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Effects of ecological process on indigenous pottery as a cultural tourism product: A case of Zulu pottery

Folasayo Enoch Olalere
University of Zululand, South Africa
Private Bag X1001, KwaDlangezwa 3886
E-mail: olaleref@unizulu.ac.za
ORCID ID: https://orcid.org/0000-0003-1083-7907

Abstract

This exploratory case study aims to document the ecological factors influencing the production and development of indigenous pottery as a tourism product, using Zulu pottery in South Africa as a case study. The study assessed the ecological factors through the seven feedback mechanisms of the *Cybernetic model*, which are resources, weather & climate, scheduling conflicts, the degree of sedentariness, demand, man/land relationships and technological innovation. Data was collected by critically examining previous fieldwork reports, literature, documented interviews and through field observation. The findings from the study show that the feedback mechanisms influence two stages of pottery development; that is, the initial development (origination) and the development to a full-time craft. These findings are of value to researchers and relevant government agencies as it reveals what to be addressed to sustain the indigenous pottery production as a tourist attraction in South Africa.

Keywords: Cultural tourism, Ceramic ecology, Indigenous craft, Zulu pottery,

Introduction: Pottery as Cultural Tourism Product

Cultural tourism is one of the new waves that is increasing the significant contribution of the tourism industry to many nations' economy (Henley, 2016; Olalere, 2019; Williams, 2016). Nations are beginning to use tangible and intangible cultural heritage assets to attract visitors and to provide peak experience for tourists. Studies consistently show that cultural heritage travellers stay longer and spend more money than other kinds of travellers ("National Trust," 2014), which is evidence that cultural heritage is no longer a mere memory or a cultural reference. The term cultural heritage has become a prominent part of the multifaceted tourism product that uniquely positions several destinations, improves their competitiveness (Williams, 2016) and also drives commerce, business and leisure (Green lines Institute, 2013).

Pottery, as a tangible cultural heritage asset, possesses a wonderfully varied and diverse range of cultural tourism, from the act to the art of pottery making. Many cities around the world have become tourism spotlights due to their myriad ceramics attractions and pottery making. A good example is an upsurge in pottery tourism in Stoke-on-Trent, England, where tourists not only visit to watch the crafting but also engage in the pottery making as part of their tourism experience.

In the case of Zulu pottery in South Africa, the indigenous pottery is one of the renown cultural heritage assets produced by the largest ethnic group in South Africa. The indigenous pottery, according to Perrill (2012) is tied to a deep artistic and early history of Zulu identity, which is integrally linked to both utilitarian (transport, drink and prepare beer) and spiritual (for offering beer to ancestors) uses (Fig. 1). Blackening of Zulu pottery

wares, as shown in Figure 1, is one of the significant features that mark the wares as a distinctive tradition with strong spiritual ties; however, not all Zulu pots are black.

Figure 1. Examples of Zulu pottery wares
Source: https://zulupottery.weebly.com/present-day.html

Prior to the 20th century, Zulu pottery wares were often acknowledged as historical and anthropological objects. However, in the early 1980s, the indigenous crafts were featured in art venues, and some of the first Zulu potters were acknowledged (Perrill, 2012). This recognition ushered in an increasing demand for the artworks, even up till today. The Zulu pottery wares can be found in various places; from the roadside markets and tourist destinations to national and international galleries and museums.

Over the last few decades, artists and social scientists in Southern Africa have devoted much energy to the study of indigenous ceramic production. The Zulu pottery is not an exemption as many studies have reported on the classification of Zulu pottery and its relationship with group identity (Fowler, 2015). These include the study of the vessel names and functions (Fowler, 2006; Reusch, 1998), the manufacturing process (Fowler, 2008, 2011; Maggs & Ward, 2011) and symbolic representations (Armstrong, Whitelaw, & Reusch, 2008; Fowler, 2011; Jolles, 2012; Maggs & Ward, 2011).

Besides, Jolles (2005) has also studied Zulu pottery from the archaeological perspective, exploring the socio-economic aspect of production while (Fowler, 2011) examined the social factors and regional variations influencing the pottery production using the social interaction network model. However, no study examined the ecological factors affecting Zulu pottery production and its development as a cultural tourism product. According to Arnold (1985), the ecological approach to ceramics is etic and cross-cultural. The approach is not concerned with the classification of pottery or analysing of an ethnographic pottery tradition. Instead, it is concerned with the interrelations of a population of potters with their environment and culture.

Therefore, this study examines the relationship of Zulu potters to the environment and culture to identify the factors affecting the development of the indigenous craft. The investigation was achieved through a series of feedback mechanisms following a cybernetic model (Arnold, 1985). The feedback mechanisms were presented as a process, which helps explain the evolution of ceramic specialisation in KwaZulu-Natal: from non-potters to part-time potters and finally to full-time potters.

The Ecological Perspective in Pottery Studies

Matson (1965) emphasised on the need to go beyond the study of pottery itself to understanding its relationship with the environment and culture. Matson called this approach "Pottery ecology," which begins with studying the pottery environment, local resources used in pottery production, as well as describing the ecological and climatological features that might impinge on potters (Rice, 2006).

Arnold (1985) later came up with a broader perspective related to Matson's idea of Pottery ecology drawing from the theoretical perspective of System Theory (Doran, 1970), ethnoarchaeology and cultural ecology (Steward, 1955). Arnold developed a *Cybernetic Model* with cross-cultural ability to explain the origins and evolution of pottery production. The cybernetic model developed from these three theoretical perspectives comprises of seven feedback mechanisms (Fig. 2).

These mechanisms give either regulatory feedbacks or positive feedbacks. Regulatory (or negative) feedbacks are processes which promote equilibrium and counteract deviations from stable situations over a long period of time (Arnold, 1985); while positive feedbacks are processes which make a system to expand and eventually reach stability at new and more complex levels (Maruyama, 1963). The two advantages of this approach is that; it provides cross-cultural generalisations concerning a series of relationships of pottery to the environment and culture, and it also provides an understanding of these relationships in space before the variable of time is added (Arnold, 1985).

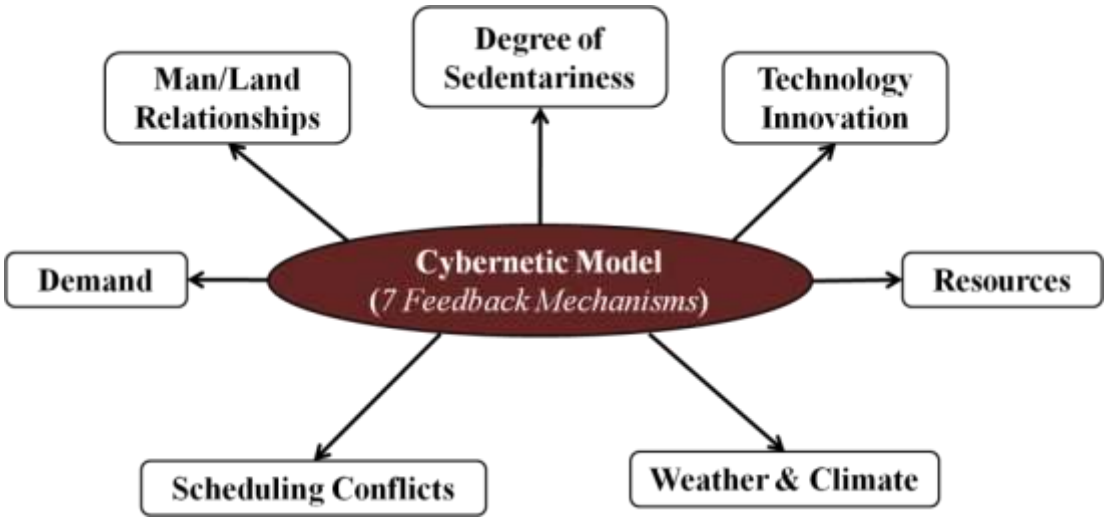

Figure 2. Cybernetic feedback mechanisms

i. *Resources:* This feedback mechanism looks into the availability and suitability of clay with respects to pottery production in a particular area. According to Nicklin (1979), Oliver (1967), Rhodes (1970), and Tuckson (1966), the presence of suitable clay is often viewed as being the primary environmental factor responsible for pottery production. Besides, the distance to the resources also provides valuable feedback with respect to pottery production. According to Arnold (1985), the origination of pottery making and development into a full-time craft in a society is often as a result of the availability of raw materials within their vicinity. This available resources make exploitation easier and prevents the high cost of

obtaining resources. With respect to the exploitable threshold model developed by Arnold (1985), the minimum and maximum range of exploitation are 1km and 7km, respectively. This implies that resources located within this exploitation range will serve as a deviation amplifying mechanism while resources located farther than 7km will act as a negative feedback mechanism that prevents ceramic production and/or development.

ii. *Weather and Climate:* The rate of drying in pottery production is affected by wind velocity, relative humidity and temperature (Shepard, 1956). Thus, this feedback mechanism identifies the effects of weather and climate on pottery production in a particular area.

iii. *Scheduling conflicts:* This mechanism reveals how potters schedule pottery making such that it does not interfere with subsistence activities; and if it does, how they allocate the craft without conflicting with other responsibilities.

iv. *The degree of Sedentariness:* It is a feedback mechanism that relates pottery production of a population to the relative mobility of that population.

v. *Demand:* It is a feedback mechanism that relates the demand for pottery wares to its development into a full-time or part-time craft.

vi. *Man/Land Relationship:* According to Arnold (1985), when a population exceeds the ability of the land to sustain it, there is movement into other occupations like pottery making. Thus, this mechanism involves the relationship of pottery making population to the land used for agricultural production.

vii. *Technology Innovation:* According to Arnold (1985), one innovation that has profound consequences for the evolution of full-time pottery specialisation is the development of forming techniques for speed fabrication. Thus, this mechanism provides deviation amplifying feedback for part-time specialisation, its expansion into new areas and its evolution into a full-time craft.

Methodology

Based on the aim of this study, which was to identify the ecological factors that impede the development of the indigenous Zulu pottery production, the researcher employed the cybernetic model in retrieving relevant data. This was achieved by critically examining previous fieldwork reports, literature and documented interviews conducted on Zulu pottery over the past two decades.

Based on the data collected, a direct interpretation was used in analysing, discussing, comparing and contrasting the data to determine the factors that impede the development of the pottery production. The direct interpretation was used because of its robust nature in extracting meaning from different categorical data and then synthesis the meaning by matching data patterns (Creswell, 2007). Thus, the findings from this study are presented in eight (8) categories, which are:

i. *Category 1 (Personal History)*: This category presents the findings on the personal history of the potters, such as; how, when and where they learn the craft skills.

ii. *Category 2 (Clay Resources)*: The category analysed the availability, accessibility and suitability of clay resources for making pottery.

iii. *Category 3 (Weather & Climate)*: This category presents the findings on the effects of Weather and Climate on pottery production.

iv. *Category 4 (Scheduling Conflicts)*: This category presents the findings on how the potters schedule pottery making and prevent interference with other subsistence activities.

v. *Category 5 (Man/Land Relationship)*: Category 5 analyse the relationship of pottery making to the productivity of land for agriculture.

vi. *Category 6 (Degree of Sedentariness)*: The findings and analysis of data in this category aimed to find out the pottery production in relation to their mobility.

vii. *Category 7 (Demand)*: The findings and analysis of data in this category aimed to find out the rate of demand for ceramic products and how it affects the development of pottery production.

viii. *Category 8 (Technology innovations)*: The findings and analysis of data in this category aim to find out the creative or attempted improvement in forming techniques over the years to speed-up fabrication and increase productivity.

Results and Discussion

Findings in Category 1: Personal History

It is interesting to note that pottery making is mostly family craft in the Zulu society. Previous documentations revealed that Zulu potters learn pottery making from either immediate or extended family. For example, the foremost Zulu ceramist, Siphiwe, learnt the craft from her mother-in-law and started producing pottery wares at the age of sixteen (in 1930) (Jolles, 2012). She passed the craft-skill to her only daughter Nesta, who also did the same to her five daughters.

The same what the case with Judith Mkhabela, whom Maggs & Ward (2011) qualified as an inspirational potter from KwaZulu-Natal. She learnt pottery making from her uncle's wife and later taught her daughter (Ward & Mkhize, 2013). This shows that the family influence is positive feedback that enables the initial development of the pottery craft and the later development into the full-time work.

Besides, since the majority of the Zulu pottery wares are functional vessels used for cooking, storage, serving, transport or medicinal-ritual; this useful aspect is also evidence of a deviation amplifying mechanism that might have led to the initial development and evolution of Zulu pottery into a full-time craft.

Findings in Category 2: Clay Resources

Zulu potters access clay sources freely near their home, which is usually within 3km (Fowler, 2011; Ward & Mkhize, 2013). Perrill (2012) reported that Zulu potters sometimes go as far as 10km to get clay near riverbanks and hillsides, but often overcome this labour-intensive task by hiring community members to retrieve clay. Hence, this provides positive feedback for the production and development of Zulu pottery, as opined by Arnold (1985) that pottery making can only originate in society and develop into full-time craft if the clay resources are available in the vicinity of their work area.

Findings in Category 3: Weather and Climate

Weather and climate have a profound effect on pottery production as it determines the time necessary for drying pottery wares and accessibility to clay sources. In the case of Zulu pottery, the drying time varies from days to weeks, depending on the weather and climate. The spring and winter provide the highest deviation-counteracting feedback and the drying time can take more than a week during this period. However, during the Autumn and summer, the drying time can be as short as a day (Fowler, 2015), which makes these seasons the optimum weather for production. Even though the production rate in spring and winter is slow, but the Zulu potters still manage to produce all through the year due to the accessibility to clay sources at any time of the year.

Findings in Category 4: Scheduling Conflicts

Scheduling conflicts are often as a result of the interaction of the climate restraints on pottery making and the subsistence activities. Interestingly, many of the Zulu potters are full-time (Armstrong et al., 2008) because households and activities are historically sub-divided by gender and pottery making have been the domain and the main source of income for women in the Zulu communities (Fowler, 2006; 2008; 2011 & 2015). For example, the foremost Zulu ceramist, Siphiwe and her daughter (Nesta) and even the granddaughters were all reported to be full-time potters (Jolles, 2012). The inspirational Potter, Judith Mkhabela, was also a full-time potter (Maggs & Ward, 2011; Ward & Mkhize, 2013). This was possible since they allocated the craft to only females (Armstrong et al., 2008) without conflicting with any other substantial subsistence activities (such as agriculture) during the period of optimum weather for pottery making. Therefore, scheduling conflicts have a positive or amplifying effect on the origin of pottery making and its development into a full-time craft in the Zulu community.

Findings in Category 5: Man/Land relationship

Historical evidence shows that the man/land relationship has an amplifying effect on the development of Zulu pottery. According to a report by Jolles (2005), a series of natural disasters that swept over Zululand in the nineteen century disrupted their traditional way of life, which is farming and rearing of animals. These include severe drought, swarms of locust that destroyed the crops, an epidemic of rinderpest that wiped nearly 85% of cattle and the east coast fever. These disasters channelled the Zulu communities into non-agricultural pursuits: while women focus specifically on pottery making, the men often carve wood and weave baskets. These provide amplifying feedback for the continuation of pottery production and its evolution from a part-time activity to full-time craft.

Findings in Category 6: Degree of Sedentariness

Earthenware is often difficult to transport without breakage; thus, sedentariness is viewed as an important factor that determines the origin and development of pottery making (Linnes, 1925). That is; lack of sedentariness is a limiting factor while sedentariness is an amplifying factor for the development of pottery making within a society. Hence, since the Zulu potters are fully sedentary society, this characteristic provides amplifying feedback for the origin of pottery making in the Zulu communities.

Findings in Category 7: Demand

Research shows that there was an increase in demand and use of Zulu pottery wares after the late 1800s, which was as a result of an increase in beer consumption due to excessive grain production (Perrill, 2012). Hence, an increase in agricultural produce positively influence the demand and use of the indigenous pottery, and since then, the pottery has become a symbol of Zulu cultural traditions. Subsequently, the expansion of interest by collectors and museums has created a huge demand for the indigenous pottery. Hence, the production and selling of the pottery wares are now becoming a global undertaking where Zulu potters produce pots for both local and external market with some intermediaries helping in the buying and selling. Often, the middlemen place an order, and the Potters' produces base on the number of wares ordered. This has a positive influence on the development of the pottery and its transformation into a full-time craft in the Zulu community.

Findings in Category 8: Technology innovations

Interestingly, the same traditional and primitive forming technique (hand-built) is being used by Zulu potters (Armstrong et al., 2008; Fowler, 2008, 2011, 2015; Maggs & Ward, 2011). This hand modelling technique (coiling and pinching) manipulates a lump of clay to form vessel shape by squeezing or rolling the clay into long ropes or fillets. The ropes, rolls or fillets of clay are then built up to establish the vessel circumference (Blandino, 1984), while successive clay applied increases the height gradually (Fig. 3).

Figure 3. Zulu woman making a pottery ware
Source: https://c1.staticflickr.com/3/2117/1674493314_5e49db4335.jpg

With this technique, pottery wares are often made in several stages, which requires drying after each stage, to prevent sagging or cracking when more clay is added. This makes the rate of production relatively slow. Besides, with this technique (hand modelling), the shape and size consistency is not guaranteed.

Evidence shows that the potters neither attempted new technology nor new innovative technique; this may be as a result of three barriers. First, the habit pattern of new technology and innovation may be incompatible with their habit pattern. According to Spier (1967), "motor habit" patterns are rigid and difficult to change, therefore difficult for potters to adopt new production technique. Second, the organisational patterns of pottery making

may be inconsistent with those necessary for innovation (Arnold, 1985). That is, the potters see no need for technology innovations, because of the lineage and the mode of acquiring the artisanal skill, the potters have held on to the inherited traditional method of pottery production (coiling and pinching method). The third is their economic marginality (Arnold, 1985; Whitaker & Whitaker, 1978); that is, they have limited capital and resources and therefore rejected any innovation that requires capital investment. Thus, the old technique used limits productivity and hence provides negative feedback that limits the development of the pottery in the communities.

Conclusion

The study shows that the feedback mechanisms influence two stages of pottery development; the initial development (origination) of pottery making and the evolution to a full-time craft. The findings revealed that six (6) feedback mechanisms have a positive influence, while "Technological Innovations" do not effect on the origination of Zulu pottery (Table 1).

Table 1. Summary of the findings

Feedback Mechanisms	Origination of Zulu Pottery	Evolution of Zulu Pottery into Full-time
Clay Resources	Positive	Positive
Weather & Climate	Positive	Negative
Scheduling Conflicts	Positive	Positive
Man/Land Relationship	Positive	Positive
Degree of Sedentariness	Positive	Positive
Demand	Positive	Positive
Technology Innovations	No Effect	Negative

Even though most of the Zulu potters are full-time employees, the study shows that their failure to improve the production process is a limiting factor that might have affected the expansion and productivity of the craft. In addition, the spring and winter season also limits their productivity levels. Therefore, in order to enhance and sustain the Zulu heritage pottery, the potters need to improve their production process by adopting contemporary techniques (such as slip casting, wheel throwing etc.); employ drying technology (e.g. dryer in a controlled environment) during spring and winter season. These will help the potters to maintain the production rates all through the year.

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