Rural-Urban Comparison of Manufacturing SMMEs Performance in KwaZulu Natal Province, South Africa

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Abstract

The paper investigated the role of location on the performance attributes of manufacturing Small, Micro and Medium Enterprises (SMMEs) in South Africa's second-largest province of KwaZulu Natal (KZN). Panel data from 191 SMMEs covering three years between 2015 and 2017 were analysed using R software. The results utilising the Random Effects Within-Between (REWB) technique show that SMMEs in KZN have related characteristics but the extent to which they influence performance is moderated by location. The findings also indicate that the use of digital media and liability registration negatively affects the performance of urban-based, with no effect on rural-based enterpris es. Based on the findings, it was recommended that SMMEs in KZN should focus on productivity, permanent employees, temporary employees and total assets to drive performance despite their locations. Based on this study, the government has an informed basis for the development of effective interventions for SMMEs in the province.

Keywords: *KwaZulu Natal, Location, Small Enterprises Characteristics, Performance, Rural, SMME, Urban.*

Introduction

Local firms in the form of Small, Micro and Medium Enterprises (SMMEs) need to be fostered in any economy. They are key socio-economic drivers, particularly those in the manufacturing sector, by contributing to employment creation, export activities and fostering a culture of innovation (Herrington & Kew, 2016; Leković, Marić, & Leković, 2014; Lekhanya, 2015; Ebiringa, 2011). Small firms are regarded as critical instruments through which poverty, inequality and unemployment can be addressed (Okpara & Kabongo, 2009; Organisation for Economic Co-operation and Development [OECD], 2017). Inevitably, many countries, either developed or emerging, have placed extended emphasis on the sector as it forms one of the critical blocks for their economic development (Gupta, Guha, & Krishnaswami, 2013; Hunter, 2011; Hyder & Lussier, 2016). Small enterprises are top employment generators, contributing high rates of job creation in emerging economies (Yusuf & Dansu, 2013; Jamali, Voghouei & Md Nor, 2014; Arasti, 2011). Small firms make up more than 90% of total firms and employ more than 60% of the population in Africa (International Trade Centre, 2018). In South Africa, SMMEs constitute the majority of firms in the economy (Soni, Cowden, & Karodia, 2015). The SMME sector plays a significant role in the South African economy, contributing 34% and 60% of Gross Domestic Product (GDP) and employment, respectively (International Finance Corporation, 2019). The South African government does not view SMMEs, particularly in the manufacturing sector, only as a means through which innovation, economic growth and employment creation can be achieved (Olawale & Garwe, 2010; Ngibe & Lekhanya, 2019) but much more than that. Small enterprises in the country are considered a critical means through which apartheid legacy patterns of business ownership can be redressed, especially in rural areas (National Planning Commission, 2011; Ayandibu & Houghton, 2017).

In line with national government priority, the KwaZulu Natal (KZN) provincial government aims to promote the sustainable growth of SMMEs across the province (KwaZulu Natal-PPC, 2017). However, the province's spatial landscape is marked with significant inequality exacerbated by the application of differing legislative and policy frameworks depending on the region's level of economic development (KwaZulu Natal-PPC, 2017). This implies that firms in eThekwini metro, which in the provincial context is classified as the urban centre, are

affected by different issues than those in other 10 district municipalities which are generally rural (KwaZulu Natal-PPC, 2017; Cooperative Governance and Traditional Affairs [COGTA], 2018). This set-up, which was inherited from the apartheid rule, implies that firms, particularly SMMEs characteristics, which in turn affect performance are moderated by their geographical locations in the province. As such, this study aims to establish and compare performance attributes of manufacturing SMMEs based on their geographic locations in South's KZN province. The rest of the paper is structured as follows: literature review; data and descriptive statistics; empirical analysis; discussion of findings; conclusion; and recommendations.

Literature Review

International Finance Corporation (2019) report indicates that about 41% of small enterprises in KwaZulu Natal (KZN) are based in rural areas. The province is home to just one metro and the remaining 10 district municipalities are predominantly rural (Provincial Treasury, 2017). According to the Bureau for Economic Research (2016), SMMEs especially in the manufacturing sector continue to struggle and they now make up 8.9% of the total SMMEs down from 12.3% in the country, between 2008 and 2015. The trend threatens the hope of the government to drive socio-economic development and address apartheid legacy through resilient SMMEs in the manufacturing sector (National Planning Commission, 2011). Research has shown that the support requirements of SMMEs vary spatially owing, among others, to their location, which moderates their characteristics and ultimately performance (Phillipson, Tiwasing, Gorton, Maioli, Newbery, & Turner, 2019; Shiferaw, 2009; Buyinza, 2011). Empirical studies around sub-Saharan Africa have established that manufacturing SMMEs' location bears a significant influence on their attributes which in turn impacts performance (Bigsten & Gebreeyesus, 2007; Rijkers, Söderbom, & Loening, 2010). The importance of location on the sustainable performance of SMMEs is also noted as crucial even for firms in the same geographical region, like urban areas (Soni et al., 2015). Such findings attest to the fundamental role played by location on firm growth and long-term survival (Lucky, 2011).

The importance of establishing firm attributes based on their location is critical in South Africa given the country's history of segregation, which promoted rural marginalisation (Stull, Bell, & Ncwadi, 2016). The

system favoured urban-based firms compared to rural firms which, to date, seem to continue grappling with, inter alia, infrastructural, specialised skills and transport challenges (Bomani & Derera, 2018). Some studies have indicated that, two decades after independence, the country's sparse economic set-up still reflects historical imbalances marked with uneven patterns of development across different regions (Lawrence & Rogerson, 2019; Stull et al., 2016). The continued effects of apartheid are reflected in those large areas, which are mainly rural and remain under-developed compared to the so-called 'core regions' – the major metropolitan centres in the country (Lawrence & Rogerson, 2019). The apartheid system forced most indigenous people into barren rural areas in which economic activity was insignificant and SMMEs growth prospects were limited. These peripheral underdeveloped regions are also known as distressed areas termed Bantustans under apartheid; they had the highest levels of poverty and unemployment (Stullet al., 2016). This set-up meant that local enterprises had limited demand and could not access thick local and international markets.

Arokium (2010) posits that the South African market structure is marred by significant unequal access to basic services owing to the firms' geographic location. This is not only unique to South Africa, with findings on Ethiopian manufacturing SMMEs establishing that firms in urbanised regions leveraged on better access to infrastructure, raw materials, credit and demand to drive growth than those in rural areas (Bigsten & Gebreeyesus, 2007; Rijkerset al., 2010). The trend is also noted in developed countries, as shown by Huggins, Prokop and Thompson's (2017) study on the United Kingdom (UK) small firms, in which they found that firms based in peripheral regions like Wales had lower levels of human capital as skilled workers are attracted to more developed regions. Findings by Bomani and Derera (2018) on KwaZulu Natal align with these studies at global, regional and national levels, as entrepreneurs in rural areas claimed that their geographical location had a negative effect on their performance. However, since the dawn of democratic rule in 1994, the South African government claims to have made strides in trying to reverse the apartheid legacy through increased development of hinterland areas (National Planning Commission, 2011). This is in stark contrast to the findings by Bomani and Derera (2018) indicating that rural enterprises continue to struggle. The Provincial Treasury (2017) reports that the manufacturing sector's contributions to the provincial GDP between 2005 and 2015 were mainly from the province's only metro, eThekwini, while contributions from other rural

regions decreased over the same period. This indicates that urban-based manufacturing firms tend to perform better than those in rural areas.

Various studies have been carried out around the globe to establish the effect of location on firm attributes and thus their performance (Audretsch & Dohse, 2007; Hugginset al., 2017; Buyinza, 2011). Phillipsonet al. (2019) compared the attributes of rural versus urban firms in the UK and established that location influenced the attributes of these firms and the study pointed out the importance of such a study for bespoke policy development which leads to spatially balanced economic development. In sub-Saharan Africa, the importance of location has also been empirically established, showing that firms located in developed regions tend to perform better than those in rural settings (McPherson, 1996; Rijkerset al., 2010; Bigsten & Gebreeyesus, 2007). Lucky (2011) argues that location should be given urgent consideration in small firms studies as it plays a critical role in their performance and thus survivability.

However, based on the available evidence, it is noted that there is limited research to compare the performance attributes of firms, mainly SMMEs operating in urban and those in rural areas in KZN province despite the provincial spatial inequality (COGTA, 2018). Such a study would be key to informing effective policies aimed at the SMME sector. Previous studies have mainly focused on SMMEs based in the same region like urban areas (Mahohoma, 2018; Soniet al., 2015; Gwala, 2014), or rural areas (Lekhanya, 2016; Jili, Masuku & Selepe, 2017; Bomani & Derera, 2018). Similarly, those that looked at the provincial level (Laljit, 2006; Ngibe & Lekhanya, 2019) did not make a distinction between rural-based and urban-based enterprises utilising the same dataset despite the concession by the government that the province is spatially unequal between urban and rural areas (COGTA, 2018). This paper thus aims to address this gap by utilising panel data to compare the characteristics influencing the performance of firms based on their location in KZN, South Africa's second-largest province (Provincial Treasury, 2017; KwaZulu Natal-PPC, 2017).

A review of the literature shows that there is limited research on how the firm's geographic region influences the relationship between performance and internal drivers (Audretsch & Dohse, 2007; Hugginset al., 2017). Audretsch and Dohse (2007) argue that notwithstanding the stylised facts produced by the duo of Gibrat's Law of Proportionate Effect (LPE) and the Industry dynamic theoretical views on the role of firm-specific characteristics and industry factors on firm performance,

locational aspects have received inadequate attention in these studies. A firm's geographic location has a significant influence on performance and survival, especially for small-sized enterprises. This claim, on the moderating effect of location on firm performance, can be traced back to the seminal work of Alfred Weber (1909) in which, through the lenses of classical locational analysis, he acknowledges the geographical fixation of input resources, which explains why firms have varying attributes and located in different locations (McCann & Folta, 2011). In showing the growing interest in the role of location on firm performance, Rijkerset al. (2010) argues that this burgeoning interest is a manifestation of the impact geographical location has on both small and large organisations' ability to generate sales. McCann and Folta (2011) assert that the selective effect of location is captured by the varying spatial disparities in economic output based on geographical environments in which firms operate.

Puga (2002) charges that firms operating in geographical locations with many other firms are exposed to strong competition for both inputs and products. The incentive emanating from the advantages of trade costs and returns to scale results in firms setting up operations around large markets which inevitably are home to relatively many firms (Arokium, 2010). This trend is reflected by regional concentrations of high-tech firms in Silicon Valley, biotechnology firms in Cambridge or software companies in India's Bangalore. While exposed to competition, firms in these regions tend to be more productive and thrive more than those in non-concentrated areas like rural settings. This is occasioned by the fact that firms in urban areas or industrial parks tend to benefit directly or otherwise from, *interalia*, knowledge spillovers, access to specialised labour and quality inputs. These firms also leverage on the brand of successful companies operating from the same location to enhance performance (McCann & Folta, 2011; Niyimbanira, Eggink, & Nishimwe-Niyimbanira, 2020). Some studies in sub-Saharan Africa argue that firms in urban areas, owing to their location, tend to register superior levels of productivity which contributes towards better performance than those in rural or less developed areas (Rijkerset al., 2010; McPherson, 1996; Bigsten & Gebreeyesus, 2007).

Firms located in strategic locations like industrial hubs or science parks, which are mainly in urban areas, have different characteristics and perform better compared to those in non-urban areas. This is because they leverage on access to skilled workers and advanced technologies that are not available to rural firms (Puga, 2002; Lucky, 2011; Niyimbaniraet

al., 2020). Due to differences in population densities between urban and rural enterprises, the latter would be expected to access a substantially limited pool of skilled and experienced workers (Phillipsonet al., 2019). Previous studies have noted that the quality of support to some regions, like rural areas, is significantly different from that received by firms in developed industrial areas. This makes it difficult for rural enterprises to survive and grow due to a myriad of challenges which in the main include high input costs, poor infrastructure, subdued penetration of technology and low demand for their products and services (Rijkers et al., 2010; McPherson, 1996; Lucky, 2011). It has also been established that firm age and performance have a convex relationship, especially for those in urban areas (Rijkerset al., 2010). The convex relationship indicates that, in the early years of operation, younger firms tend to perform better than their old counterparts before bottoming up and performance positively relates to age.

Arokium (2010) concludes that firms located in urban centres, by being close to one another, tend to achieve higher levels of collective efficiency as they leverage-positive external economies as well as inter-firm collaboration and inexorably mutual dependency. As such, it is expected that, owing to the general concentration of firms in urban areas, they are likely to benefit from various direct and indirect inter-firm engagements which are inexorably induced by their locational set-up. Tsvetkova, Thill and Strumsky (2014) note the increasing interest by researchers on the role of geographic influence on firm performance drivers, which is indicative of the interest by various stakeholders to appreciate the extent to which location influences enterprise characteristics and thus customise effective support interventions. This is in line with previous studies over the last three decades which recommended the need for more research on the influence of location on small firm attributes and thus performance (O'Farrell & Hitchens, 1988; McCann & Folta, 2011). This is more needful in South Africa, as the country is transitioning from apartheid, a political system which promoted spatial divide (Ayandibu & Houghton, 2017).

The above review of empirical literature suggests that firms have different attributes based on their locations, which in turn affect performance. While various related studies have been carried in developed countries (Phillipson et al., 2019) and some African countries (Shiferaw, 2009; Rijkerset al., 2010), there is still limited research on this area in South Africa's KZN province, especially focusing on the manufacturing sector which is regarded as one of the key labour-

absorbing industries. The provincial government has indicated that they continue to invest in enabling infrastructure in rural areas through initiatives like industrial parks and special economic zones in order to enhance the performance of manufacturing SMMEs despite their geographical locations (KwaZulu Natal-PPC, 2017). However, there are no studies to assess the effect of these interventions on the performance attributes of SMMEs in the province. In this light, this study, which, according to the authors' knowledge, is the first on this area, aims to fill this gap by ascertaining and comparing the characteristics and their influence on the performance of manufacturing SMMEs in the KZN province.

A Focus on KwaZulu Natal Province

According to the Provincial Treasury (2017), KZN is the country's second largest province by both population and economic output. The province is the second after Gauteng, contributing more than 21% to the national manufacturing value added (Small Enterprise Development Agency, 2012). It is home to one metropolitan municipality, eThekwini, which is the economic hub of the province contributing more than 60% to the provincial economic output (COGTA 2018). Other district municipalities which are predominantly rural are Amajuba, Harry Gwala, iLembe, King Cetshwayo, Ugu, uMgungundlovu, uMkhanyakude, uMzinyathi, uThukela and Zululand (KwaZulu Natal PPC, 2012). The province contributes 16.5% to the National Gross Value Added (GVA) and for seventeen years from 1995, KZN contributed more than 16% to the national GDP. The province's economic base is diverse owing to its strategic positioning. According to Trade and Investment KwaZulu Natl (TIKZN) (2013), KZN is home to Durban and Richards Bay which are the continent's largest and busiest seaports, making it one of the top provinces in the country's level of industrialisation with the third highest export propensity compared to other provinces. The province is largely driven by the manufacturing sector which contributes almost a quarter to the provincial economy (TIKZN, 2013). The manufacturing sector in KZN contributes the highest proportion (12.5%) of employment to the total national manufacturing sector employment ahead of Western Cape (12.1%) and Gauteng (11.8%) (Provincial Treasury, 2017).TIKZN (2016) reports that manufacturing small and medium-sized firms in KZN are responsible for 91% and 84% of the exports respectively, compared to their peers in the agricultural and mining sectors.

Methodology

Data

The study, which is quantitative in nature, utilised three-year panel data which was accessed from McFah Consultancy (Pty) Limited, a Durban-based business and tax consulting company for SMMEs. The sample was made up of 191 manufacturing SMMEs across the KZN province. The study sample size is comparable with various previous related studies in the KZN Province (Ayandibu & Houghton, 2017; Lekhanya, 2016) and also other emerging economies (Yusuf & Dansu, 2013; Hermelo & Vassolo, 2007). The sample sizes in these studies were below our study sample and were deemed adequate to draw meaningful conclusions and generalise findings across the study area. The uniqueness of our study lies in that unlike majority of related previous studies on the KZN province, here we used panel data, which is richer than cross-sectional dataset. The panel data covered three years, and this aligns with previous related studies which utilised the data covering the same period (Hermelo & Vassolo, 2007; Almsafir, Nassar, Al-Mahrouq, & Hayajneh, 2015). From the longitudinal dataset, 61% of the enterprises were urban-based, situated in eThekwini metropolitan municipality and 39% were rural-based located across the 10 district municipalities in the province. The representation of SMMEs from the other district municipalities was distributed as follows: King Cetshwayo (11%), uThukela (10%), uMgungundlovu (7%), iLembe (3%), Amajuba (3%), Ugu (2%), Zululand (2%), uMzinyathi (1%), uMkhanyakude (1%) and Harry Gwala (0%). The dataset had the following variables: sales, owner's year of birth, owner's gender, firm location, total assets value, permanent employees, temporary employees, website use, digital marketing medium use, firm registration year and registration type.

Dependant Variable

Empirical literature has largely utilised sales as the measure of firm performance (Buyinza, 2011; Hermelo & Vassolo, 2007; Hyder & Lussier, 2016; Phillipsonet al., 2019). Sales, unlike employment which discriminates against capital-intensive firms or assets which are biased against labour-intensive firms, captures the firm's business activity. Panda (2015) posits that sales, compared to other indicators, provides a good measure of company performance and this concurs with submission by

other scholars (Olawale & Garwe, 2010). As such, in this paper, sales as per the dataset was used as a measure of SMME performance, measured by the natural logarithm of SMME sales (LogSales).

Independent Variables

Independent variables were coded to allow for quantitative analysis; Entrepreneur age (EntAge) was measured as the difference between the survey period (2015 to 2017) and year of birth. Gender (Gen) was proxied by 1 for male and 0 for female business owners. Total assets value was measured by logarithm of total assets (LogTA). Number of permanent employees (Pemp), number of temporary employees (Temp).Website (Web), 1 for enterprises with a functional website and 0 otherwise. Company age (CoAge) was measured as the difference between the survey period and year of registration. To assess the use of digital marketing (DigMkt), the dummy variables 1 was used for those with at least one or more of digital marketing mediums (Facebook, Twitter and Instagram) and 0 otherwise. Registration type (Reg), the legal structure of the participating firms, was defined by 1 for limited liability (Pty Ltd) companies and 0 for other. Labour productivity (Prod) was measured by the logarithm of sales per employee. Location was proxied by 1 for that based eThekwini (urban area) and 0 for those located in other district municipalities which are predominantly rural.

Data Analysis

To enable data analysis, firstly the dataset was processed into an ordered and organised form. This step, as argued by Mahohoma (2018), allows extraction of information through descriptive statistics and empirical analysis. Both the descriptive statistics and empirical analysis were performed, using open source software, R project for statistical computing version 3.6.3 (R Development Core Team, 2019), which was also used by Nheta, Shambare, Sigauke and Tshipala (2020) in their study of small firms in the South Africa's Limpopo province.

Descriptive Statistics

Table 1 shows the descriptive statistics of selected entrepreneur and organisational factors. The descriptive statistics shows that interestingly rural enterprises are owned by relatively young entrepreneurs in

comparison to those located in urban areas. Internal organisational factors show that on average, urban-based SMMEs registered higher sales revenue, employs more permanent workers, have higher levels of productivity, owns more assets, and have more years of experience (older) than rural-based SMMEs. This indicates that urban-based firms are established and rely on their resources and experience to drive performance. Notably, rural-based firms, on average, employ more temporary staff compared to those in urban areas, showing that rural SMMEs are small-sized as noted by Roca-Puig, Beltrán-Martín and Segarra Cipres (2012). Following Coad, Segarra and Teruel (2016), Wilk's lambda test of means was also computed as per Table 1 and the results show the statistically significant difference between the selected variables mean values based on SMMEs' location.

Table 1: Selected entrepreneur and SMMEs characteristics

	Urban-based SMMEs n = 116 Obs. = 348		Rural-based SMMEs n = 75 Obs. = 225	
	Mean	*Std.Dev*	*Mean*	*Std.Dev*
Entrepreneur specific factors				
EntAge	45.00	8.26	44.80	7.22
Organisational factors				
LogSales	16.10	2.01	15.54	1.44
Pemp	56.34	66.29	32.48	34.39
Temp	5.97	12.98	7.08	15.43
Prod	12.52	1.62	12.20	1.16
LogTA	15.47	2.17	14.95	1.53
CoAge	16.68	17.07	13.75	17.21
Diff. means: Wilk's lambda 0.934 p-value 0.000 Chi2-value 38.45				

Source: Own calculations

Further to the descriptive statistics above, following previous studies (Coad, Holm, Krafft, & Quatraro, 2018), the following graphical depictions were computed as per Figure 1(a), (b), (c) and (d). The analysis as per (a) and (b) shows that urban-based SMMEs registered marginally

higher sales levels than their rural counterparts during the three years between 2015 and 2017. Graph (a) also shows that the sales of both urban and rural enterprises are approximately normally distributed, with mode and median for both being very close to the mean. Graph (c) indicates a positive relationship between labour productivity and firm performance. However, urban-based firms are quick to improve their levels of labour productivity, while rural-based SMMEs' productivity levels do not improve as fast to match firm turnover levels. This is aligned with previous findings that firms which utilise a high proportion of temporary staff tend to have low productivity levels (Roca-Puig et al., 2012).
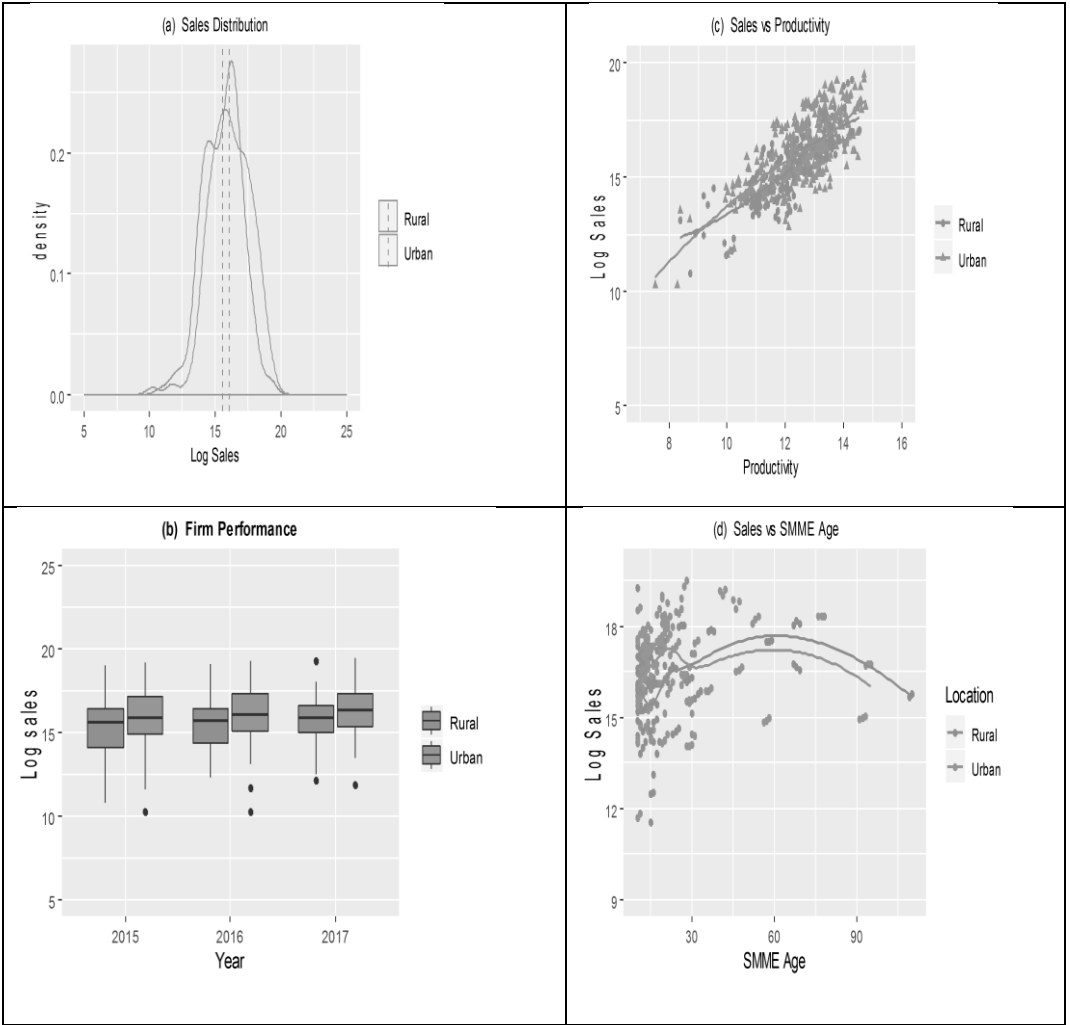
Figure 1: Selected characteristics comparative analysis

Graph (d) depicts a concave relationship between firm age and performance for urban-based SMMEs. On the other hand, the analysis of both rural and urban based firms shows an inverted U-shaped relationship between firm age and sales performance for SMMEs. This finding implies that SMMEs in the province experience a real senescence problem and this is more pronounced for urban-based ones. Finally, panel regression analysis was utilised to empirically ascertain and

compare the characteristics of urban and rural SMMEs and their influence on sales revenue as per the next section.

Empirical Analysis

The Random Effects Within Between (REWB) panel data modelling approach also known as the 'within-between' (Bell & Jones, 2015) was harnessed in this study. The approach combines the benefits of fixed effects (FE) and random effects RE) techniques by modelling both within and between the effects of the subjects (in this case SMMEs) concurrently. Mundlak (1978) charges that this technique unifies RE and FE in a defined way and removes any arbitrariness required in deciding the nature of the effects. With this technique, heterogeneity is modelled at both observation and cluster levels (Bell, Fairbrother, & Jones, 2019) as per Equation (1):

$$y_{it} = \mu + \beta_{1W}(x_{it} - \bar{x}_i) + \beta_{2B}\bar{x}_i + \beta_3\,z_i + v_{i0} \qquad (1)$$
$$+ v_{i1}(x_{it} + \bar{x}_i) + \epsilon_{it0}$$

Where y_{it} is the regressand (LogSales), x_{it} is a time varying regressor, z_i is a time invariant regressor, β_{2B} is the average within effect of x_{it} and β_3 represents the effect of z_i. The random element of the model has two terms, v_{i0} attached to the intercept and v_{i1} attached to the within slope and both of these measures are generally assumed to be normally distributed and finally ϵ_{it0} is the model error term. The REWB modelling approach because of its flexibility make the results not only nuanced and accurate but also insightful by allowing the researcher to appreciate a given phenomenon, in light of both micro and macro associations (Bellet al., 2019). Data were scaled utilising the in-built scale function in R before applying Equation (1) to compute the analysis and the results are presented in Table 2 below.

Table 2: REWB Results on Urban and Rural SMMEs

	Urban (Model 1)		Rural (Model 2)	
	Within	Between	Within	Between
B_0	-	0.00 (0.02)	-	0.00 (0.02)
EntAge	2.04*** (0.42)	0.02 (0.02)	0.89** (0.36)	-0.00 (0.02)
Gender	-	0.00 (0.02)	-	0.01 (0.02)
Prod	0.90*** (0.02)	0.69*** (0.04)	0.76*** (0.02)	0.79*** (0.03)
Pemp	0.26*** (0.03)	0.32*** (0.03)	0.45*** (0.04)	0.36*** (0.03)
Temp	0.06** (0.03)	0.09*** (0.02)	0.21*** (0.02)	0.18*** (0.03)
LogTA	0.03 (0.02)	0.18*** (0.04)	0.17*** (0.03)	0.07* (0.04)
CoAge	-3.86*** (0.88)	-0.04* (0.02)	-1.81** (0.83)	-0.02 (0.03)
Web	-	-0.00 (0.02)	-	0.01 (0.03)
DigMkt	-	-0.06*** (0.02)	-	0.04 (0.02)
Reg	-	-0.04** (0.02)	-	-0.03 (0.03)
	n = 116 Observations = 348 Pseudo-R^2 (fixed effects) = 0.90 Pseudo-R^2 (total) = 0.94		n = 75 Observations = 225 Pseudo-R^2 (fixed effects) = 0.93 Pseudo-R^2 (total) = 0.96	

Notes: Standard errors shown in parentheses.
***Significant at 1% significance level
 **Significant at 5% significance level
*Significant at 10% significance level

The empirical results as per Model 1 and Model 2 show that, for both urban-based and rural-based enterprises, the quintile of entrepreneur age, productivity, permanent employees, temporary employees and total assets have a significant positive effect on SMMEs' performance. For both rural-based and urban based firms, company age has a significant negative relationship with performance, especially when the within effects are considered. The major difference between rural-based and urban-based manufacturing firms lies in the effect of digital marketing mediums and limited liability registration type. These two attributes have a significant negative effect on the performance of SMMEs with operations in KZN's only metropolitan, eThekwini municipality. For

both rural and urban enterprises, the entrepreneur's gender and website use do not have an effect on the performance of SMMEs in KZN despite their geographical locations.

Discussion of Findings

In line with previous findings, our results show that rural-based enterprises are younger than urban-based (North & Smallbone, 1996). These findings show that, on average, rural-based manufacturing firms have less experience than their urban counterparts. Graphical analysis also shows that urban-based enterprises had, on average, marginally higher sales levels for the three years between 2015 and 2017. For both rural-based and urban based SMMEs, the relationship between age and performance is concave, showing that young SMMEs have higher sales levels which then declines with age. The results as per Table 2 above show that the entrepreneur's age is an important driver, with a positive effect on the performance of SMMEs, and its impact is more pronounced for urban enterprises. This finding is contrary to previous studies in which age was found to be either negatively related (Amran, 2011) or had no effect (Essel, Adams, & Amankwah, 2019) on firm performance. As with a wider body of literature, entrepreneur's gender had no effect on the performance of SMMEs in KZN (Esselet al., 2019; Zhou & de Wit, 2009). Labour productivity has a positive effect on the performance of SMMEs in the province, as was also established by other studies (Bigsten & Gebreeyesus, 2007; Shiferaw, 2009). This shows that there is some underlying process of market selection which will result in inefficient firms being ultimately eliminated from the market (Jovanovic, 1982).

The importance of human resources, both permanent and temporary staff, was also noted, as both forms of employment had a positive impact on performance. The effect of permanent staff is at least triple and double that of temporary employees for urban-based firms and for rural-based firms, respectively. This shows that, due to their extensive involvement in organisational activities and also employment security, permanent workers have an increased positive effect on performance than temporary workers (Thorsteinson, 2003; Pauka, 2015). The coefficient of temporary staff shows that rural-based SMMEs are prone to increased administrative costs which in turn adversely impacts performance due to their increased use of temporary workers (Roca-Puig, Beltrán-Martín, & Cipres, 2012). The positive influence of total

assets was also ascertained for both rural and urban enterprises, as was also established by Al-Ani (2013) on Oman manufacturing firms.

The company's age has a negative effect on sales, showing that younger firms perform better than older firms in the province. The negative effect of age is stronger for SMMEs in urban areas as the coefficient is more than double that of rural enterprises. The finding highlights that as urban firms age, they are not adaptive to new changes which would be expected in eThekwini as the leading economic hub in the province in which competition is inevitably extensive. The negative effect of age on performance aligns with findings by Zhou and de Wit (2009); but this is contrary to recent findings in emerging economies which establish a positive effect on performance (Esselet al., 2019; Radipere & Dhliwayo, 2014). The major difference, not only in terms of firm attributes' effect but also in direction, was noted on the effect of digital marketing and limited liability registration. These factors have a significant negative effect on urban enterprises and have no impact on the performance of rural-based enterprises. The negative effect of digital marketing is contrary to the Jobs and Gilfoil's (2014) assertion that digital marketing enhances performance through increased generation of online sales. This implies that small businesses in eThekwini metro lack proper understanding of digital tools; and as charged by Ngibe and Lekhanya (2019), these firms need to recruit skilled personnel to avoid the negative impact while benefiting from the use of these modern marketing platforms.

The negative effect of limited liability registration shows that SMMEs with this form of registration operating in urban areas are at a disadvantage compared to those with the same registration type in rural areas. This is in line with assertions as per the OECD (2017) that regulatory burden associated with limited liability registration in South Africa discourages even informal firms from formalising. This trend is unique to not only South Africa, but also to other developing countries. Adegbite, Ilori, Irefin, Abereijo and Aderemi (2007) establish that majority of small-scale companies in Nigeria avoid limited liability in preference for other types of registrations owing to the regulatory burden which comes with the former. Finally, use of website had no significant effect for both urban-based and rural-based enterprises. This is in stark contrast with previous findings which established the positive effect of website use on firm performance (Buyinza, 2011). This may be implying that SMMEs in both rural and urban areas use simple and static websites which are not dynamic to promote interaction with potential clients

which is required in order to positively drive performance through such a platform (Meroño-Cerdan & Soto-Acosta, 2005).

Conclusion

This paper contributes to literature by being the first study to examine the extent to which spatial disparities influence firm performance attributes of SMMEs in the KwaZulu Natal province. A unique three-year panel data was used to establish and compare the characteristics of manufacturing SMMEs in urban and rural areas. The results from the empirical analysis using the REWB panel data modelling technique reveal that SMMEs owned by older entrepreneurs tend to perform better than those owned by young entrepreneurs, especially in eThekwini municipality. The importance of human and financial resources, despite firm location, was also highlighted. This is shown by the positive association between SMMEs sales performance and the quartet of labour productivity, permanent and temporary staff, and total assets, notwithstanding the fact that some of these attributes' levels of influence on performance differ by location. However, digital marketing and limited liability registration had a negative effect on the performance of SMMEs in the province. These findings are important for both practitioners and policy-makers to make informed decisions and policies respectively, which enhances the performance of SMMEs based in urban and rural areas.

Recommendations

1. To improve the survivability of rural SMMEs which on average are younger than urban-based enterprises, the government should consider implementing both virtual and physical incubators to improve the provision of bespoke support based on this and other relevant previous studies.
2. To improve rural SMMEs performance through access to markets opportunities, the government should ensure effective implementation of the preferential procurement policy and enterprise development initiatives in rural districts and local municipalities in KZN.
3. Organisations focusing on the SMME sector like Small Enterprise Development Agency should develop technical skills development programmes to enhance productivity levels of rural enterprises.

4. As recommended by Bomani and Derera (2018), after providing training of SMMEs in the rural areas, local municipalities should provide ongoing mentorship support, so that these enterprises improve their performance to match their urban counterparts.
5. SMME support organisations should utilise monitoring and evaluation tools to assess the impact of their interventions and, where necessary, adjust them to enhance impact.
6. The government should consider reviewing the regulatory burden which comes with limited liability registration as this adversely impacts urban-based SMMEs' performance.
7. In order to improve the effect of digital marketing, SMME owners in urban areas need to consider recruiting skilled personnel to minimise the adverse effect of these platforms. The negative relationship between age and performance shows that old enterprises, especially in urban areas, should be adaptive to changes in the market to avoid declining in sales which in turn threatens survival.
8. In light of these findings, SMMEs in both urban and rural areas should develop strategies aimed at leveraging their sources of strengths to drive sustainable superior performance, while at the same time minimising the negative effect of certain attributes. Furthermore, the provincial government and other key stakeholders should utilise the findings to customise impactful support interventions based on the location of SMMEs.

Limitations of Study

The number of SMMEs in the manufacturing sector in KwaZulu Natal is relatively small compared to the Gauteng province. So, in that regard, it is not clear whether our findings can be generalised across the country. This presents an opportunity for this type of research to be extended to other provinces and country at large in the future. Furthermore, it is recommended that future studies consider the inclusion of macroeconomic variables.

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