Acadlore Transactions on Applied Mathematics and Statistics
https://www.acadlore.com/journals/ATAMS

Demographic Influences on Indigenous Knowledge Practices in Chief Albert Luthuli Municipality

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Received: 06-13-2023 **Revised:** 08-13-2023 **Accepted:** 09-01-2023

Citation: M. Famo, M. Machate, "Demographic influences on indigenous knowledge practices in Chief Albert Luthuli Municipality," *Acadlore Trans. Appl Math. Stat.*, vol. 1, no. 2, pp. 77–86, 2023. https://doi.org/10.56578/atams010203.

Abstract: In recent years, a surge in studies concerning indigenous knowledge (IK) has been observed, yet a clear definition of IK remains elusive. Discrepancies in international studies lead to fluid interpretations of the concept. The present study seeks to delineate the key elements characterizing knowledge as either indigenous or foreign to a specific community. Through a meticulous exploration of definitions surrounding indigenous knowledge, it is posited that all knowledge forms can be considered indigenous within the communities of their origination. To elucidate this argument, the impact of community demographics on the adoption of knowledge perceived as indigenous within the Chief Albert Luthuli Municipality was investigated. Data were collected using structured interviews, involving a total of 398 respondents. Analyses were conducted employing a mixed-method approach, utilizing Microsoft Excel and the Statistical Package for Social Sciences (SPSS). Findings revealed a significant relationship between variables such as commonly spoken language, cultural attributes, age, and employment level with IK practices within communities. Furthermore, the economic factors, including employment status, education levels, and household income, were examined for their association with the adoption of IK practices. It was discerned that such variables were correlated with the adoption of IK practices, especially as alternative strategies in the absence of consistent household income. Key determinants like the language proficiency of the household head, employment status, educational attainment, family size, household income level, age, and gender of the household heads were analyzed. The influence of these determinants on household adoption of indigenous practices was assessed using inferential statistical methods, specifically probability and regression analysis.

Keywords: Indigenous knowledge; Cultural practices; African cultural frameworks; African philosophical paradigms; Decolonial perspectives

1 Introduction

In the 21st century, an expansion of indigenous knowledge (IK) research has been observed, particularly within the context of post-colonial history [1]. Such advancements are often interpreted as potential markers of the end of colonial legacies, signaling the resurgence of genuine human developmental potential. A prevalent debate centers on the existence of distinct categories of knowledge: indigenous and otherwise. Through rigorous scrutiny, it is posited that all knowledge types might inherently be indigenous within the locales of their genesis.

A primary challenge arises from the observed inconsistencies in the definitions of indigenous knowledge across various studies. For instance, IK is delineated by the study [2] as localized knowledge, uniquely tailored to specific cultures, and cultivated over extended periods through societal practices and experiences. On the other hand, Roue and Nakashima [3] characterizes it as information intrinsic to particular subcultures, suggesting a more homegrown aspect. Upon comparison, local and home-grown are arguably synonymous. Yet, a pivotal question emerges: can "knowledge" be interchangeably used with "information"? Such a distinction remains largely unaddressed in the current discourse on indigenous knowledge. Further complexity is introduced by the study [4], who emphasize that indigenous knowledge encompasses both a comprehensive set of knowledge and related practices. Contrary to views presented by the studies [2–4], it is suggested that IK is not limited to mere awareness but extends to the practical application within daily societal routines. While expecting uniformity in definitions might be considered unreasonable, the presence of discrepancies is unmistakable.

Another dimension of the discourse examines the possible existence of knowledge forms – be it skills, technology, practices, or information – devoid of indigenous characteristics. Such knowledge, if identified, might be devoid of the inherent traits of IK, leading to its classification as non-indigenous. To elucidate this, 37 globally sourced definitions of IK were assessed to discern commonly recurring elements characterizing IK (Figure 1).

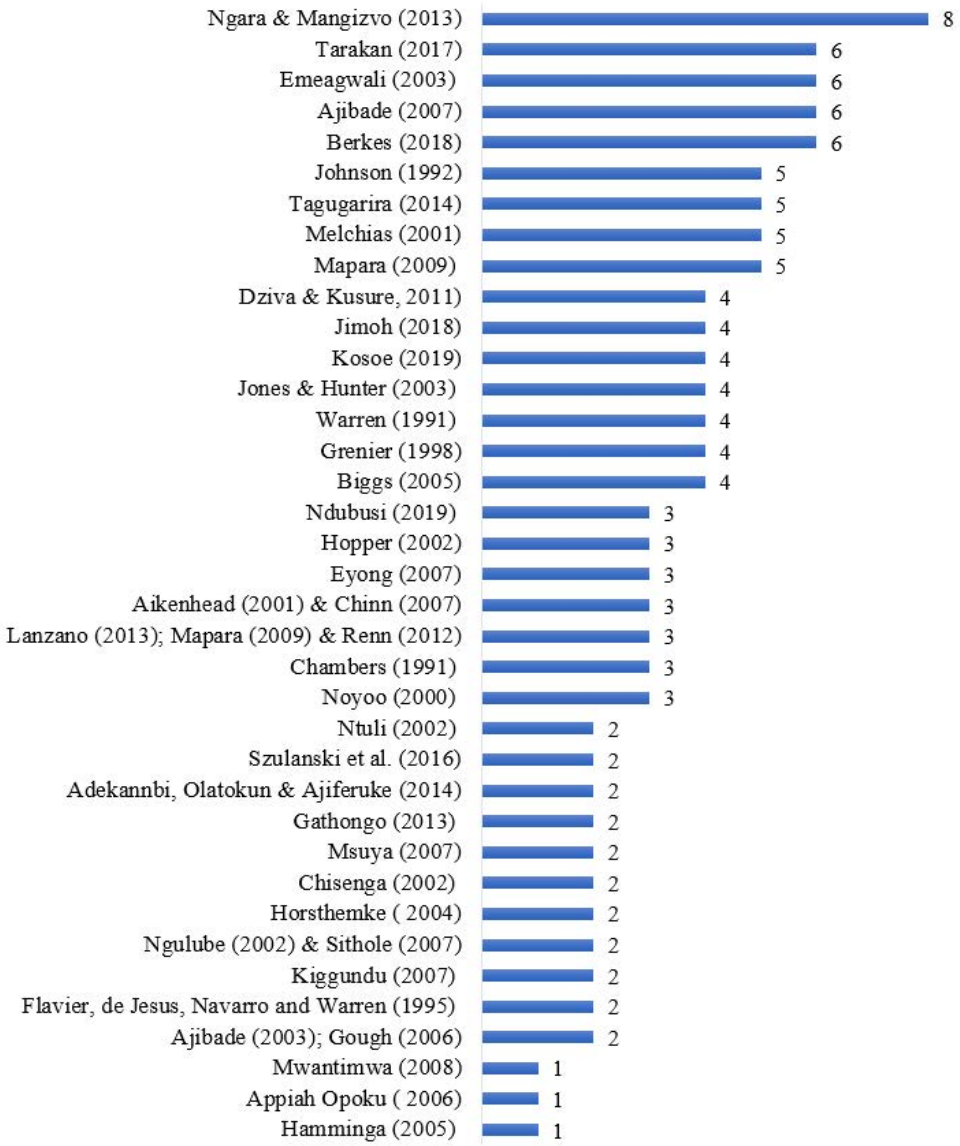

Figure 1. Number of elements used in the definition of indigenous knowledge per study

Upon the examination of 37 distinct studies, it was found that, on average, between 3 and 4 elements were commonly employed to delineate indigenous knowledge (Figure 1). Interestingly, more than half of the scrutinized articles incorporated three elements or fewer in their respective definitions. The observed variance between the minimum and maximum number of elements used was recorded to be seven, with a calculated standard deviation of 1.6. Predominantly, two elements were favored in the representation of IK. Such findings lay the foundation for deducing the probable number of elements that should be present to aptly categorize knowledge as indigenous. These criteria serve as benchmarks, underscoring the earlier proposition that the absence of purely non-indigenous knowledge forms exists in the universe. These established benchmarks further guided the characterization of primary data from the study area to determine its alignment with indigenous knowledge parameters.

From the 37 scrutinized articles and their accompanying definitions of IK, 26 unique elements emerged (Figure 2). The range of elements used for IK characterization spanned from 1 to 17 among different authors. The mean number of elements incorporated by authors stood at 4.7. It was discerned that less than half of the studies utilized fewer than 4 elements. Conversely, a majority of over 50% employed four or more elements in their definitions, with the mode of elements being fixed at 1, exhibiting a standard deviation of 4.0. Through this descriptive statistical

evaluation, a consensus was reached, suggesting that a median of four elements could be deemed as the optimal count for representing the essence of IK. Subsequently, the quartet of elements that manifested the highest frequency (Figure 2) were earmarked as the pivotal components for this study. These encompassed: (1) knowledge localized within a specific geographic sphere, (2) insights procured through specific practices or methodologies, (3) an ensemble of concepts or a knowledge corpus, and (4) skills cultivated locally. Therefore, a holistic definition of indigenous knowledge, predicated on these four elemental pillars, can be formulated as: a conglomeration of concepts or a knowledge set, coupled with skills fostered locally, which are disseminated and honed through practices integral to community livelihood sustenance.

Building upon the earlier discussions, attention was also directed towards the historical underpinnings of the term 'indigenous knowledge'. Derived from Latin origins, the term 'indigenous' can be traced back to the words 'indigenus' and 'indigene' [5]. As cited by the Word Hippo in 2021, 'indiginus' is understood as an adjective encompassing synonyms such as (1) native, (2) indigenous, (3) aboriginal, and (4) born within. A parallel perspective on the term 'indigenous' is offered by the study [6], who attribute its etymology to the Latin word 'Indigena', signifying 'native'. It is noted that this particular term found its initial usage around the early 1640s. Further elaboration by the study [6] indicates that 'Indigena' resonates with the essence of 'natural occurrences', and has its roots in the age-old Latin term 'indu', which subsequently is believed to have evolved from the ancient term 'endo'. Interestingly, 'endo' holds congruence with the Greek term 'endina' [6].

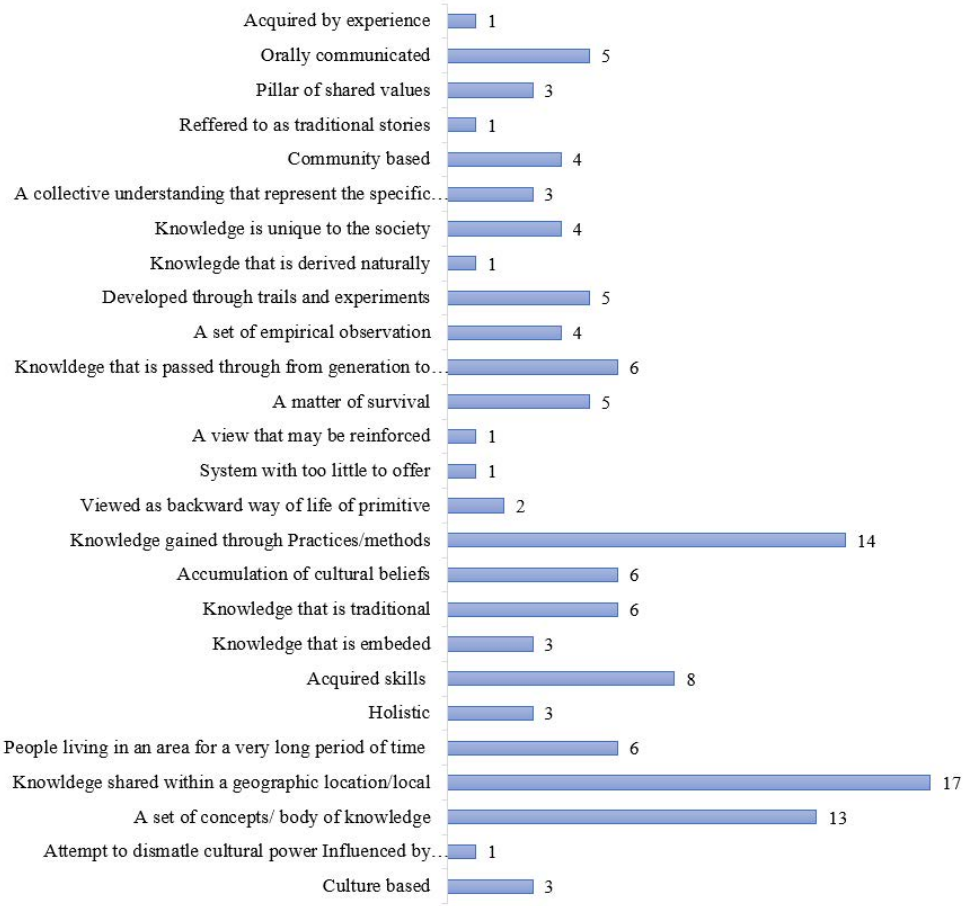

Figure 2. The frequency of use of an element in the definition of indigenous knowledge based on the 37 reviewed articles

The primary focus of this research was to ascertain the determinants that mold indigenous knowledge practices at the household level within the confines of the Chief Albert Luthuli Municipality.

2 Discussion of the Results

In the examination of the concept of indigenous knowledge, four predominant elements were identified: knowledge shared within a geographic location, knowledge accrued through various practices or methods, a cohesive set of concepts or a body of knowledge, and locally acquired skills. Ngulube and Ndubisi [7, 8] propose that the language in which respondents communicate inherently forms an integral part of IK, being primarily transmitted orally within

specific geographic domains. Moreover, the study investigated seven demographic aspects believed to influence indigenous knowledge practices within the community: language, employment status, education levels, household income, family size, age, and gender.

2.1 Language Demographics

To gauge the linguistic profiles within the Chief Albert Luthuli Municipality, 398 questionnaires were disseminated to participants. Interviews were conducted using the respondent's native language, and Figure 3 provides an illustrative breakdown of the languages spoken by these respondents.

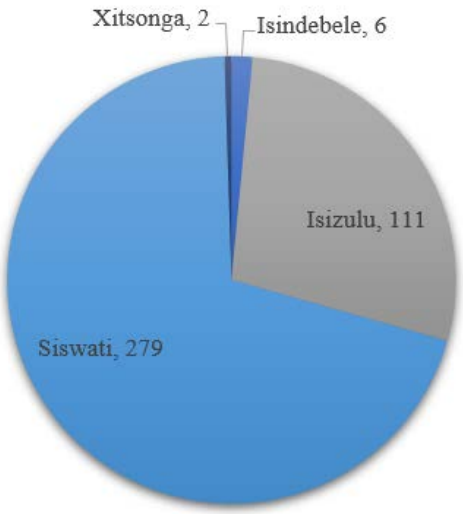

Figure 3. Predominant languages within households

Within the Chief Albert Luthuli Municipality, it was observed that the Nguni tribe and Vatsonga dominate, with 98.0% of respondents being of South African origin and a minor 2.0% stemming from Swaziland. Hopper [9] highlight that IK remains preserved in the communal memory, primarily being orally transmitted within the community and to successive generations through traditional mediums like storytelling, songs, and other oral traditions. The predominant demographic, in this case, was of the Nguni lineage, sharing a consistent cultural backdrop, ancestral practices, beliefs, and native languages. The correlation between a respondent's ethnicity and the language they communicate in was deemed significant. Detailed analysis revealed that languages such as siSwati (70.1%), isiZulu (27.9%), isiNdebele (1.5%), and Xitsonga (0.5%) were prevalent, a finding further supported by data from the 2016 Census.

Historical accounts indicate that during colonial and apartheid eras, the African populace of South Africa was categorized into prominent ethnic factions, including the Nguni, Sotho, Shangaan-Tsonga, and Venda, alongside the Coloured and Afrikaans demographics. An essential hallmark of these ethnic distinctions was language (South African History Online, 2016). The Constitution of South Africa, in Section 29 (9), recognizes 11 official languages, which include isiSwati, IsiZulu, IsiNdebele, and Xitsonga. The integral roles of culture and language in fostering learning, especially among indigenous communities, are acknowledged [10].

The linguistic predisposition of an individual is posited by the study [11] to influence their perception of the world. This sentiment echoes the Sapir-Worf hypothesis, which accentuates the relationship between language and cognitive processes. Within indigenous communities, the linguistic framework impacts their survival methodologies [12]. Furthermore, IK is understood to encompass an array of components such as skills, innovations, beliefs, values, language, and experiences, all of which are disseminated through linguistic tools like traditional storytelling, proverbs, and drama [13]. It was further noted by the study [14] that the language spoken by an individual potentially influences their unemployment probability. Recent data from Stats SA (2021) indicate a decline in the employment rate in Mpumalanga by 96,000, with the Nguni-speaking demographic being the most adversely impacted.

2.2 Employment Profile of the Respondents

The employment status of the respondents is visually depicted in Figure 4.

By the International Labour Organization's (ILO) criteria, unemployment is defined as the condition where individuals, despite actively seeking paid employment, remain jobless due to prevailing economic conditions. A high unemployment rate among the youth was observed in the Chief Albert Luthuli municipal area, as showcased

in Figure 4. This observation aligns with the findings of the study [15], who also documented elevated youth unemployment rates. A community survey conducted in 2011 reported a similar trend, highlighting a significant unemployment rate among community members aged between 18 and 64. Specifically, employment and unemployment rates stood at 65.6% and 34.4% respectively, as corroborated by Stats SA 2011. In addition, it was noted that 36.2% of the respondents remained unemployed, 32.9% held employment, and the rest comprised of pensioners and students at 21.4% and 9.5% respectively.

A significant rural dimension to poverty is evident in South Africa, where approximately 75% of the impoverished population resides in rural areas, particularly in former homelands. Elevated unemployment rates further compound the challenges faced by these rural communities. In 2021, the official unemployment rate in Mpumalanga was documented to be 21.9% (Stats SA, 2021).

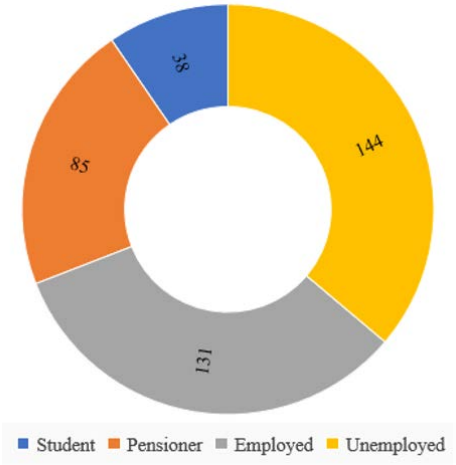

Figure 4. Employment status within households

Interestingly, a gender disparity in unemployment rates was identified. Lauer [16] revealed that unemployment rates among women surpassed those of men, standing at 35% compared to 25%. This gender disparity was also evident in the Chief Albert Luthuli Municipality, where a significant number of women remained unemployed. It was observed that the participation of women in adopting indigenous knowledge practices exceeded that of their male counterparts. Such gender dynamics intertwined with IK are deeply rooted in cultural values and are viewed as vital cultural capital within diverse communities. Meyiwa et al. [17] posits that women play an indispensable role in community survival, often taking on a broader array of IK tasks than men. These findings are consistent with the observation of the study [17] that indigenous knowledge systems (IKS) frequently serve as the primary resource for these women to support their families, especially given their unemployed status. In the Chief Albert Luthuli Municipality, it was noted that community members engage in waste recycling activities as a poverty alleviation strategy, however modest the earnings. Poverty alleviation, as defined by the study [18], pertains to effective measures undertaken to reduce deprivation of well-being.

IK is often regarded as the cumulative knowledge inherent to local communities, acting as a conduit for innovative problem-solving strategies, especially for the underprivileged. Rather than existing in isolation, IK is in a state of flux, constantly integrating external knowledge, marrying the past with the present and local insights with non-local perspectives. Bohensky and Maru [18] maintains that local communities frequently harness IK-based innovations to address day-to-day challenges tied to poverty. A parallel may be drawn with the rural area of Inanda in South Africa's KwaZulu-Natal Province, which, akin to the Chief Albert Luthuli Municipality, faces significant unemployment and poverty. In such settings, natural resources often become paramount, underpinning livelihoods and serving as a source of income-generating activities. For generations, IK has been integral to socio-economic development within local communities, not only within the South African context but on a global scale.

Indigenous knowledge is posited by the studies [19, 20] to function as the pivotal social capital for the impoverished, serving as their primary asset when navigating the arduous journey of survival. This underlying potential of IK, when infused into locally managed, sustainable, and cost-effective strategies, offers profound implications for developmental processes. A close association between IK and survival-decision frameworks has been highlighted, laying the foundation for problem-solving initiatives tailored to local communities, particularly the economically disadvantaged [21, 22]. In numerous global locales, the integration of indigenous knowledge practices into developmental paradigms is viewed as an avenue for spurring growth within economically strained rural sectors [23].

A significant association between employment status and the methods of waste handling and disposal within

respondents' domiciles has been identified through statistical analysis (x^2=16.181, p=0.001). It is inferred that employment status is influenced by indigenous practices, given the observed p-value is below the 0.05 threshold. Drawing upon the study [24], it is highlighted that indigenous knowledge Systems have metamorphosed into catalysts for rural advancement, especially when channeled through sustainable waste recycling endeavors, providing tangible reference points for sustainability.

Notably, high unemployment rates disproportionately impact individuals with only primary education. Recent trends suggest that even those who have pursued high school education, yet failed to secure a Grade 12 certificate, grapple with unemployment vulnerabilities. Alarmingly, even the more educated demographic seems susceptible to employment instability. A decrease in unemployment rates among the minimally educated populace was observed between 1997 and 2008, as corroborated by StatsSA 2011. In a comprehensive assessment, Emeagwali [25] characterizes the African indigenous knowledge system as a reservoir of knowledge and skills. This system, historically tapped into for self-employment avenues, remains deeply entrenched among the Sub-Saharan African populace. The grim reality, underscored by the study [26], remains that almost a third (29%) of the populace languishes below the poverty line, with unemployment rates soaring, particularly among the young, and the less-educated rural demographics.

2.3 Educational Landscape of the Community

The Quarterly Labour Force Survey conducted by Statistics South Africa between 2010 and 2020 elucidated the correlation between unemployment rates and educational attainment. It was revealed that individuals with a high school level of education bore the brunt, facing an unemployment rate of 23.7%. The educational profiles of respondents from Chief Albert Luthuli Municipality are depicted in Figure 5.

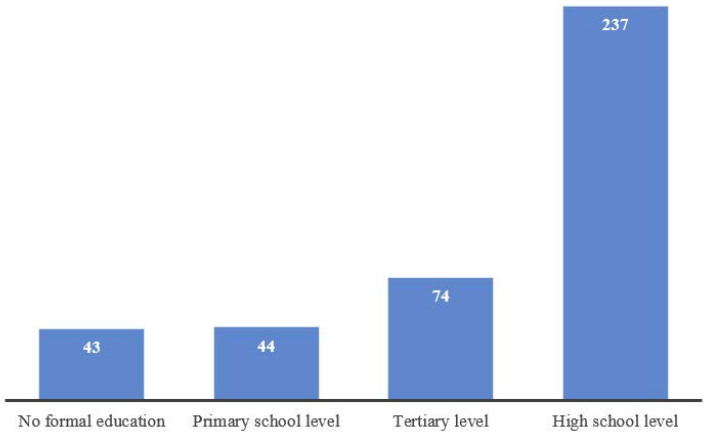

Figure 5. Pinnacle of educational attainment

Within indigenous societies, education is traditionally perceived as a continuum of life experiences [27]. The very notion of education has been delineated as a cornerstone for human survival, serving as a conduit through which one generation imparts accumulated wisdom, insights, and experiences, thereby equipping successive generations to navigate life's multifaceted challenges [28, 29]. In a 2017 report by the World Bank, it was determined that merely 8.2% of the South African population aged 25 and above held at least a bachelor's degree or an equivalent advanced qualification. Concurrently, a 2016 survey by Statistics South Africa indicated that of individuals aged 20 years and beyond, a mere 4.4% concluded primary education, 28% were engaged in secondary education, 27% attained a matric certification, and 63% had embarked on tertiary education.

Data from this investigation suggested that a notable 10.8% of respondents lacked formal education, 11.1% completed only primary education, 18.6% advanced to tertiary levels, while the majority, 59.5%, had high school education (refer to Figure 5). It can be inferred that the education level of respondents potentially impacts their perception and recognition as indigenous individuals. In this context, the term "aboriginal" is conceived as a synergistic fusion of indigenous communities and their endemic environments [30]. The profound impact of education, acting as a catalyst in shaping knowledge and skillsets, further capacitating individuals to serve as agents of economic transformation within communities, is underscored by the study [31].

2.4 Correlation Between Family Size and Indigenous Knowledge Practices

As depicted in Figure 6, an exploration of the connection between family size and the comprehensive ratings of indigenous knowledge practices was conducted. Notably, a substantial correlation between the two variables was not

identified, as evidenced by an R^2 value of 0.0078.

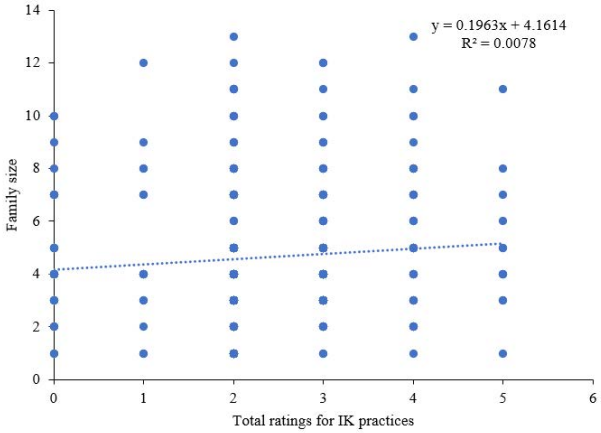

Figure 6. Relationship between family size and the prevalence of indigenous knowledge practices

2.5 Interplay Between Household Income and Indigenous Knowledge Practices

Figure 7 provides an insight into the potential impact of household income on the indigenous knowledge or practices embraced by a household.

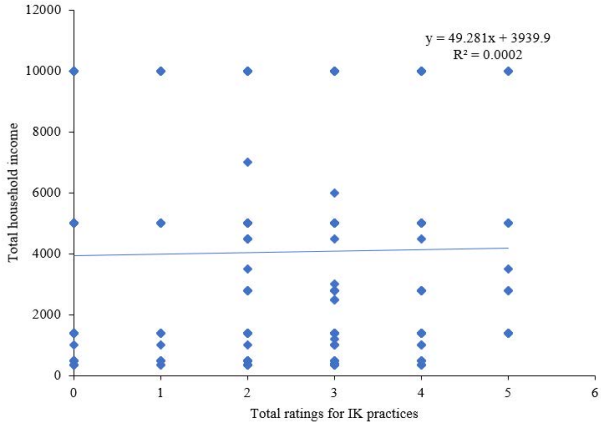

Figure 7. Correlation between household income and the adoption of indigenous knowledge practices

2.6 Examination of the Interrelation Between Household Income and Family Size

In Figure 8, an exploration into the connection between total household income and family size is depicted. A substantial correlation between these two variables was not observed, evidenced by an R^2 value of 0.0657.

Family size is defined by the study [32] as the aggregate number of members constituting a family unit. A discernable, yet weak positive relationship between family size and household income is observed, particularly within rural communities ($R^2 = 0.0657$). This association aligns with the findings presented by the studies [33, 34]. Moreover, a linkage between family size and specific ethnic groupings, in this instance the African race, is highlighted by the study [35]. Factors leading to divergent family sizes are ascertained to be deeply rooted in the cultural origins of the specific communities and also in demographic elements such as age and sex distribution.

The average household income and expenditure of respondents per month is identified to be below R624 per person, marking the threshold of the food poverty line according to Statistics SA (2021). It is stated by Statistics South Africa that a significant proportion, approximately 4.75 million households, subsist below the poverty line. Rural impoverishment metrics from Statistics South Africa (2016) reflected a rise from 77% in 2011 to 81.3% in 2015. The utilization of indigenous knowledge is posited as a viable approach to counteract rural impoverishment. Notably, indigenous knowledge is frequently the most readily accessible and relevant knowledge framework for the day-to-day existence of underserved rural communities in developing nations [36, 37]. Indigenous knowledge, as delineated by the study [26], represents the inherent understanding embedded within certain communities, especially rural

populations. The detrimental influence of escalating poverty, especially on women, is accentuated in South Africa, compelling rural women to rely increasingly on natural resources and indigenous knowledge for sustenance. Gender disparities rooted in traditional patriarchal cultures influencing labor dynamics, especially among impoverished peasant households, are underlined by the study [38]. It is further accentuated that women, particularly those heading households, confront poverty more acutely than their male counterparts [39].

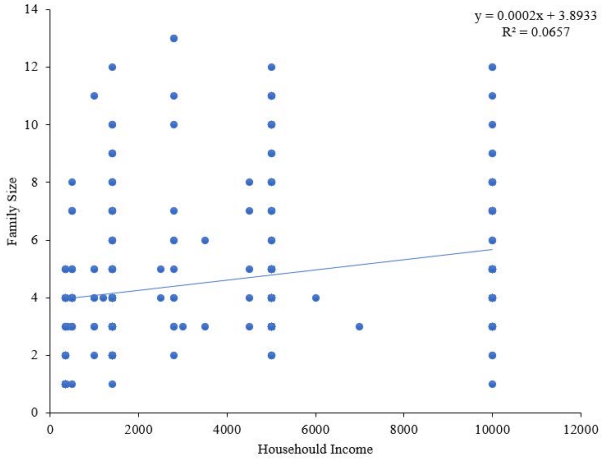

Figure 8. Correlation between household income and family size

2.7 Age-Related Trends in Indigenous Knowledge Practices

In Figure 9, a delineation of the interrelation between indigenous knowledge and age is presented.

Of the total respondents, 54.8% were identified as female, with the remaining 45.2% being male. Gender is characterized not by biological differences but by culturally determined behaviors and interactions between the sexes, as emphasized by the study [40]. These behaviors and interactions have been shaped over time and manifest differently across various cultures. A pivotal study by the study [41] unveiled that women predominantly serve as the guardians of indigenous knowledge systems, a notion that is resonant in the studied area.

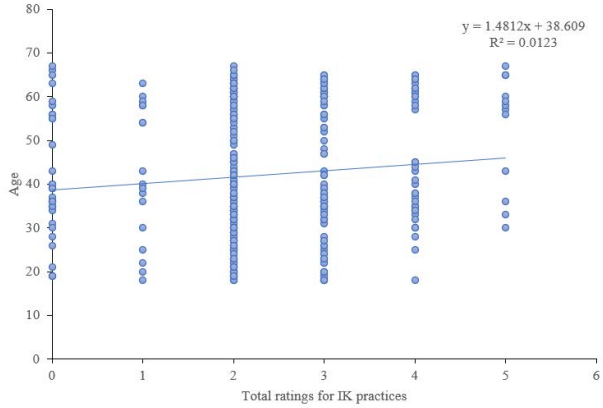

Figure 9. Correlation between age demographics and IK practices

3 Conclusion

Indigenous knowledge, when distilled to its foundational elements, can be understood as a collection of concepts, skill sets, or bodies of knowledge acquired or shared at a local level. This knowledge has historically been utilized to sustain the livelihoods of communities. From an in-depth exploration of the concept, it was inferred that indigenous knowledge is typically constrained within a specific geographic region. However, it is occasionally diminished, being perceived as a system with limited offerings, often viewed through a lens tarnished by colonial ideologies and power structures.

An examination of demographic factors influencing the assimilation of indigenous practices revealed several determinants. These encompassed the household head's language, employment status, educational attainment, family

size, household income, age, and gender. The correlation between these factors and the adoption of indigenous practices was further elucidated using inferential statistical methods, notably through probability and regression analyses.

Within the Chief Albert Luthuli Municipality, a predominantly rural area, it was observed that a majority of the respondent households communicated in the Nguni language, with a mere 0.5% identifying as xiTsonga-speaking households. Given the environmental context, a significant portion of respondents were identified as unemployed. As a consequence, indigenous practices became a lifeline, as skills were collaboratively shared within the community. Thus, the importance of acknowledging indigenous knowledge across communities cannot be overstated, not only as a reflection of local traditions and culture but also as a pivotal survival mechanism. This study contributes to the broader discourse that challenges colonial narratives, emphasizing the imperative to recognize diverse knowledge systems without hierarchical bias.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

Conflicts of Interest

The authors declare no conflict of interest.

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