes a way for actors to exchange and share resource and use them to obtain power that can be used to influence third-party actors (Casciaro and Piskorski, 2005). According to the RDT, an organization's performance is determined by its capacity to acquire and control essential external resource (Pfeffer and Salancik, 1978) as well as control the market for its products (Davis and Cobb, 2009). RDT describes how the mutuality and interdependence of enterprises affect the operations of organizations (Frączkiewicz-Wronka and Szymaniec, 2012). The RDT emphasizes the strategic resource management strategies used to achieve power by exploiting the relationship's reliance and uncertainty (Jen-Yin *et al.*, 2017). The RDT proposes a balance of power between the actors (in our context, cooperators) to better achieve equity of resource sharing in the relationship (cooperation). Brandenburger and Nalebuff (1996) claimed that complementors and competitors play interchangeably by sharing the resource to create value large enough to benefit all by bringing in more customers. Therefore, the use of RDT becomes necessary at this point since resource interdependence is a variable in the RDT that influences the way firms interact, in our context, the cooperation, and sets the power balance. Therefore, RDT, which was proposed by Pfeffer and Salancik and refined by Casciaro and Piskorski (1978), can be used to explore moderation processes in the influence that the duration of cooperation has on profitability (van den Broek *et al.*, 2018) because cooperation is more cooperative when enterprises' resources leverage power among them.

### **Development of Hypotheses**

A recent study on the effect of cooptation duration on a firm's performance concluded that the duration of the cooptative relationship in particular areas of the firm's activities is related to the type of benefits to the coopting partners (Cygler *et al.*, 2018). The literature lacks empirical studies to determine how the duration factor of cooptation affects the profitability of MSEs. Cygler *et al.* (2018) went further to study the viability of cooptation as a strategy for a firm's profitability, and the relationship that exists between the duration of cooptation and benefits in sales and logistics. The results indicated that cooptation was a viable strategy for the firm to develop sustainably and that coopting firm's profitability increased with the increased duration of cooptation in sales, distribution and logistics activities. This study assessed the influence of the duration of cooptation on the profitability of an MSE, and so the hypothesis tested was:

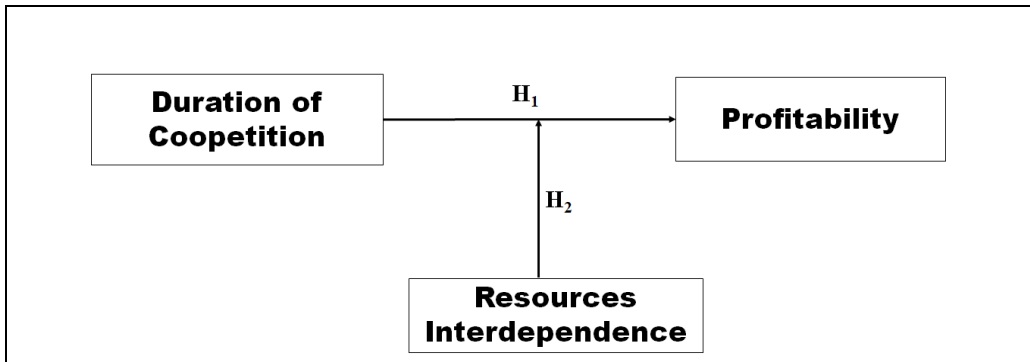
*H<sub>1</sub>: The duration of MSEs' cooptation positively influences their profitability.*

Resource interdependence was considered one of the antecedents and drivers of cooptation, as mentioned in theoretical development. Interfirm resource interdependence was thought to have a positive influence on the duration of cooptation, according to Chai *et al.* (2019). The interdependence of resources is assumed to have a moderating influence on the way the duration of cooptation influences profitability, because the duration of cooptation increases trust, reduces the uncertainty of the future, and mitigates the conflicting tendencies of the partners. As a result, hypothesis *H<sub>2</sub>* was developed.

*H<sub>2</sub>: The level of influence of the duration of MSEs' cooptation on their profitability is positively moderated by the resource interdependence among them.*

### **Conceptual Framework**

The theory of cooptation (TOC) and the resource dependence theory (RDT) are employed as theoretical frameworks in this study. The two theories aided in the formulation of the study's conceptual framework and the theoretical knowledge of the variables assumed to influence MSE profitability and how the influence is moderated. A conceptual framework was created as a model to direct hypothesis testing after studying the literature and formulating hypotheses. As a result, Figure 1 shows the relationships in terms of the tested hypotheses.



**Figure 1. Conceptual Framework**

## **Methodology**

### **Sampling and Data Collection**

The sampling space consisted of 45 recognised handcraft markets in three clusters with 297 MSEs. These MSEs sold home décors, fashion accessories, or both home décors and fashion accessories to the local and or the export market, or both local and export markets. The sample size was arrived at by Yamane's formula that factors in the confidence level of 95% (the significance level = 0.05) for the maximum variability in a population (Uakarn *et al.*, 2021).

The sample size,  $n$ , was calculated as:

$$n = \frac{N}{1 + Ne^2}$$

The calculated sample size was 175; however, only 159 people responded (91% response rate). The Clusters consisted of Open Markets, Curio Shops, and tourist hotels' duty-free shops. Within the clusters, MSEs congregated and transacted business together in the marketplaces. A representative sampling technique was employed to pick both the market and the MSEs in the market to form the study sample. This study took a quantitative, cross-sectional survey approach. A structured questionnaire was used to collect data for variables under the study. Independent variables in the study were duration of coepetition (DuratX) and resource interdependence (ResM), and the dependent variable was profitability (ProftY). The variables were measured using the average value of indicator scores. The DuratX indicators were the duration of MSEs in business, the duration of MSEs in collaboration, and the extent to which the duration of collaboration helped the MSEs both to deal with goods delivery to the customers and increase customer base. The ResM indicators were the extent to which the MSE gained the product development know-how, the market knowledge, and marketing and sales techniques from the competitor. The ProftY indicators were the extent to which the MSE sold more volumes of goods, improved the

variety of goods sold, cut costs in operation, and improved business performance. All indicators were measured in 5-point Likert that progressed from the weakest support of the premise (represented by 1) to the strongest endorsement of the premise (represented by 5). For each variable, the indicators were averaged out to get a variable value for analysis. According to Creswell (2016), the questionnaire consisting of closed-ended questions is appropriate for the respondents to be able to reply quickly. All items in the same questionnaire had to have the same Likert-like scale grading so that measurements could be compared easily (Simms *et al.*, 2019).

### **Outliers and Missing Data**

Data cleaning for outliers was performed through winsorization, the process where outliers are replaced with either the largest or second smallest value in the observation (Kwak and Kim, 2017). The boxplot was generated to check for outliers for each variable. One outlier was detected in the moderating variable ResM, and was winsorised to be equal to the second smallest value in the observation. Part of the reason why the outliers were not there in other variables was that trained enumerators were employed to collect the data from the respondents. Complete case analysis was used to manage missing data since the sample size was well above 30 (Kang, 2013, Kwak and Kim, 2017). No missing data were observed when running frequency checks for all the variables. All 159 cases were valid.

### **Reliability of the Research Instrument**

Cronbach's alpha was used to test and measure the internal consistency between variables in the scale (Taber, 2018). This test was used to explore the level of reliability of all the constructs across all the questions that were administered to the respondents. The average values of the 5-point Likert points were employed for all variables. The precaution was taken to ensure that all questions were in a positive direction, and the general rule is that if Cronbach's alpha ( $\alpha$ ) > .700, the internal consistency between variables in the scale is generally good. The Cronbach's Alpha values test results for all variables are shown in Table1 which shows "Cronbach's  $\alpha$  if Item Deleted" for all indicators in each variable. The results indicate that Cronbach's value in  $\alpha$  all cases if the item deleted is greater than .700 (Cronbach's alpha ( $\alpha$ ) > .700).



**Table 1: Item-Total Statistics**

	<b>Scale Mean if Item Deleted</b>	<b>Scale Variance if Item Deleted</b>	<b>Corrected Item-Total Correlation</b>	<b>Cronbach's Alpha if Item Deleted</b>
<b>DuratX</b>				
COOP_22	9.15	9.939	.630	.765
COOP_23	10.35	9.456	.769	.702
COOP_24	9.43	9.310	.727	.718
COOP_25	10.14	10.606	.438	.860
<b>ResM</b>				
COOP_29	6.27	5.224	.942	.863
COOP_30	7.18	6.289	.761	.991
COOP_31	6.27	5.224	.942	.863
<b>ProftY</b>				
COOP_26	6.11	7.329	.876	.929
COOP_27	6.05	6.605	.941	.880
COOP_28	6.24	8.373	.860	.946

The profitability of the MSE (ProftY) was the dependent variable in this study, whereas the duration of coopetition (DuratX) and resource interdependence (ResM) were the independent variables.

**Data Analysis**

The nature of the data variability and its associations were explored using descriptive and inferential statistical approaches. The parameters for the target population and the relationship between the variables were established using inferential statistical analysis. Here, the moderated multiple linear regression analysis model that had the following general structures were used:

Moderated Model:

$$Y = \alpha_0 + \alpha_1.X + \alpha_2.M + \alpha_3.X*M$$

Where:

Y - The dependent variable – Profitability.

X – The independent variables -Duration of coopetition (DuratX)

M - The moderator - Resource interdependence (ReM)

$\alpha_1, \alpha_2$ , and  $\alpha_3$  -The regression coefficients that measure changes in the dependent variable, Y, with a unit change in independent variables X, M, and X\*M respectively.

$\alpha_0$  - The Profitability when coopetition is zero.

(Mira *et al.*, 2016; Wineaster, 2017).

**MLR Assumption Testing**

Then MLR assumptions checked were the linearity between the dependent variable and each of the independent variables, the normality of variable distributions of residues, and the homoscedasticity of the variances of error terms (Williams *et al.*, 2013).

**Linearity Assumption**

The linearity assessment was done to ensure a linear relationship between the dependent and independent variables (Osborne and Waters, 2002; Williams *et al.*, 2013). It entailed partial regressions of MSE’s profitability on the duration of coepetition. The residuals of the independent and dependent variables were checked during regression. The summary of the linearity assumptions for all variables is in Table 2.

**Table 2: Summary: Linearity Assumption Test for All Variable**

	The Profitability (DV) Regressed with	Partial Regression		Partial Correlation	Significant Values
		Constant	Beta Value	Coefficients	
1	DuratX	+1.185	+0.595	R <sup>2</sup> = .355	p = .001
2	ResM	-0.139	-0.049	R <sup>2</sup> = .002	p = .543

Source: Field Data (2021)

The regression coefficients and correlation coefficient of determination for the regression of profitability on the duration of coepetition were statistically significant. The linearity assumption was not violated.

**Normality Test**

A normality test was performed to check the normal distribution of the residuals of the regression; the errors between observed and predicted values (Wu and Leung, 2017). The test produced both Q-Q plots of the studentized residual values and the numerical values of the Kolmogorov-Smirnov goodness of fit test (sig. value test). From Table 3, the Kolmogorov-Smirnov goodness of fit test (sig. value test) is .004. The p-value shows that the normality assumption is not violated (p < .05).

**Table 3: Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.088	159	.004	.977	159	.008

a. Lilliefors Significance Correction  
Source: Field Data (2021)

**Multicollinearity**

Multicollinearity exists when the regression model’s two or more independent variables are highly correlated. The variance inflation factor (VIF) test was run to assess the Collinearity Statistics, and the results are in Table 4(Williams *et al.*, 2013).

**Table 4: Coefficients<sup>a</sup> and Collinearity Statistics**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-0.097	.242		-.403	.687		
DuratX	0.197	.061	0.197	3.237	.001	.634	1.578
ResM	-0.139	0.228	-0.049	-.610	.543		

<sup>a</sup>Dependent Variable: Profitability of the MSE

The results indicated that VIF across the independent variables was less than 10, and  $p < .001$ , so the multicollinearity was not significant (McClelland *et al.*, 2017). According to McClelland *et al.*, checking the moderating variable may not be necessary when running the moderated multiple regression analysis, so the VIF index was ignored in this analysis.

**The Homoscedasticity**

The homoscedasticity of the variances of error terms means the equality of the variances of error terms across the values of the independent variables. The Breusch-Pagan Test of heteroscedasticity was used (Halunga *et al.*, 2017). For the sample size (N) = 159 and the number of predictors (P) = 3, the R<sup>2</sup> value was .0229, and the Breusch-Pagan test for heteroscedasticity was 4.601 (Chi-Square df = 2,156). The significance level was  $p = .3307$  (Null hypothesis, H<sub>0</sub>: homoscedasticity exists). The decision criterion is: If the p-value of the test is less than some significance level ( $\alpha = .05$ ), the null hypothesis is reject and presume that heteroscedasticity is present in the regression model (Halunga *et al.*, 2017). Since this p-value is not less than .05, one fails to reject the null hypothesis. Consequently, we expect that homoscedasticity was present. To avoid multicollinearity induced by the primary independent and interactive variables, centred interactive variables were employed (McClelland *et al.*, 2017). This study evaluated how the interacting factors affected the independent variable’s predictive abilities. The hierarchical regression model was used when working with an independent and a possible moderating variable. Therefore, hierarchical

regression analysis of ProfitY on DuratX, the centeredResM, and the centered ResM\*ResM was performed.

### **Findings**

According to the descriptive analysis, no handicraft MSE in the research region had over 35 employees, and approximately 79% of all MSEs had fewer than 5 employees. The handicraft/curio cluster had the most handicraft MSEs, with almost half of all handicraft MSEs, followed by the open markets cluster with 30.2%. About 62% of the MSEs surveyed marketed both home décor and fashion accessories, with less than 20% focusing solely on one of the two categories. According to the study, 57.2% of all MSEs concentrated only on the local market and did not export, while 39% serviced both the domestic and export markets. The percentage of MSEs that focused on exporting was fairly small (about 4%). When the links between MSE attributes in the sample were examined, it was observed that 51.6% of MSEs in the open markets and 35.2% of MSEs in the handicraft/curio clusters, respectively, sold products in the domestic market. The art centre duty-free shops were the largest cluster selling handicrafts in the export market (about 83.3% of MSEs).

According to the findings, about 58.6% and 61.3% of all MSEs sold only home décor products and only fashion accessories in domestic markets, respectively. About 37.9% and 35.5% of all MSEs sold only home décor products and only fashion accessories in both domestic and export markets. The independent and dependent variables were cross-tabulated, and it was shown that approximately 36.5% of all MSEs that were involved in coepetition had no noticeable profitability, 35.2% of all MSEs with low to high coepetition achieved moderate to high profitability, and 27% of all MSEs with moderate to very high coepetition achieved high to very high profitability. When investigating the length of the time that the business has been in operation, about 66% of all the MSEs in the clusters have been in operation for more than 5 years. Out of these, two-thirds of them have been in operation for more than 7 years. The analysis indicated that about 55.3% of all MSEs either frequently or very frequently repeated coepetition. Upon regressing the frequency of collaboration on the intensity of repeated collaboration, it was clear that the frequency of collaboration accounted for about 84.9% of the intensity of collaboration if other factors were kept constant ( $R^2 = .849$ ).

### **The Association of Duration of Coepetition (DuratX) and Different Attributes of the MSEs**

The relationship between Duration of Coepetition and MSE cluster type revealed that 37.5%, 66.7%, and 61.1% of all MSEs in the open markets,

handcraft/curio shop, and art centre/duty-free shop clusters respectively had been in coepetition for more than 3 years. When analysing the period of coepetition and the product category, it was observed that 58.6% and 45.2% of all MSEs selling exclusively home décor and fashion accessories were coepeting for more than 3 years, respectively. About 69.9% of MSEs offering both home décor and fashion accessories coepeted with one another in the same time. The analysis of the duration of coepetition and the market type also indicated that about 53.9%, 66.9%, and 59,6% of all the MSEs serving the domestic market only, the export market only, and both domestic and export markets were engaged in coepetition for more than 3 years. The findings revealed that MSEs of all ages were cooperating at varying degrees with one another. About 51% of all MSEs studied coepeted for three to seven years, whereas 43.4% of all MSEs studied coepetition for less than three years. When the duration of coepetition was compared to the size of the MSE, it was discovered that 52.4% of all MSEs with less than 5 employees coepeted with each other for 3 or more years, and 76% of all MSEs with 7 to 22 employees coepeted with each other for the same time. About 62.5% of all MSEs with employees aged 22 to 35 had coepetition with one another for 3 or more years.

### **The Moderation Effect of Resources Interdependence Among MSEs (ResM) on the Influence of DuratX on ProftY**

The hierarchical regression analysis of ProftY on CentredDuratX, CentredResM, and then on CentredDuratX\*centredResM was performed. The objective was to check the moderating effect of centredResM on the influence of the duration of MSEs' coepetition their profitability. The hypothesis tested were:

*H<sub>1</sub>: The duration of MSEs' coepetition positively influences their profitability.*

*H<sub>2</sub>: The level of influence of the duration of MSEs' coepetition on their profitability is positively moderated by the resource interdependence among them.*

MLR analysis was done to test these hypotheses after centering the variables and introducing the interacting term, centred DuratX<sub>4</sub>\*centredResM. The multicollinearity caused by the primary independent and interactive variables was avoided by centering the independent and interactive variables. The results are as depicted in Table 6. After MLR analysis of ProftY on CentredDuratX, CentredResM, and CentredDuratX\*CentredResM (Table 5), the moderation term was not statistically significant ( $p = .743$ ), and the interacting term was not statistically significant in influencing the coefficient of the independent variable ( $p = .853$ ).

**Table 5: Regression Coefficients<sup>a</sup>**

Model		Unstandardized		Standardize		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	2.981	.076		39.166	.000
	CenteredX	.582	.049	.690	11.838	.000
	CenteredM	.027	.166	.010	.164	.870
2	(Constant)	2.980	.071		41.841	.000
	CenteredX	.319	.064	.320	4.985	.000
	CenteredM	.051	.156	.018	.328	.743
	CenteredX*Centered ResM	-.021	.111	-.010	-.185	.853

a. Dependent Variable: Profitability of the MSE

The correlation between ProfitY, DuratX, and ResM was also analyzed (Table 6). ProfitY and DuratX exhibited a positive, strong, and statistically significant correlation (Model 1). The R<sup>2</sup> change was .073, and the correlation improved from R<sup>2</sup> = .474 to R<sup>2</sup> = .548, and the effect was significant (p < .001).

**Table 6: Model Summary**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate	Change Statistics				
					ΔR <sup>2</sup>	ΔF	df1	df2	Sig. ΔF
1	.689 <sup>a</sup>	.474	.468	.960	.474	70.419	2	156	.000
2	.740 <sup>b</sup>	.548	.536	.896	.073	12.497	2	154	.000

a. Predictors: (Constant), CenteredM, CenteredX

b. Predictors: (Constant), CenteredM, CenteredX, CenteredX\*CentredM

Source: Field Data (2021)

Based on this analysis, the moderated regression equation before the entry of the interacting term (Model 1) is:

ProfitY = 2.981+ .690 CentredDuratX + .010CentredResM, t(2,157) = 11.838 and p < .001 for the basic independent variable.

After the entry of the interacting term (Model 2), the moderated equation is:

ProfitY = 2.980+ .320CentredDuratX + .018centredResM - .010CenteredX\*CentredM, t(3,157) = 4.985 and p < .001 for the basic independent variable.

## **Discussion**

The purpose of this study was to assess the influence of the duration of cooperation on the profitability of micro and small enterprises in the handicraft industry and to assess whether the resource interdependence moderates the influence of cooperation duration on the MSE profitability.

The Influence of the MSEs' Duration of Cooperation (DuratX) on MSE's Profitability (ProftY), Hypothesis  $H_1$

Descriptive statistics showed that almost all MSEs in open markets and handicraft/curio stores clusters have been in cooperation for five to ten years. About two-thirds of all MSEs that were exclusively selling home décor and fashion accessories were cooperating for less than five years. Very few MSEs were cooperating for five years or longer. Almost all the MSEs involved in the export market were engaged in cooperation for more than five years while only about three-quarters of the MSEs serving the local market were involved in cooperation during the same time. The data indicated that the duration of cooperation was longer with larger MSEs than with smaller ones. The findings revealed that MSEs of all ages were cooperating at varying degrees with one another. These results agree with Broekel (2012) that the age of MSEs and their duration of collaboration improves the intensity and efficiency of cooperation.

Linear regression analysis was used to test the hypothesis  $H_1$  that:

*The duration of MSEs' cooperation positively influences the MSE's profitability.*

Results in Table 7 showed that the correlation coefficient of determination,  $R^2 = .468$ , and the regression equation at  $t(2,157) = 11.838$  and  $p < .001$  for the basic independent variable was found as:

$\text{ProftY} = 2.981 + .690 \text{ CentredDuratX} + .010 \text{ CentredResM}$ . This analysis revealed that ProftY increases by 0.690 for every unit increase in CentredDuratX, and the effect was statistically significant. The coefficient of the moderator term was not statistically significant in influencing the profitability of the MSE ( $p = .870$ ). If other variables are kept constant, 46.8% ( $R^2 = .468$ ) of the variance in ProftY can be accounted for by DuratX. The influence was statistically significant at a 95% confidence interval. This observation is important since, according to Guimarães *et al.* (2021), cooperation is a long-term strategy for MSEs' profitability and growth. The results were in agreement with Beata (2012) and Cygler *et al.* (2018) that the duration of cooperation contributes to profitability among the players. With this, it can be concluded that the duration of MSEs' cooperation positively influences the MSE's profitability, and hypothesis  $H_1$  is accepted.

### **The Moderation Effect of Resource Interdependence Among MSEs (ResM) on the Influence of Duration of Coopetition (DuratX) on Profitability (ProftY): Hypotheses H<sub>2</sub>**

After the entry of the interacting term (Table 5 and Model 2 in Table 6), the moderated equation is:

ProftY = 2.980 + .320CentredDuratX + .018centredResM - .010CenteredX\*CentredM,  $t(3,157) = 4.985$  and  $p < .001$  for the basic independent variable.

The moderation hypothesis  $H_2$  that was tested asserted as follows:

*The level of influence of the duration of MSEs' coopetition on the MSE's profitability is positively moderated by the resource interdependence among MSEs*

This analysis reveals that ProftY increases by 0.320 for every unit increase in CentredDuratX, and the effect was statistically significant although the regression coefficients of moderator and the interacting terms were not statistically significant ( $p = .743$  and  $p = .853$  respectively). The regression coefficient of the basic independent variable was significantly moderated from .690 to .320. The correlation coefficients of determination between ProftY and the independent variables before and after the entry of interacting terms were also analysed (Table 6). The  $R^2$  change was .073, and correlation coefficient of determination improved from  $R^2 = .474$  to  $R^2 = .548$ . The change caused by the moderator and the interacting term was about 15%, and it was statistically significant ( $p < .001$ ). So, hypothesis  $H_2$  which states that the level of influence of the duration of MSEs' coopetition on their profitability was positively moderated by the resource interdependence among them was accepted.

### **Conclusion and Recommendations**

The purpose of this research was to better understand horizontal coopetition among micro and small firms in the post-production phase of business, where the duration of MSE coopetition in the handicraft industry was thought to impact MSE profitability. Within the scope of this study's constraints, it can be inferred that the duration of coopetition had a positive and statistically significant impact on MSE profitability. It was also expected that resource dependency between coopeting MSEs would mitigate the effect of coopetition duration on the profitability of the MSE. According to the study, the impact of moderation was visible and statistically significant. This study led to a better knowledge of the post-production coopetition dynamics at the firm. The research added to a better understanding of how post-production coopetition influences MSE profitability and the development of a framework for identifying post-production coopetition's impact on MSE



profitability. These empirical findings, which are based on cooptation theory and resource dependency theory, provides a foundation for post-production cooptation research in the future. The study emphasizes the relevance of cooptation research being linked with other theoretical frameworks, as well as the valuable insights that may be gained as a result of doing so. According to the study, MSE attributes such as cluster type, principal product type sold, markets served, firm size, and firm age all influenced the length of cooptation. More research on the factors that influence the degree of cooperation is needed. This study was limited to one city in one developing country, with the hope of being generalized to other cities and developing economies. More empirical data from industry-specific scenarios, as well as data from other environmental settings, is recommended to support the conclusions of this study, as it would add to deeper awareness and knowledge of the cooptation theory.

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