

# Enhancing Small and Medium Scale Enterprises Sustainability: Factors Influencing the Pottery Industry in Sri Lanka

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**Abstract.** The pottery industry stands as a revered traditional handicraft, bearing both social and economic significance as a sustainable source of revenue within Sri Lanka. This study aims to unravel the elaborate factors that influence small and medium-scale enterprises (SMEs) within this industry. The study targeted small and medium-scale pottery producers in Udukiriwala, Hambantota District of Sri Lanka, with a sample size of 75 participants. The sampling technique employed was a simple random selection method. Data accumulation was coordinated via a precise pre-tested questionnaire, designed to encapsulate demographic particulars and inquiries connected to various constructs using a five-point Likert scale. Comprehensive statistical analysis ensued, encompassing mean calculations, standard deviations, correlation assessments, and regression analyses. Environmental factors exhibit a significant positive correlation, underlining their intense influence on the pottery industry's development. In absolute contrast, economic factors showcase a notable negative correlation. Meanwhile, sociological factors and government influence factors exhibit no statistically significant correlations with the pottery industry's evolution. The recognition of pivotal factors shaping the pottery industry sets the stage for well-informed actions, providing a solid basis for fostering its sustained expansion and advancement within the Sri Lankan context.

**Keywords:** economic factors, environmental factors, pottery industry, small and medium-scale enterprises (SMEs), Sri Lanka

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## 1. Introduction

The pottery industry is the manufacturing sector that creates various ceramic goods, most frequently made from clay or other ceramic materials. These items can be practical, such as ceramic pots, plates, bowls, and cups, or decorative, such as figurines, sculptures, and art pieces. Pottery has a long history and is frequently associated with traditional craftsmanship and aesthetic expression [1].

This research attempt aims to investigate the elaborate factors that influence small and medium-scale enterprises within the context of Sri Lanka's pottery industry. The spotlight of this

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investigation falls on the Udukiriwila region, renowned for its vibrant pottery industry, be in the Hambantota district within the southern province of Sri Lanka. The Udukirilwila Potter's Cooperative Society, established in 1955, has been a pivotal force in coordinating organized pottery production through the dedicated efforts of local villagers, each specializing in a unique craft. This cottage industry primarily operates within households, characterized by a modest technological setup and production scale.

The Sri Lankan clay market will grow rapidly in 2022, up 9.7% from the previous year. Overall, total consumption expanded at a moderate rate from 2012 to 2022, increasing at an annual rate of +3.7% on average over the prior decade [2]. The pottery industry in Sri Lanka is dominated by small and medium-sized enterprises (SMEs). These enterprises serve an important role in preserving the traditional craft of pottery while also contributing to the country's economy. Many pottery workshops and studios in Sri Lanka operate as small and medium-sized enterprises, creating a wide range of ceramic goods ranging from traditional containers to more contemporary and artistic pieces [2]. Further to the article expressed, when opposed to larger industrial producers, these pottery SMEs frequently work on a smaller scale, and they can have a deep relationship to local communities and cultural heritage. These businesses create jobs, particularly for experienced artisans and craftspeople, and they help to promote Sri Lankan culture and artistry through their products [2].

There are some key factors affecting SMEs within the pottery industry in Sri Lanka, highlighting their challenges and opportunities. Economic Factors: Various economic factors influence SMEs in the ceramics sector. Market demand, pricing systems, and access to financing all play critical roles in the success of these businesses. Dahanayake admitted that the alternations in demand for pottery items, both on a local and global scale, exert a notable influence on the revenue flows of small and medium-sized enterprises (SMEs) [3]. Furthermore, price tactics, cost management, and supply chain dynamics all have an impact on the profitability of these organizations. Sociological factors: The pottery enterprises are firmly embedded in Sri Lankan culture. Demand for pottery products can be influenced by societal views towards traditional crafts and the preservation of cultural identity. Ekanayake expressed that encouraging cultural appreciation and understanding can help to develop the market for authenticated ceramics and SMEs [4]. Environmental factors: The pottery and clay industries are heavily influenced by environmental conditions. These factors can have an impact on a variety of components of the industry, including raw material availability, manufacturing processes, waste management, and the sector's overall sustainability. To guarantee a balance between creativity and conservation of the environment, should use sustainable sourcing methods, energy-efficient kiln technology, eco-friendly glaze compositions, waste reduction measures, and cooperation with environmental specialists [5]. Technological factors: Modern technology usage has become a critical factor in the growth and sustainability of SMEs in the ceramics industry. The incorporation of sophisticated kiln

technology, efficient production procedures, and digital marketing strategies can boost these businesses' competitiveness [1]. The level of technology literacy and readiness to adopt innovation within traditional pottery practices have an impact on SMEs' overall success. State factors: The regulatory environment shapes the working conditions for SMEs by including business registration processes, taxation rules, and compliance requirements. The formation and growth of ceramic SMEs can be hampered by an unclear or heavy regulatory framework. Simplified registration procedures and tax regulations that favour entrepreneurs can encourage more to enter the market.

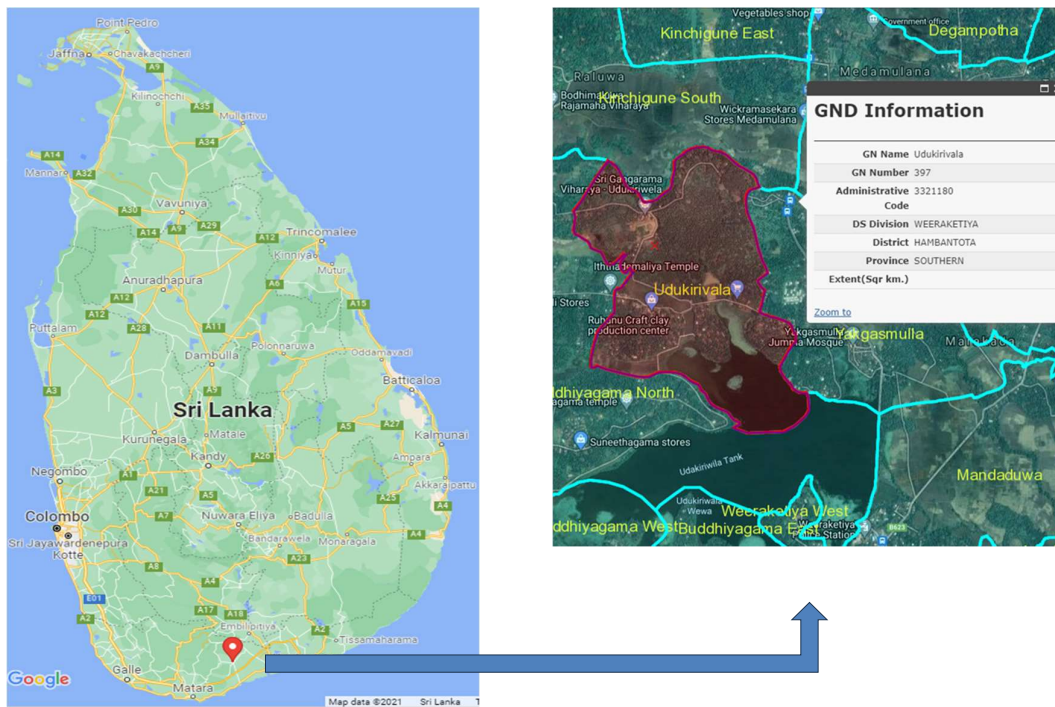
The pottery sector holds considerable promise for sustainable growth, with the potential to significantly contribute to Sri Lanka's national economy. Operating year-round, pottery making serves as a continuous source of livelihood, particularly empowering women by generating employment opportunities. Yet, this sector grapples with shared challenges, including limited investment in fixed assets, particulars of pottery firing, exaggerated competition from metal and plastic industries, reliance on outdated techniques, marketing difficulties, and a lack of governmental support. Despite its potential, the pottery industry remains relatively localized and lacks widespread recognition throughout the nation. While certain regions have embraced pottery as a significant trade, primarily through small and medium enterprises, comprehensive research in this domain, particularly in the southern province, has been limited. Hence, it becomes important to discover the underlying factors shaping the pottery industry's landscape within small and medium-scale enterprises.

This study undertakes the critical task of identifying the pivotal factors impacting the pottery industry, specifically within the Southern Province's Sri Lanka. The central focus is on detecting the elaborate relationship between these influencing factors and actual pottery production outcomes in the designated area.

## **2. Method**

### **2.1. Study Area and Population**

The southern region of Sri Lanka stands prominently renowned for its pottery industry, commanding nationwide recognition. Within this context, small and medium-scale entrepreneurs emerge as pivotal drivers of this sector. The focus of this study centers on the Udukiriwala GN Division, situated within the Hambantota District of the Southern Province, Sri Lanka (Figure 1).



**Figure 1.** Udukiriwala GN Division, Hambantota District of the Southern Province, Sri Lanka

## 2.2. Sampling Procedure and Sample Selection

The study's target demographic comprises small and medium-scale pottery producers within the designated region (Population size about 103), with a sample size of 75 participants. To ensure a representative sample, a straightforward random sampling technique was employed. The sampling process was facilitated by utilizing data on pottery producers obtained from the divisional secretariat of the Hambantota district in Sri Lanka. The study was conducted in September to December 2022.

## 2.3. Data Collection

For sourcing relevant information, the study made use of secondary data extracted from existing literature. The primary data collection phase encompassed interviews and group discussions. The research methodology employed was the survey research method. The study targeted pottery producers within the Udukiriwala region. Employing a simple random sampling approach, a sample size of 75 participants was selected. The data collection process relied on a pre-tested questionnaire that encompassed demographic details and inquiries relating to the constructs featured in the research models. Additionally, open-ended questions were included. Throughout the survey, all constructs were assessed using a five-point Likert scale, ranging from "Strongly disagree (-2), Disagree (-1), Neutral (0), Agree (+1) and Strongly agree (+2)."

Within the domain of this social science investigation, general demographic information was employed to interpret both the overall population and the sample under inspection. The independent factors were identified as environmental, sociological, economical, and

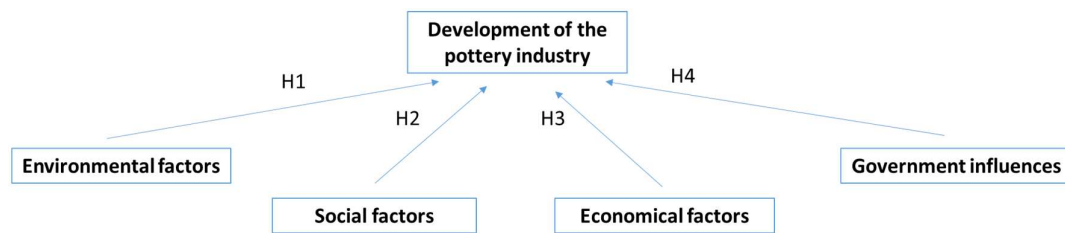
governmental influences. As the dependent variable, the study sharpened in on the progress of the pottery industry as driven by small and medium-scale entrepreneurs.

**2.4. Operational Variables and Measurement**

In terms of variables and measurements, a range of demographic factors were documented, encompassing age, gender, education level, experience, monthly income, and pottery product involvement. The questionnaire employed a Likert Scale spanning from -2 (indicating complete disagreement) to +2 (signifying complete agreement) for quantifying these variables.

Within the realm of environmental variables, the following factors were assessed: the availability of quality raw materials, unrestricted access to raw materials, a climate that is highly beneficial, and the absence of negative impacts from the pottery industry on environmental pollution. Under sociological variables, the study explored the following dimensions: a strong societal awareness about the pottery industry, extensive product awareness within the community, the industry's influence on the advancement of societal livelihoods, and the level of recognition that producers gather within the society. Economic variables were examined through the lens of ease in acquiring capital, expertise in establishing market connections, the extent of product demand, and the facility in procuring proficient human resources. Considering the factor of government influence, the investigation examined: the degree of government intervention, access to subsidies, the effectiveness of pottery production policies, and the presence of specialized loan facilities for production ventures. As the dependent variable, the study evaluated factors like elevated production quality, robust marketing linkages, augmented income generation, and favorable customer satisfaction.

**2.5. Conceptual Framework**



**Figure 2.** Conceptual Framework of the Study

**2.5.1. Environmental factors**

Clay, a primary material in pottery making, is highly influenced by environmental factors [6]. Regions with abundant clay deposits tend to advance increasing pottery industries due to easy access to raw materials [7]. Environmental conditions like soil composition, moisture content, and geological formations affect the quality and availability of clay [8]. Environmental factors such as temperature, humidity, and precipitation impact the drying and firing processes crucial in

pottery making [9]. In areas with consistent and favorable climatic conditions, potters can better control the drying and firing stages, resulting in higher quality products.

Hypothesis 1: Environmental factors have a positive impact on the pottery industry (H1)

### **2.5.2. Social factors**

Understanding and adapting to these social factors are crucial for the pottery industry's growth and relevance. Social factors such as cultural heritage and traditions influence the styles, techniques, and designs used in pottery [10]. This can create diverse pottery styles unique to different regions, reflecting local customs and history. Access to education and training significantly shapes the schedule of skilled craftspeople within the pottery industry and influences the preservation of traditional techniques [11].

Hypothesis 2: Social factors have a positive impact on the pottery industry (H2)

### **2.5.3. Economical factors**

Economic conditions greatly impact consumer spending. During prosperous times, there's often higher demand for luxury or decorative pottery items [12]. Conversely, in economic downturns, the demand might shift towards more practical or affordable pieces. The purchasing power of consumers is directly tied to their income levels. Higher disposable incomes often lead to increased spending on non-essential items, including pottery [13]. As household incomes rise, there's a likelihood of a greater market for premium or specialty pottery products [14]. Economic factors like fluctuations in the costs of raw materials, energy, and labor impact the overall production expenses [15].

Hypothesis 3: Economical factors have a positive impact on the pottery industry (H3)

### **2.5.4. Government influences**

Government influences, whether through supportive policies or regulatory measures, significantly impact the route of the pottery industry. Collaboration between the government and industry stakeholders is crucial for fostering a conducive environment for growth, sustainability, and innovation within the sector [16]. Regulations and policies, financial support and incentives, international trade agreements, education and training initiatives, research and development funding are the different means of government influences for the development of the pottery industry [16] – [18].

Hypothesis 4: Government influences have a positive impact on the pottery industry (H4)

## **2.6. Data Analysis**

Responses obtained from the questionnaire were meticulously compiled and organized in a tabulated format using the Microsoft Excel software suite. The collected data underwent comprehensive analysis using the SPSS statistical software package, version 26. To ensure the internal consistency and reliability of the measurements, a reliability analysis was conducted. This entailed calculating Cronbach's alpha coefficient, which served as a robust indicator of the

constructs' reliability. In the process of variable selection, Descriptive Statistics were employed to evaluate the chosen variables. Furthermore, to assess the interplay between variables, the study employed correlation analysis to explore the relationships among Environmental factors (EI), Sociological factors (SI), Economic factors (ECI), and Government influence (GII) on the Development of the pottery industry (DP) by small and medium-sized enterprises (SMEs).

### **3. Results and Discussion**

#### **3.1. Characteristics of Pottery Producers**

This insightful observation sheds light on a substantial facet of the study: the engagement of individuals across different age groups in the production process. Specifically, it underscores the substantial involvement of the elderly population, represented predominantly significantly ( $p$ -value  $< 0.05$ ) within the age bracket of 41 – 60 years. This finding not only highlights the continuity of traditional crafts but also emphasizes the role of experience and expertise passed down through generations. Individuals in the 41 to 60 age bracket often possess extensive experience and knowledge acquired from their families or communities. They might have grown up in environments where pottery-making was a prevalent craft, leading them to pursue it as a profession. Conversely, respondents falling within the age category of fewer than 20 years represent the group with the lowest percentage ( $p$ -value  $< 0.05$ ). Conversely, the second-highest level of engagement is evident among individuals aged between 21 – 40 years, indicating diverse participation across a range of age groups.

This gender disparity in respondent distribution holds significant implications for the pottery industry within the context of the study. Notably, the proportion of male (61.33%) respondents surpasses that of females (38.66%), signifying a greater representation of male individuals actively engaged in the pottery production sector ( $p$ -value  $< 0.05$ ). This could be attributed to various factors, such as cultural norms, historical roles, or access to opportunities. This insight encourages further exploration into the underlying reasons for this gender-based participation discrepancy and its potential implications for the industry's dynamics and development.

This observation generates an insightful interpretation of the distribution of experience levels among the respondents. It is evident that the majority of participants exhibit experience ranging below the 20-year threshold. This finding encapsulates the prevalence of individuals who have been actively engaged in the pottery industry for relatively fewer years. Further analysis of this data prompts contemplation about the potential implications of this skew in experience distribution. It indicates exploration into the circumstances that might contribute to the high concentration within the 11 – 20-year experience range ( $p$ -value  $< 0.05$ ). Delving into factors such as the evolution of the pottery industry, changing demographics, or shifting career trajectories could provide a richer understanding of this dynamic.

Table 1 observation unveils an intriguing facet of the pottery industry's economic landscape. The prominence of the 20,001.00 – 30,000.00 rupees income range (p-value < 0.05). underscores a sizeable group of producers who fall within this specific earning group. Deeper investigation into the dynamics of income distribution could unravel insights into the socioeconomic factors influencing earnings within the pottery industry. The reasons emphasizing this concentrated distribution could be various, encompassing factors such as market dynamics, demand for pottery products, or prevailing pricing structures.

**Table 1.** Socio-Economic Characteristics in Udukiriwala GN Division, Hambantota District of Southern Province, Sri Lanka

Variable	Frequency	Percentage (%)
Age (Years)		
≤ 20	2	2.667
21-40	23	30.66
41-60	41	54.66
≥ 60	9	12.00
Gender		
Male	46	61.33
Female	29	38.66
Experience (Years)		
≤ 10	23	30.66
11-20	30	40.00
21-30	12	16.00
31-40	5	6.66
41-50	4	5.33
≥ 51	1	1.33
Income (Rs.)		
≤ 20,000.00	12	16.00
20,001.00 – 30,000.00	36	48.00
30,001.00 – 40,000.00	26	34.66
≥ 40,000.00	1	1.33

**3.2. Various Influences on Small and Medium-Scale Enterprises (SMEs) within the Pottery Industry**

Numerous elements exert their influence on Sri Lanka's pottery industry. Consequently, our investigation has identified distinct primary categories of factors namely, economic, environmental, sociological, and governmental influences as independent variables that shape the production of pottery products by small and medium-sized enterprises (SMEs), which in turn constitute the dependent variable.

The reliability test functions as an assessment of the internal consistency exhibited by multiple measurements of a single variable. In this context, the Cronbach's alpha coefficient was utilized



to gauge the reliability of the latent variables, as outlined by Tavakol and Dennick [19]. As underscored in the SPSS Survival Manual [20], for evaluating the reliability and validity of a research tool and achieving optimal internal consistency, a Cronbach's Alpha value equal to or greater than 0.70 with a significant p-value of  $P < 0.05$  is sought. It's also acknowledged that a Cronbach's Alpha exceeding 0.60 can be deemed acceptable for the study's instruments.

In alignment with these criteria, the reliability estimates, expressed as coefficient alphas, for the independent variables of Environmental factors (EI), Sociological factors (SI), Economical factors (ECI), and Government influence (GII) were determined to be 0.725 (p-value  $< 0.05$ ), 0.750 (p-value  $< 0.05$ ), 0.610 (p-value  $< 0.05$ ), and 0.811 (p-value  $< 0.05$ ), respectively. Similarly, the reliability estimate (coefficient alpha) for the dependent variable, the Development of the pottery industry (DP), was computed at 0.779 (p-value  $< 0.05$ ). These computed values all reside within the range of acceptable levels as indicated in table 2, reinforcing the internal consistency and reliability of the study's measurements.

**Table 2.** Descriptive Statistics of the Selected Variables

Variable	Mean	Standard Deviation
Development of the pottery industry (DP)	0.02	0.773
Environmental factors (EI)	0.96	0.820
Sociological factors (SI)	0.01	0.868
Economic factors (ECI)	-0.82	0.763
Government influence (GII)	-0.50	0.812

Upon scrutinizing the correlation between composite dependent and independent variables, the outcomes are presented in Table 3. Notably, the analysis reveals distinct patterns of correlation that shed light on the complicated dynamic forces at play. Firstly, Environmental factors exhibit a statistically significant positive correlation (p-value  $< 0.05$ ) with the development of the pottery industry ( $r = 0.284$ ). This connection is substantiated by considerations such as the region's environmental suitability marked by optimal temperature and lower rainfall as well as the availability of high-quality clay. The utilization of abundant ball clay from dried-up tanks for pottery production, along with access to free clay and firewood, collectively serve to catalyze and encourage the pottery industry within the area. Environmental complexity and resources positively impact the performance of SMEs in Kasongan pottery SMEs, with environmental complexity having a direct and significant effect through business strategy [21]. Conversely, Economic factors exhibit a statistically significant negative correlation (p-value  $< 0.05$ ) with the development of the pottery industry ( $r = -0.295$ ). This nuanced association speaks to factors that hinder the progress of pottery production, such as insufficient capital for investment and a dearth of skilled labor. These obstacles contribute to a discouraging effect on pottery production within the locality. This overview insight underscores the sophisticated interplay of various factors and their differential impact on the industry's evolution within the studied area. Current negative

economic situation in Sri Lanka may have a negative effect on pottery industry in Sri Lanka such as political instability, lack of infrastructure, and lack of labor [22].

The government might prioritize other industries or sectors over pottery production. Industries like tourism, agriculture, or manufacturing might receive more attention and resources due to their perceived economic significance compared to the relatively smaller pottery industry. There might be a lack of targeted policies or initiatives specifically tailored to support the pottery industry. The government might not have dedicated programs for skill development, market promotion, or infrastructure development within the pottery sector. Pottery might have a more localized market compared to other export-oriented industries. As a result, the government might focus its efforts on industries with greater potential for international trade, overlooking the potential of the pottery sector. Due to the above mentioned reasons, government influences did not show positive correlation to the development of pottery industry in Sri Lanka.

**Tabel 3.** Correlation Results of the Variables

Variable		EI	SI	ECI	GII
Development of the Pottery Industry (DP)	Pearson Correlation	.284*	-.161	-.295*	-.022
	Sig. (2-tailed)	.014	.167	.010	.854
	N	75	75	75	75

\* Correlation is significant at the 0.05 level (2-tailed), EI – Environmental factors, SI – Sociological factors, ECI – Economical factors, GII – Government influence factors

**4. Conclusions**

When examining the spectrum of influences shaping small and medium-scale enterprises within the domain of the pottery industry, a nuanced prospect of factors comes to light. This involved interplay uncovers distinct patterns that bear substantial implications for this creative and historic trade. To begin, environmental factors emerge as a pivotal force, displaying a statistically significant and positive correlation with the development of the pottery industry. Within this context, climatic considerations, the quality of available clay, and the financial outlay associated with essential inputs stand out as pivotal determinants. Conversely, the landscape shifts markedly when considering economic factors. This category showcases a statistically significant and negative correlation with the development of the pottery industry. A multitude of dynamics contribute to this correlation, spanning challenges such as inadequate capitalization and a shortage of skilled labor. These economic hurdles manifest as substantial roadblocks, curtailing the momentum and extent of progress within the pottery production sphere in the area. Knowingly, a spotlight on sociological factors and government influences reveals a different narrative. Within the margins of the current study, these factors do not demonstrate statistically significant correlations with the pottery industry. While their presence certainly influences the broader

ecosystem, their direct impact on the complex dance of pottery production in the region remains relatively restrained.

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