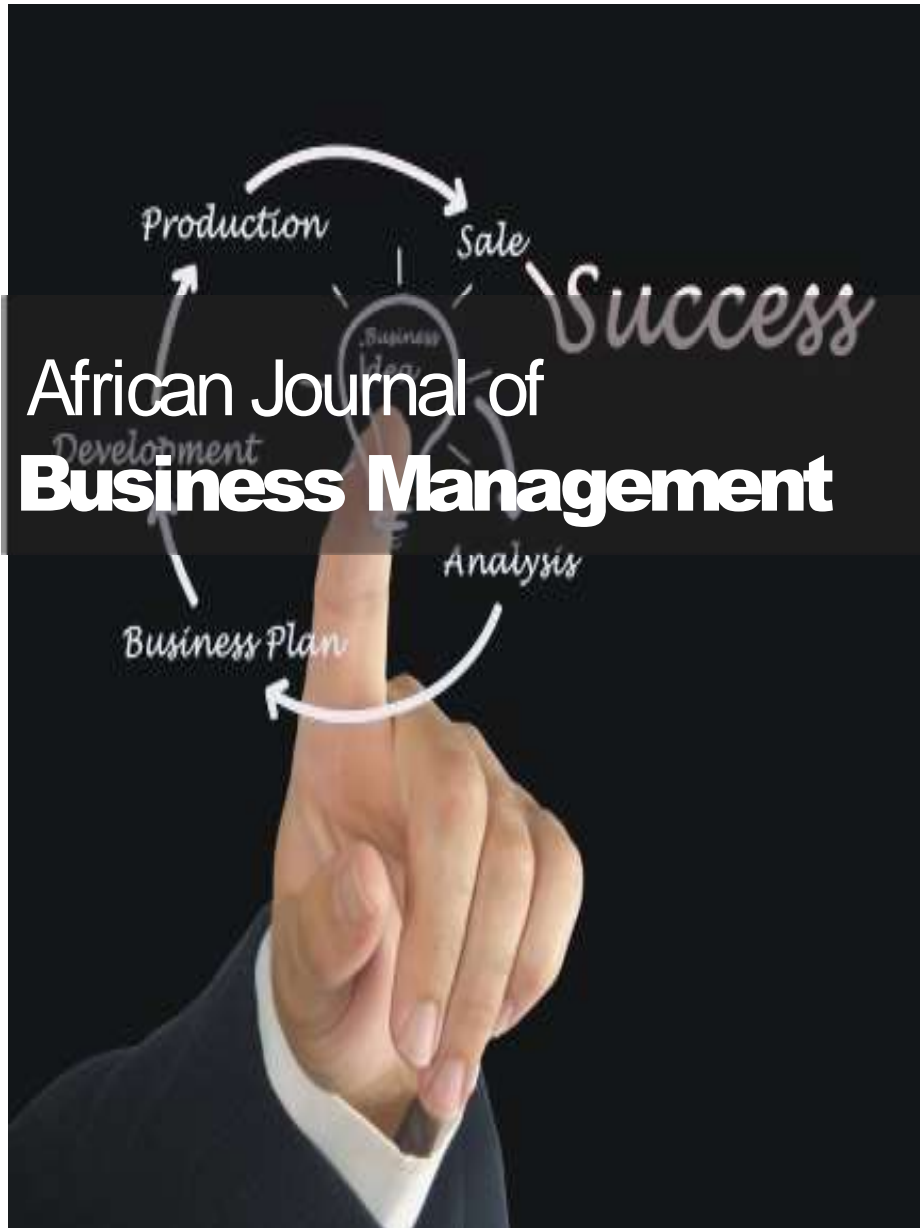


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Table of Contents: Volume 12 Number 13 14 July, 2018

ARTICLES

Diversity management discourse: An African perspective Loliya Akobo and Osikwemhe Damisah	396
Attaining competitive advantage through energy efficiency: A cooperative strategic perspective Kiptum Henry Yatich	406
Prototyping an innovative e-platform of financial assistance for small medium enterprises in Mauritius Padachi K., Narrainen D. and Boolaky A.	415

Full Length Research Paper

Diversity management discourse: An African perspective

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This paper reviews the concept of diversity across selected sub-Saharan Africa countries. It focuses on the impact of social relations that depict cultural and social identities of individuals within these African countries. This is with the aim to help corporations develop diversity management strategies for their workforce. Consequently, this narrative paper adopts a qualitative approach, a literature survey that assesses views on diversity in Africa by critically exploring discussions on the formation of social identities, dominant diversity dimensions and approaches to managing diversity in the region. The paper reveals challenges in managing the existing socio-cultural formations in African states and further reveals the role of state institutions in managing these diversity concerns from a national perspective which ultimately feeds into corporations. The paper highlights the impact of the lack of diversity management strategies on national development planning and how this results in limited access to social services and lack of opportunities in the workplace, especially in relations to gender equality; thereby, slowing the progress towards achieving equality and capacity development. This paper significantly contributes to understanding and developing diversity management approaches relevant to sub-Saharan African States and acts as a catalyst for more in-depth research in managing diversity within African States.

Key words: Diversity management, Africa, development, management.

INTRODUCTION

This paper aims to review diversity management from an African perspective to contribute to management discourse as well as act as a catalyst to foster more in-depth research on African management approaches. It addresses the key question: how is diversity viewed and what are the likely challenges to managing diversity from

an African perspective. This is because, Africa as a continent has multiple diversity dimensions, hence, the need to understand and manage these differences to promote effectiveness and efficiency in the workplace cannot be ignored. For instance, literature (Atta-Asamoah, 2012; Mengisteab, 2011; UNECA, 2014)

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reiterates that diversity in Africa focuses on social identities¹. This is because social identity forms the base for diversity discourse in the African context; thereby, increasing the need to understand the multiplicity of social identities (Bereketeab, 2011). The multiple social identities represented in any society determine the extent to which a society is perceived as diverse (Atta-Asamoah, 2012). Atta-Asamoah (2012) groups social identities in Africa into two: ascribed social identity and attained social identity. Ascribed social identities are inherent or deeply rooted in an individual. They include gender, ethnicity, race and religion, and form the culture of specific groups. The second social identity group, which are attained social identities, include shared values, beliefs and experiences, and factors such as the environment and changing interests influence this group. In spite of these efforts to categorise social identities, Atta-Asamoah (2012) and Mengisteab (2011) argued that this does not successfully elucidate the plurality of diversity in Africa and its influence in the reformation and governing of African states. Kamoche (2002) highlights that the multicultural nature of African states creates a high tendency for individuals to relate with people of the same cultural background rather than on the assumption of belonging to a common nation-state. This is likely to influence both the national and organisational levels. He further recognises the significance of family in most African states as a key socialising unit (Kamoche, 2002). This unit stretches to the extended family and then the ethnic group. Hence, strong evidence of favouritism exists 'along kinship and ethnic lines', as culture requires people to show support and care for those from the same tribe. This echoes the presence of multiple social identities in the African context.

Another characteristic highlighted by Atta-Asamoah (2012) is the homogenous approach to understanding social identities at the macro- (national and organisational) level, while remaining diverse at the micro- (individual) level. This automatically creates conflicting understanding and management of social identities at various levels. Furthermore, Atta-Asamoah (2012) ascribed the failure of a nation's state building process as the reason for a weak 'African experience'. Hence, understanding social dynamics as a starting point elucidates the need to not only manage social identities towards development at the national level, but also to manage diversity and promote equality at organisational levels, to drive productivity in the workplace.

METHODOLOGICAL APPROACH

As mentioned, this paper is a narrative review that explores literature survey approach to understand social

identities and its impact on management approaches and national development in selected sub-Saharan African countries. It draws facts from previous studies and critically analyses them to make meaning towards how diversity is viewed in Africa. Hence, no new empirical data has been collected and included as it compares and summarizes facts on mainly existing findings and theories. Following, research (Atta-Asamoah, 2012) shows that African countries seek to address diversity concerns through policies aimed at creating an inclusive state. Hence, the paper, critically examines selected African nations to explore the concept of diversity and how these countries address diversity concerns. Though it noticeably examines the concept of diversity from a national perspective, this is with the intention to aid development and implementation of a more relevant diversity management practice by organisations, perhaps in partnership with national policies and agencies.

A REVIEW ON THE FORMATION OF SOCIAL IDENTITIES IN AFRICA

As previously mentioned, diversity management from an African perspective unveils the concept of diversity in Africa around social identities. Therefore, it is necessary to explore the formation of identities and social identities especially in relation to individual and societal social constructivism. Social identity, as initially established by Henry Tajfel in the 1970s, was in relation to social perception, categorisation comparison, prejudice, discrimination and intergroup conflicts (Burke, 2006). This idea helps develop conceptual views around motivation, norms, behaviour, social influence, multiple categorisations and diversity (Brown, 2000; Burke, 2006). This theory looks at intergroup relations and the social self (Hogg et al., 1995). Linking intergroup relation to identity, this postulates that self reflects the wider social structure (Hogg et al., 1995). This also captures the argument that an individual's understanding of her/his self-influences his/her social behaviour. This therefore positions social behaviour as the link between individual and society (Hogg et al., 1995).

However, differentiating individual constructs from social identities, Burke (2006) highlights that individual constructs are attributes not shared with other people, while individuals in a social group exhibit social identities shared with more than two other persons. In the African context, individuals are not completely separate from their social realities in relation to socio-cultural formations. Individuals categorised in social groups are stereotyped as likely to exhibit the same or similar character traits (Kamoche, 2002; Ezra and Mateveke, 2012). In addition, this supports the argument that individuals are likely to exhibit multiple social identities (Atta-Asamoah, 2012).

Alongside social identities, culture plays a key role as an identity signifier in most African countries (Mengisteab,

¹In this thesis, a social identity looks at how an individual can be labelled or identified socially. Other terminologies used interchangeably include diversity dimensions, social categories, social groups and social construct.

2011), thereby classifying African states as extremely diverse (UNECA, 2014). This links to Hofstede's argument (Hofstede and McCrae, 2004) that individuals' character and their cultural environment affects beliefs. From Hofstede's (2001) definition of culture, he argues that culture does not focus on individuals, but represents a group of people. Furthermore, Hofstede (2001) states that culture is for a group of people as personality is for an individual. Similarly, the uniqueness of most African states links directly to culture, beliefs and practices that possibly influence the state institutions. Following this debate, Atta-Asamoah (2012) evaluates Africa as institutionally diverse. In his argument, he states that many African countries, like Uganda, Nigeria and Ghana, merge their formal institutions and systems of the modern state with traditional institutions. This again supports the notion that the concept of diversity in Africa places emphasis on social identities, culture and state formations (UNECA, 2014) and will practicably position prevailing socio-cultural formations as the dominant social dimensions in this scale.

Diversity dimensions in Africa

The previous arguments have shown the significance of social formations in Africa and the probability of certain diversity dimensions taking precedence over others in Africa, although this varies from country to country. The dimensions include gender, disability, age, ethnicity, education, beliefs, values, HIV status, politics and religion (Romie and Nkomo, 2005; Neff, 2007; Mo barak, 2011; Atta-Asamoah, 2012). The identifiable socio-cultural formation in Africa does not leave out racial diversity, as globalisation has also made Africa home to immigrants. Countries like South Africa have a high presence of racial identity because of their social structure (Romie and Nkomo, 2005). In contrast, specific diversity dimensions are in some cases perceived as not conventional (The Economist, 2014) in some countries. For instance, there is awareness and acceptance of specific sexual orientations in some countries that are nonetheless addressed as criminal offences in others such as Zimbabwe and Nigeria, where unacceptable sexual orientations are punishable under the law of the land (Mkono, 2010). On the subject of gender, Atta-Asamoah (2012) describes an almost even distribution of the men and women (of varying ages) population in Africa. However, this has not corrected or reduced the gender issues experienced in most African countries, which relate to the uneven balance of position and resources for equality and development. Christianity and Islam are the main religions in Africa; though traditional African ideas and other forms of religious identities have a significant presence (Atta-Asamoah, 2012).

For instance, South Africa addresses the oppression of and discrimination against certain social groups (Neff,

2007). According to Klarsfeld (2010), apartheid focused on legislated racial categorisation and separation that divided the population into various, mainly racial sectors. This division affected every sphere of social life, from education to employment. Hence, discriminatory practices were inevitable (Romie and Nkomo, 2005). For many years, a large number of minorities in South Africa did not have rights to education, jobs and opportunities because of discrimination (Romie and Nkomo, 2005). This lack of rights positioned racism as a major diversity dimension generating inequality. Similarly, Romie and Nkomo (2005) stressed that democracy in South Africa was responsible for the rise in racial and gender diversity in the workplace; however, Neff (2007) argued that ethnicity allows a more insightful analysis of the social structure of the South African nation than race.

In addition, scholars (Thomas and Bendixen, 2000) performed an exploratory study on the impact of ethnicity on management culture in South African organisations. They interviewed 586 managers and the results showed similarity in cultural values amongst the various ethnic groups represented (Hofstede, 1991). Another finding was that the management cultures are independent of 'dimensions of culture and race' hence, management practices can improve through study and experience (Cox, 1994). Again, this emphasises the peculiarity of each country in relation to understanding and managing diversity. Furthermore, it raises the question of how best an organisation can adapt to managing these diversity differences. The above review has provided evidence of race, ethnicity and gender as the three major identifiable diversity dimensions in South Africa. However, HIV status has also been identified as a dominating social difference (Mo Barak, 2011) because of the rise of discrimination against individuals identified with HIV.

Similarly, in Zimbabwe, HIV status is a key diversity dimension. While there are other dominating diversity dimensions in Zimbabwe, Mkono (2010) highlights the fact that there is a limited consciousness of the significance of diversity management in an organisational context. Furthermore, Ezra and Mateveke (2012) stressed that the African patriarchal culture is evidently rooted in the subconscious state of both African employees and employers, and this shows in the stereotyping and segregation acts carried out in the workplace in Zimbabwe. Stereotyping is evident at the national level, especially in relation to gender balance in the institutionalisation of state affairs (Ezra and Mateveke, 2012).

In Ghana, Abdulai (2000) highlights that discrimination exists subtly in the public sector, with gender, ethnicity and regionalisation dominant amongst other social identities. Consequently, policies act as an instruction to promote integration of the Ghanaian people and 'prohibit discrimination and prejudice' on the grounds of diversity differences (Abdulai 2000: 451). For instance, gender dialogue ensures that women take roles that are

significant in socio-economic activities, including decision making at the top management level. Abdulai (2000) summarises that there are lapses in both the public and private sectors regarding recognising the social needs of the workforce; hence, he cites this as the motivation for the introduction of a human relations institute in Ghana.

Additionally, the socio-cultural paradigms in Ghana influence strongly the structural and management plan of organisations (Sackey et al., 2011). This paradigm views women as supporters to their male partners. Hence, a large number of women in Ghana exhibit specific behavioural patterns, including prioritising domestic chores above other responsibilities outside the home (Sackey et al., 2011). Although increasing numbers of women are becoming professional, they face the challenge of carrying out both domestic roles and organisational demands as two full-time jobs (Sackey et al., 2011). This prevents them from progressing within the organisation; hence, the top positions remain reserved for men (Sackey et al., 2011). In Eritrea, political position and parties (Tessema and Soeters, 2006) influence state gender and class. This affects employee performance within an organisation; for example, gender, class, age or political views, rather than merit or experience, influence promotion in the workplace.

Consequently, as reviewed by Akobo (2016), Nigeria as a nation has for many years, endured conflicts due to the poor supervision of gender related issues and other socio-cultural factors like, ethnicity and religion. These social frustrations have challenged the structure of the Nigerian state set by the colonial government pre-independence. In spite of these debates pointing back to the impact of the colonial governance before independence (Akobo, 2016), the Nigerian structure has significantly remained the same and has led to continuous dialogue on 'what should be'

Political involvement as identified in the case of Eritrea (Tessema and Soeters, 2006), highlights the impact of politics on human resource management or development processes, whether in an organisational or national context. This further highlights the involvement of political leaders and parties in the development process in developing African countries, where position and authority are used to exploit the lapse in managing differences and resources within the state (Asiedu, 2006). This exploitation further enhances political instability in the nation (Fosu, 2002, 2003). Moreover, the unstable political environment in Eritrea affects the planning and management of human resource practices, including managing diversity and the development of human capacity (Tessema and Soeters, 2006). Therefore, this establishes the fact that beyond considering internal factors in human resource strategies, it is similarly important to consider external factors that can influence diversity management either at an organisational or national level.

Similarly, the presence of ethnic, religious and other

social differences in Nigeria influences the pursuit of political gains (Treisman, 2000; Frynas, 2005). This exploitative strategy of obtaining competitive advantage over others includes promoting rivalry amongst various ethnic and/or religious counterparts (Frynas, 1998, Asiedu, 2006). Likewise, Kenya's heterogeneous characteristic has led to the emergence of ethnic challenges in the workplace (Budhwar and Yaw, 2001). This has manifested in the form of 'favouritism' for recruitment and training opportunities (Adekanye, 1995). Similarly, as a result of unemployment and political conflicts (Adekanye, 1995), people tend to rely on their tribes to take advantage of 'ethnically-sanctioned obligations' (Budhwar and Yaw, 2001). The socio-cultural system in Kenya is influenced by what Nzelibe (1986) describes as an 'African thought system' (p. 214). This system stresses ethnocentrism, traditionalism, communalism and social teamwork (Budhwar and Yaw, 2001). The critical discussion so far highlights how diversity dimensions are myriad and varied in some African countries. Hence, it brings to light the fact that companies operating in Africa need to understand the social identity dynamics in the national and organisational context in order to implement appropriate diversity management approaches.

APPROACHES TO MANAGING DIVERSITY CONCERNS IN AFRICA

The foregoing discussions on the nature of diversity in Africa highlight the need to manage diversity both at the national and organisational levels. This growing need emerged during the early stage of the post-independence era (UNECA, 2014) because of the struggle experienced by African leaders in relation to decolonisation and political control (Atta-Asamoah, 2012). This struggle still exists within the geo-political context in most African countries as social differences connect with the unrest occurring in this region (Mengisteab, 2011). For instance, the inability to establish a sense of national culture (in some African states) and encourage tolerance between various social identities promotes socio-cultural related conflicts (Mengisteab, 2011; Ekanade, 2012). Consequently, Tanzania pursued a common national identity policy, with the first president following independence adopting a universal language across the country. Following this, the government established a one party education system that eradicated diversity processes at the nation's local and political levels. In Ghana, the government made policy choices that involved banning ethnic and religious political parties.

Similarly, Kenya introduced legislation against discrimination and initiatives to promote peace and co-existence, while South Africa, amongst several efforts, introduced initiatives targeted at reducing discrimination among the people. This was in relation to their

establishment of strong democratic institutions to empower minority groups economically and to create a single identity for the country (Atta-Asamoah, 2012). In the Nigerian context, diversity discussions intersect with institution building and governance system (Akoba, 2016). In spite of these efforts to create a single state and reduce diversity conflicts, the debate remains as to whether these countries can be completely homogenous, as diverse social identities will persist (Atta-Asamoah, 2012).

In relation to transferred policies, the Kenyan industrial environment focused on trade unions (Budhwar and Yaw, 2001) established during the independence movement (Chege, 2008). This focus also led to the early formation of human resource practices and policies in Kenya (Budhwar and Yaw, 2001); however, despite this, Budhwar and Yaw (2001) argued that the human resource practices need to be clearly personalised in order to adapt to organisational realities. This they argued should take into consideration, the influence of the socio-cultural, political, economic and industrial environment of the organisation. This suggests personalisation of human resource practices but does not however limit the understanding and management of various social identities represented in a workforce. Therefore, Gilbert et al. (1999) highlights that the workforce is a reflection of the society in which the organisation is located.

From a Ghanaian perspective, there was an integration of Western labour management practices with traditional personnel management activities after independence (Budhwar and Yaw, 2001). The British colonial administration, European missionaries and commercial enterprises introduced these Western management practices. These Western practices were formal and structured, and contradicted the traditional informal practice (Akinnusi, 1991; Budhwar and Yaw, 2001). Furthermore, as a result of independence, the new government focused on empowering indigenes (nationals). This led to the replacement of foreign staff with Ghanaians in the public and private sectors (Budhwar and Yaw, 2001). Additionally, as a step towards development, Ghana introduced constitutional rule, which provided frameworks and laws with which to govern its people. This constitution also included policies for effective human resource policies within the public and private sectors (Abdulai, 2000).

In South Africa, according to Grobler et al. (2006), organisational diversity management programmes have only existed for a few years. Nonetheless, the most common diversity concerns include sexual harassment issues, employees with disabilities and the recruitment and selection of individuals classified as minority groups, including women. Thomas and Bendixen (2000) and Binedell (1993) state that management practices in South Africa have been shaped by British and American systems, which has provoked some criticism from African scholars, for example Anakwe (2002), who argues that

African management styles should replace the Western systems. One of the main reasons that established this argument was that there was no integration of African cultural values exhibited by national stakeholders into their organisational cultures (Thomas and Bendixen, 2000). The analyses above on the approaches to managing diversity in African states reveal that there are limited management processes that intersect with cultural and national structures, and these structures create a challenge in managing diversity in the African context. Therefore, arguably, the existence of policies towards an inclusive state in the African context introduces a likely structural challenge to transferred Western policies (Nishii and Ozbilgin, 2007). This paper also discusses the challenge of transferred diversity management processes that exist in the African context.

DIVERSITY MANAGEMENT CHALLENGE IN AFRICA

The previous critical analysis on diversity approaches in some African countries reveal that these approaches were developed in response to the lack of a perceived national consciousness in these nations. Likewise, the author further reiterate that the establishment of policies as an approach to address probable social related conflicts highlight the challenge of engaging suitable management strategies. This focuses on the effects of transferred management practices in the African context. Again, this analysis explores countries in Africa.

A recent study (Sartorius et al., 2011) argues that diversity management in most organisations' workforce has been a challenge, specifically for MNCs. The complex nature of integrating cultural differences within the workplace remains a universal human resource issue, even in an African context like Mozambique (Hofstede, 1994; Sartorius et al., 2011). It is further argued that this is a result of Western-based MNCs implementing home-based human resource systems in Africa. Conversely, Africans have accepted these systems in order to attract foreign investors (Horwitz, 2007). This approach to economic growth, however, creates a challenge for social development and the development of African management styles especially in the light of understanding and managing social identities in the workplace (Horwitz, 2007). The challenges and resistance recognised in diversity practice because of these social differences led to a rise in research expenditure on how to manage the situation efficiently (Sartorius et al., 2011). The economic circumstance in Mozambique demonstrates that the adoption of neo-liberal policies in the early 1990s was a radical step towards rebuilding their economy following the extended civil war (Sartorius et al., 2011). This also led to the establishment of MNCs and the practice of transferred management policies at this scale.

Similarly, in Zimbabwe, because of privatisation (which also increased the presence of MNCs) and deregulation

introduced by the Zimbabwean government, the employment rate increased slowly. However, particular globalisation challenges came into play, including the ability to implement global policies in a local context (HDR, 1999; Thompson, 2000; Fischer, 2003). Correspondingly, Horwitz et al. (1996) argued that managers in organisations were overpowered by the challenge of globalisation because they were not able to integrate all levels of the organisation (Budhwar and Yaw, 2001). On the other hand, the 'Africanised' system in Kenya (Lutta-Mukhebi, 2004) was characterised by ethnicity, thus creating an autocratic system in both the public and private sectors. Ultimately, this led to the closure and privatization of state-owned enterprises (Nyambegera, 2002). In addition, the private sector grew because of the significant presence of MNCs. This dominance had a huge impact on the economy. Furthermore, there was perception that the human resource systems practised by these MNCs was an improvement of the existing system (Nyambegera, 2002). They attracted and retained a qualified workforce, regarded as more efficient (Akinnusi, 1999; Budhwar and Yaw, 2001). In spite of these advantages, Budhwar and Yaw (2001) and Akinnusi (1999) emphasised that MNCs found it difficult to operate domestically. These affected areas include staffing, general work life, motivation and productivity.

The challenge of how diversity should be managed in Africa elucidates a form of globalisation where policies transferred between countries seem viable (Komache, 1997). However, once again, this is debatable (Nishii and Ozbilgin, 2007) if not contextualised to ensure effective practices that enhance development (Thompson, 2000). As a developing continent, there is a strong focus on the need to promote national development planning in both the national and organisational contexts. With support from international agencies (United Nations, 2010), initiatives like the millennium development goals (MDGs) seek an inclusive social development process. This process aims to ensure equality and social development for all people in the African context. However, without the engagement of state institutions, these initiatives would seem futile. This understanding introduces the role of state institutions in managing diversity.

The role of state institutions in diversity management

The awareness of the significant role of state institutions positions them as major stakeholders in the formation and implementation of diversity management policies in Africa (Kamoche et al., 2012; Akobo, 2016). These state institutions include governments, government related policy makers and regulatory agencies. In Africa, state institutions view MNCs as key players in state's economies (Sethi, 2002). This is in relation to their large employment capacity and service delivery packages. Similarly, due to the continent's large human workforce

and relevant resources (BBC, 2014), African states demonstrate a potential investment environment for various MNCs (Kamoche et al., 2012). However, there is the argument that factors like conflicts, unstable governance, laws and regulations pose a major threat and challenge to these corporations (Kamoche, 2002). In their argument, Kamoche et al. (2012) highlight that, while these institutional factors could act as a resistance for attracting foreign and local investors to a state, there is still significant evidence of thriving local corporations and MNCs in these African states. This, then, elucidates the fact that these challenges may not necessarily restrict economic enhancement, competitive advantage and globalisation (Kamoche, 2002; Atta-Asamoah, 2012).

In agreement with the foregoing argument, diversity issues in Africa share a number of characteristics, including the influence of globalisation, technology, and economic and political development (Atta-Asamoah, 2012). This further increases the opportunity of being significant contributors to the advancement of diversity management and African development planning. However, despite the possibility of these characteristics allowing for better living conditions and accessibility, their connection to diversity management, which includes identifying and defining social identities in various African countries, embraces this struggle through the adoption of fluid neo-liberal paradigms in specific states (Adekanye, 1995).

This argument leads to awareness of how national culture influences diversity (Hofstede, 1991; Romie and Nkomo, 2005) and can create stereotypes, and this, in turn, influences the way of life within the society (Kamoche, 2002; Ezra and Mateveke, 2012). For instance, Rudman and Kilianski (2000) explain the impact of culture on behaviour through gender-role stereotypes that authorise men to be masculine and women to be feminine. This led to the existence of male dominance in management in South Africa (Romie and Nkomo, 2005). Moreover, as the medium for promoting gender equality throughout society, the South African government established after apartheid created legislative rights and responsibilities to this effect. Romie and Nkomo (2005) argued that while there are some positive changes, there remains high evidence of white male dominance in top leadership positions. Through Affirmative Action programmes, South African organisations have made efforts to include individuals from other ethnic minorities in their management structures (Romie and Nkomo, 2005). These programmes involve managing the country's diversity.

From a national perspective, the South African populace believe it is the government's duty to ensure effective management of diversity and the redistribution of power, wealth and opportunity (Human, 1996). This is crucial for the future prosperity and stability of the country (Human, 1996). Similarly, at an organisational level, employees, especially line managers (Human, 1996)

handle the organisation's affirmative strategy. In spite of this understanding and the passing of government legislation on organisations, Human (1993, 1996) argued that most organisations have this policy in place but do not practice effective management of diversity. He further states that many organisations, when faced with diversity challenges, implement hastily identified solutions that do not incorporate the company's strategy.

In addition, the South African government established a Reconstruction and Development Plan (RDP) in 1994 to meet the basic needs of all its citizens. The policy for this project was to be 'people driven' (Spiereburg and Wels 2006). The RDP preceded the 1996 policy of Growth, Employment and Redistribution (GEAR), which hoped to build economic prosperity based on neo-liberal assumptions (Spiereburg and Wels, 2006). However, these projects did not succeed because of the strong presence of racism and class in the development structure (Klarsfeld, 2010) along with other overpowering economic factors like the global instability at the time (Hanival and Maia, 2008).

In Ghana, the role of state institutions towards a more inclusive society led the country to design its constitution to be inclusive and compatible with international treaties (GHRDR, 2007). The Ghana Human Development Report (GHDR, 2007) highlights the significant progress made by the government, from a social exclusive state to a more inclusive one. Areas affected include gender-related issues, cultural norms of discrimination, minimal access to public goods and services, geographical disparities, and age-related and disability exclusions. The policies developed by the Ghanaian government, because of various social exclusions (Garvin et al., 2009), depict the recognition of adequate management approaches (Cox, 1991) as a strong instrument to achieve a socially inclusive society (GHRDR, 2007).

In the Kenyan context, factors that influence the formation of human resource policies and practices include the political-economic environment, socio-cultural environment and the natural environment (Budhwar and Yaw, 2001). The political-economic environment incorporates the negligence of the government in the utilisation of funds, as the state has been unable to provide quality education, health and infrastructure development to a required standard (Budhwar and Yaw, 2001). This led to the introduction of a structural adjustment programme (SAP) by the United Nations, a neo-liberalism paradigm for a free market and privatisation (Adekanye, 1995) of services. Additionally, political unrest and ethnic conflicts have fuelled insecurity in Kenya, which has affected the political and economic growth of the country (Budhwar and Yaw, 2001). As previously discussed, it is the role of the state institutions to initiate national development in the country. However, due to lapses in the government systems in most African countries, nationals as well as the state institutions tend to rely on MNCs to promote national development

planning (Akobo, 2016). This expectation allows for the possibility of positioning diversity management towards achieving national development.

CONCLUSION

National development is a key phenomenon amongst African countries. This relates to methods by which countries can achieve a high level of development for majority of their populace (McLean, 2004). This includes several development policies and initiatives planned locally, or at state or national level (Lutta-Mukhebi, 2004). In many African countries, the need for increased skilled labour for national development is rising (Sydhagen and Cunningham, 2007). The United Nations argues that the Human Development Index (HDI), which measures life expectancy, education and access to resources for development, will assist policy makers and institutions in focusing on the lives of people in general, rather than only in relation to the economy (Klugman, 2011). This is due to the understanding that social issues like inequality, socio-cultural related conflicts and environmental issues weaken institutions if they are not handled appropriately (Sydhagen and Cunningham, 2007; Akobo, 2016).

In view of these HDI groupings, most sub-Saharan African countries are rated low as, in most African countries, access to essential resources, including education, and improving the standard of living in rural areas need development (McLean, 2004; Klugman, 2011). This drive for development has led to embracing Western concepts of diversity management and other human resource strategies at organisational level (Mkono, 2010; Akobo, 2017). Following this, Anakwe (2002) argues that Africa needs to develop relevant management approaches that can increase productivity within the region. It is also necessary to highlight that these approaches must consider the need for state intervention and progress in developing skills for economic growth (Horwitz et al., 1996). Consequently, during the eighth African Governance Forum (AGF-VIII) on democracy, elections and the management of diversity in Africa, Tegegnetwork Gettu, United Nations assistant secretary general and director of the UNDP Regional Bureau for Africa (RBA), argued that both democracy and development in Africa are key concepts for human development, and are both related through mechanisms, processes and institutions (UNDP, 2011). This reinforces that development progress can function efficiently when one recognises that countries and societies have varied social, economic and political conditions, which may not be suitable for the neo-liberal ideology or transfer of Western practices (Sydhagen and Cunningham, 2007). This could be within either a state or an organisation (Hofstede, 1991). Hence, identifying and managing various social identities that reflect the social institution of a country or an organisation impacts on the diversity management practice of any corporation operating within

the African region (Hofstede 1991, 2001).

As a step towards reformation, human resource management and development, strategies are being established in African countries. For instance, in management and state institutes, human resource development (HRD) projects and salary scaling ensure the development of organisations' workforces and particularly nationals across various states and sectors. Similarly, in most African (Asiedu, 2006) and even Western States (Shen et al., 2009), specific diversity dimensions are more evident, and this tends to be reflected in the change processes (Akobo, 2017) of national and organisational strategies. This further creates the perception that the concept of diversity in the African and Western contexts is likely to have similarities as well as differences. Regardless of these evidences of similarities and differences between the global North and South, this paper clearly emphasises the need to understand how diversity is contextualised in African States to promote effective management processes.

This paper reiterates areas by which the nature and concept of diversity in Africa has been contextualised in selected African States. From the foregoing discussions, it has well been emphasised that diversity dimensions in Africa focus on dominant socio-cultural formations. As a result of these formations, expansive approaches (Budhwar and Yaw, 2001; Atta-Asamoah, 2012) have been applied to manage identified diversity concerns. These approaches consider both national and organisational levels at a particular scale and recognise the role of state institutions in promoting the validity and effectiveness of this concept. However, in spite of these procedures, diversity management in Africa has not been without challenges. These challenges again are created from national and organisational paradigms, as identified in the paper.

Similarly, in spite of the growing presence of diversity in Africa, explicit diversity management processes within organisations in the African context remain largely unknown, and there have been extensive discussions on the need for effective management practices in Africa (Komache et al., 2012). Consequently, some scholars (Anakwe, 2002; Nyambegare, 2002) argue that the adoption of Western practices (Nishii and Ozbilgin, 2007) in the African region in relation to management and development of human resources may be unsolidified, as Africa has distinctive characteristics (Anakwe 2002). This includes its heterogeneous complexity (Hofstede, 1991; Budhwar and Yaw, 2001). This diverse nature of most African countries affects the political, economic and social development of the people (Budhwar and Yaw, 2001). In addition, the vast significance of culture in politics and economics strengthens the link between diversity and globalisation, which also recalls the rhetoric of neo-liberalism (Spienburg and Wels, 2006) in the African context (Akobo, 2017).

It can be seen that equality is used recurrently in

diversity management discourse. Although Kandola and Fullerton (1998) highlight the difference between managing diversity and equal opportunity, these two concepts usually intersect within the development and management discussions as a result of diversity management evolving from equal opportunity rights (Klarsfeld, 2010). Hence, managing diversity and equal opportunities discourse depicts the rationale for valuing and managing diversity dimensions across various countries. For instance, gender equality is addressed in most African constitutions, and this has led to national changes supported by government and non-governmental organisations (NGO). These initiatives encourage women to be active participants and decision makers (Spienburg and Wels, 2006). However, it remains clear that male dominance predominates in Africa because of the patriarchal nature of societies (Morrell, 1998; Booyesen, 2007). Similarly, racial inequality has some significance in Africa. For instance, Thomas and Bendixen (2000) stated that whites still control the public and private South African economic sectors as an effect of the apartheid regime, while the labour force is predominantly black. In addition, Spienburg and Wels (2006) argue that racial inequality still affects socio-cultural dynamics in some African organisations. They further stress that racial stereotypes and divisions outside organisations affect people's behaviour and attitudes in the workplace. Therefore, there is need to examine the connection between national cultural values and managing diversity in the workplace (Hofstede, 1991).

The critical analysis in this paper undoubtedly demonstrates that Africa as a continent exhibits multiple diversity dimensions hence, we cannot ignore the need to manage these differences in order to promote effectiveness and efficiency in the workplace, as well as positively influence development (Sydhagen and Cunnigham, 2007). Although, arguments have arisen as to what type of management system should be incorporated to bring about this in Africa, this narrative paper examines critically the concerns around diversity management discourse in Africa. In summary, the push towards the adoption of African management practices (Anakwe, 2002) should not instigate the total dismissal of management practices and ideologies from the global North especially due to the effect of globalisation (Akobo, 2017). Akobo (2016) reemphasises the argument that the rejection of Western theories would be an impractical counter move to global processes for industrialisation and globalisation because of the establishment of the third sector across various countries, the operations of private sector businesses in home and host countries and the fostering of public sector partnerships with both the private and third sector organisations across the globe.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Full Length Research Paper

Attaining competitive advantage through energy efficiency: A cooperative strategic perspective

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The Kenyan economy in the recent past has witnessed a considerable exit of multinational companies due to high-energy costs. Similarly, a comparative analysis among the East African community partners places the country among the list of those nations with high-energy charges levied on consumers. This phenomenon disadvantages the competitiveness of local industries while discouraging potential players. This is detrimental to the government efforts of ensuring economic growth and development. Such exits reduce investor confidence, and drives away potential investors. In addition, it adds more pressure on the government's efforts to create more jobs, creation of more goods and services, increased household and national income. The objective of the study was to assess the effect of energy costs on attaining competitive advantage among manufacturing firms in Kenya. A quantitative research approach using survey research design was adopted by the study. Purposive sampling of 14 firms was done representing a total of 14 company representatives who filled the self-administered questionnaire. Data analysis was done using both descriptive statistics and inferential statistics. The hypothesis test showed that energy costs on electricity and petroleum had a significant effect on manufacturing firm's efforts in attaining competitive advantage and was a significant predictor of competitive advantage in Kenya at 37.2% explanatory power. The results also showed that manufacturing companies in Kenya spend an average of 10.5% of their total income on electricity and petroleum products, thus reducing their competitiveness both nationally and internationally. The study posits that, since energy management practices yields significant benefits not just to the firms, but the society, environment and the government, there is a need to foster a cooperative approach in efficient energy use investment.

Key words: Energy cost, cooperative strategy, energy efficiency, competitive advantage, Kenya.

INTRODUCTION

Energy efficiency refers to the installation of energy efficient technologies and implementation of practices that are designed to reduce energy wastage and eliminate energy losses in homes and business firms (Taylor, 2012). Manufacturing firms across the world incur huge energy costs through energy bills. The fundamental question is whether modern manufacturing

firms practice energy efficiency or not. If they do, what are the significant benefits arising out of energy efficiency practices? Can energy efficiency practice be carried out cooperatively with other industries? Can the gains assist a firm in attaining competitive advantage? In modern economies, if the above significant questions are adequately addressed, then a sustainable competitive

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firm can be fostered. In 2013, the U.S. was just 39% efficient in energy use; this implies that 61% of the firms and households did not practice energy efficiency (Fischer, 2013). Bai (2013) observed that 41% of all global firms considered energy efficiency management as an extremely important endeavor to their firms. However, 64% of these global firms focused on carbon reduction and not as a cooperative practice of energy efficiency as a strategy in attaining all firms' competitive advantages. In addition, cost savings was noted to be the leading driver of all energy efficiency initiatives (Bai, 2013).

A study by McCoy et al. (2014) commissioned by the Australian government found that 72% of the sampled companies spent more than 10% of their total revenue on energy sources before interest, taxes, depreciation and amortization. It further revealed that businesses consider energy costs of 2 to 3% of sales revenue to be high. The same study also showed that companies that spend more than 3% on energy costs and profitability less than 10% are classified as having high exposure to energy costs while those that spend less than 3% with profitability greater than 10% are classified as low exposure companies. The study proposed the following classification with regard to energy costs:

Very high impact: Energy Costs is >15%

High impact: Energy Costs is between 3-15%

Medium impact: Energy Costs is >1%

Low impact: Energy Costs is <1%.

The National Statistics publication of the United Kingdom notes that in UK, energy prices have been increasing steadily since 2004 (Johnson, 2012). Price increase on electricity and petroleum products erodes competitive strategies attained by firms; hence there is need for manufacturing firms to practice energy management in support of its competitive initiatives. The U.S.A Energy Information Administration in its Annual Energy Outlook predicted a continued energy price increase both for petroleum products and for electrical energy in the years to come (Conti, 2013). In this regard, there is need to practice energy management so as to reduce costs and transfer the gains to other firms' competitive strategies.

Audrie (2008) stated that energy efficiency efforts in the US between 2002 and 2007 helped reduce 5% of the nation's electricity demand and saved Americans \$16 billion on energy bills, which is equivalent to 27 million cars. This is a tremendous achievement which if replicated by manufacturing firms in developing economies such as Kenya, can assist their firms' attain an overall competitive performance. A study carried out by Singh (1995) stated that in countries such as Malaysia, Indonesia, Ghana, Zimbabwe, Colombia, and Turkey, the average energy costs from total income was not more than 10% and that firms would seek alternative sources of energy if the costs were too high. According to Beck and Chaves (2011) government taxes on energy

efficient equipment are passed forward into a firm's input costs. This has the net effect of increasing a firm's product price and negating its competitiveness international markets.

Alegana (2014) also concurs with the argument that taxation in Kenya influences the choices that firms make in their investments quests. This implies that manufacturing firms may perform poorly in the international business environment and there is need for energy efficiency practices to be intensified so as to reduce the effects of taxation on firm's efforts of attaining competitive advantage.

Energy Efficiency Practices in Kenya's

In Kenya, Kirai (2004) presented findings of a study that showed poor uptake of energy efficiency practices by industrial firms. This owed to the fact that there was no assistance given by government to firms, low involvement by company CEOs, perception of expensive technology, and the size of firm as the challenges facing adoption of energy efficiency practices. Although, there was notable training of over 250 firms in efficiency practices, few firms invested in the exercise. The payback period for such practices was 1 year and 2 months. The study recommended seminars, awareness training, energy audits, and technology upgrades as the measures of promoting energy efficiency practices.

Under its Vision 2030, the Government of Kenya-GOK (2007) observed that the manufacturing and commercial sectors are dominated by electricity and petroleum energy sources while the traditional sector is dominated by wood. Energy costs are noted to be one of the critical challenges towards economic prosperity; hence, efficiency in these energy sources is essential. It is on this premise the Kenya Energy Regulatory Commission (ERC) published the Energy Management Regulations, 2012 which spelt out a raft of energy efficiency measures that consumers can implement on their firms or households with guidance from licensed auditors recommended by Energy Regulatory Commission (ERC). The government further recommends that for the country to attain economic prosperity, increase in energy management practices is essential. The current study proposes that with such significant attention given to energy efficiency practice, it should be a shared responsibility by all firms in attaining their individual competitive strategies.

The study by Kirai (2007) further established that the ever-increasing energy costs, severe lack of energy efficiency practices in Kenya, insecure energy sources and reliance on imported petroleum products are some of the challenges affecting the economy. His study focused on the entire economy and not on the manufacturing sector only. He also recommended for the energy sector continuous efficiency awareness and information sharing

among players. The study also proposed guidelines, short courses, legal frameworks, and government support programs which can be instituted in all manufacturing firms to boost their efforts on energy efficiency and attaining their competitive strategies. The findings of the study indicated poor energy efficiency adherence with up to 30% energy losses among sector players for which Kenyan manufacturers are the largest consumers of electricity and fuel. The reluctance in the practice of energy efficiency practices renders the salient benefits of energy efficiency elusive. The study however did not address the ability of such practices being practiced by all firms to attain a firm's competitiveness. United Nations Environment Programme (UNEP) (2011) observed that for efficient use of petroleum products by motor vehicles; the average consumption of diesel driven vehicles in Kenya was 1 L/11 km while consumption of petrol was 1 L/13.88 km. Consumption per kilometre in developed economies such as the US, Japan, China and European Union is lower at an average of 16.3 km/L, showing that the efficiency of their motor vehicles is higher than their Kenya counterparts (UNEP, 2011). A report by Kenya National Bureau of Statistics-KNBS (2012) showed that the manufacturing firms own fleets of vehicles which consume significant amounts of petroleum products and that most of its fleet are not fuel efficient due to age factor.

The average age of vehicles driven in Kenyan roads is 15 years and their efficiency erodes as it ages. American vehicles have a road lifespan of 11.4 years, European Union is less than 5 years while Japan it is between 7-8 years. In Kenya, the average road usage is double the world standard and three times the average of the most efficient road transport systems (Kenya Motor Industry Association, 2014). The Association asserts that when vehicles get older, they consume more fuel, and become inefficient in energy usage, thus increasing operating costs. In their recommendations, they propose the use of the newest possible efficient technologies in their fleet of motor vehicles. Energy efficiency is one of the core functional strategies as noted by Hill and Gareth (2007). Increasing energy prices erodes Kenya's competitiveness in international trade (Kenya Association of Manufacturers (KAM), 2013). It is therefore evident that manufacturing firms which use much of electrical and petroleum energy for most of their processes bear the burden of being less competitive in both national and international economies.

Manufacturing sector in Kenya

There are strong pointers that manufacturing firms in Kenya end up paying high energy costs occasioned by energy wastage, inadequate supply and continuous instability in prices (Energy Regulatory Commission, 2012; Kirai, 2004; CCPs, 2013; KAM, 2015). This erodes their competitiveness in national, regional and international

markets, as well as reducing their profit margins. Olingo (2016) contends that high power costs are pushing manufacturers out of Kenya to other countries such as Egypt, South Africa and Ethiopia. The report shows that Sameer Africa, Cadbury, Eveready, Procter and Gamble, Reckitt Benckiser, Johnson and Johnson, Bridgestone, Unilever and Colgate Palmolive have left the Kenyan market for Egypt and South Africa, where electricity costs are lower. In Kenya, the cost of electricity ranges from KES 15-17 per kWh compared with Uganda's KES. 4 per kWh; Tanzania's KES.12 per kWh; Egypt's KES 11 per kWh; Ethiopia's KES 9 per kWh and South Africa's KES 6 per kWh (Wakiaga, 2017; Kenya Institute for Public Policy Research and Analysis (KIPPRA), 2016).

RESEARCH AND METHODOLOGY

This study carried out in Nairobi County adopted a quantitative research approach, using a survey research design. The data were collected using a self-administered questionnaire (Annex 1) and analyses were made using both descriptive and inferential statistics. It was then presented using tables. The study carried out a multi-stage sampling that involved purposive sampling of all the 14 manufacturing companies, and a census of all 14 member of management from the 14 manufacturing companies.

RESULTS AND DISCUSSION

Firm's annual energy costs

Table 1 shows that costs of electricity and petroleum were relatively high at an average of $\bar{x} = 10.5\%$. This means that majority of manufacturing companies spent a high percentage of their gross revenues on electricity and petroleum products. Also, the Standard deviation $\sigma = 1.25797$, showed that costs on electricity and petroleum were fairly diverse among firms in the manufacturing sector. This implied that there are strong indicators for energy costs to decrease or increase depending on companies' desire to practice energy management and vice versa. It should be noted that there is tendency for such changes in cost savings to differ from one nation to the other due to historical development of a country, transparency of government regimes, composition of the energy supply and demand, differences in end uses, and in political agendas (The Regulatory Assistance Project, 2012).

The study findings concur with the findings of Henri et al. (1999) who noted that firms have limited knowledge on newer technologies, and usually spend less finance on energy efficient technologies or related strategies which in turn increases consumption and thus costs. However, it disagrees with the findings of Singh (1995) who showed that in countries such as Malaysia, Indonesia, Ghana, Zimbabwe, Colombia, and Turkey, the average energy costs from total income by manufacturing firms was not more than 10% of total revenue before EBITDA; while in Kenya, the average costs is significantly

Table 1. Firms' annual percentage costs on electricity and petroleum.

Parameter	Costs on Energy	σ
Manufacturing Firms Average Energy Costs	10.5%	1.25797

Source: Research Data.

high at 10.5%. This implies that manufacturing firms in Kenya spend a high percentage of its revenues on energy compared to other competing firms on a global perspective and that energy inefficiencies are significantly high.

Findings by ERC (2013) show that manufacturing firms are aware of rising energy costs and the implications of energy management with regard to production costs. However, from the study findings, the high electricity and petroleum costs reveal that manufacturing companies in Kenya have not taken steps to mitigate the high costs. The findings are also in agreement with ERC (2013) which showed that in Kenya, energy management practices can lead to firm's savings of between 10 to 20% in energy usage with a payback period of less than 2 years.

The study findings are further supported by the findings from Australia by McCoy et al. (2014) commissioned by the Australian government which found that 72% of the sampled companies spent more than 10% of their total revenue on energy sources. It further revealed that businesses consider energy costs of 2 to 3% of sales revenue to be high. The above study carried out in Australia also revealed that energy cost of between 3-15% of total revenue is considered to be of "high impact", hence the costs by Kenyan manufacturers of 10.5% falls under this category and that energy management practices can reduce this to a moderate impact or low impact of less than 3%. With an average costs of 10.5%, the findings also agree with the findings of McCoy et al. (2014) that found 72% of firms in Australia spend an average of more than 10% of their revenues on energy sources. Although, the current study only focused on electricity and petroleum costs being the highest amount of resource utilized by manufacturing companies, the same is also valid for manufacturing companies in Australia.

Correlation analysis

Pearson's correlation coefficient is $r = -0.610$ at $p = 0.05$ (2-tailed) between energy costs and competitive advantage as shown in Table 2. This implied that there is a strong negative and significant correlation between energy costs in attaining competitive advantage. It implied that, increased energy costs negatively affected the competitiveness of a firm at local, national and international markets and a decrease in energy costs increased a firm competitiveness significantly. The finding

is supported by Willox (2012) who observed that more than 25% of firms incur high-energy expenses from (electricity, gas and other fuels) in Australia and this is not different in the manufacturing sector in Kenya. He further found that on average, 27% of companies he studied spent the equivalent of more than 2% of their sales revenue on energy, and 73% of the firms spent 2.5%. The report asserted that business expenses on energy as a percentage of turnovers increased between 2008 and 2011 and the trend was expected to continue. For the manufacturing sector in Kenya to attain and retain a competitive edge, there is need for energy management practice so as to lower the costs further. According to UNIDO (2012), high-income consumers of petroleum, electricity and related sources energy spend between 5 to 10% of their income and this is a replica of the current scenario in the Kenyan manufacturing sector, where energy expense stands at 10.5%. In this case, the study considered the expenses as of high impact which may hurt the firms' competitiveness in the long run both at local, national and international business economies (McCoy et al., 2014).

Regression analysis

The correlation results as shown in Table 2 revealed a strong and negative relationship which showed that energy costs had a negative effect on competitive advantage. The finding was statistically significant at $p = 0.05$. From Table 3, the regression results revealed that energy expenses on electricity and petroleum had an overall significant relationship with competitive advantage at 5% significance level (p -value = 0.021). From the regression results, the study therefore rejected the null hypothesis at p -value = 0.05 and concluded that there was a statistically significant effect of energy costs on competitive advantage among manufacturing firms.

The regression results showed that 37.2% change in competitive is explained by the firm's energy costs; hence, making cooperative energy efficient programs a strategic approach for enhanced firm competitiveness. The coefficient result showed a one percentage increase in energy costs led to a 61% decrease on competitive advantage and vice versa. This implied that an increase in energy expenses affects the competitiveness of a firm negatively and a decrease in energy expenses increased competitiveness of a firm. The average energy expenses as shown in Table 1 by manufacturing companies in Nairobi were high and stood at 10.5% of total revenues.

Table 2. Correlation analysis.

Statistical analysis		Competitive Advantage	Energy Costs
Pearson Correlation	Dependent Variable - Competitive Advantage	1.000	-0.610
	Independent Variable - Energy Costs	-0.610	1.000
Sig. (2-tailed)	Dependent Variable - Competitive Advantage	0.010	0.010
	Energy Costs		
N	Dependent Variable- Competitive Advantage	14	14
	Energy Costs	14	14

Source: Research data.

Table 3. Regression analysis.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin- Watson
					R Square Change	F Change	df1	df2	Significant F Change	
1	0.610 ^a	0.372	0.320	0.07385	0.372	7.113	1	12	0.021	1.762

^a Predictors: (Constant), Energy costs; ^b Dependent Variable: Competitive advantage; ^c N-14.

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Significance
1	Regression	0.039	1	0.039	7.113	0.021 ^a
	Residual	0.065	12	0.005		
	Total	0.104	13			

^a Predictors: (Constant), Energy costs.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin- Watson
					R Square Change	F Change	df1	df2	Significant F Change	
1	0.610 ^a	0.372	0.320	0.07385	0.372	7.113	1	12	0.021	1.762

^a Predictors: (Constant), Energy costs; ^b Dependent Variable: Competitive advantage.

Coefficient^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
		1	(Constant)	4.556			0.174		26.241	0.000	4.178	4.934	
Energy Costs	-0.043		0.016	-0.610	-2.667	0.021	-0.078	-0.008	-0.610	-0.610	-0.610	1.000	1.000

^a Dependent Variable: Energy Costs;

Source: Research data.

With such high energy expenses, manufacturing companies are at risk of losing the gains that otherwise would have been transferred to other competitive strategies so as to attain competitiveness among rival firms.

Energy management practices also enable a company to reduce their energy cost as a proportion of total cost. This highlights the need for energy management practices in the manufacturing sector. McKane (2011), as cited by IEA (2012) and the Retail Industry Leaders Association report (2013) as cited by Jamieson and Hughes (2013) argued that the practice of energy management has a pay-back period of 3 years with reduction on energy consumption costs of between 10 to 30%. Kenyan firms thus need to enhance its energy management practices if they are to enjoy the resultant benefits and thus lead them in attaining a competitive edge.

In addition, the study results also agree with those from Australia by Willox (2012) who showed that more than 25% of manufacturing firms incur high energy expenses from (electricity, gas and other fuels). He further found that, on average 27% of companies he studied spent the equivalent of more than 2% of their revenues on energy, and 73% of the firms spent 2.5%. The report asserted that expenses on energy as a percentage of turnovers increased between 2008 and 2011 and the trend was expected to continue. This is consistent with the current study findings with an average consumption of 10.5% which causes a significant reduction on revenues. The report further showed that in Kenya, energy costs and reliability have remained the biggest challenge to be overcome. In contrast, this study also shows that manufacturing companies in Nairobi spend a high percentage of its income on energy as compared to the manufacturing companies in developed countries that have embraced the use of technology and have implemented energy management practices (Hartmann and Huhn, 2009; Victoria, 2007; Willox, 2012)(Table 4).

Summary of hypothesis tests

The study thus revealed that energy costs had significant effect on competitive advantage and firms are obligated to embed energy efficiency practices in their strategic initiatives to attain competitive advantage.

Conclusion

The study results from Table 1 showed that energy costs on electricity and petroleum product as a percentage of firm revenue were high at 10.5%. Tables 2 and 3 revealed that energy costs had overall negative statistically significant relationship with competitive advantage at 5% significance level (p -value = 0.05). This

implied that an increase in energy expenses led to a decrease in competitive advantage and vice versa.

Carbon Trust (2011) stated that energy efficiency practice yields a cost savings of 5 to 25% and this should be encouraged in developing countries so as to remedy the current scenario. The finding is further supported by Kiema (2014) who showed that one unit of energy saved, corresponds to a saving of three units generated as a result of implementation of energy efficiency practices and that in Kenya, energy costs and reliability has remained the biggest challenge to be overcome. Similar findings in USA were attained by Jasinowski (2000). The findings showed that nearly 60% of manufacturers in USA foresaw electricity management as providing a saving of up to 20% on their energy costs. Further, Jamieson and Hughes (2013) argues that the practice of energy efficiency has a pay-back period of 3 years with reduction on energy consumption costs of between 10 to 30% of firm revenues.

Findings by Kinyanjui (2015) showed that the Kenyan government should reduce the production costs for manufactured goods by reducing energy tariffs and tax levied on petroleum products. This has been identified as a factor making manufacturing companies to exit the local markets to external markets such as Ethiopia, Egypt and South Africa (Olingo, 2016).

Based on the study findings, the study concurred that energy management practices can be practiced cooperatively through non-equity strategic alliance among manufacturers and government so as to boost the competitiveness of firms operating in the country at national and international markets. Such pooling of resources will help cushion the companies from the high costs of energy, capital intensive equipment and related technologies such as solar power, wind power among other forms of green energy.

Non-equity alliances will enable manufacturing firms to share unique resources and capabilities in energy technologies, knowledge, equipment and machines that will propel them to greater competitive advantage.

RECOMMENDATIONS

The current business environment is evolving and opportunities continuously arise that can enable a firm to leverage competitive advantage. The study recommends the need for a dynamic change where firms continuously share and adopt energy management practice that leads to enhanced competitive advantage. A cooperative strategic approach is gaining thrust and non-equity strategic alliances among firms will enhance resource pooling, and knowledge sharing. Such efforts will encourage investment in high-energy efficient technologies that individual firms may not afford on their own. Similarly, government support on tax rebates and waivers on energy efficient technologies is highly

Table 4. Summary of results for hypothesis testing.

Hypothesis	Test criteria	Significance	Conclusion
H ₀ : Energy costs on electricity and petroleum has no significant effect on attaining competitive advantage among manufacturing firms.	$p \leq 0.05$; Reject H ₀ ; if $p \leq 0.05$	$p = 0.021$	H ₀ Rejected

Source: Research data.

encouraged.

ABBREVIATIONS

UNIDO, United Nations Industrial Development Organization; **ERC**, Energy Regulatory Commission of Kenya; **KAM**, Kenya Association of Manufacturers; **KNBS**, Kenya National Bureau of Statistics; **GOK**, Government of Kenya; **KES**, Kenya Shillings; **IEA**, Institute of Economic Affairs; **KIPPRA**, Kenya Institute for Public Policy Research and Analysis; **CCPs**, Centre for Cooperation with the Private Sector; **EBITDA**, Earnings Before Interest, Taxes, Depreciation and Amortization; **UNEP**, United Nations Environmental Programme; **CEOs**, Chief Executive Officer's; **USA**, United States of America.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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ANNEX 1: Section C of the Questionnaire Administered.

Section C: Percentage Energy Expenses of Electricity and Petroleum

Answer the following question by ticking (✓) appropriately that which applies to you.

S/No.	Question	10-50 employees		More than 50 employees	
1	How many people are employed in the firm?	<input type="checkbox"/>		<input type="checkbox"/>	
Expenses:					
<i>For the following question, kindly provide percentage estimates ONLY</i>					
2	Annual Percentage Expenses on Energy: Example: $\% \text{ Expenses} = \frac{\text{Total Electricity Expenses}}{\text{Total Revenue}} \times 100$ and $\% \text{ Expenses} = \frac{\text{Total Petroleum Expenses}}{\text{Total Revenue}} \times 100$	2012	2013	2014	2015

What are the energy management practices implemented by the company?

Section D: Competitive Advantages Arising from Energy Efficiency

Indicate by ticking (✓) appropriately the benefits of energy efficiency? Please tick one of the choices given.

KEY: SA-Strongly Agree, A- Agree, U-Undecided, DA-Disagree, SD-Strongly Disagree.

Cost Leadership		SD	D	NS	A	SA
i)	Practicing energy efficiency leads to lower electricity expenses					
ii)	Practicing energy efficiency leads to lower petroleum expenses					
iii)	Practicing energy efficiency leads to lower production costs					
Higher Profit Margins		SD	D	NS	A	SA
i)	Energy efficiency practices leads to increase in sales					
ii)	Energy efficiency practices leads to increase in profits					
iii)	Energy efficiency practices leads to surplus funds					
Product Differentiation		SD	D	NS	A	SA
i)	Energy efficiency benefits enables the company to improve its product design					
ii)	Energy efficiency benefits enables the company to improves its product quality					
iii)	Energy efficiency benefits enables the company to improve customer service					
Energy Efficiency Practice as a Competitive Tool		SD	D	NS	A	SA
i)	Sharing information, on energy efficiency practices will enhance firm competitiveness					
ii)	Sharing knowledge on energy efficiency practices will enhance firm competitiveness					
iii)	Sharing expertise on energy efficiency practices will enhance firm competitiveness					
iv)	Pooling resources on energy efficiency practices will enhance firm competitiveness					
v)	Recognizing cooperative efforts on energy efficiency practices will enhance firm competitiveness					

Full Length Research Paper

Prototyping an innovative e-platform of financial assistance for small medium enterprises in Mauritius

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The SMEs form a vibrant pillar of the Mauritian economy through their important contribution to Gross Domestic Product (GDP) growth and socio-economic development. SMEs are recognized for their significance and their resilience in responding to fast changing conditions, even in times of the economic downturn. This paper aims to address financial illiteracy among Mauritian SMEs by proposing an integrated financial assistance strategy for small firms in view of enhancing the financial sustainability, growth and development of their business entities. The study adopts a dual methodology to address the study objectives. Two focus groups were held as part of the qualitative approach to quantify the level of financial literacy and to ultimately assess the extent of the problem. The paper also highlights the specific gaps and needs in terms of financial education and contributes to designing the most adapted solutions in terms of training and IT to respond to these needs. The research findings confirm the lack of financial knowledge among the Mauritian SMEs and the extent of their IT readiness. The survey has also revealed that although there is some degree of awareness about the most common sources of finance, the cost implications are not always fully understood. This lack of awareness on the mode of finance and the conditions apply thereto point to the existing financial education gap in the Mauritian SME sector. This further reinforces the need to implement an integrated financial platform.

Key words: SMEs, financial literacy, financial assistance strategy, Mauritius.

INTRODUCTION

The importance of Small Medium Enterprises (SMEs) to the economy is long established. Despite continuous efforts by governments and concerned institutions to provide an adequate structure for SMEs, information asymmetries with regards to access to finance, skills and global value chain, remain a challenge. Indeed, this issue has been recognised and there is ongoing research regarding the set-up of an e-platform to disseminate pertinent information to SMEs. The reference point in this context would be The European Small Business Portal

(European Commission, 2009) which provides financial assistance and information about market access and support programmes, albeit. However, proactive measures to assist SMEs are lacking in many developing countries including Mauritius.

SMEs in Mauritius covers diverse economic sectors. They make up an approximate 40% of the GDP share and absorb nearly 54.6% of employees in the job market (Ministry of Business Enterprise and Cooperatives (MoBEC), 2016). Given its potential, the Mauritian

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government is working towards making the latter a vibrant pillar of the economy. The actual target is to increase the SMEs' GDP contribution to 52% and to aim an increased export market penetration by 2026. However, this goal can only be materialised once the major barriers have been removed. The current situation is sluggish with 175 of registered SMEs being out of business for the period 2014/2015; this could be an underestimate given that 62% of SMEs are not registered (Statistics Mauritius, 2016). As highlighted by the 10-Year Master plan, the main reasons for closing down are: (1) financial difficulties; (2) lack of capacity; (3) inadequate management; (4) bureaucracy and (5) lack of financial knowledge.

It is thus important to design appropriate financial assistance for SMEs. Existing measures in Mauritius taken by banks include financial schemes, training and ICT programmes such as 'Business Boost' -provides high bandwidth access to SMEs. Despite these aforementioned supports, SMEs continue to struggle. This paper identifies the lack of financial knowledge as the missing link between the existing support providers and SME's growth potential. Against this backdrop, the forward-looking strategy as proposed by the 10-year Master Plan (2016) is to encourage innovation and build an IT Enabler E-platform for Mauritian SMEs. This paper follows the same strategy and builds on The European Small Business Portal and other African countries' experiences. The focus is primarily on the financial knowledge gap among SMEs in Mauritius. The aim is to tailor an interactive E-platform which will make the latter more financially literate. This will eventually ensure increased efficiency, productivity and growth.

A dual methodology is used to answer the main research objective. The starting point of this research is to assess the existing IT infrastructure available to SMEs. A micro-level study through the administration of survey and focus groups was used to discern the current financial awareness and knowledge of SMEs. The focus groups and surveys served as an identification measure of the financial education gap. A similar approach was also used to quantify the IT readiness of the entrepreneurs. These preliminary researches provide the foundation of the proposed e-platform.

The remaining parts of this paper are organised as follows. First is a discussion of literature on the financial literacy of SMEs with a focus on the country experiences on the usage of existing e-platform. This is followed by the employed detailed methodology which is then linked to the analysis. The analysis part sheds light on the current situation of SMEs pertaining to financial knowledge and IT readiness to embrace digital tools. Given the nature of the study, the technical feasibility in this research provides information on the technical aspects of the proposed solution, namely; requirement analysis, system analysis and design and prototype developments. Finally, the study is wrapped up with the

main findings and discussion, along with implications of the study.

LITERATURE REVIEW

Policymakers have come to see SMEs as a medium for inclusive growth and employment opportunities. The literature regarding its socio-economic benefits is well-documented. However, given the context of this paper, the relevant strand of the literature is narrowed to the issues SMEs face. The consensus across studies is that SMEs continue to struggle despite several support schemes. Lack of access to external finance (Pissarides et al., 2003); technology, innovation and expertise (Lal and Peedoly, 2006) regulatory and tax constraints feature as the most pertinent issues.

Financial literacy

Indeed, financing remains an important factor when it comes to business continuity (Nunoo and Andoh, 2012). However, the influence of financial literacy is often overlooked. Hall's (1992) findings show that the inability to understand accounting concepts and system significantly increases the chance of going out of business. Intuitively, the lack of financial literacy is tied with other complications with regards to seeking credit, detecting wasteful cash flows-to list a few. This aspect is well embedded in the definition of financial literacy as proposed by Noctor et al. (1992). They defined financial literacy as "*the ability to make informed judgements and to take effective decisions regarding the use and management of money*". It can thus be understood that financial literacy dictates attitude and the financial habit of an individual (Beal and Delpachitra, 2003; Mandell and Klein, 2009).

This theoretical argument is in line with the findings of Nalukenge and Tauringana (2013) where they argue that SMEs who are financially literate make more informed decisions, have knowledge of financial products that have high yield and are willing to leverage credit for future growth. It is thus fair to argue that a commendable level of financial literacy is a driver of growth for any enterprise and in this context, SMEs. Beal and Delpachitra (2003) agrees to the said argument and extended the benefit of financial literacy to wealth creation. Karadag (2017) further built on this concept factored for the educational level of small business entrepreneurs, and found that knowledge of financial management remains vital for firm performance. Having well-founded courses on business operations and management systems are hence necessary. Chang et al. (2014) tested for the efficiency of similar programmes and confirmed that the latter enhanced the problem-solving skills of entrepreneurs and managers. This is also corroborated by the findings of

Staniewski (2016).

SME and the economy

The literature accrues significant attention on how SMEs form a pivotal aspect in the economy. Schumpeter's (1912) work forms the basis of SMEs as economic drivers through his concept of creative destruction. The idea of small entrepreneurs being innovative and pushing incumbent firms to invest in new technologies and to be forward looking is indeed observed across industries. In the process of ensuring efficiency and non-complacency in big firms, SMEs implicitly drives investment; hence the positive link between SME development and growth (Beck et al., 2005). Kuratko (2006) further argued that SMEs played as revival tools following economic downturns in both developed and developing economies. When employment opportunity in the SME sector is factored in, Birch (1979) found that the latter is a significant contributor to employment level. Biggs et al. (1998) observed a similar finding in Sub-Saharan African countries. However, an *a priori* claim cannot be made regarding SMEs having a positive and significant impact on job creation. Few studies (Snodgrass and Biggs, 1996; Dunne et al., 1989) contested the view that small firms increase employment opportunities. It is noteworthy that in the Mauritian context, the economic benefits of the SME sector are well observed. A report by Statistics Mauritius (2013) supports significant employment growth generated by the SME sector by 34% between 2007 and 2013. It was further mentioned that value added by the sector is approximately 62% of gross output. The main takeout from this aspect of the literature is that the positive association between SMEs, growth and employment is country-specific. Although few studies reported insignificant relationship between SME development and growth; they do not dismiss efforts to invest and assist to the needs on SMEs in a country.

Needs and challenges

The literature also recognises that SMEs need certain preconditions to sustain its survival. The main constraints highlighted across studies relate to access to finance (Pissarides et al., 2003) and training facilities, existing infrastructure, technology and institutional support framework (Lal and Peedoly, 2006). When this issue is narrowed to the Mauritian context, high production costs unmatched by productivity gains, logistics constraints, lack of capabilities in ancillary services, design development, a narrow base for technology diffusion and absorption, altogether constitute major hurdles. The SME sector continues to be constrained by shortage of finance and financial instruments, high rate of interest and high rentals, the short reimbursement period, and a lack of

commercial and industrial space (Lal and Peedoly, 2006). Kadiri's (2012) paper highlighted a similar scenario in the Nigerian SME sector and portrayed lack of finance as a barrier to growth.

An important gap identified in the literature on SME development particularly in the African context, is that the linkages between institutions and SME entrepreneurship are yet to be adequately explored and understood. Institutions are often argued to play a critical role in the promotion of inclusive growth (Bartlett et al., 2005). However, there are still important institutional and policy related hurdles to overcome in order to harness the full potential of SMEs in terms of poverty reduction, social protection and empowerment. This argument agrees with the findings of Bartlett et al. (2005). These issues become even more pertinent in the context of the recent global economic crisis and its adverse impacts upon SMEs, with women and youth girls being the worst hit given their reliance on employment in the SME sector (ILO, 2010). Moreover, Migiro and Wallis (2006) found that information on sources of finance needs to be more readily available to SMEs and their advisors through an SME portal. Such reform is underway in the Philippines (Guzman et al., 2015). Also, the barriers to the utilisation and adoption of IT in SMEs can broadly be classified as internal which exist within the organisation, and include organisational culture, lack of resources and the level of training of employees. Yet, studies state that these barriers can be overcome only if there is a concerted effort among SMEs (Kapurubandara and Lawson, 2006). As proposed by Kadiri (2012), there is a need to integrate SMEs activities with financial institutions. This would arguably serve to bring coherence and build a good synergy between SMEs and the concerned institutions.

There is thus a need to invest in intellectual capital. As such, an integrated financial information system to educate the SMEs is deemed as an appropriate strategy. Ives and Mason (1990) proclaimed that ICT offers exciting opportunities to revitalise customer service by moving the company and respective product closer to customers, so that Information Systems (IS) would enhance flexibility of SMEs. Moreover, Migiro and Wallis (2006) found that information on sources of finance needs to be more readily available to SMEs and their advisors through an SME portal. Such reform is underway in the Philippines (Guzman et al., 2015). The same is observed in Nigeria with the M-Pesa mobile money disruption enabling many SMEs to be more efficient (Ndemo, 2017). It is an undeniable fact that digital technology is an opportunity for SMEs to benefit from increased market reach and knowledge networking at an arguably cheaper cost (OECD, 2017). While the debate of technological innovation in business promises new possibilities for SMEs, the OECD report (2018) reports that the latter are still lagging in embracing the shift to digitalisation. The general observation is that the technological gap widens when e-commerce systems are

controlled for.

African experiences

Surveying the literature revealed significant efforts to establish SME portal for data sharing; however the spin-offs of such initiatives are not well-established in the African context. The ITC report (2015) further adds that African countries are lagging behind when it comes to IT readiness. In view of addressing the existent digital divide, the Rwanda government is working with the private sector on their “#GoConnect” initiative to make digital services more accessible and cheaper (ITC, 2015). Similar initiatives were adopted in Kenya to cater for the microfinancing issues and fund transfer through the M-pesa mobile application (International Finance Corporation, 2009). The country also created a hotline, “Kilimo Hotline” to mitigate information asymmetry with regards to trade information, current support programmes, market prices, among others.

In the African context, it appears that countries are at different stages. This is mainly attributed to financial resource gap and lack of skills across the continent. This current situation formed the basis of the Microsoft's Biz4Africa initiative (ITC, 2015). Biz4Africa is an online platform that provides cloud-based business solutions by aggregating relevant trade information and enhances networking opportunities for small firms (Hain and Juriwetzki, 2017). It can be understood as a platform that assists firms throughout its business life cycle. Moreover, ICT impacts much on the lives of entrepreneurs by supporting them to cultivate their small enterprises and have a competitive edge in the market (Ozigbo and Ezeaku, 2009).

The country experiences have shown in different degree the extent of ICT infiltration to enhance the business activities of SMEs. The African experiences is something for the Mauritian government to replicate while the Asian experience, in particular, the Malaysian extent of ICT use is of great interest to make the Mauritian SMEs more competitive. Further, the European degree of digital use to ensure a buoyant SME sector is a good example that most other jurisdictions can embark on to tap into the potential of SMEs to create economic growth.

METHODOLOGY

The purpose of this research is to come up with an online strategy to assist SMEs in their financial literacy. This research is descriptive given that the profile of entrepreneurs and their related business are known whereby the who, what, where and how questions are well defined. With reference to Zikmund (2000), this research attempts to use exploratory research in order to have a clearer and better interpretation of the nature of a problem through exploring the problems that entrepreneurs are facing in their daily operational activities, and research is conducted to provide understanding and observation on the subject which is financial literacy of SMEs, rather than the provision of conclusive evidence. Micro and small

enterprises are targeted in this study. This investigation aspires from Yin (1994) who defines five principal research strategies to use when collecting and analysing empirical evidences namely experiment, survey, archival analysis, history and case study. The study adopts a dual methodology to address the study objectives, that is, both qualitative and quantitative. Two focus groups were held as part of the qualitative approach to gauge into the SMEs level of financial literacy and to assess the extent of the problem. The quantitative approach was possible through the development of a survey instrument. A stratified random sampling has been used for the study so as to ensure that the sample is representative of the population of SMEs in Mauritius. The determinants of size of SME firms were based on the level of turnover.

The objective of the first focus group with SMEs was to gauge into the financial awareness and knowledge of SMEs to identify gaps in financial education among entrepreneurs. The targeted SME audience consisted of 16 SMEs from various sectors of the economy. Some major constructs were identified which ultimately contributed in the design of the questionnaire. Additionally, the findings of the focus group were important for the first design of the prototype e-platform. The second focus group was held with some key stakeholders of SMEs. The participants contributed much to findings towards the existing strategies that they are providing to facilitate financial literacy of SMEs in Mauritius. These findings will be linked back to the survey results to validate the extent of the awareness about these existing schemes.

The quantitative approach was used to collect primary data from the owner manager of SMEs operating in different industry groups in Mauritius and Rodrigues. The questionnaire was designed based on an extensive review of the literature and the first and second focus groups which were instrumental in identifying some of the constructs relevant for the study. The instrument includes a number of questions with a view to assessing the respondents' financial attitude and behaviour. The questions are of nominal and ordinal scale. Some of the questions make use of multiple choice questions and dichotomous type. Some of the questions relates to about how money is handled in the business, profit/loss/pricing calculation and awareness about financing options.

In order to measure the SMEs financial knowledge, seven questions on basic financial literacy measured on an ordinal-index were used to calculate a financial knowledge score. The survey also attempts to capture the ICT adoption and usage by the owner manager as a means to run and manage their businesses. The questions set range from basic use of ICT tools/ devices to more advanced applications software that have been developed to facilitate business operations. There are also a set of questions to assess the extent of internet banking, mobile banking, Point of Sales (PoS) and other e-banking channels. Only the micro and small firms are of interest for our study. The objectives of the study are to gauge into their awareness and knowledge of financial products, procedures and obligations and evaluate their financial education needs.

FINDINGS AND ANALYSIS

Here the survey response are analysed with a view to gauge into the financial literacy of the owner manager. The survey instrument also attempts to assess the level of digital literacy as the study's main objective is to propose an integrated financial assistance strategy using an IT platform. The owner manager and firms' characteristics are first given to better profile the respondents. This is followed by an assessment of the SMEs' perception on financial literacy; their financial

attitude and behaviour, the extent of ICT adoption and usage. Most importantly, the instrument uses seven basic financial literacy questions to calculate the SMEs financial knowledge score. Lastly, the survey attempts to measure the need for financial education and assistance of the owner manager of Mauritian SMEs.

Table 1 reveals that the majority of the respondents are male, representing 62% of the sample. The age group 36 to 50 is more represented and this points to the competency of the owner managers in managing their businesses. This would be important when assessing their level of financial literacy and also the extent of FinTech usage. As expected, the qualifications of the owner manager are basically technical/vocational; and secondary level with only some 38% had studied up to university level. Next, the firm's profile is analysed in terms of its legal status, sector of operation and the yearly turnover, a common proxy to measure size of firms. The majority of the firms are organised as sole proprietorship and private companies, representing 44 and 30% respectively. 25% of the sample firms operate as a partnership, where the requirements for compliance to preparation of accounts are less stringent. The initial survey form has captured the sampled firms sector using a number of categories ranging from agriculture to health care. In order to facilitate later analysis, the sector was regrouped into primary, secondary and tertiary sector, with the food and beverages as a separate industry group. The primary and services sectors are represented by 20% of the sample and 35% are from the secondary sector while the food and beverages is 25%. Based on the turnover figured, nearly half of the sampled firms are classified as small, which is a focus of the study.

In line with the study objectives, the respondents' perception on financial literacy is measured using a 5-point Likert scale. Financial literacy is defined as a combination of awareness, knowledge, skills, attitudes and behaviour needed to make sound financial decisions, in order to achieve individual financial wellbeing. Table 2 summarises the results and report the mean score for the different dimension of financial literacy. It appears that the owner managers perceive their level of financial literacy to be high where their financial knowledge, skills, attitude and behaviour are rated as good.

Accounting records

The literature on the financial management practices has revealed the lack of attention to basic accounting records of SMEs (Padachi, 2012). This is often viewed as a major weakness when the owner manager of firms accesses formal credit. The survey results confirm this situation. Table 3 shows that the most popular records kept by the firms is the receipts and payments (72% of the sample firms) while there are still 50% of the sample firms that keep the transactions in a log book and some 39% use the company's bank account to keep track of the

Table 1. Descriptive data.

Summary statistics	F	%
Owner Manager Characteristics		
<i>Gender World Bank</i>		
Male	109	62
Female	68	38
<i>Age Group</i>		
18-35	49	28
36-50	83	48
Above 50	42	24
<i>Qualifications</i>		
Primary	17	10
Secondary	48	28
Technical/vocational	41	24
Degree	66	38
Firms' Characteristics		
<i>Sector</i>		
Primary	29	20
Secondary	52	35
Tertiary	29	20
Food n Beverages	36	25
<i>Legal Status</i>		
Sole proprietorship	79	44
Partnership	44	25
Limited Private Cos.	53	30
Cooperatives	3	1
<i>Turnover</i>		
Below 10 m	101	59
10-25 m	44	26
26-49 m	22	13
50 and above	4	2

business transactions.

The system of recording of transactions is predominantly a combination of manual and computerised – 64% of the sample firms claim to have both systems. This has implication on the readiness of our SMEs to adopt computer applications to facilitate the business operations, where 64% of the SMEs claimed that they use a combination of manual and computerised recording systems. This finding points to the widely known fact that the SMEs are credited as “resource poverty” (Cressy, 1991).

ICT Adoption and Usage

The basic ICT qualification of the 174 SME owner

Table 2. Perception on financial literacy.

Assessment	Awareness		Knowledge		Skills		Behaviour	
	f	%	f	%	f	%	F	%
Very Good	14	8	17	10	17	10	22	13
Good	107	62	108	63	100	58	96	56
Average	40	23	32	18	38	22	40	23
Bad	8	5	13	8	13	8	12	7
Very Bad	3	2	2	1	2	1	2	1
Mean	3.71		3.72		3.68		3.74	

Table 3. Accounting records and systems of recording.

Accounting records	Responses		Percent of cases	Recording systems	f	%
	N	Percent				
Receipts and Payments	126	37.6	71.6	Fully Manual	41	23.2
Log book	88	26.3	50.0	Partly Manual	15	8.5
Main Transactions	46	13.7	26.1	Both computerized and manual	113	63.8
Rely on Bank Account	69	20.6	39.2	Do not keep	8	4.5
None	6	1.8	3.4	Total	177	100.0
Total	335	100.0	190.3			

Table 4. ICT Qualifications.

Qualification	Responses		Percent of cases
	N	Percent	
Computer studies - SC level	37	18.4	23.0
Computer studies – HSC level	39	19.4	24.2
ICT3	51	25.4	31.7
Degree level	23	11.4	14.3
None	51	25.4	31.7
Total	201	100.0	124.8

Table 5. IT Readiness.

%	IT Plan	Internet	Website	Staff literacy	Expert in IT	Database	e-banking	e-filing	e-commerce
Yes	54	83	58	65	52	61	55	49	42
No	46	17	42	35	48	39	45	51	58

managers is displayed in Table 4, which shows that 32% of the owner manager does not possess a qualification in ICT related studies. This in itself would be a handicap for the owner managers to use ICT in the running of their business. However, it is interesting to observe that 32% of the owner managers have undergone training in computer studies as part of the government project to make the population more IT literate. 32% of the respondents have followed the ICT 3 courses. The survey data attempts to assess the SMEs' readiness to embrace ICT in carrying the operation of the business.

Table 5 summarises the nine (9) questions set to gain an insight into the firms' ICT strategy, internet access, human capital and the usage of technology. There is some evidence as to the SMEs preparedness to use ICT as the majority of the respondents claim that they have access to internet, have their own home page, have skilled staff, or they avail the services of expert in IT. However, they do not make enough use of e-banking or e-commerce as only 49% of the sampled firms use the MRA e-filing services for payment of tax.

Table 6 displays the result on the usage of e-banking

Table 6. Frequency of usage of e-banking.

Usage frequency	ATM	IB	MB	SMS	POS	Credit cards	Debit cards	Smart Cards
Very often	48	24	19	12	9	16	17	6
Often	32	35	26	27	26	34	36	24
Sometimes	10	10	11	11	13	14	16	16
Rarely	5	5	8	8	8	12	7	7
Never	5	26	36	42	44	23	24	47
Mean	1.85	2.74	3.16	3.40	3.52	2.91	2.86	3.65

Table 7. Communications tool.

Communication frequency	Email	Fax	Letter	Telephone	SMS	Skype	WhatsApp
Very often	60	23	32	80	59	25	40
Often	16	25	29	16	24	22	20
Sometimes	6	13	14	3	8	19	14
Rarely	4	12	9	-	5	9	8
Never	14	23	16	1	4	25	18
Mean	1.94	2.95	2.48	1.26	1.73	2.85	2.43

channels. The most common one is the ATM (mean score = 1.85) and the least often used is the smart cards (with a mean score of 3.65). The use of debit and credit cards are quite popular among the Mauritian SMEs. However, it is important to point out that nearly a quarter of the sample firms do not make use of debit and credit cards. Moreover, the point of sale technology is not often used as more than 50% of the firms hardly used this device for trading. It is interesting to note that internet banking is used by most of the respondents with a mean score of 2.74. The two latest Fintech devices, namely SMS banking and mobile banking have not captured the attention of the owner manager.

In order to gain an insight into the extent of the use of technology devices, the respondents were asked to choose the most often used communication tools. Table 7 shows that most traditional forms of communication remain; telephone, letter and fax having a mean value of 1.26, 2.48 and 2.95, respectively. Alternatively, the most commonly used communication tool in the advent of technology is SMS followed by email and WhatsApp. 60% of the respondents claimed that they use WhatsApp while 73% used text message. It is interesting to note this trend as this will facilitate the implementation of an e-platform as a solution to the financial assistance strategy.

Financial knowledge score

The study attempts to gauge into the financial knowledge of the SME owners by asking some basic questions on the calculation of interest, understanding concept of risk, cost of capital and financial statement. Tables 8 and 9 give the summary statistics grouped into the owner

manager characteristics and firms' characteristics. The Financial Knowledge score is based on the questions in the survey and encompasses the core areas which follow that of Atkinson and Messy (2012) whereby each correct answer was given an equal score of 1 with each question bearing equal weightage. The maximum Financial knowledge score is therefore 7. The average knowledge score of SME owners was found to be 3.21 (45.9%) implying a below average performance in terms of financial knowledge.

The study prompts further, to investigate the extent to which demographic factors including gender, age, qualifications of SME owners as well as the firm characteristics such as legal status, the business sector in which they operate and the annual turnover affect financial knowledge. The analysis revealed that the only significant demographic determinant of financial knowledge for our sample group is the level of qualifications of the SME owners. Summary statistics related to qualifications of the respondents are reported in Table 10 and the Levene's test for testing the homogeneity of variances is also given. There was no evidence to reject the null hypothesis of homogeneity of variances at 10%. To identify where the differences in qualifications lie, the Tukey HSD Post-hoc test is performed which shows that degree holders and those having a technical or vocational training have higher financial knowledge than those having basic education.

Financial education and assistance

Here the survey instrument captures the need for financial education and assistance for the Mauritian SMEs

Table 8. Qualifications and financial knowledge score.

Qualifications of SME owners	Financial knowledge score mean (Standard deviation)	Mean difference	
Degree	3.38 (-1.72)	Technical/Vocational	-0.14
		Secondary Level	0.207
		Primary Level	1.322**
Technical /Vocational	3.53 (-1.921)	Degree	0.14
		Secondary Level	0.347
		Primary Level	1.463*
Secondary Level	3.18 (-2.037)	Degree	-0.207
		Technical/Vocational	-0.347
		Primary Level	1.115
Primary Level	2.06 (-1.948)	Degree	-1.322**
		Technical/Vocational	-1.463*
		Secondary Level	-1.115
Total	3.23 (-1.907)	Levene's Statistic	0.865
		F Value	2.548**

Source: Computed. **, * implies significance at the 10 and 5% levels respectively.

Table 9. Financial Education and Assistance.

Statement	SA	Agree	Mean	Std dev.
Understanding Finance is important for my business.	42	40	4.03	1.21
I need regular basic financial tutorials.	26	45	3.78	1.12
Use of ICT improves access to basic templates that would help me better manage the business finance.	31	43	3.90	1.06
Bank provides counselling to better manage the business finance.	10	43	3.39	1.04
Am satisfied with the financing solutions provided by banks.	10	36	3.29	1.06
Am satisfied with the grants provided by support agencies.	10	35	3.28	1.06

Table 10. WCMS Comparison.

Requirement	WordPress	Joomla	Drupal
Learning Curve	Moderate	High	Moderate
Ease of Use	Moderate	High	Moderate
Documentation Support	High	Moderate	Moderate
Probability of obtaining support for unresolved issues	High	Moderate	Moderate
Probability of having required plug-ins available	High	Low	High
Probability of having suitable themes/template available	High	Low	High
Security	Low	High	High

to better run their businesses. There is a comfortable number (48%) of the respondents who confirm that they would need training on business education. Next the

questionnaire contains a six-item statement to evaluate the need for financial education and what assistance the SMEs are benefiting from.

There is a good consensus ($X = 4.03$) among the owner manager that finance is important for the running of the business. This is followed by the need to have regular basic financial tutorials ($X=3.78$; $SD=1.12$). Given the time constraint which SMEs face, they are of the view that the use of ICT will facilitate access to business templates that would prove beneficial to manage the business finance. On the other hand, the survey results point to the lack of support from the banks and the support agencies. The owner managers are of the opinion that the banks should make more effort to counsel them in business finance. This is further evidenced by the low satisfaction level (46%) with regards to the financing solutions provided by their banks. A similar observation is made about the grants which are provided by the support agencies. These findings add credence to the focus of this study; that is the need to develop an e-platform as a means to better assist in the financial education and assistance of the Mauritian SMEs.

The analysis of the survey has uncovered the relative low financial knowledge especially for SME owners having basic education as well as the lack of awareness about basic financial planning tools useful for the business. This is observed despite the fact that SME support agencies do have training on financial tools to support SMEs. For instance, the SMEDA in collaboration with ACCA “conduct workshops on basic finance for the SME owners; Other organisations like the MEF and NWEC conduct basic *“Adult literacy and life skills programme to empower human capital”*. Furthermore a representative of the NCC avers that *“there are many non-financial people who submit their financials to the registrar”*. The organisation is therefore planning to introduce a non-award programme on financial management, book keeping and accountancy for SMEs. On the other hand, the focus groups with SME owners suggest lack of responsiveness to the training programme *“not because they are not interested”* but because they are *“so busy with their business routines”* that they often *“do not find time to attend the training”*. Some even pointed that they miss out on the training because the information does not reach out to them as they do not always have the attitudinal reflex *“to check websites”* of support agencies

Additionally, the desk work has highlighted the numerous financial schemes of banking institutions and support agencies; however, it has been observed that although entrepreneurs are generally aware of these, it becomes *“tedious to take appointments with all of them”* to decide on their most suitable options. The respondents also highlighted that a forum where the community could exchange their experiences and share practical information would also be *“helpful”* and *“instructive”*. Moreover, the survey has revealed that although there is some degree of awareness about the most common sources of finance, the cost implications are not always

fully understood.

In the light of the above and given that there is evidence of ICT readiness among the Mauritian entrepreneurs, the proposed solution is an e-platform which encompasses (1) Short clips on basic accounting terminology and on initiatives and operational activities of entrepreneurs; (2) Tutorials on bookkeeping and basic financial management by a professional SME advisor acting as an online tutor to explain the concepts of basic accounting and finance; (3) Accounting templates in Excel format that can be used by entrepreneur in handling their basic financial matters; (4) An interactive discussion forum where the registered users can log in to interact with other entrepreneurs and SME advisor to discuss financial management and other related issues; (5) Centralised information centre from relevant financing institutions and support agencies where SMEs can search for relevant information provided by them and other service providers; and (6) News and events alerts to provide relevant information related to SMEs in Mauritius. This proposed solution draws mainly from previous studies conducted by Mazur (1998).

TECHNICAL FEASIBILITY

This part of the research elaborates on the technical aspects of the proposed solution and the major technical issues concerning the development of the web-based SME finance Literacy project. The phase consists of the design, development and deployment of a web application to provide useful information to intended users. Indeed, the Web Content Management System (WCMS) as a powerful tool has allowed the development of this proposed web-based application from a central interface. One of the primary aims of using WCMSs is to bypass the need for hand coding and development from scratch (Patel et al., 2011), where Plug-ins are readily available to perform complex tasks as well as maintenance tool to bring modifications to web content (Ghorecha and Bhatt, 2013). The three common WCMSs have been analysed and compared with respect to the key requirements of this project. Table 10 illustrates the result of this evaluation.

As can be observed from Table 10, WordPress, Joomla and Drupal have various notable strengths and weaknesses. All the 3 WCMSs meet more or less the same goals; however, they do not all contain the same features. WordPress has been considered best suited for this project because of its large array of built-in features as well as a large selection of additional plug-ins (43,427) which enhances the value of websites as well as enrich visitors' experience. Moreover, a substantial amount of documentation and support for WordPress is available in the form of live chat with WordPress representatives, published books, online forums and video tutorials as well as pre-packaged graphical themes and templates readily

available.

Requirement analysis

SMEs require a web application designed to enable them access resources related to facilities provided to setup/enhance business. The initial requirements have been captured from the focus group conducted at SMEDA with 16 SME owners representing a cross-section of the Mauritian SMEs. Their feedbacks were gathered to know their needs for the requirements of the proposed solution and in the design of the survey instrument.

Problems with actual system

There is no such system that provides information to intended users. As such, SMEs need to search information by themselves that they find suitable and sometimes they land at the wrong place. Entrepreneurs need to contact appropriate authorities to have valuable information which takes a day or two. Hence, it is a loss of time in monetary terms.

Functional specifications

The following functional specifications are proposed by the SME target audience:

- i) Easy to use by any person (children, students, matured entrepreneurs, novice entrepreneurs);
- ii) Simple in terms of design for easy usage such as Google;
- iii) Inter-operable on various devices namely PC, laptop, mobile systems such as smart phones, iPhones;
- iv) Informative with easy information contents;
- v) Facilitate SMEs operational activities/tasks;
- vi) Forum for knowledge sharing for various communities of practices and sectors of the economy;
- vii) Animated and interactive for better understanding;
- viii) Responsive and accessible quickly with easy navigation menus with more informative as possible in terms of literature, video tutorials and maintenance easiness and content update;

Technical specifications

The website has been designed to be available on a 24/7 basis where it can be (a) accessible to a large number of users without affecting performance of the website itself; (b) highly resilient; (c) scalable and easily maintainable in the future and (d) enhanced with security features to protect user credentials and data. The website is hosted

on a 24/7 Linux server with domain name <http://www.domain-name.com>. To access the website, users should have one of the following browsers installed, namely; Internet Explorer (IE) min version 10, Chrome and Firefox. The website OS is also accessible via mobile devices. The website is being designed using HTML 5 for the presentation layer. Mysql database is being used as back-end where all the information pertaining to the website is stored. The intermediary language between the front-end and the back-end used is the PHP language.

Project management methodology

The development methodology of the proposed prototype is based on Rapid Application Development (RAD) and the prototyping approach used to develop the website. It is tuned and enhanced after peer review and basis requirement. The proposed solution is derived after working on various prototyping, an evolutionary prototyping approach, that is, an initial prototype is worked on and tested, leading towards a second prototype, until the final has been approved to be the most suitable one. Two types of user group were defined namely (i) Normal User and (ii) Admin user. The development tools were (i) HTML, JavaScript as frontend, (ii) PHP programming to push and pull data from Database and (iii) MySQL Database as backend. The solution intends to bring an all-in-one platform that can provide useful information at the tip of fingers to intended SME users who will have a major advantage in saving time and money. Information on the e-platform can be accessed anywhere and anytime provided they are connected to the internet, comprising of videos, tutorials, post and even chat to be incorporated.

Prototypes development

One of the main focuses of the study is to propose an innovative e-platform of financial assistance for Small Medium Enterprises. This has necessitated a number of prototypes with the involvement of key stakeholders which were deemed important to come up with an appropriate Logo Design as displayed in Figure 1.

Final prototype

After evaluation and testing with some targeted SME users, the last prototype finally comprised of a welcome page (Figure 2), a web page stating the vision and mission statements of the e-platform (Figure 3), a web page containing all the useful links for SME web users, events to display events organised by stakeholders in favour of the SMEs, a chat room for SMEs to share



Figure 1. Final logo design.

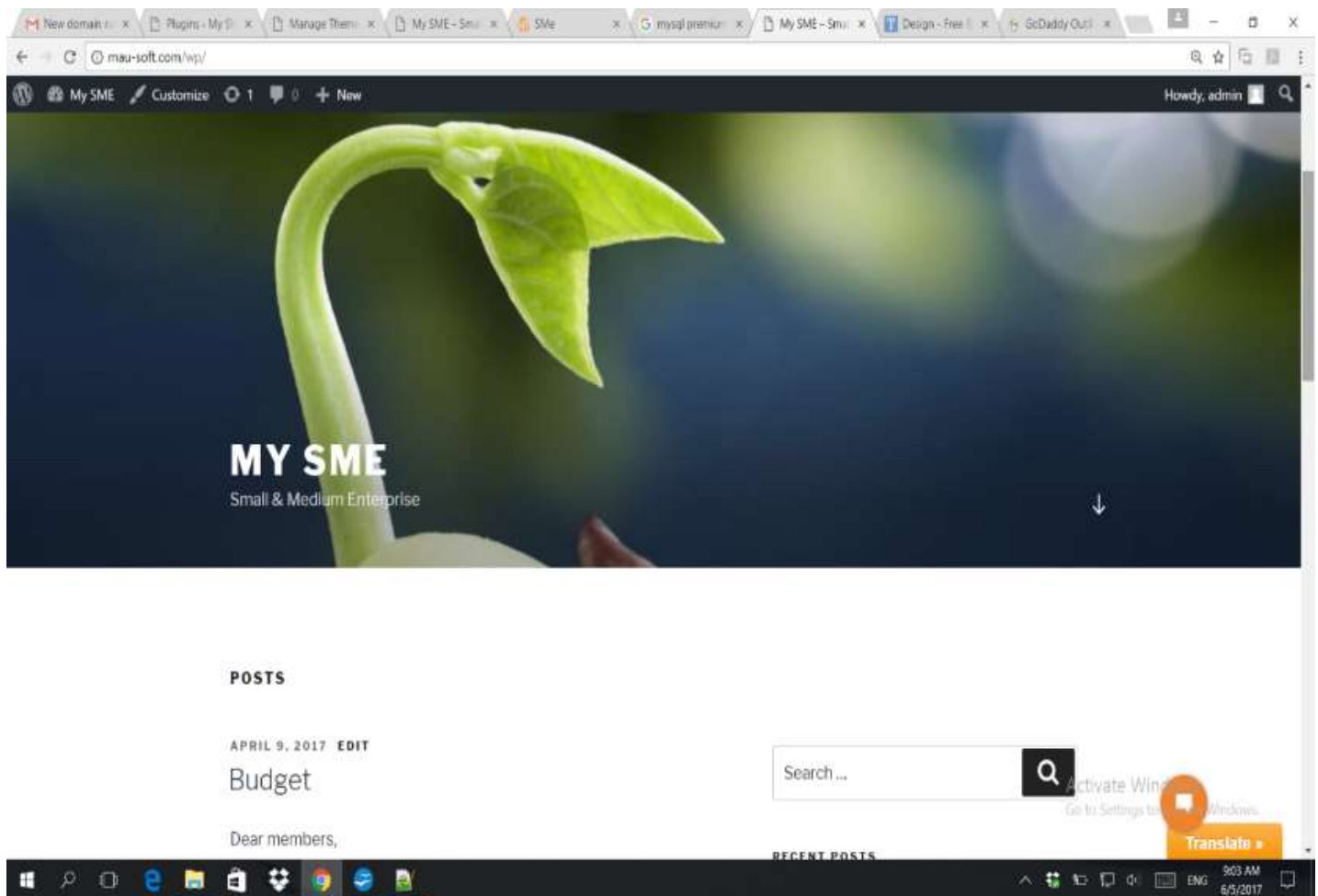


Figure 2. Main page.

knowledge related to the SME sector, a site map to guide the SME users, contact us page to enable communication with the e-platform administrators, login function to facilitate networking with SME peers and the main service is the entrepreneur learning corner (ELC). The ELC provides several facilities, namely; the financial

templates, online dictionary on basic accounting terms to facilitate quick reference, online video tutorials from tutor, and a televised short film/video on sources of finance. This e-platform acts as a knowledge sharing platform for the SMEs and among the SME peers. The pilot e-platform can be accessed at: <http://smefinance.mu/>.

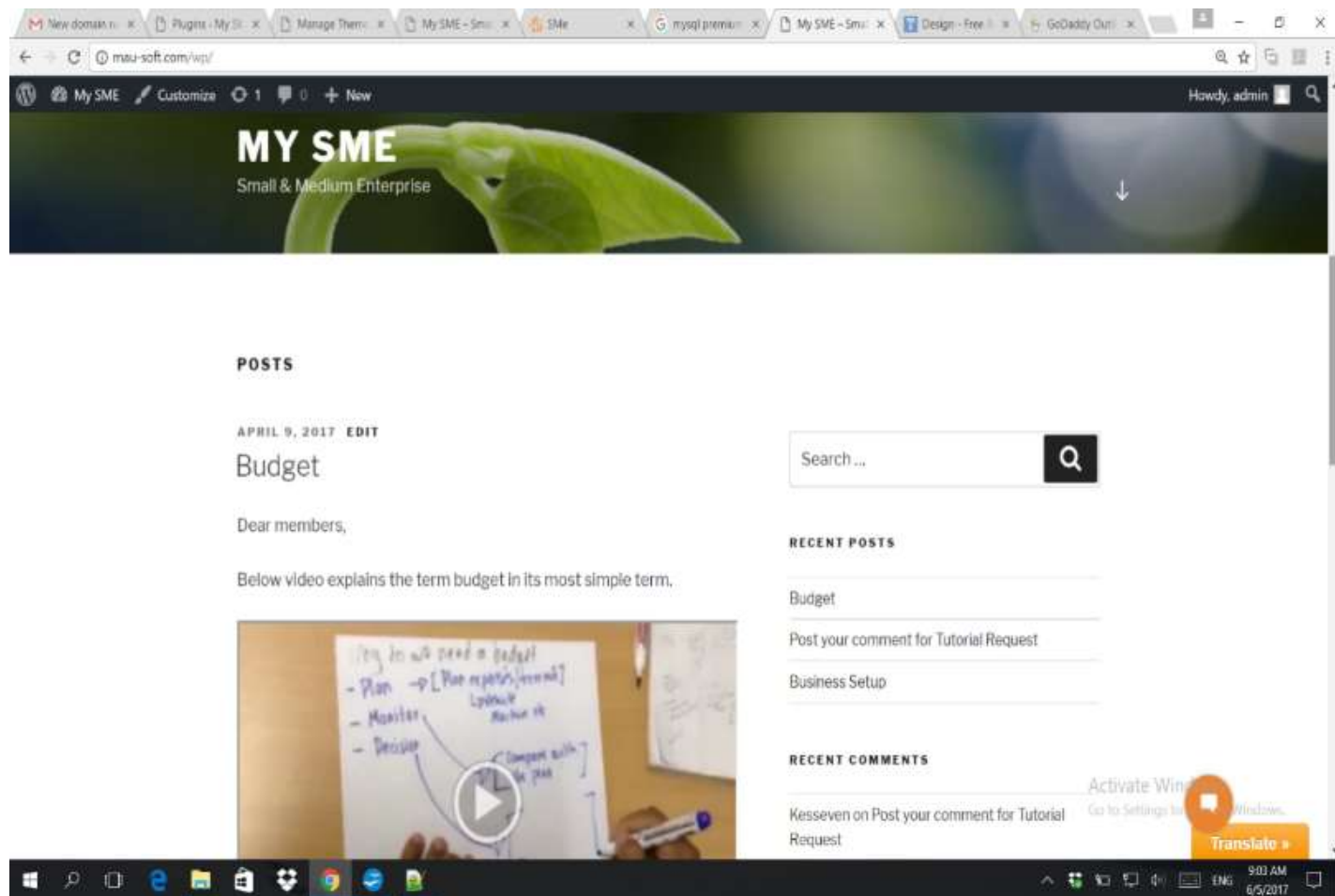


Figure 3. Web Page for sample lesson.

Conclusion and implications of study

The main contribution of this project is the design of an e-platform to improve the financial knowledge of entrepreneurs through videos and podcasts on basic accounting and finance terminology, as well as sources of finance. The e-platform will give access to financial tools to assist entrepreneurs in their business decision making process, and includes the possibility of a sharing platform among SMEs peers to share their difficulties in order to learn and develop their financial capabilities. So far, each financial institution (FI), namely banks and SME authorities and stakeholders have their own platform in terms of their website to display financial information for SMEs. As such, important information is diluted and does not reach the SMEs as targeted. Moreover, given their limited time and business obligations, SMEs require an integrated e-platform for a self-help and one-stop shop information for their financial needs. The significance of this project is to bring forth one integrated platform to educate SMEs of their financial needs whereby all FIs, SME stakeholders, related government bodies can also provide information to outreach the SMEs. This e-

platform is planned to act as a Win-Win situation for both parties, namely, SMEs as well as stakeholders. Online videos, chat, forums among peers, member registration are among the proposed functionalities to support in the mentioned project objectives.

The main takeout of this research is that SMEs are fundamentally resource constraint and that the sustainability of their growth demands a holistic strategy. This research has answered important questions regarding the degree of financial and digital literacy in the Mauritian context. It is expected that this prototype research will result in a spin-off and materialise into a fully operational and integrated financial education platform.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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