

Socio-Economic Factors Influencing Trade of Medicinal Plants in the Informal Market of Maseru City, Lesotho

Lisebo Motjotji¹ and Lerato Seleteng-Kose^{2*}

¹Department of Environmental and Geographical Science, University of Cape Town, Private Bag X3, Rondebosch 7701, Cape Town, South Africa

²Department of Biology, National University of Lesotho, P.O. Roma 180, Lesotho

*Corresponding Author

Lerato Seleteng-Kos, Department of Biology, National University of Lesotho, P.O. Roma 180, Lesotho, Tel: +266 58724507, E-mail: leratoseletengkose@gmail.com

Citation

Lisebo Motjotji, Lerato Seleteng-Kose (2025) Socio-Economic Factors Influencing Trade of Medicinal Plants in the Informal Market of Maseru City, Lesotho. J Herb Med Plants 2: 1-12

Publication Dates

Received date: July 06, 2025

Accepted date: July 18, 2025

Published date: July 22, 2025

Abstract

Medicinal plants form an integral part of traditional medicine in most societies. Therefore, their trade is common in the informal market of major towns in Lesotho, particularly Maseru City. However, there is limited information regarding socio-economic dynamics of trade of these medicinal plants in the country. Therefore, the current study was undertaken to investigate main driving forces for the trade of medicinal plants, including the socio-economic profile of the street vendors, the contribution of the trade to their livelihoods and the reasons for participating in the trade. This was undertaken by interviewing street vendors selling medicinal plants in the Central Business District of the City, and conducting a market survey. Sixty vendors (comprising traditional practitioners, herbalists and mere traders) were reported to sell medicinal plants in the informal market of the City. The sale of medicinal plants was found to be dominated by males. The majority of the vendors had a formal education, and many of them were middle-aged, reflecting that they are economically active and thus providers in their households. Therefore, they resorted to selling medicinal plants due to their low socio-economic status. Nevertheless, the income generated is very low, but this is compensated by the fact that the medicinal plants are sourced free of charge from their wild populations, or purchased from harvesters at a very low cost. However, some of the medicinal plants are reported to be depleting. Other factors influencing the vendors to sell medicinal plants were found to be following an ancestral calling and healing the sick. Further research is recommended on investigating socio-economic needs of other re-



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source users such as harvesters and consumers, to ensure sustainable use of the traded medicinal plants.

Keywords: Informal Market; Medicinal Plants; Socio-Economic Needs; Street Vendors; Trade.

Introduction

The use of medicinal plants to improve man's health dates back to ancient times where people looked for cures in nature [1]. In fact, medicinal plants have supported societies and communities by maintaining their culture [2-4] healthcare systems, economic and subsistence needs [5-7]. This is particularly true now that medicinal plants have been turned into commodities in the cash economy [8, 5]. Moreover, medicinal plants form a critical part of traditional medicine in most societies where they are used to treat and prevent diseases, as well as to perform cultural rituals (Millennium Ecosystem Assessment [MEA], 2003). In western medicine, medicinal plants function as a source of new drugs [9-10]. Therefore, medicinal plants are a foundation of both traditional medicine and western medicine throughout the world [11].

The trade of medicinal plants is a lucrative business worldwide, and the market for medicinal plants has been on the rise [12- 15]. Therefore, there is a high demand for medicinal plants to supply local and international markets [16, 15]. This high demand has resulted in extensive harvest of targeted species from natural habitats since the trade is supplied largely by wild populations [17-21]. Harvesting of medicinal plants for trade is performed by many of the marginalized and poor communities who strive to obtain income to sustain their lives [3, 22-23]. These communities sell medicinal plants in local trade that is confined within national boundaries as well as international trade that occurs between countries. In addition, they sell medicinal plants in formal and informal markets. For example, some species are sold in licenced traditional pharmacies (muthi shops) which represent the formal market. Contrary to this, some medicinal plants are sold in open spaces along street pavements by unlicensed street vendors and this is considered to represent the informal market [24].

Similar to other developing countries, medicinal plants in Lesotho are used to provide healthcare and income to many Basotho (the people of Lesotho), where they are sold through local and international trade [25-29]. For example, popular spe-

cies such as *Dicoma anomala* Sond. subsp. *anomala* and *Hypoxis hemerocallidea* Fisch.Mey. & Ave-Lall. are sold locally in the informal markets of major towns [29-31]. Therefore, the trade of medicinal plants seems to be common in the informal markets of Maseru City, Hlotse and Maputsoe towns [29, 31], with the Maseru City having the largest quantity of trade [31]. These traded medicinal plants are sourced entirely from wild populations as there are no cultivation programmes for medicinal plants in Lesotho [28]. In fact, the demand for medicinal plants has fuelled extensive harvesting of wild species to supply urban markets in major towns of the country [29-31]. There has also been extensive harvest of wild species such as *Pelargonium sidoides* DC. to supply international markets [26-28]. Consequently, the populations of some medicinal plants are believed to be declining in their natural habitats [26, 28, 29]

Despite the importance of medicinal plants in sustaining livelihoods in Lesotho, there is limited information on socio-economic dynamics of the trade, such as factors that influence trade of medicinal plants and how these dynamics affect sustainable use of traded species. Indeed, [30] reported that there is poor record keeping in the trade of medicinal plants and lack of background information on the traders and their socio-economic characteristics. Therefore, the aim of the current study was to investigate the socio-economic interface driving the trade of medicinal plants in Lesotho.

Materials and Methods

Study Area

Lesotho has 10 Districts, with Maseru being the Capital Town and having the highest population (519,186), [65]. In addition, Maseru District has more economic activities and employment opportunities [32] than the other nine districts. Therefore, the urban population in Maseru continuously grows as people join the City looking for better livelihood opportunities. The Central Business District in the Maseru City can be divided into the north-eastern and western parts

which have different commercial activities [33]. The north-eastern section comprises the old bus stop area and the Maseru market. As a result, there are many people who come to sell and/or buy goods from formal and informal businesses. This section is a hub of the informal trade activity where many street vendors sell various products such as clothes, fruits, vegetables, food, seeds and seedlings, cigarettes, air time and medicinal plants along street pavements (Fig. 1). On

the other hand, the western section of the Central Business District houses Kingsway Street which is the City's main linear street characterized by formal commercial activities, formal businesses, government offices, private buildings and commercial banks [33]. Unlike the northern-eastern part of the Central Business District, the western section does not have many street vendors. In addition, the assortment of products that are sold in the western section is limited to mostly fruits, food and clothes.

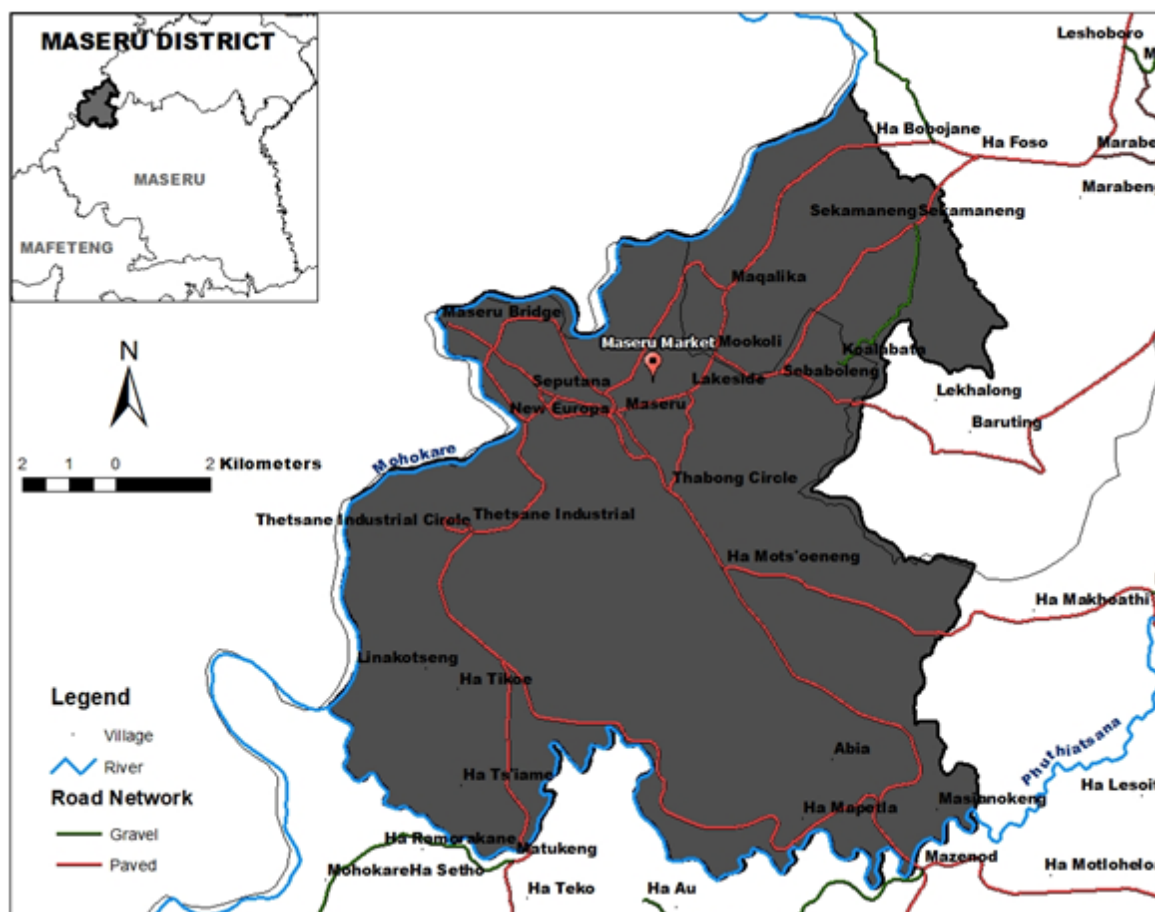


Figure 1: The map of Maseru City Council, including the Central Business District (area within white circle) and its location in the map of Maseru district [28].

Data Collection

A survey of the informal market in the Central Business District of the Maseru City was undertaken in the Maseru Market between October and November 2019. General observation of the market, focusing on market actors and activities, was made by traversing the informal market on foot to, among others, establish the location of street vending businesses, estimate the number of street vendors and observe how street vendors conduct their businesses. Data from the survey were collected using a semi-structured questionnaire,

and face-to-face interviews with street vendors. This approach was adopted from previous researchers such as [34-41, 30]. Both data collection tools were designed in the local language (Sesotho) and then translated into English. Prior to conducting the survey, ethical clearance was granted by the Ethical Clearance Committee of the University of the Free State (Ethical clearance number UFS-HSD2019/0199). In addition, participation of street vendors was only allowed when they had given consent by signing a consent form (written in the local language).

Results

Socio-Economic Profiles of Street Vendors Selling Medicinal Plants

A total of 60 street vendors was found to sell medicinal plants in the informal market of Maseru City Central Business District. These results show that the number of street vendors has increased by 10 in the last seven years following a study by [30] who recorded 50 vendors operating in the same area.

Gender

Of the 46 vendors who participated in the study (14 declined to be interviewed), 78% were males and 22% female, thus perpetuating the gender inequality that Basotho women already face in various sectors [42-45].

Age

A majority of the street vendors were aged between 21-60 years (80%), of which a larger portion was concentrated in the age cohort of 31-40 years (28%) and 41-50 years (26%). Only 10% of the vendors were old people aged 65 and above. The average age of the vendors was 46, with the oldest trader being 87 years old while the youngest was 26. Both the oldest and youngest traders were male. The female traders were aged between 37 and 70.

Marital Status

More than half of the street vendors were married (59%) whereas 20% were single, followed by 11% who were widowed and 7% who were separated from their spouses. However, only 4% of them were divorced. Surprisingly, four of the five vendors who were found to be widowed in the current study were females, as well as one of the two divorcees.

Educational Background

The majority of the street vendors have acquired some form of formal education (89%), whereas the remaining 11% are illiterate, all of whom were males. However, of the 89% of

street vendors who acquired formal education, more than half (54%) only studied up to primary school level, followed by 24% who went up to secondary school, whereas 9% attended high school. It is important to note that three of the four street vendors who attended high school were females. The remaining 2% (all of which are males) possessed an undergraduate degree from a local tertiary institution.

Occupation

All the street vendors were of the opinion that the trade of medicinal plants contributes substantially to their livelihoods since many of them (63%) were unemployed before starting their medicinal plants businesses. Those who were previously employed worked in the informal sector (26%) selling other types of goods in the streets, being hired by other traditional healers who sold medicinal plants in the market or working in low-paying jobs such as gardening in the informal sector. Only 10 street vendors indicated that they used to work in the mines in South Africa (4%), which represents the formal sector. All the street vendors pointed out that the trade of medicinal plants was their main occupation, indicating that many of them solely depend on it (Table 1). More than half (54%) of them were traditional healers, followed by herbalists (26%), traders (18%), as well as one street vendor (2%) who indicated that he fits in all the three categories. Only 3 of the 25 street vendors who are traditional healers were women while the rest of the traditional healers were men.

Number of Dependents

Almost all the participants (96%) were found to be sole breadwinners in their families, supporting a varying number of family members on a monthly basis. In fact, half of the participants (50%) have 4-6 dependants. This was followed by 22% of the vendors who indicated that they have 7-10 dependants, while 9% of them were supporting 10 or more dependants (Table 1). Indeed, the average number of children per family in Lesotho is five [65] and the average household size is four people [65].

Table 1: Socio-economic profiles of street vendors operating in the Maseru City informal market

Characteristics	Category	Number of Street Vendors (<i>n</i> =46)	Percentage (%)
Previous occupation	Formal sector	2	4
	Informal sector	12	26
	Unemployed	29	63
	¹ Other	3	7
Current occupation	Traditional healer	25	54
	Herbalist	12	26
	Mere trader	8	18
	² Other	1	2
Sole bread-winner	Yes	44	96
	No	2	4
Number of dependents	1-3	7	15
	4-6	23	50
	7-9	10	22
	≥ 10	4	9
	³ Other	2	4
Availability of tangible livelihood assets	Available	28	61
	Not available	18	39

1"Other" meant responses such as "I cannot remember" and "I am not sure". 2"Other" meant a vendor who considered himself to fall under all the three categories of traditional healer, herbalist and mere trader. 3"Other" was a response such as "I cannot remember", "I am not sure" and "it depends".

Other Income Generation Activities

In terms of ownership of tangible assets, 61% of the vendors have assets such as land in the form of fields and residential sites, livestock and houses. On the other hand, 39% of the vendors had no assets. Even though the majority of the vendors had assets, these were limited. For example, a vendor would report that he has just one cow, another had two sheep, whereas another would mention only two chickens. Only five vendors indicated that they have crop fields. However, they revealed that it had been a long time since they actively cultivated anything on their fields due to factors such as limited income to buy agricultural products such as seeds, and time con-

straints to engage in production since they are always preoccupied by the trade of medicinal plants. Only two participants owned vehicles, whereas three vendors had savings for which they did not disclose the amount.

Duration of the Medicinal Plants Trade Business

A total of 23 businesses (out of 46) were reported to have been in operation for a period of 1-5 years (28%), whereas 22% have been in existence for 6-11 years. This means that half of the businesses (50%) have been in operation for a period between one and 11 years (Fig. 2), with the oldest business having been established 47 years ago. Only five businesses were established less than a year ago with the most recent business being a month old. It is important to note that only few businesses were established in the time period of 21-25 years (2%).

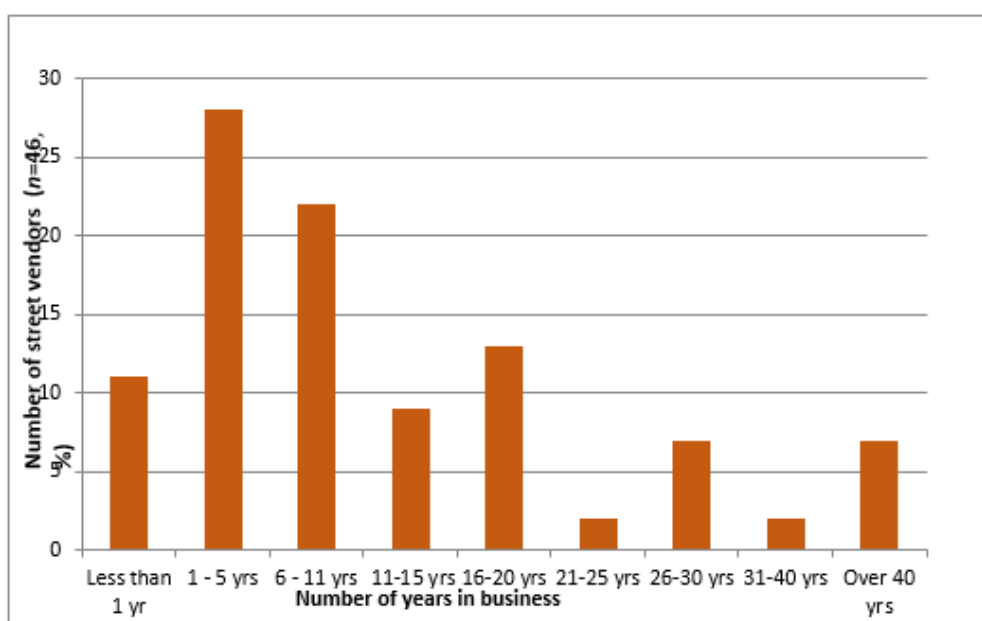


Figure 2: Number of operating years for street vendors selling medicinal plants in the Maseru City informal market.

Income Generated From the Trade of Medicinal Plants

The street vendors obtain varying amounts of income from the trade of medicinal plants. Eleven vendors (24%) receive an income of M201-M600/month (1M = 1Rand), followed by 12 (26%) who earn M601-M1000/month (Fig. 3). A total of 21 vendors (slightly less than half of the participants) receive an income of over M850/month, which is above the international poverty line of \$1.90/day (<https://www.worldvision.org/sponsorship-news-stories/global-poverty-facts>).

Comparatively, only three vendors (7%) earned M1001-M1400, whereas five 11% received M1,401-M1,800/month, and only one vendor (1%) obtained M1,801-M2,000 and six vendors (13%) pocketed an income above M2,000. These results show that half of the street vendors earn between M201 and M1,000/month. On the other hand, eight (17%) participants did not know how much income they collected per month, which is not surprising since the *muthi* trade is known for poor record-keeping [24, 38]. Nonetheless, all the vendors maintained that income from this trade has helped them to survive and maintain their families.

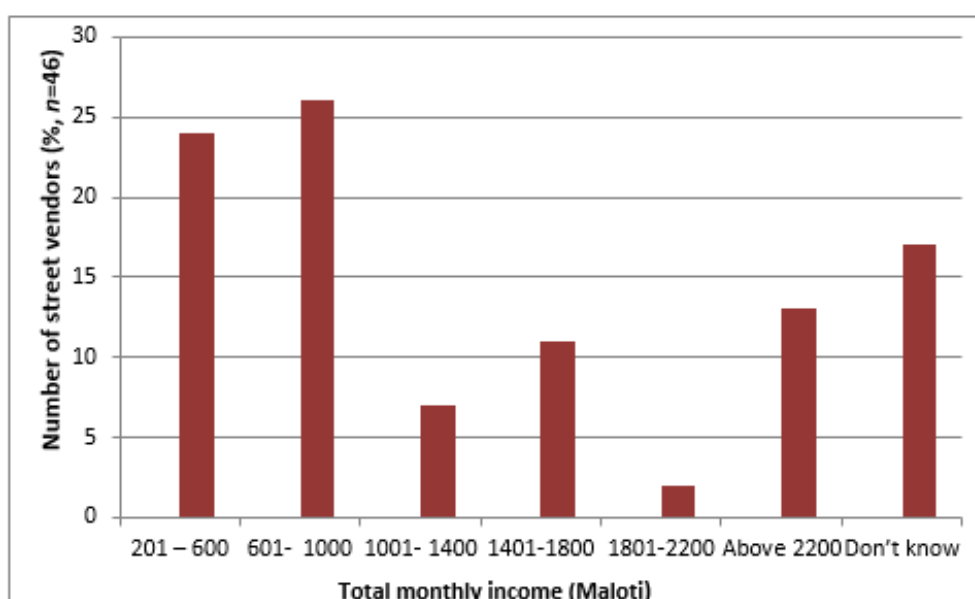


Figure 3: Total monthly income street vendors obtain from trade of medicinal plants in the Maseru City informal market.

Source of Medicinal Plants

Reasons for Selling Medicinal Plants

The main factors influencing vendors to sell medicinal plants in the market were largely found to be income generation, responding to an ancestral calling and healing people to maintain good health. The majority of traditional healers who sell medicinal plants in the market indicated that they do not use medicinal plants by choice, but have been instructed by their ancestors. To them, the trade of medicinal plants was not simply meant for income generation, but for appeasing their ancestors as well as healing the sick. Therefore, some traditional healers even heal patients without charging any fee, as long as they achieved their primary goal of saving lives. Herbalists mentioned that they sell medicinal plants because they have the knowledge that was passed on to them by their parents and/or their peers to heal the sick. On the contrary, mere street vendors reported that they ended up selling medicinal plants as a last resort after failing to get employment for a long time. Therefore, they participated in the trade to get out of poverty and to sustain their families. Other participants mentioned that selling medicinal plants was the next best option after losing their jobs in the informal sector and/or failing in other street vending businesses such as selling fruits which require high capital costs and the commodities are more perishable than medicinal plants. Observations made during the market survey revealed that irrespective of being traditional healers, herbalists or mere traders, there were standard prices charged for selling the medicinal plants.

Discussion

The increasing numbers of street vendors may be attributed to the low barriers to entry into the trade of biological resources such as medicinal plants, and the trade also requires low capital investments as well as minimum skills [46]. Even though the number of vendors seems to be increasing at a very low rate, it is possible that their number increased significantly but some of them may have relocated to other areas such as Thetsane industrial and Maseru bridge areas where there are new developments and high customer densities.

A big gap was observed between males and females in the trade of medicinal plants (with the former dominating), and this is worrying since women are a marginalized group that

has been excluded from key decision-making processes on conservation work [47-50]. These results are consistent with those of [30] who also established that the majority of street vendors (72%) who sold medicinal plants in the informal market of Maseru City were male. In addition, Williams et al. (1997) found more males selling medicinal plants than females in the Witwatersrand *muthi* markets of Gauteng Province. A similar observation was made by [51] who reported that 74% (20 out of 27 participants) of the traditional healers and herbalists were males in the Maseru District of Lesotho. The disparity may be due to the historical and cultural belief that traditional medicine in Lesotho is considered a male activity [52]. On the other hand, women are not expected to be traditional healers due to taboos associated with women handling traditional medicine. As a result, their role has been relegated to housekeeping activities [52]. In fact, women are regarded as traditionally impure to practice traditional medicine in some African societies (Cunningham, 1993). However, the domination of the trade by males established in the current study is contrary to observations made in other *muthi* markets such as the Eastern Cape Province of South Africa, where most traders were found to be females [38, 53] also observed more females than males being involved in the trade of medicinal plants in the *muthi* markets of Nigeria.

The age distribution of street vendors in the current study (mostly middle-aged) indicates that most of them are economically active since they occupy an age group of between 21-60 years [54, 30] also reported that 90% of street vendors participating in the trade of medicinal plants in Maseru City were aged between 20-60 years, with the majority in the age groups of 31-40 years (26%) and 41-50 years (22%).

The results of the current study reflect that a majority of street vendors are married. The results concur with a study by [55], which determined the contribution of biological resources to livelihoods in the Lesotho highlands, it was noted that the majority of the participants were married (64%). The fact that most of the widowed and divorced participants were females suggests that the majority of the women participating in the informal trade of medicinal plants are vulnerable and sole bread-winners. A similar trend was also observed in the informal markets of other countries such as South Africa. For example, [38] determined that more than half of the traders in the Nelson Mandela Bay Municipality of the Eastern Cape Province were unmarried women.

The current study indicates that most of the street vendors in Lesotho are literate, and a majority of these are women. Lesotho is considered to have one of the highest adult literacy rates in Africa at 86.2% (<http://www.bos.gov.ls/>) with a higher literacy rate in women as opposed to men [56]. The high literacy rate observed in the current study are also in agreement with the findings by [30] who established that only 28% of the traders in the *muthi* market of Maseru City had never attended school. The results of the current study are also in agreement with observations made in previous studies conducted in *muthi* markets of different provinces of South Africa, such as the KwaZulu-Natal [57, 36, 22, 38] and Limpopo [58-59], where the majority of street vendors have primary education.

The current study indicates that the trade of medicinal plants is characterised by vendors who were either jobless before entering the trade or had temporary jobs. This is not surprising because some of the vendors have no formal qualifications and skills to work in the formal sector. In fact, the unemployment rate in Lesotho is reported as 33% (<http://www.bos.gov.ls/>). A similar pattern of unemployment and lack of skills in the trade of medicinal plants has also been observed in *muthi* markets in South Africa [38]. In addition, the current study reflects that many of these vendors are sole bread-winners with more than four dependents. Indeed, Turner (2001) reported that many households in Lesotho have a single bread-winner. These results are consistent with observations made by [38] in *muthi* markets in South Africa, where the majority of street vendors were found to have more than three dependents (with only 15% of them support 1-3 dependants).

The study shows that the majority of street vendors operating in the informal market do not possess enough assets to sustain livelihoods. Even agricultural production seems to no longer be meeting their subsistence needs despite being considered as a major livelihood strategy for many Basotho [60]. Many of the vendors have been in the industry for several years, confirming the importance of the trade as a permanent form of livelihood as other studies elsewhere have shown [38]. The long duration of street vendors' businesses also indicates that the sale of medicinal plants is indeed an important occupation for them. This may have contributed to improvement in economic growth that Lesotho experienced around the year 2000, which lowered unemployment and poverty rates (<https://www.worldbank.org/en/country/lesotho/overview>). However, the trade of medicinal plants is generally charac-

terised by low income [38].

Many of the medicinal plants sold by vendors are sourced from their wild populations in the country. There is also exchange of medicinal plants between Lesotho and South African vendors regarding those that are depleted in one area. In fact, several studies conducted in South Africa confirm that Lesotho is one of the source areas for some medicinal plants traded in *muthi* markets of the KwaZulu-Natal Province [37] as well as the Gauteng Province [24, 62]. Despite the various reasons given for the trade of medicinal plants, it is obvious that the majority of the street vendors were engaged in the trade for income generation. This indicates that all the three categories (traditional practitioners, healers and common traders) strive to make some profits irrespective of the reasons that influenced them to sell medicinal plants. Some of the factors reported in the current study influencing participants to engage in the trade of medicinal plants have also been observed in a previous study conducted by [30] in the Maseru City *muthi* market. These include low levels of formal education and poverty due to lack of employment opportunities. Similar factors have also been reported in *muthi* markets elsewhere in South Africa such as the KwaZulu-Natal Province [37], Mpumalanga and Limpopo Provinces [62], Eastern Cape Province [38] and Western Cape Province [63].

Conclusions

A total of 60 street vendors were reported in the current study to sell medicinal plants in the informal market of Maseru City (Central Business District) market, indicating an increase since the last study conducted in 2012. The street vendors comprise traditional practitioners, herbalists and common traders. The trade was found to be dominated by males, a majority of which are the most economically active, being in their middle ages, thus breadwinners in their households. Even though the majority of the street vendors are literate, they have resorted to the sale of medicinal plants due to unemployment. Therefore, the trade of medicinal plants is their main occupation and source of income. Even though many of the street vendors have been in operation for a long period, the sale of medicinal plants is generally characterised by low income. However, there are standard prices set by the vendors to avoid competition and ensure attainment of profit.

The study has revealed various socio-economic factors influ-

encing the trade of medicinal plants in Maseru City Market, mainly being income generation, appeasing their ancestors (responding to the ancestral calling) and healing the sick. Therefore, many of the street vendors participate in the trade to sustain their families. Indeed, selling of medicinal plants is more preferable than other commodities such as fruits and vegetables, since the latter require high capital costs and are more perishable, whereas medicinal plants are sourced either from their wild populations free of charge or from harvestors at a comparatively lower cost. Therefore, further research is recommended on quantifying the trade of medicinal plants and investigating socio-economic needs of other resource users such as harvestors and consumers. Cultivation programmes for medicinal plants in Lesotho is also important to relieve the pressure on the wild populations and ensure sustainable use of medicinal plants.

Conflict of Interest

Authors declare that they have no conflict of interests associated with this publication.

Authors' Contributions

LM conceptualised the research and collected the data, LSK supervised the research and drafted the original manuscript. Both authors edited the manuscript and added valuable information.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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