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Editorial

Information Management and Business Review (IMBR) provides a unique platform to scholars around the world to share their knowledge and publish research work in the fields of information management, business, management and related disciplines. The work submitted for publication consideration in IMBR should address empirical and theoretical developments in the subjects related to the scope of the journal in particular and allied theories and practices in general. Scope of IMBR includes: subjects of finance, accounting, auditing, cost & management accounting, financial psychology, financial literacy, marketing, information management, human resource management, knowledge management, innovation, change management, enterprise management, e-commerce and information system. Author(s) should declare that work submitted to the journal is original, not under consideration for publication by another journal, and that all listed authors approve its submission to IMBR. It is IMBR policy to welcome submissions for consideration, which are original, and not under consideration for publication by another journal at the same time. Author (s) can submit: Research Paper, Conceptual Paper, Case Studies and Book Review. The current issue of IMBR comprises of papers of scholars from Morocco, Nigeria, Ghana, Saudia Arabia, Bangladesh and Sultanate of Oman. The effect of HR practices on business performance, a user-centric housing recommender system, financial management practices, firm growth and profitability of small and medium scale enterprises, micro-finance for women empowerment: a rural-urban analysis, mobile learning approach in higher education institutes (HEIS) are some of the major practices and concepts examined in these studies. Journal received research submission related to all aspects of major themes and tracks. All the submitted papers were first assessed by the editorial team for relevance and originality of the work and blindly peer-reviewed by the external reviewers depending on the subject matter of the paper. After the rigorous peer-review process, the submitted papers were selected based on originality, significance, and clarity of the purpose. The current issue will therefore be a unique offer, where scholars will be able to appreciate the latest results in their field of expertise, and to acquire additional knowledge in other relevant fields.

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Table of Contents

Description	Pages
Title	1
Editorial	2
Editorial Board	3
Table of Contents	4
Papers	5
The Effect of HR Practices on Business Performance in Morocco: An Application of the Universalist Approach Hayat EL ADRAOUI	6
A User-Centric Housing Recommender System Ojokoh, B. A., Olayemi, O. C., Babalola, A. E., Eyo, E. O	17
Financial Management Practices, Firm Growth and Profitability of Small and Medium Scale Enterprises (SMEs) Alhassan Musah, Erasmus Dodzi Gakpetor, Portia Pomaa	25
Micro-Finance for Women Empowerment: A Rural-Urban Analysis M Saiful Islam, Tarikul Islam	38
Mobile Learning Approach in Higher Education Institutes (HEIS): Insights beyond the Acceptance Model of Technology Abdelbaset Queiri, Araby Madbouly	47

PAPERS

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The Effect of HR Practices on Business Performance in Morocco: An Application of the Universalist Approach

Hayat EL ADRAOUI
Morocco, North Africa
heladraoui@iscaextra.net

Abstract: The role of HRM in improving business competitiveness is recognized. The scientific literature has several theoretical approaches through which some authors have attempted to validate this hypothesis. The objective of this study is to verify if the companies most successful in Morocco are distinguished by their HR practices under the Universalist approach. We quantitatively analyze the returns of a panel of 92 national and multinational companies in Morocco. A context far unexplored by management researchers. These companies operate, since the 80s, in a context of strong competition due to the globalization of markets. The results are used to validate the Universalist perspective and argue the scope of certain HR practices in this context.

Keywords: *HR practices, business performance, Morocco*

1. Introduction

Investment in the development of HR practices been in recent years a growing interest from the research community. It is becoming increasingly strategic and stands as one of the solutions that allow businesses to be more competitive. Several studies have attempted to validate the alleged relationship between HR practices and business efficiency. Most is done in developed countries, leaving a large validation of this issue in African countries such as Morocco. A context that has been little strategic management studies in the field of Human Resources (SMRH). This paper aims to verify if we can empirically test the hypothesis on the potential impacts of HRM practices on performance in large enterprises in Morocco. In this perspective, we have structured this contribution into five parts: the theoretical framework, the peculiarities of the Moroccan context, methodology and discussion of the results, their managerial implications and limitations.

Theoretical Framework: The HR functions towards arolemoreandmorestrategic. For over twenty years, the scientific literature on the crucial role of HR in maintaining competitive advantage is abundant. Strategic Human Resource Management (SHRM) is characterized by the major interest attributed to the contribution of the HR function in the process of defining and taking strategic decisions. The major concern of the SHRM is to ensure that HRM integrates the needs of the organization (Barrette, Ouellette, 1997). Managers agree a strategic role to HRM at least for two reasons: first, because modern businesses thrive in environments increasingly unstable and then their human resources play an important role in the success of strategies Adaptation (Guerin and Wils, 2002). It shows that HRM taken in its strategic dimension is a vector that is responsible for the success of organizations (Bayad, 1997). To survive, companies are required to develop innovative solutions to stand out from the competition. They have no other options but to act on strategic levers they are able to control. These include financial capital, human and material. Which contributed substantially to the development of the theory of corporate resources (Barney, 1991). Interest in these variables has continued to evolve, which gave birth to the resources that assumes that recent theory can be a competitive advantage of the company if they are generating valuable, rare and difficult to substitute (Christian Arcand and Tellier, 2005). By focusing on the company's internal resources as a source of competitive advantage, this theory considers the staff is not only a success factor in achieving the strategies, but it is the competitive advantage of organizations (Becker, Gerhart, 1996; McMahan, Virich and Wright, 1999; Emery, 2003). HRM has gradually developed from the beginning of industrialization under the influence of several factors related to changes in economic and management requirements of organizations. Administrative HR management is the classic role of the function. It is summed up in an organized information management to help managers make decisions. Its action is courtermiste. Usually in subordination to the financial management given the importance of the payroll (Weiss, 1979; Emery, 2003).

The Performance Concept: The performance concept meanwhile, has undergone many definitions from the management researchers. For a long time, this concept has been reduced to a single dimension focuses on the financial dimension (Bourguignon, 1995). However, the complexity of the economic environment especially

during the period of the eighties and ninety, has led to a realization that the company's control cannot be limited to one aspect Financial. Thus, given the changes in the competitive environment, there has been an appeal to non-financial performance measures to supplement traditional financial measures. This has accelerated the abandonment of one-dimensional approach to the concept of performance in favor of a multidimensional vision. Furthermore, although the concept of performance is widely developed in the literature, knowledge is still a vague concept and difficult to identify for businesses. The link between HRM practices and performance: a presentation of the Universalist approach HR management, resource theory has formed the basis for the development of strategic management concepts in HR. Around which several theories have developed and tried to study the impact of the development of certain HR practices on performance. The publications of the past 30 years show that the authors agree on the strategic role of HRM in achieving organizational goals (Arcand, 2000; Bayad, 2004).

They demonstrated that whatever the company's size and whatever its strategy and even with the presence of an undeveloped HR function, the company is required to value its staff to be more efficient (Christian Arcand, Tellier and Arcand, 2005). The literature that is chained offers several models that have attempted to explain this link. Some authors Delery and Doty, (1996) in particular, were the first to propose a typology that include these approaches under three names: the Universalist approach, contingency approach and the configurationally approach (Allani-Soltan, Bayad and Arcand, 2004). As part of our study, the Universalist approach is used to validate the RH-performance link in larger companies in Morocco. This approach assumes that certain HR practices have a positive impact wherever it is applied. It was designated by authors like Delery and Doty, (1996) and McMahan, Virick and Wright, (1999) under the title of "best practices" or "one best way". The principle of universalism presumes that certain practices are impervious to organizational contexts and apply whatever its peculiarities. Increase their presence in all cases the probability of greater efficiency (D. Chênevert, B. Sire B., M. Tremblay, 1998). The contingency approach suggests that HR practices to be effective, must beings aligned with organizational factors called contingency and particularly with the business strategy of the organization. Contrary to the principle of the superiority of universalism, the so-called configurationally approach postulates that many HR practices groupings may lead to performance based on the principle of equi-finality.

These configurations are ideal types profiles which organizations must come together to maximize their performance (Allani-Soltan, Bayad and Arcand, 2004). According to this perspective, HR practices should have a synergistic effect between them (internal stowage) in addition to the synergy with the strategy (external stowage) to result in better performance (Lacoursière, Fabi, and ST-Pièrre Arcand, 2004). Other authors such as Barrette, (2005) employ the concepts of horizontal and vertical alignments to describe this synergy. The universality of the theory is not undone theoretical foundations. There are two theoretical foundations on which is based the proponents of this approach (Delery and Doty, 1996; Arcand, 2000). It is based primarily on the human capital theory (Becker, 1962; Schultz, 1961) in that employee skills are considered an asset as the company's other assets, generating wealth if they operate in an appropriate context. And secondly, it is based on the theory of strategic resources (Barney, 1991) in that certain resources in the organization can represent a sustainable competitive advantage if they are rare and difficult to imitate or substitutable. Researchers are still far from unanimous about the superiority of one of three approaches that have been presented (Lacoursière, Fabi, ST-Pièrre and Arcand, 2004). Indeed, this field of research is still perfectible (Arcand, 2000). In Morocco, even less, because we have not had access to studies addressed the relevance of this link.

In the literature, the results seem to support a great extent the principles of the Universalist approach. One of the most cited validations of universalism is that made by Huselid, (1995) of 968 US companies. The measures of the implementation of certain HR practices related to skills development and motivation have been reported in three performance indicators: the level of sales, turnover and growth of shareholder value. Analyzes published by Huselid strongly support the Universalist perspective. Another Canadian study by Barrette and Simeus, (1997) with 36 high-tech companies has validated this approach. Both authors concluded that investment in the practical merit pay appears to significantly influence the level of productivity, profit margin and return on equity prices. As for the evaluation, it influences the growth potential of the shares and the profit margin unlike the practices related to training that explain low extent, the level of productivity of the companies studied.In a survey of 536 employees and managers in Quebec,

published by Tremblay, Guay and Simard, (2000) the authors examined the perceived influence of four HR processes (dissemination of information, sharing power, skills development and recognition) on organizational commitment and engagement of staff. The study has the feature to test individuals'views in respect of a number of practices rather than HR managers. This realization is confirmed by figures on the evolution of the HR function in Morocco, reported by some law studies.

HR Management Features in Morocco: Several companies still limit the role of the HRF administrative management but external requirements related to the changes that the country lives require the HR function to "equip" (DIORH, 2012) and "professionalize" after some HR questioned. In the Maghreb countries and Morocco in particular by the proximity and similarities of their cultural patterns, issues relating to the development of a model for HRM is of major interest (Frimousse and Peretti, 2005). The challenge faced by many HR professionals in Morocco is approaching advantage of strategic partner and get away from the administrative agent. They concluded that organizational commitment and work behaviors are influenced more by the implementation of HRM practices and how they are perceived by employees, by their presence. The context of the function also reveals another observation related to the gap between multinational and domestic enterprises. The former are often in the implementation of strategies defined at their parent companies. A position that gives them the role of real locomotives contributing to the dissemination of new practices.

HR managers of domestic enterprises meanwhile, face in their daily lives to the difficulty to expand their scope of action to strengthen their contribution. They often lie second in participation in management and in defining strategic orientations. Autonomy in decision making still seems somewhat effective. The HR function in Morocco is in a good momentum of progress despite the silence of Moroccan legislation on some topics such as diversity, ethics and unionism. Under this constraint, some practices are still difficult to implement. Given these factors, we cannot endorse the evolution of HR management practices only to those factors. In order to read the components that have characterized the context in which it evolved (protectorate Moroccanization, border openings, etc.), we offer a substantial overview to see how they are combined to build a modern management of companies. The HR function in Morocco has become necessary with the presence of employees that dates back to early last century with the Protectorate and the introduction of capitalism. Overall we distinguish two periods (1) the period of the protectorate and (2) the period after independence.

The Period of the Protectorate: HRM in Morocco emerged at the beginning of the last century with the colonization and capitalism that brings up the type of employer-employee relationships and that will gradually replace the types of non-wage reporting. Two major events marked the world aware of the 19th century, which led to major changes: the industrial revolution and colonialism. They are closely related since the industrialization of the economy has rapidly created a shortage of raw materials required openings to new markets untouched from exploitation (colonies). Economic growth had become such a strong and legitimate means of conquest that military power. In 1880 Moulay Hassan 1st signed the agreements of the Madrid conference in which twelve Western powers were present. And that was the beginning of the economic protectorate (Ayache, 1957). Between 1919 and 1930, the companions, employers and apprentices were organized into guilds. They received wages and some gifts in kind (Zimmermann, 1914). In 1924, industrial plants have become more numerous and they went to 615 companies employing 7,228 employees. Some of them were as strategic Breweries of Morocco, the company superphosphate and machinery company Schwartz Hautmont (Ayache, 1957). Unionism in Morocco was born with colonialism. Ayache, (1957) argues that the trade union movement in Morocco was an extension of the French labor movement, with all its peculiarities. Over this period, the global economic crisis had affected the traditional economy quickly Moroccans. The peasants were impoverished by the collapse of grain prices and poor harvests and artisans were ruined by the closure of export markets. Among the main wage demands included the recognition of the right, the fight against unemployment, the setting of a minimum wage and application of the law of 08 hours (Ayache, 1957). Under pressure from the strikers, three Royal Decrees were published in the Official Gazette in 1936. Thus was established in Morocco for the first time the principle of the day of 08 hours as it was set in France en 1919.

Independence Period: After independence, Morocco has tried to restructure its economy. The objective was to develop and protect the emerging economy. During this period, he has expanded that amplified the gap between the two main sectors: the modern sector has inherited a number of activities protectorate employing 30% of the workforce, and the area which brought together the traditional agriculture and crafts with more than 60% of the active population (Oved, 1961). The Moroccan State was required to take swift action to put the country on the path of growth. These efforts have focused on three axes (1) the reform of agricultural structures, (2) direct state intervention to increase production and (3) management of the imperatives of Moroccanization services which required a significant investment for training Moroccan executives.

With the swelling of the external debt and pressure from international creditors, the country is launched from the 80s, in a free and open program in the world economy. The result was the adoption of the structural adjustment program in 1983 and continued by the inclusion in the GATT in 1987. At the end of the twentieth century, this commitment is expressed by the conclusion of a number of free trade agreements, first with the European Union in 1996 and the USA in 2004. The objective of these agreements was to free the economic fabric of the heavy state intervention. Faced with the demands of increasingly strong, companies were required to mobilize their employees around these challenges. Modern management has begun to develop productivity-enhancing and consideration of the wealth of human capital.

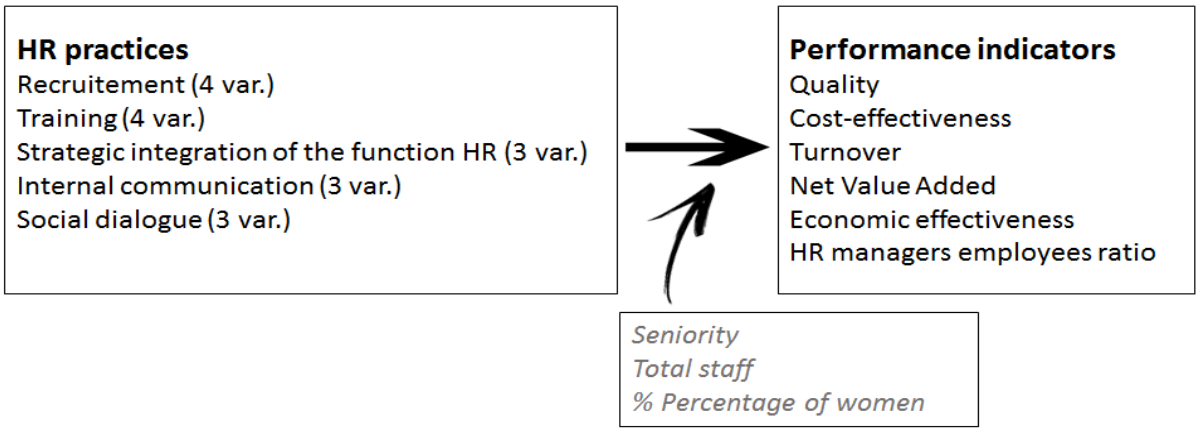
2. Empirical Work

Our empirical work is not just about large national enterprises, otherwise we would have provided limited lighting a part of reality to answer our questions. For this, our investigation also includes multinationals operating in Morocco. In total we interviewed 92 companies among the top performers. In the following we present the hypothesis and research model, a description of the main characteristics of the firms in our sample and the results obtained from the correlation analyzes. Chat conclusion will highlight the limitations, managerial implications and possible extensions of our contribution.

The Model and the Hypothesis of the Research: Based on the contributions of the literature, we present the following Universalist hypothesis and research model for it:

Hypothesis: "Some HRM practices have a positive effect on business performance in Morocco

Figure 1: Reasearch Model

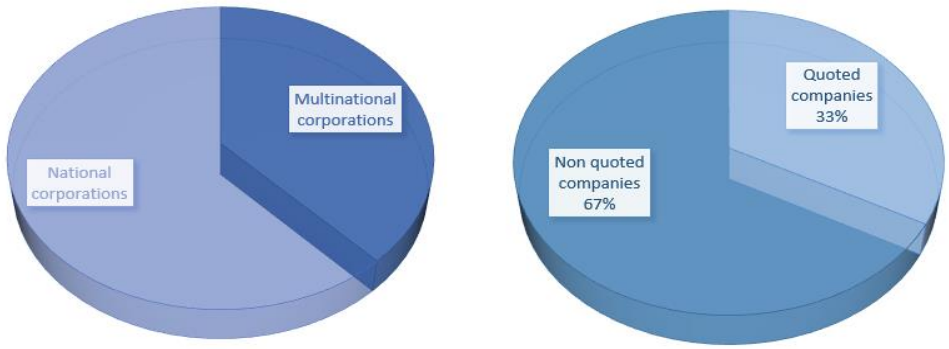


3. Methodology

The Structure Sample: This study was carried out from a study involving 92 large Moroccan firms (average size = 1530) representing the major industries in Morocco (Figure 2). A questionnaire was sent to those responsible for HRM 120 companies, the majority are included among the 500 largest companies in Morocco. Of these, 92 agreed to participate in the survey. Is a 80% response rate. During the preliminary phase of design work, a series of exchanges with professionals in the field was also conducted to assess there levanceof the questions. Our sample is represented primarily by national companies (62%) of which 33% is

publicly traded. The surveyed managers are a seniority level and study that allows them to be aware of the challenge similar studies and the importance of providing reliable information. Each company is autonomous in its management, some have relative autonomy given their attachment to parent companies. We also asked companies for their award-winning HR practices at the national or international level. This is particularly the case of Microsoft and the Mamounia. Our sample includes the oldest companies in Morocco as Cosumar, OCP Group, the Board of tobacco (Altadis) and BMCI (a subsidiary of BNP Paris below).

Figure 1: Structure of the Sample N=92



The Choice of Variables: Although there are several studies in the scientific literature, offering a variety of HRM practices, we still chose to validate the choice of these practices by some HR professionals. An approach that is the basis of extensive research (Arcand, 2000). Unnecessary or irrelevant practice was abolished. We chose 05 HRM practices declined in 17 variables. Questions are dichotomous or multiple choice types (Table 1). Performance in turn, is a multidimensional concept after extensive literature review. According Aît Razouk and Bayad, (2011) indicators predominate in the performance measurement were still financial and accounting. To remedy this, Bayad and Liouville, (1998) distinguished three types of indicators represented by a social dimension measured by performance, working time, absenteeism, etc., an organizational dimension measured by productivity, innovation and quality and finally an economic dimension represented by financial profitability indicators, trade and economic and sometimes even on the customer loyalty.

Other authors such as Dyer and Reeves, (1995) presented four types of results: social, organizational, financial and commercial. With that, we adopt a multidimensional measure of performance represented by three dimensions: economic, financial and commercial companies in the sample. The indicators measure the changing Turnover (CA), the quality, the value added (VA), the financial profitability (ROE) and the global teacher ratio approached by the formula Number of Frames / number of employees. We also study the impact of HR practices on performance perceived by managers represented by the quality and cost effectiveness. Some authors believe that a significant relationship between HRM practices and performance could result from subjective responses of surveyed HR managers. According Bayad and Aît Razouk, M. Bayad, (2011) managers involved in investigations usually have in mind an abundance of HRM practices implies better performance. To overcome this limitation, we also based on indicators from the summary statements of the period 2011-2012.

4. Results

Given the large number of quantitative dependent variables and categorical predictors we conducted an analysis by linear regressions. A statistical method that combines technical analysis of variance and regression to identify interactions between different types of variables. A first reading of the results (Table 2 Matrix of correlations) can observe the existence of a significant relationship between certain HR practices and performance indicators. We believe that the development of practices and the scope of their application may depend on the age or size. With that, the big companies would be sufficiently developed more concerned with the development of new practices so that smaller and younger would not necessarily a complex structure sufficiently to justify the development of certain practices. The statistics actually show that the introduction of certain practices varies depending on the number of employees. The correlation matrix shows

that this recruitment practices (r = 0.313, sig = 0.002), strategic integration of the HR function (r = 0.267, sig = 0.010). And conversely, practices related to internal communication and social dialogue is less developed in companies with more women than men (r = -0.208, sig = 0.047; r = -0.291, sig = 0.067). Seniority in turn reinforces the presence and development of social dialogue practices associated (r = 0.304, sig = 0.003).

Effects Value Added (Va): Our statistics show that the VA seems to be related to a developed recruitment policy managed on a HRIS, favoring internal movement of all categories of staff and uses sources of candidates that are multiples (R2 = 0.064; sig = 0.015).

Table 1

Recruitement
Recruitement is managed in a Human Resource Service Management (HRMS)
Recruitment policy favors promoting from whithin for executives
Recruitment policy favors promoting from whithin for technicians and supervisors
Sources of recruitment are multiple
Training
The training policy préviligie specialized agencies
Training is managed in a Human Resource Service Management (HRMS)
Human resource planning anticipate needs whith training
The number of days of training
Strategic integration of the function HR
The presence of an entity of human resources management
The human resources manager is associated in the strategic decision-making
The management policy of the human resources is formalized and communicated to the employees
Internal communication
Written communication is important
Emailing is an important communications tool
The working meetings are an important communications tool
Social dialogue
The percentage of the unionized employees
Unions are important actors in collective bargaining
Unions influence decision-making

Effects Financial Profitability (Roe): The financial performance of the company, we have chosen to represent the ROE, appears to be significantly related to certain HR practices. Linear regression models show that this indicator is influenced by the presence of a formalized HR policy and communicated to employees (R2 = 0.063; sig = 0.016) and the recruitment policy (R2 = 0.050; sig = 0.033). The ROE seems to be also related to internal communication practices, particularly those associated with the use of written, e-mails and team meetings (R2 = 0.058; sig = 0.021).

Effects on Perceived Quality by HR Managers: We read on our models the presence of plausible links between the level of quality perceived by managers and certain HR practices associated with internal communication (R2 = 0.045; sig = 0.043).

Effects Profitability Perceived by Hr Managers: As for the latter performance indicator, some HR variables related to social dialogue seems to have a predictive power variability (R2 = 0.075; sig = 0.008). This is especially for social dialogue practices that made the partner unions in decision making.

Effects on the overall student ratio (Number of Frames / global workforce): Our statistics show in the following that this indicator is inversely associated with social dialogue practices (R2 = -0.208, sig = 0.046). Parallel to the regression analysis, we have ensured that there is no effect of multi collinearity between

variables related to the dependent variables of the model. Already, we emphasize that the studied HRM practices are not all capable of influencing the same way the performance indicators (Table 3 Results of linear regression).

Training: we are surprised at the low impact of practices related to skills development. This provides us with an unexpected result given the large literature suggesting that training is one of the most influential. And leads us to assume that the "universal" nature of certain practices is relative and it is related to the context in which the business is located. One possible explanation for the insignificant effect of training practices seems to be provided by the study by Fabi, Lacoursière, Morin and Raymond (2010) conducted among 382 employees. These authors have shown that training in Québec companies is seen as one of the major tools that directly impact job satisfaction and commitment to the organization and indirectly on performance. Some authors Decock Good and George, (2003) in particular, believe that the impact of training is not easy to prove since it is often shifted in time.

Table 2

Matrice des Corrélations

		Ancienneté	Effectif	% Femmes	Indice Recrutement	Indice Formation	Indice Intégration stratégique de la FRH	Indice Systèmes de Communication	Indice Dialogue Social	Qualité	Rentabilité	CA	VA	ROE	Tx Encad GL
Ancienneté	Corrélation de Pearson	1	,226*	-,127	,172	,067	-,103	-,018	,304**	-,163	-,120	-,111	-,107	,030	-,066
	Sig. (bilatérale)		,030	,228	,102	,524	,326	,867	,003	,121	,256	,293	,309	,776	,529
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Effectif	Corrélation de Pearson	,226*	1	-,011	,313**	,184	,267*	,116	,146	-,048	,043	,149	,122	,042	-,022
	Sig. (bilatérale)	,030		,915	,002	,079	,010	,269	,165	,653	,684	,156	,246	,693	,834
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
% Femmes	Corrélation de Pearson	-,127	-,011	1	-,078	,013	,066	-,208*	-,291**	,067	,176	-,023	-,098	,015	,077
	Sig. (bilatérale)	,228	,915		,461	,899	,534	,047	,005	,523	,094	,825	,353	,890	,465
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Indice Recrutement	Corrélation de Pearson	,172	,313**	-,078	1	,105	,242*	,159	,029	-,173	-,175	,175	,254*	,223*	-,032
	Sig. (bilatérale)	,102	,002	,461		,321	,020	,129	,780	,099	,096	,095	,015	,033	,766
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Indice Formation	Corrélation de Pearson	,067	,184	,013	,105	1	,219*	,079	,187	,085	,093	-,184	-,174	,033	,021
	Sig. (bilatérale)	,524	,079	,899	,321		,036	,453	,074	,421	,379	,079	,097	,758	,844
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Indice Intégration stratégique de la FRH	Corrélation de Pearson	-,103	,267*	,066	,242*	,219*	1	,428**	-,035	-,080	-,026	,049	,051	,251*	,078
	Sig. (bilatérale)	,326	,010	,534	,020	,036		,000	,742	,450	,807	,646	,627	,016	,462
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Indice Systèmes de Communication	Corrélation de Pearson	-,018	-,116	-,208*	,159	,079	,428**	1	-,099	-,212*	-,144	-,009	-,014	,240*	,034
	Sig. (bilatérale)	,867	,269	,047	,129	,453	,000		,349	,043	,171	,932	,894	,021	,749
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Indice Dialogue Social	Corrélation de Pearson	,191	,146	-,291**	,029	,187	-,035	-,099	1	-,127	-,274**	-,042	-,039	-,004	-,208*
	Sig. (bilatérale)	,068	,165	,005	,780	,074	,742	,349		,228	,008	,693	,715	,968	,046
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Qualité	Corrélation de Pearson	-,163	-,048	,067	-,173	,085	-,080	-,212*	-,127	1	,673**	,034	,025	-,032	-,022
	Sig. (bilatérale)	,121	,653	,523	,099	,421	,450	,043	,228		,000	,745	,816	,764	,838
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Rentabilité	Corrélation de Pearson	-,120	,043	,176	-,175	,093	-,026	-,144	-,274**	,673**	1	,026	,015	-,009	,114
	Sig. (bilatérale)	,256	,684	,094	,096	,379	,807	,171	,008	,000		,803	,884	,929	,280
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
CA	Corrélation de Pearson	-,111	,149	-,023	,175	-,184	,049	-,009	-,042	,034	,026	1	,918**	,000	-,086
	Sig. (bilatérale)	,293	,156	,825	,095	,079	,646	,932	,693	,745	,803		,000	,998	,414
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
VA	Corrélation de Pearson	-,107	,122	-,098	,254*	-,174	,051	-,014	-,039	-,032	,015	,918**	1	,184	-,150
	Sig. (bilatérale)	,309	,246	,353	,015	,097	,627	,894	,715	,816	,884	,000		,080	,153
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
ROE	Corrélation de Pearson	,030	,042	,015	,223*	,033	,251*	,240*	-,004	-,032	-,009	,000	,184	1	-,096
	Sig. (bilatérale)	,776	,693	,890	,033	,758	,016	,021	,968	,764	,929	,998	,080		,363
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Tx Encad GL	Corrélation de Pearson	-,066	-,022	,077	-,032	,021	,078	,034	-,208*	-,022	,114	-,086	-,150	-,096	1
	Sig. (bilatérale)	,529	,834	,465	,766	,844	,462	,749	,046	,838	,280	,414	,153	,363	
	N	92	92	92	92	92	92	92	92	92	92	92	92	92	92

*. La corrélation est significative au niveau 0.05 (bilatéral).

**. La corrélation est significative au niveau 0.01 (bilatéral).

Table 2: Results of the Linear Regressions

HR practices	Quality		Cost-effectiveness		Turnover (CA)		Value added (VA)		Financial Profitability (ROE)		Global Teacher Ratio	
	R-deux	Sig.	R-deux	Sig.	R-deux	Sig.	R-deux	Sig.	R-deux	Sig.	R-deux	Sig.
Recruitement	0,300	0,990	0,310	0,960	0,310	0,950	0,640	0,015*	0,500	0,033*	0,001	0,766
Training	0,007	0,421	0,009	0,379	0,034	0,079	0,030	0,097	0,001	0,758	0,000	0,844
Strategic integration of the function HR	0,006	0,450	0,001	0,807	0,002	0,646	0,003	0,627	0,063	0,016*	0,006	0,462
Internal communication	0,045	0,043*	0,021	0,171	0,000	0,932	0,000	0,894	0,058	0,021*	0,001	0,749
Social dialogue	0,016	0,228	0,075	0,008**	0,002	0,693	0,001	0,715	0,000	0,968	0,043	0,046*

Discussion: No doubt such results are a real support for the Universalist theory of HR. However, can you confirm, as these analyzes, we were able to validate the supposed link exist between HRM practices and performance across the Universalist approach? Indeed, the statistics obtained from the returns of Moroccan companies show that this approach is relevant in social sciences. Some HR practices seem to be powerful on the principles of universalism. Topping the list, just those associated with internal communication, recruitment and strategic integration of the HRF. This result is not surprising according to the interviewed managers.

Recruitment: The significant effect of the recruitment practice in the variability of the VA and ROE is not surprising given the large number of studies that have placed him among the high-performance HRM practices. A result that is contrary to the conclusion of Arcand, (2000) on the lack of effect of staffing practices on the performance of DesJardins funds. Huselid, (1995) by cons set the selection of personnel among the most influential components on productivity and financial performance. The significant impact of recruitment practices that emphasize internal mobility of executives and technicians and supervisors on performance indicators is a result that was confirmed by some authors as DG Cabaret, (2009). The author's starting point was the hypothesis that the skills and competencies not used by the employee in a workstation could develop in the year and change to other activities and that the notion of potential competence refers to an evolving and dynamic design. The author suggests that internal mobility allows employees to develop their capacity for change. This is a practice that also reduces the costs of adaptation and prepare solutions to unforeseen future. In another study by Fabi, Raymond, Lacoursière and Arcand, (2004) among 200 SMEs, the authors confirmed the positive effect of this practice on the same performance if it is associated with a decrease in productivity in results. They explain that this decline is recoverable at other levels given the observed positive links with the rest of the performance indicators. This is particularly the gains made in the capacity of employee retention, development of new products and the evolution of the rate of return.

Internal Communication: Several research on the relevance of the RH-performance link placed internal communication and information dissemination among the most influential practices. The study by Gagnon and Arcand, (2011) in a Quebec manufacturing company (over 600 employees) corroborates our results. The authors concluded that the lack of planning and lack of information sharing on the vision cause deficiencies in the definition of objectives. These shortcomings result in lower performance. A second study was conducted by Benedict and Rousseau, (1990) with 21 private sector SMEs in Quebec. The results of the study have placed internal communication among the best performing HRM practices. However, some authors such as B. Fabi, R. Lacoursière, L. Raymond et J. St-Pierre (2010) estimate that the practice effect in question is favorable, but it is visible on the term job satisfaction and employee engagement. An additional explanation appears in the results of the longitudinal study by Aît Razouk and Bayad (2011) to understand the relationship between HR practices and performance. The authors concluded that internal communication and dissemination of information on the company's strategy and organizational goals are among the most effective HR practices but whose effect is shifted in time.

According to A. Ait Razouk, (2014) practices of participation and sharing of information allow employees to feel a part of decision-making and also understand the meaning of their commitment to the organization. Bryson, (1999) meanwhile, concludes that some HR practices associated with communication, participation and compensation have a significant impact on the variability of financial performance as they are applied in SMEs or large structures of more than 200 employees. His study involved a sample of 178 SMEs and 386 large

companies. In some Moroccan businesses, access to information on new strategic directions is still limited to an elite. In these organizational contexts, only the managers and employees "appreciated" by their hierarchies are informed. The withholding of information is exercised even between vis-à-vis managers of a new employee or following organizational changes. The spread of information and sharing of vision and financial performance with all employees represent a major paradigm shift in several companies in Morocco.We continue to see in companies that attendance at meetings on new projects or new strategic directions is not accessible to everyone.

The Strategic Integration of the Hrf: Indeed, the results obtained by Bruno, Lacoursière, Martin and Raymond, (2010) on the most effective HR practices for retention and engagement of employees joining our conclusion. These authors identified 10 practices that may have a positive effect on job satisfaction, commitment to the organization and employee retention. This leads to an improved product quality, improved productivity and profitability. They concluded that the activities under the theme "Communication and Participation" for employees to be informed regularly about the objectives of the organization and the organization of work are among the trio of the most influential practices satisfaction work. Definitely, it seems clear that in the Moroccan context, the integration of social concern in the development of HR practices is linked to the respect of legal texts (DIORH, 2012). Despite this, some companies are developing new practices that go beyond what is required by the labor code in order to be more competitive. They often draw successful practices of multinationals. A similar conclusion on the French context was made by Coulon, (2006) in a study involving 106 HR professionals. The author claims that French companies are not developing original practices but rather are required by law. The rest of the practices developed to improve their competitiveness.

Social Dialogue: While it is clear that the importance of social dialogue in a structure shows a strong presence of unionized staff, it stands to follow that it is a practice generally represented by employees of a certain age. Indeed, authors like De Coster, A. Cornet and C. Delhaye, (1999) explain that it is important to make the distinction between movements fighting for change for workers and the presence of organized unions explain to the workers the decisions of power and exercise oversight or supervision missions. Hence the link between the practice and the indicator measuring the overall supervision. We believe that these practices are complementary and substitutable and are able to reduce managerial efforts in the company.

5. Conclusion

Overall, the results obtained from tests support our Universalist assumption. The positive and significant correlations presented the scope of several HRM practices with certain performance indicators advocate this perspective that some HR practices have a positive effect on performance each time they are applied. Without a doubt such results are a real support for the Universalist theory of HR is the perspective that until now have relied more research. Some authors, Becker and Gerhart, (1996) in particular, argue that there is no magic formula regarding HR practices to implement for better efficiency. However, can you confirm, as these analyzes, we were able to validate the supposed link exist between HRM practices and performance? It appears that in our sample companies, some HR practices are able to develop some performance indicators. HR professionals have every incentive to invest in the development of HRM system using these practices called "winning." Our study brings additional insight to the question on the RH-performance link in Moroccan companies which represent a field of research that is relatively young and worth exploring further. However, all research has limits, and ours is no escape from this principle. In order to explain the scope of other practices, authors like Mr. Arcand, (2000) proposes to introduce the culture of the organization to be considered in this kind of analysis. It should be added that in addition to the limit associated with universalism, our study was cross- sectional. Roll out the study over several years is in our opinion, an extension of great significance in order to give more meaning to the links posted by statistical models. Also, it should be stressedthat the modelsassociated withuniversalismare simplistic (Lacoursière, Fabi, St-Pierre Arcand, 2005) and ignoreinteractions withcontingency factorsinside andoutsidethe company. As suggested by theaut hors of universalism, these studies areto be completed byothersthat take into accountinteractionswith the environment.

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A User-Centric Housing Recommender System

Ojokoh, B. A[1]., Olayemi, O. C[2]., Babalola, A. E[3]. & Eyo, E. O[4]
[1,4]Department of Computer Science, Federal University of Technology, Akure, Nigeria
[2]Joseph Ayo Babalola University, Ikeji-Arakeji, Nigeria
[3]Department of Mathematical Sciences, Anchor University, Lagos, Nigeria
bolanleojokoh@yahoo.com, ocolayemi@jabu.edu.ng, asegunloluwa@gmail.com, eokoneyo@gmail.com

Abstract: Recommender systems are very useful in assisting users to reduce the complexities involved in their decision making processes. It is particularly difficult for people to make decisions on housing choices because different options exist with different facilities, in different locations and with varied cost implications. This paper proposes a hybrid user-centric housing recommender system that is implemented to assist potential house buyers and tenants to generate house listings based on their preferences with the aid of fuzzy logic and item-based collaborative filtering. A virtual tour of the houses is also provided for better choice making.

Keywords: *Recommender System, Fuzzy Logic, Collaborative Filtering, Housing*

1. Introduction

Recommender Systems essentially perform the function of information filtering while dealing with the problem of information overload as they dynamically filter out relevant information from large databases based on user's preferences, interest, or item's observed behavior (Konstan and Riedl, 2012; Pan and Li, 2010). Recommender systems are able to perform the function of predicting the preference of a user about an item based on his profile (Isinkaye et al., 2015). These systems proffer benefits such as reducing the transaction costs of finding and selecting items and revenue enhancements in electronic commerce sites. They have also been proved to improve decision making process and quality (Pathak et al., 2010). Housing is a basic human need and it is a critical determinant for survival. It is seen as one of the most basic human necessities alongside food and clothing (Ikejiaku, 2009). An individual who has an abundance of food and clothing without a house to live in might as well be regarded as an animal (Carpenter et al., 2005). Currently, a person's choice of housing not only provides the main purpose of protection but goes further to reflect a person's status in society. As a result of this, people meticulously put a lot of factors into consideration before making a particular choice for a house. According to Aggarwal (2016), the basic recommender approaches are Collaborative filtering, Content-based and Knowledge-based. Collaborative filtering provides a recommendation based on the idea of leveraging the ratings and actions of a user with his community. The content-based approach provides a recommendation based on the attributes that the user has favored in his past ratings and actions, while a knowledge-based approach gives a recommendation based on the user's explicit specification of the kind of attributes he wants.

Knowledge-based recommender systems, essentially leverage user specifications item attributes and domain knowledge. They are particularly useful when dealing with items and services that are not purchased or required very often. These include houses, which is the major concern of this study. An important strength of these systems is the absence of the cold-start problem. The features of these items and the user profile at times are presented in imprecise, uncertain and vague from. Thus, they need to be carefully analyzed for optimal results. Fuzzy Logic is a method that has been found to be very useful for addressing such situation and have been widely applied to handle uncertainty, impreciseness and vagueness in item features and user's behavior in the design of recommender systems (Jain and Gupta, 2018). In some instances, two or more of these basic types of recommender systems are combined to form a hybrid system based on the need at hand. In this research, a hybrid system that utilizes a combination of knowledge-based filtering and item-based collaborative filtering is proposed to recommend houses. It contains a fuzzy logic based component that analyses multiple housing attributes. These attributes typify the profile of the users. It also uses an item based collaborative filtering component for location comparison based on user's ratings and produces a suggested list expected to depict the preferences of the users, using a case study of Akure metropolis of On do State, Nigeria. Section two of this paper presents the literature review. Section three describes the proposed

method. The results of the implemented system are presented in Section four, while Section five concludes the paper.

2. Literature Review

Recommender systems have intuitively come into play to help present the user with exactly what he had in mind to find by taking input parameters from the user that is used in some way to determine what he needs. Recommender systems have been studied and used to suggest items such as books, music, movies, news, and partner matching in dating sites, among others that are of matched interest to a particular user (Schafer et al., 1999; Pizzato et al., 2010; Burke, 2002). Recommender systems give suggestions and recommendations when users need to make decisions while faced with different choices (Ojokoh et al., 2012). Access to information is readily increasing and likewise the information available, so typically on the hunt for information on a particular item, a bulk of information has to be perused to get to that item which the user particularly needs, and in scenarios where the users don't know exactly what they are looking for, this scenario is now even more complicated and most of the time the user only usually finds that particular item by mistake. In order to find associations among items and users, a Recommender System (RS) analyzes data about items or about interactions between users and items (Omisore et al., 2013). It usually provides advice about items to be purchased or examined by users. The results presented as recommendations usually help the users to navigate through large information space of product descriptions, movies, news articles or other items (Burke, 2001). These recommendations can be based on the top overall sellers on a site, the demographics of the consumer, or an analysis of the past buying behavior of the consumer to predict possible future behavior (Omisore & Samuel, 2014).

Collaborative Filtering (CF) evaluates items using the opinions of other people (Schafer et al., 2002). A CF algorithm suggests new items or predicts the utility of a certain item for a particular user based on the user's previous likes and the opinions of other like-minded users. For a typical CF situation, there is a list of l users U = $\{u_1, u_2, \ldots, u_l\}$ and a list of n items I = $\{i_1, i_2, \ldots, i_n\}$. Each user u_i has a list of items Iu_i, which the user has expressed his opinions on. Opinions can be given by the user as a rating score, usually within a certain numerical scale, or can be derived from purchase records, by analyzing timing logs or by mining web hyperlinks among other options (Konstan et al., 1997; Terveen et al., 1997). Sarwar et al. (2001) identified User-based CF which could be memory or model-based (Isinkaye et al., 2015) and Item-based collaborative filtering algorithms. One important step in the item-based collaborative filtering algorithm is the computation of the similarity between items and the selection of the most similar items. The basic idea in similarity computation between two items i and j is the isolation of the users who have rated both of the items and then the application of a similarity computation technique to determine the similarity $s_{i,j}$. Such similarity between items could be computed using cosine-based similarity, correlation-based similarity or adjusted-cosine similarity (Sarwar, 2001). Content-based recommendation does not use other people's opinion to recommend but rather recommend items based on a description of an item and the profile of the user.

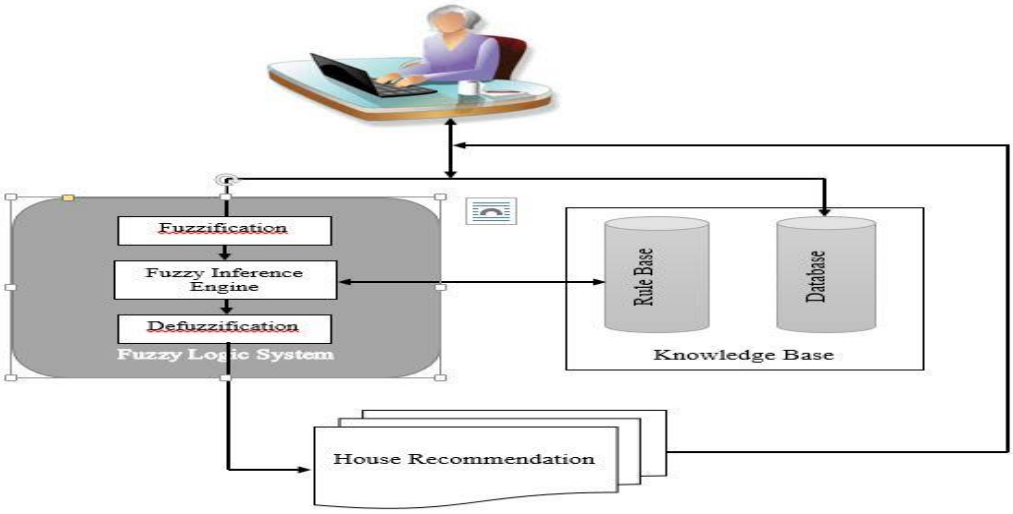
Content-based methods recommend items that are similar to the ones that the user liked in the past (Lops et al., 2011). It is an information filtering approach where features of items a user likes are exploited for recommendations. Content-based recommender system is dynamic in every way as it learns from the user through the categories of items the user examines and also items the user has previously rated, purchased or viewed (Lops et al., 2011). In general, various candidate items are compared with items rated by the user and the best matching items are recommended. Event though, a content-based recommender makes its comparison with items the users have viewed previously, it solely remains with that particular user. The third type of recommender system is one that uses knowledge about users and products to pursue a knowledge-based approach to generating a recommendation, reasoning about what products meet the user's requirements. Knowledge-based recommender systems are particularly useful in the context of items that are not purchased very often. Such cases include the recommendation of items such as real estate, automobiles, tourism requests, financial services, or expensive luxury goods. Usually, sufficient ratings may not be available for the recommendation process because of the fact that these items are not commonly purchased. In addition, they require different types of detailed options. For items in a Knowledge-based recommender, the nature of consumer preferences may evolve over time as can be found in the example of a car model that may evolve significantly over a few years as a result the preferences may show a corresponding evolution. In

other situations, to fully capture user interest with historical data such as ratings might be somewhat difficult. Essentially, in the Find Me system the collaborative filter is only used after the knowledge-based system has done its work (Yuan et al., 2013).

Moreover, it may be that a particular item has some attributes associated with it that correspond to its various properties, and a user may be interested only in some items with specific properties. An instance is in cars that may have several models, color engine and interior options, and user interests that may be regulated by a very specific combination of these options. Thus, in these cases, the item domain tends to be complex in terms of its varied properties, and it is difficult to associate sufficient ratings with the existing large number of combinations (Aggarwal, 2016). Knowledge-based recommender systems could be: Constraint-based recommender systems, where users typically specify requirements or constraints (for example, lower or upper limits) on the item attributes or Case-based recommender systems, where specific cases are specified by the user as targets or anchor points (Lorenzi et al., 2014). A number of works exist in any of the above-outlined approaches or a combination of one with another. For instance, Shanmuganathan and Karthikeyan (2016) proposed a recommendation system for flats availability within Chennai city limits and its surroundings. The system employed the Analytical Hierarchy Process (AHP) for supporting product comparisons and evaluation of consumers. Burke (2002) particularly tries to propose a system that excels above the drawbacks of both the knowledge-based and collaborative recommender system. He proposed a hybrid recommender system (Find Me) for choosing restaurants based on various parameters. The system particularly collects information from its users. It also develops a platform whereby similar ratings are derived from other users' actions in the system, then similarities are looked for from across other users, then these similarities are used to modify the options made available to the user during the tweaking process from the browsing behavior of other users. In Daly et al. (2014), a multi-criteria system for recommending available houses for purchase or rent based on the location of the house, and other locations the user journeys to frequently while factoring the price the house goes for. The system computes travel time between the choice area and the frequently commuted locations, traffic congestions along the routes and recommends a house that gives the minimum travel time at best to locations that are important to the user and suits the user's price range.

3. Methodology

Figure 1: Architecture of the Housing Recommender System



The architecture in figure 1 describes the housing recommender system. It consists of user interface, a medium through which users make interaction with the system, also a medium through which input is given to the system and output is displayed back to the user. The knowledge base includes the database and rule base. The database is a repository for storing information about houses, locations, user preferences, and user comments, user account information, the users account information, house information, entire location

information. It serves as a store of information used to process operational data needed by the system. The fuzzy logic engine consists of fuzzification the rule base, inference engine and the defuzzification components which are described below:

Fuzzification: Here, the input variables are fuzzified. Also their respective membership functions are defined. These functions are applied to determine the degree of each input variable. Equation 1 describes the universe of discourse and its fuzzy set.

$$u = \{(x_i \mu_u(x_i)) | x_i \in U, \mu_U(x_i) \epsilon [0,1]\} \quad (1)$$

where U is the universe of discourse that contains all elements that will be put into consideration, μ_u is the degree of membership of x_i and $\mu_u(x_i)$ represents the membership function (MF) of $x_i$in U, which is also a real number whose interval is from 0 to 1, and can be derived from equation 2

$$\mu_u(x_i) = \begin{cases} 1 \\ \frac{x_i - a}{b - a} \\ \frac{c - x_i}{c - b} \end{cases} \quad (2)$$

where a, b, c, are parameters of the membership function from equation (2). After proper consultations with estate agents, attributes needed for the recommendation of houses were obtained. These include house price (very low, low, quite average, fairly high, high), house type (bungalow, duplex, pent house, self-contained, room and parlor self-contained, terraced house, 2-bedrooms flat, 3-bedrooms flat, 4-bedrooms flat, tenement house), house location (rural, low cost area, estate, Government Reserved Area, urban, socialized area). Table 1 shows the House price linguistic variables used to determine price range of houses for users.

Table 1: House Price Linguistic Variables and Fuzzy Value Range

S/N	LINGUISTIC VARIABLE	FUZZY VALUE RANGE	TRIANGULAR FUZZY NUMBER (TFN)
1	Very Low	0 ≤x ≤50000	(0,1,2)
2	Low	50001 ≤x ≤100000	(1,2,3)
3	Average	100001 ≤x ≤1800000	(2,3,4)
4	Fairly High	180001 ≤x ≤350000	(3,4,5)
5	High	x ≥ 350000	(4,5,6)

The Rule Base: The rule base is the second component of the Fuzzy logic system. It is characterized by a set of "IF- THEN" rules, in which the antecedents (the IF part of the rule) and its consequences (the THEN part of the rule) involves linguistic variables.

Inference Engine: The inference engine receives input from rule base and fuzzification interface. It is a decision-making engine that applies suitable procedures formed from the rules in the rule base in order to draw deductions as output. For each rule, the inference mechanism checks the membership values in the condition of the rule. The inference engine technique employed in this paper is the Root Sum Square (RSS). RSS is given by the formula in equation (3):

$$\text{RSS} = \sqrt{(R_1^2 + R_2^2 + R_3^2 + \ldots + R_n^2)} \quad (3)$$

where R = value of firing rule, $R_1^2 + R_2^2 + R_3^2 + \ldots + R_N^2$ are strength values (truth values) of different rules that also have the same conclusion.

Defuzzification Process: The defuzzification process accepts fuzzy set from the inference engine and converts them to a single crisp value. There are several methods for defuzzification, the Centre of Gravity (COG) was employed for this work. The COG is formula given below:

$$CoG(Y') = \sum \frac{\mu_Y(X_i)X_i}{\mu_Y(X_i)} \qquad (4)$$

where (X_i) denotes the center of the membership function and $\mu_Y(X_i)$ is the membership value in the membership function.

Item-Based Collaborative Filtering: The item based approach looks into the set of items the system possesses and computes their similarities to the target item *j*, the user has selected or rated, it then returns *l* $\{l_1, l_2, \ldots l_n\}$ which are the most similar items to *j*. Correlation-based Similarity (Sarwar, 2001) is proposed, where similarity between two items j and k is measured by computing the *Pearson-r* correlation. If the set of users who both rated, *j* and *k*are denoted by *U*, then the correlation similarity is given by:

$$Sim(j,k) = \frac{\sum_{u \in U} (R_{uj} - \bar{R}_j)(R_{uk} - \bar{R}_k)}{\sqrt{\sum_{u \in U} (R_{uj} - \bar{R}_j)^2} \sqrt{\sum_{u \in U} (R_{uk} - \bar{R}_k)^2}} \qquad (5)$$

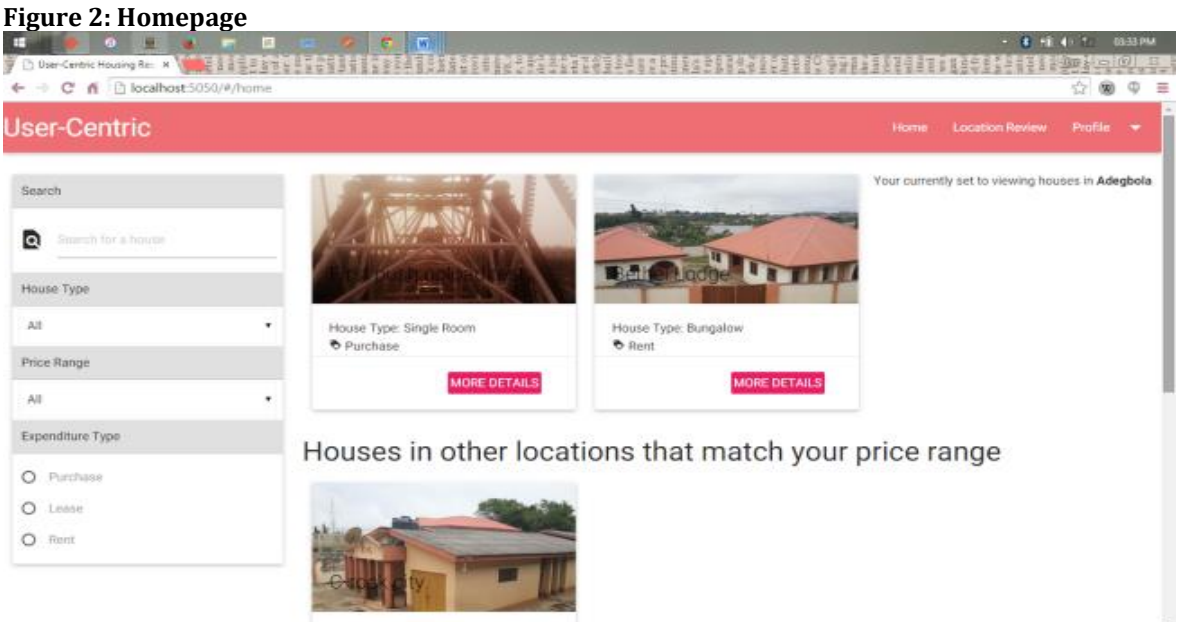
where U is the set of users who rated j and k,
R_{uj}, is the rating of user u on item j,
$\bar{R}$is the average rating of the jth item.

4. Results and Discussion

Implementation: All program codes were implemented using HTML, Node.js and Web GL. HTML tags were employed to structure the way the web pages are displayed; Node JS is a runtime system for creating (mostly) server-side applications. Mongo DB which is a document-oriented DBMS is used as the persistent data store for the application, while Web GL is used through the implementation of three JS to provide a virtual 360-degree showcase of selected houses. This research was implemented as a web application so as to make it easily accessible by users using different varieties of devices. The data sets used were obtained from recognized government approved real-estate agents in on do State, one of the prominent states of Nigeria to create an authentic case study for evaluating the effectiveness of the system.

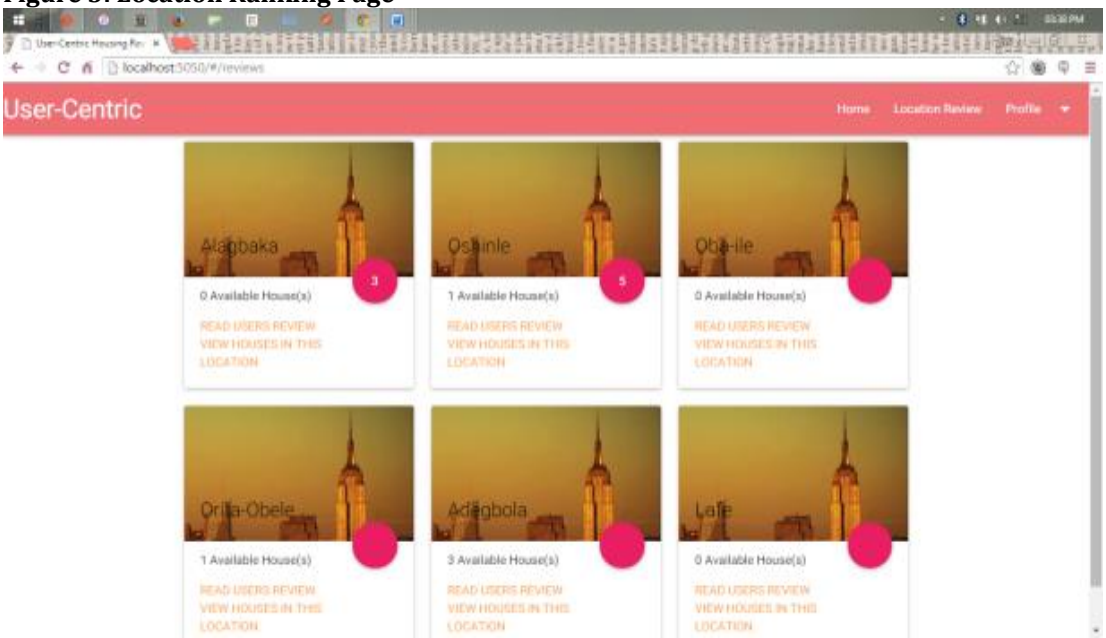
Homepage: The homepage is displayed after a successful login by the user. The home page is where the user gets his recommendations, based on the location he had previously entered in on sign-up. The user also has the option to filter through the recommendation given to him by searching, the house type, and expenditure type.

Figure 2: Homepage



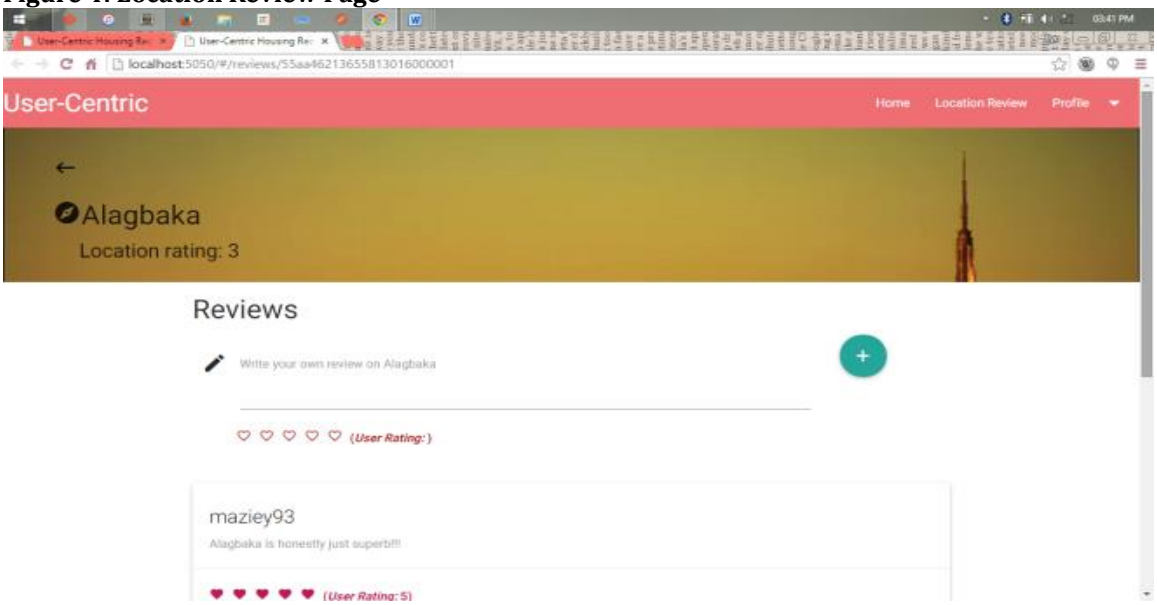
Location Ranking: This page gives the user insight about the location rankings based on the ratings that other users of the system have assigned each location, also from this page user can navigate to read reviews by different users about the location or view the houses in the location.

Figure 3: Location Ranking Page



Location Review Page: On this selected page, users are able to gain insight to a particular location by reading reviews and ratings that other users have given this location and logged in user can also add their own reviews and ratings for the selected location.

Figure 4: Location Review Page



Evaluation: For the evaluation of the developed system, the metrics defined by Lops et al. (2011) for reviewing the efficiency of recommender systems were adopted to actually help determine if the developed system provided any help to the users. The metrics that were chosen as the basis for the system's performance evaluation are: User preferences, User Interface and Experience, Novelty. A simple survey was

carried out to evaluate the effectiveness of the user-centric recommender system, using a sample of twenty users. These users included students, housing agents and prospective house renters. The following scales were used to rate the interface and novelty of the system: Very Good (4), Good (3), Fair (2), Poor (1).

Table 2: Results Showing User Interface, Novelty and Experience Ratings by Users

S/N	QUESTION	V.GOOD [4]	GOOD [3]	FAIR [2]	POOR [1]	RATING
1	How easy is it to understand the proposed system?	10	4	5	1	3.15
2	How friendly is the interface design?	12	4	4	0	3.3
3	Did other user ratings affect your choices?	8	3	5	2	2.7
4	How was your experience using the system?	7	10	3	0	3.15
5	How would you rate the virtual tour of the houses?	15	5	0	0	3.75

Each individual question score was calculated by multiplying the score point of the user rating by the user frequency for the particular score point and then further finding the average, so we have the formula;

$$\frac{\sum_{i=1}^{4} f x_i}{4} \qquad (6)$$

To calculate the total average rating for the system;

Average system rating = $\frac{3.15+3.3+2.7+3.15+3.75}{5}$ = 3.21

5. Discussion and Conclusion

The results also show that 50% of the sample population found the proposed system relatively easy to understand and rated the ease of use of the system a score point of 4, while another 20% and 25% rated the system score points of 3 and 2 respectively. This might be due to the fact that systems that proffer similar solutions already exist. Only 5% of the respondents rated the ease of use of the system poor. 60% of the sample population found the system very friendly to use and rated the system a score point of 4, while 40% rated user-friendliness a score point of 2 and 3. No percentage of the respondents rated the system poor for user-friendliness. 44% of the sample population found that the choices of users in the system were affected by ratings of other users in the system. Another 28% of the user establishes the idea that the rating of other users is a factor which influences the choice new users make. 35% of the sample population found the user experience of the system to be very good, while 50% of the population found the user experience to be good, in total a very large proportion of the sample population all found the user experience of the system to be good.

The virtual tour implementation of the houses was designed to give the users a way for them to see the house completely in 3D; the virtual tour experience was rated 75% by the sample population and they found the virtual tour experience to be very good. The remainder 25% of the sample population also found the tour to be good. This generally shows that the ratings of the respondents with regards to virtual tour experience provided by the system is very good as well as provide good pictorial and qualitative information about the property. In fact, it is inferred from the data presented that the virtual tour was what most respondents liked the most about the system.

Conclusion: Housing remains a basic need of mankind which cannot be overemphasized. This paper addresses the design and implementation of a housing recommender system that matches a user's preferences with houses that suite his needs. The research explored fuzzy logic for analyzing the multiple housing attributes and Pearson correlation coefficient to aggregate the rating of users on locations. A virtual

tour of the houses is also provided for better choice making. An evaluation of the system was conducted with twenty users' experience. In the future, the methods presented in this work, can be elaborated further with more datasets and a broader level of experiments can be carried out.

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Financial Management Practices, Firm Growth and Profitability of Small and Medium Scale Enterprises (SMEs)

Alhassan Musah[1], Erasmus Dodzi Gakpetor[1], Portia Pomaa[2]
[1]School of Business, Dominion University College, Ghana
[2]University of Ghana Business School, University of Ghana, Ghana
a.musah@duc.edu.gh

Abstract: The study examined financial management practices using four components: working capital management practices, capital structure management, accounting information and financial reporting practice, and the use of capital budgeting techniques and fixed assets management. Performance of SMEs was examined from the context of profitability measured by Return on Assets and of growth. The study sampled 100 SMEs from Accra with data collected through the administration of a questionnaire. Data were analysed using descriptive statistics and Pearson correlation analysis. The results of the descriptive statistics revealed that working capital management practices had the highest mean score, followed by accounting information and financial reporting practices, capital structure management and finally, the use of capital budgeting techniques and fixed assets management, in that order. The Pearson correlation analysis showed a positive association between the four components of financial management practices and between SMEs profitability and growth. The results emphasize the need for SMEs to improve on their financial management practice to improve the profitability and growth of these firms. It is recommended that the use of capital budgeting techniques be improved, as this area of financial management, even though it impacts positively on the performance of SMEs had the least score. Most importantly, the managers of SMEs should use discounted cash flow techniques to evaluate investment and projects before committing the resources of the company. SMEs are encouraged to adopt IFRS for SMEs to enhance their financial reporting practices. This will also improve their decision making and access to capital which will allow these SMEs to expand.

Keywords: *Financial management practices, SMEs, Growth, Profitability*

1. Introduction

There is growing recognition of the important role small and medium enterprises (SMEs) play in economic development in both developed and developing countries (Muneer 2017; Selvanayaki 2016; Karadag, 2015; Jindrichovska, 2013; Abor & Quartey, 2010). SMEs have been described variously in previous literature to be the seed for larger businesses, good and reliable job creator and an important contributor to economic growth and development (Muneer, 2017; Abor & Quartey, 2010). Research has shown that the SMEs sector in most developing countries employs the majority of the urban dwellers and labour force and by extension provides incomes to the government through taxes and their household (Kilonzo & Ouma, 2015). SMEs complement the activities of the larger scale industries through their integration into the mainstream of industrial development by providing the industries with critical parts and components as well as by expanding into the international markets (Ahiawodzi & Adade, 2012; Madurapperuma, Thilakerathne and Manawadu, 2016). Poor financial management has been posted as the main cause of SMEs failure (Arinaitwe, 2006; Muchira 2012). Mazzarol (2015) argues that there is a positive association between the performance of a business and the level of training and knowledge in bookkeeping and financial management practices.

Pandey (2004) defines financial management as a discipline that deals with the financial decisions that a firm make using some financial tools of analysis. Gitman (2011) on the other hand defines financial management as the concept of time, money and risk and how they are related to each other. According to Mazzarol (2015), financial management practices in SMEs are different from those found in larger firms, due to the nature of their cash flow cycle, their working capital management challenges, and SMEs' difficulty in raising external finance through debt or equity. Other studies argue that most SMEs have inadequate financial management and accounting systems; different from those used by large firms, and that SMEs also have the inadequate skilled personnel to manage those funds (Muneer 2017; Kilomzo & Ouma, 2015; Turyahebwa, 2013). Research has shown that 60 percent of SMEs fail within a few months of their operation (Karadag, 2015; Benedict & Matsotso, 2014; Ahmad & Muhammed Arif, 2015). One major reason for the collapse of SMEs is

poor or lack of proper bookkeeping and accounting practices which are components of financial management practices (Bowen, 2009; Germain 2010; Kitinga, 2013).

While it has been established that the use of appropriate bookkeeping, financial reporting and management accounting, Practices are important to the survival of SMEs (Bowen, 2009; Isa, Saleh & Sapiei, 2007), scarcely will you find sufficient reported research on the subject in the sector, particularly in Ghana where just a handful of studies has been reported in recent times. Studies on SMEs in Ghana have focussed on some aspects of financial management practices like bookkeeping, and to a lesser extent working capital management without comprehensively examining the entire financial management practices of SMEs and how these can affect their growth and profitability. For instance, some studies have examined accounting and bookkeeping practices of SMEs in different contexts in Ghana and other parts of Africa (Musah, 2017; Agbemava 2016; Dawuda & Azeko, 2015; Owusu 2015; Mutua 2015; Boame 2014; Amoako 2013; Maseko & Manyani, 2011). Other studies have also examined access to finance and credit for SMEs in Ghana (Forkuoh & Li, 2015; Asamoah, 2014; Amoako, 2013; Ahiawodzi & Adade, 2012; Abor & Quartey, 2010). Poor financial management has been declared as the main cause of SME failure (Muchira, 2012; Arinaitwe, 2006). Previous studies in other jurisdictions have established that most SMEs are owner-managed, where the owner performs most of the financial management tasks alone or with some unskilled staff, and this scenario affects the performance and growth of these firms (Mazzarol et al. 2015; Uwonda, 2013; Amoako, 2013; Abanis 2013; OECD, 2010).

Even though SMEs globally have similar characteristics, the environments within which they operate affect their financial management practice. The need to understand the impact financial management practices can have on the growth and profitability of SMEs is critical so as to provide policy recommendation in the midst of little or no literature on the subject matter in the Ghanaian context. This study is aimed at addressing these discrepancies in the literature by examining the financial management practices of SMEs in Ghana and how these affect the performance of these firms. The study makes significant contributions to: Research, Policy, and Practice. At the moment there is little or no literature that has examined financial management practices of SMEs in Ghana and their possible impact on growth and profitability. The findings of this study contribute to the literature on SMEs and on measures to ensure their viability. The findings of this study provide a comprehensive picture of the financial management practices of SMEs. This will in turn lead to a better understanding of this phenomenon and thereby the development of more effective strategies to aid the effective operation of the SMEs. The findings and recommendations of this study are useful in the advocacy efforts of policymakers as well as for designing interventions and for implementing programmes to improve the financial and management accounting practices among SMEs. The information on SMEs' accounting practices and financial performance provide invaluable insights and inputs, especially to the government, in assessing whether further assistance ought to be provided to SMEs.

2. Literature Review

The Concept of Financial Management Practices: The term finance management practices is used to represent the management of funds and how the funds are used to achieve the objectives of the organization and shareholders' value maximization (Chandra, 2011; Kilonzo & Ouma, 2015). According to Kitonga (2013) typical financial management practices in organizations include an accounting information system, fixed assets management, working capital management, financial reporting and analysis, capital structure management etc. These components of financial management practices are supported by Kilonzo and Ouma (2015). Muneer, (2017) also sees accounting information systems as well as working capital management as critical components of financial management. Zietlow et al., (2007) see financial management as the creation of wealth, planning and monitoring of a business' financial assets, improving its profitability and generating the required return to capital providers. In short, financial management practices include all aspects of management that affect the finances of the company and what is needed to achieve the overall objective of the organization. This includes working capital management, long-term financial management and capital structure management, accounting information and financial reporting practices, capital budgeting etc. Kitonga (2013) defines that an accounting information system is the recording of transactions using computers with the aid of accounting systems and techniques which are used to record and analyse business transactions for the purpose of preparing a financial statement for users. A proper accounting information

system is at the heart of proper bookkeeping and financial analysis for decision making (Muneer et al. 2017). Research on SMEs globally all emphasise the importance of accounting information system for their survival and growth (Lavia-Lopez & Hiebl, 2014; Chen et al. 2013; Amoako, 2013). Gitman (2011) argues that information from financial statements is useful for planning, evaluation and decision making.

The management of a firm capital structure involves the choice of the right mix of debt and equity capital that will maximize the profitability of the firm (Romney, 2009). In Ghana access to finance is a major challenge to most businesses especially for SMEs and they struggle to meet the requirement of the financial institutions (Abor & Quartey, 2010). Also access to finance has been a major challenge to SMEs in developing countries especially Ghana and as such can have implications for financial management practices and profitability (Muneer2017; Amoako, 2013; Abor & Quartey, 2010). This notwithstanding, the management of working capital is very critical and one of the major financial management decisions as it has serious implications on the financial performance of every company (Musah, 2017). This means that it is important for SMEs to take a serious look at how they manage their capital structure to reduce the burden on their cash flows. It is argued that firms in their early stages do not require so much debt capital as this will enormous burden on their cash flow which could result in liquidation challenges (Muneer, 2017) According to Kitonga (2013), fixed assets management is an important component of financial management practices as it represents the long-term investment decision of SMEs. Investment in these assets requires huge capital outlay and as such it is important that they are managed well when acquired. Karadag (2015) argue that it is not enough to be concerned only about the purchase price of fixed assets, but also the total cost of ownership. If the right decision was taken in the acquisition of the assets, it would impact positively on profitability (Mazzarol et al. 2015).

The Concept of SMEs: There are several definitions of SMEs depending on the context. Most of these definitions either use the number of employees or turnover to define what constitutes SMEs. Muneer et al. (2017) defined an SME, according to the State Bank of Pakistan, to be an organization that is not listed on the Stock Exchange and does not have employees of more than 500 for a manufacturing business and 50 employees for a trading or service organization. Study on SMEs in Kenya defined an SME as a business whose number of employees ranges from 10 to 250. The National Board for Small Scale Industries (NBSSI) in Ghana defines SMEs using both number of employees and assets. NBSSI defines SMEs as having employees ranging from 10 to 150 and to have fixed assets of 10 million Ghana cadies. SMEs play a significant role in the Ghanaian economy by way of employment and its contribution to Gross Domestic Product (GDP) (Abor & Quartey, 2010; Amoako 2013). Good financial management practices contribute significantly to the growth, survival and profitability of SMEs (Turyahebwa et al. 2013).

Empirical Literature: Accounting information system and financial reporting practice and analysis and SME performance accounting information system include all the system that enable financing reporting and analysis for decision making. Several studies have found a positive and significant association between financial reporting practices and SMEs' performance. Agbemaya, (2016) examined the impact of financial management practices on the performance of SMEs in the Ho Municipality. The study sampled 200 SMEs from the municipality and used descriptive analysis as well as correlation analysis to achieve the objective of the study. The outcomes of the study showed that there was a positive association between proper financial reporting practices and profitability of SMEs. The study concluded that sound financial reporting practices assist in decision making as well as help SMEs to access capital and expand their operations.in a related study Musah (2017) study on SMEs bookkeeping practices and its effect on growth and performance reported a positive association between SMEs accounting practices and performance. Mutua (2015) examined the effect of financial accounting practices on the growth of SMEs in Chuka Town, Kenya. The study results show that the majority of SMEs do not keep proper books of account, which affect their ability to make proper business decisions, fulfil their tax obligations, and raise the needed capital from creditors or banks to support their operations. Finally, the study concluded that proper bookkeeping practices influence the growth and financial performance of SMEs in Kenya.

Working Capital and Cash Flow Management and Performance of SMEs: According to Mazzarol et al. (2015) in their study they argued that cash flow management and working capital management are the most important aspect of financial management practices. It was argued, that an organization cannot operate

without a reliable cash flow or liquid assets, which are the major component of working capital management. Cash flows are generated from sales and eventually receivables which suggest that cash flow problems can be traced to declining sales or increase in irrecoverable debt which will affect the performance of the organization (Muneer et al., 2017). In cases like this, the owner/manager must inject new cash into the business or borrow to finance liabilities due, or at best reduce cost in order to survive (Mazzarol et al. 2015). To this end, the cash cycle of an SME, which is the summary of its working capital, is very critical for the success of the business. The main thrust of these studies is that the more efficiently an SME, or any firm for that matter, manages it working capital properly, the better its chances of boosting the profitability of the organization.

Capital Structure Management and Profitability of SMEs*:* The Capital structure is related to the source of finance for the business and has some implications on the performance of the firm (Mazzarol et al. 2015). Capital structure represents the right mix of debt and equity to finance the operations of a business. The success of SMEs in Ghana's dynamic business environment depends largely on their capacity to being able to determine the right mix of capital structure that will ensure that shareholders value are maximized and other stakeholder interest also taken care of studies have shown that the capital structure management of SMEs especially in developing countries depends largely on their ability and capacity to manage risk associated with their business cash flows prudently (Karadag, 2015; Kennedy, 2006). The SMEs sector in Ghana continues to dominate business activities despite the numerous challenges they go through and the environmental challenges confronting them. The Type of finance SMEs choose affect their capital structure which have implication for their bottom line (Musah, 2017). In a study, Abor (2007) among other things examined how SMEs capital structure affects their financial performance. The study adopted a quantitative approach using secondary data and found that long-term debt was positively associated with gross profit margin of SMEs. The study also reported a negative association between short-term finance and a gross profit margin of SMEs in Ghana and South Africa. Other studies on financial management practices that included capital structure management reported a positive association between the two variables suggesting that SMEs will improve their financial performance by choosing the right mix of debt and equity to reduce risk and at the same time enjoy some tax shields from the interest obligations.

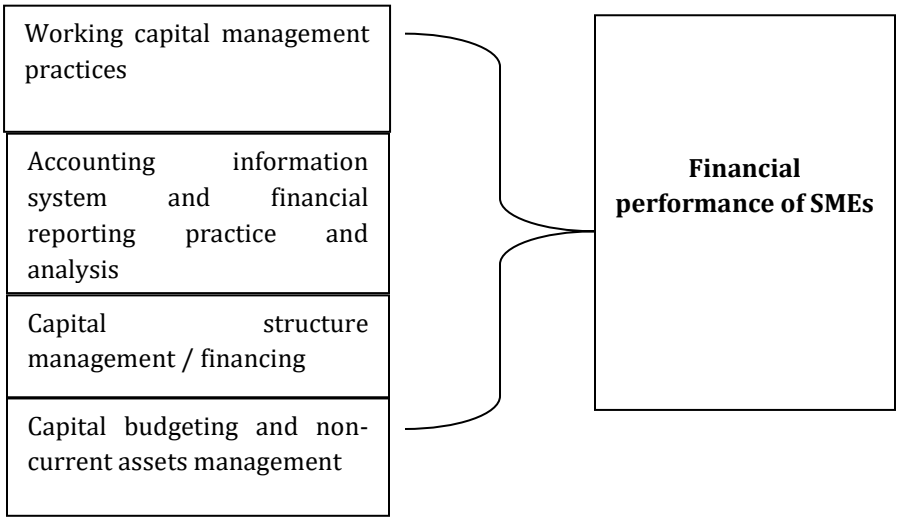
Capital Budgeting and Non-Current Assets Management and Profitability of SMEs: Capital investment decisions are critical business decisions because of the financial consequence of those decisions (Kilonzo & Ouma, 2015). Brigham's (1995) capital budgeting decisions are more critical for SMEs than for larger organizations since a wrong decision can affect the survival of the business. Because of the importance of capital investment decisions to business, finance literature has proposed various techniques that should be used to evaluate the financial viability of this investment before committing the organization's resources to it (Muneer et al. 2017). Various techniques that can be used to evaluate investment in capital assets include: a payback period with its attendant variations in discounted payback methods, accounting rate of return or return on investment, net present value, internal rate of return etc. the overall objective of an organization's financial management strategy is to maximize the value of shareholder wealth. The money for this kind of investment in developed countries with proper financial markets relies on long-term debt, but same cannot be said for Ghana, as most SMEs do not have access to such long-term capital in Ghana. The Ghana Stock Exchange (GSE) in its attempt to address the problems faced by SMEs in listing or raising funds through this exchange embarked on a project to create an alternative exchange which might help eliminate the challenges faced by SMEs in raising funds through the exchange, called the Ghana Alternative Exchange (GAX).

Tauringana and Afrifa (2013) argue that many SMEs who have some elements of working capital management practices are able to enhance the cash conversion cycle thereby improving their profitability. All the studies reviewed agree that effective working capital management practices are positively associated with the profitability of SMEs though this project has been in play for a long time, the GSE is still faced with difficulty in getting SMEs to raise fund through GAX. Some few SMEs have taken advantage of the new opportunity to list and raise equity capital but the challenge for SMEs to be able to list even on the Alternative Stock Exchange still persists. The majority of studies of financial management practices of SMEs report that most of SMEs use the payback method or the discounted payback method in evaluating projects compared to a larger organization where the net present value method is preferred (Jindrichovska, 2013; Kilonzo & Ouma, 2015; Turyahebwa, 2013). What is common among most of the studies on financial management practices,

that have included investment and capital budgeting as a major component of financial management practice, is the fact that they report a positive association between effective capital investment and budgeting and SMEs performance.

Conceptual Framework: The grand mean of 3.0 shows that SMEs pay the least attention to capital budgeting and fixed assets management compared to the other component of financial management practices in Ghana. The framework represent above shows that effective working capital management practices, capital structure management, accounting information system and financial reporting and analysis and capital budgeting and management of fixed assets are the major components of financial management practices and influence the profitability of SMEs in Ghana. Even though all the components of financial management practices in the framework above influence profitability, it is expected that working capital management will have the most significant effect on the profitability of SMEs in line with the previous literature.

Figure 1: Conceptual Framework of Financial Management Practices and SME Performance



3. Research Methodology

In terms of research strategy, the study adopts the survey approach as it seeks to survey SMEs owners and managers of their views on the impact of financial management practices on the performance of their organizations. The study also adopted the purposive sampling technique to sample respondents for the study. The purposive sampling technique is a non-probabilistic sampling method that allows the researcher to choose respondents that best fit the study in a non-probabilistic manner. Under this approach, the only sample with the characteristics that fits the objectives of the study is selected. The target population for the study is SMEs that have formal structures and good organizational structure where financial management practices are practiced. In this regard 250 questionnaires were issued and 180 were retrieved. However, a good number of the SMEs that responded to the questions answered no applicable to most of the financial management practice rendering them invalid for the study. These questionnaires were therefore dropped leaving a sample of 100 SMEs that fit the characteristics needed for the study. The study focused on only SMEs that have a formal structure and as such excluded market men and women who do not have a proper business structure in place to enable them to to practice any form of financial management. The data collected was first coded into SPSS and excel to enable the appropriate statistical tools to be applied in the data analysis.

4. Analysis and Discussion

Respondent Demographics: A total of 150 questionnaires were sent out to SMEs, but only 100 were filled and returned representing an 83% response rate. Each respondent was picked from one SME, meaning that 100 SMEs were sampled for the study. A response rate of 83% is considered acceptable as per examples from

previous studies and can be used for making a statistical inference (Selvanayaki, 2016). The analysis is therefore based on the responses gathered from the management of these companies, mainly the Chief Executive Officer (CEOs), Finance Directors and Accountants. The study is unique in the sense that most of the studies examined a component of financial management such as capital structure, bookkeeping and accounting records and firm performance and not examining all the major components in one study. The results show that 50% of the respondents were financed directors while 40% were chief executive officers and 10% accountants. These respondents are very crucial in their respective organization regarding the capital source. This means that the respondents had knowledge in the subject matter under study as they were in charge of those decisions.

Financial Management Practices of SMEs: The study measured management practices using four key indicators, working capital management practices, accounting information system and financial reporting and analysis, capital structure and financing and capital budget and management of non-current assets. Each component of financial management practices was measured as were a number of variables where respondent was required to rank the existence or non-existence of such practices in their respective organization based on a 5 point Likert scale. The financial management practices have been determined using the means response for each statement and the grand mean for each component of financial management practices. The standard deviations of the variables have also been included to show the deviation of the responses from the reported mean. The study also used growth in total assets and growth in sales as a measure of SMEs performance. The average growth in total assets for the sampled SMEs is 12% whiles average growth in sales 8%.

The result shows the gender distribution of respondents sampled from the companies. The results of the analysis revealed that 38 respondents representing 76 per cent were males whilst 12 respondents also representing 24 per cent were females. It is clear that the majority of the respondents for this study was male(s)

Descriptive Analysis

Table 1: Descriptive Statistics

Variable	Mean	Std. Deviation	Min	Max
Age	12	0.9563	5	24
Total Turnover	¢800,000	0.6574	¢500,000	¢12,000,000
Total Assets	¢2,000,000	0.5825	¢200,000	¢10,000,000
Growth in Assets	0.1245	0.4562	0.03456	0.56734
Growth in Sales	0.08467	0.54276	0.5467	0.25467

Source: Field Data, 2018

The study also examined some descriptive statistics on the SMEs sampled for the study. The average age of SMEs sampled for the study was 12 years with the least age being 5 years and the maximum age being 24 years. The result is slightly different from the results of Abor (2008) who reported an average age of SME of 9 years. In terms of annual turnover generated by the SMEs sampled for the study, it ranges from GH¢500,000 to GH¢12,000,000 with an average of GH¢800,000. As indicated in the methodology, the study sampled only SMEs that have well-established structures and systems operating like big business but not listed on the Stock Exchange and as such meet the definition of SMEs as per IFRS for SMEs. Also, the average total assets of the SMEs sampled ranges from GH¢200,000 to GH¢10,000,000 with average total assets of GH¢2,000,000. The growth rates are lower compared to that reported by Abor (2008) where the average SME growth rate was 50%.

Accounting Information Systems and Financial Reporting

Table 2: Accounting Information System and Financial Reporting Practices

Elements of AIS & FR	N	Mean	St. dev
The financial statements of the company are prepared in line with the financial accounting standards	100	4.56	0.507
The financial statements are prepared in accordance with GAAP	100	4.50	0.586
The financial statements are published regularly	100	3.85	0.456
Financial statement is prepared in line with IFRS for SMEs	100	3.15	0.764
The company uses accounting information for decision making	100	4.20	0.354
Periodic reports are generated by the AIS for decision making	100	4.65	0.267
Grand Mean		4.18	

The mean responses on accounting information system and financial reporting practices as a major component of financial management practices show that generating periodic reports from the accounting information system for decision making had the highest score of 4.65. This was followed by the preparation of the financial statement in line with financial accounting standards with a mean score of 4.56 and in compliance with GAAP with a mean score of 4.50. The responses with the least mean score were the preparation of a financial statement in compliance with IFRS for SMEs. The results suggest that the majority of the SMEs do not prepare a financial statement in compliance with IFRS for SMEs, even though Ghana adopted it far back in 2009 and its implementation was supposed to have started by 2012. A good accounting information system provides the relevant financial data for financial management and decision making. The results also show how important SMEs view accounting information and financial reporting and analysis to business activities and decision making.

Capital Structure Management of SMEs

Table 3: Capital Structure Management Practices

Elements of capital structure management	N	Mean	St. dev
The company is conscious about its capital structure	100	4.15	0.443
The capital structure of the company is appropriate	100	3.85	0.564
The company has fully utilized the debt facility according to its capabilities	100	3.25	0.352
The company relies on equity capital only	100	3.0	0.674
The company has foreign ownership	100	3.20	0.543
The company does not have any challenge raising equity capital compared to debt	100	3.50	0.542
The company is able to raise debt capital easily compared to equity	100	4.20	0.253
Grand Mean		3.14	

The responses from the management of the capital structure of SMEs shows that most SMEs agree that it is easy to raise debt capital as an SME in Ghana and that equity h had a mean score of 4.15. This was followed by the fact that most SMEs are conscious about their capital structure which had a mean score of 4.15. The statement with the least mean score was whether the SMEs rely on only equity as their source of finance. The results suggest that most SMEs use debt and equity capital and that it is easier to raise debt capital than equity capital. The grand mean score for capital structure management is 3.14, lower than accounting practices. This suggests that SMEs take accounting practices more serious than the management of their capital structure.

Working Capital Management Practices

Table 4: Working Capital Management Practices

Elements of working capital management	N	Mean	St. dev
The company has a working capital management system	100	3. 85	0.567
Maintains inventory records which are updated regularly	100	4. 82	0.235
Optimal cash balances are maintained by the company at all times	100	4. 50	0.152
Maintains proper records for all payables	100	4. 00	0.352
Ensures there is sufficient cash flow to meet daily needs	100	4.85	0.215
Prepares cash flow forecasts to identify future surpluses and deficits	100	4.40	0.327
Grand Mean		4.40	

The results from the working capital management practices of SMEs show that ensuring that there is sufficient liquidity to meet daily needs had the highest mean score of 4.85. This was closely followed by the maintenance of regular inventory records which had a mean score of 4.82. The statement with the least mean score was the company having a working capital management system, and this had a mean score of 3.85. Overall, the mean score for the sampled SMEs' working capital management practices appears higher compared to other variables in the other financial management practices. The grand mean score of 4.40 shows that SMEs take working capital management issues very seriously.

Capital Budgeting and Fixed Assets Management

Table 5: Capital Budgeting and Fixed Assets Management Practices

Elements of capital budgeting and fixed assets management	N	Mean	St. dev
Use of professional advice in capital investments	100	3.85	0.32
Use of capital budgeting technique like payback	100	3.75	0.35
Use of capital budgeting techniques like discounted cash flow	100	3.20	0.65
Applying capital budgeting techniques in decision-making	100	3.90	0.45
The company maintains a non-current assets register	100	4.20	0.25
Grand Mean		3.00	

The next financial management practice that was examined was the use of a capital budgeting techniques in taking investment decision in the various SMEs and how fixed assets are managed as part of the company's financial management practices. The results in the table above show that keeping fixed assets register had the highest mean score of 4.20. The use of capital budgeting tools for decision making had the second highest mean score of 3.90 under the capital budgeting and fixed assets management practices. This was followed by the firm's use of professionals in capital budgeting decisions with a mean score of 3.85. The use of capital budgeting tools such as payback period had a means score of 3.75 and the use of discounted cash flow techniques had the least mean score of 3.20. The results imply that even though SMEs use capital budgeting techniques in their financial management and investment decision making, the majority use the payback method compared to the discounted cash flow techniques. The results of the descriptive statistics of the financial management practices of SMEs in Ghana show that SMEs' working capital management practice is more serious compared to the other financial management practices.

Working capital management practices reported the highest mean score of 4.40. This was followed by accounting information and financial reporting practices which showed a grand mean of 4.18. Capital structure management was next with a mean score of 3.14 and SMEs' use of capital budgeting techniques and management of fixed assets achieved the least mean score of 3.0. The results show that on average SMEs in Ghana have some levels of financial management practices in place in their respective organizations. The results are similar to the results of previous studies in other jurisdictions. For instance, Turyahebwa (2013) study on financial management practices of Ugandan SMEs revealed that working capital management practices had the highest mean score of 2.35 while financial reporting and analysis had the least mean score of 2.10. Muneer et al. (2017) also reported similar results based on a sample of SMEs in South Africa. Selvanayaki (2016) reported similar findings with a sample of Rice Milling firms in Tamil Nadu.

The Impact of Financial Management Practices on SMEs Profitability: To achieve the second objective of the study which sought to examine the influence of financial management practices on the profitability of SMEs, the Pearson correlation analysis was adopted to achieve the objective of the study. Profitability of SMEs was measured by the average of profit margin, return on assets and return on equity for the sampled SMEs. The study examined how the components of financial management practices, such as an accounting information system and financial reporting practices, working capital management practices, management of capital structure and the use of capital budgeting tools and management of fixed assets all affect the profitability of SMEs. The result of the Pearson Correlation analysis is presented below:

Table 6: Pearson Correlation Analysis for Profitability and Financial Management Practices

	Profit	WCM	CSM	AIS&FR	CBM
Profit	1.00				
WCM	0.69***	1.00			
CSM	0.53**	0.41	1.00		
AIF&FR	0.65***	0.35	0.19	1.00	
CBM	0.51**	0.30	0.25	0.28	1.00

*** Significant at 1%, **Significant at 5%, * significant at 10%

The result of the correlation analysis from the Pearson correlation analysis in table 4.4 above shows that there is a positive correlation between working capital management practices (WCM) and profitability of SMEs. The result is also statistically significant at a 1% significance level. The results improvement in SMEs working capital management practices will improve their overall profitability. The result is consistent with previous studies in the literature and consistent with the expectations of the study. The second variable, capital structure management (CSM) also showed a positive correlation with the profitability of SMEs. The result is also statistically significant at a 5% significance level. The result shows that improvement in the capital structure management of SMEs improves their financial performance. The result is consistent and confirms the assertion that the capital structure of a firm affects their profitability and as such should be taken seriously by SME owners if they want to maximize their profitability. The third variable, accounting information system and financial reporting practices (AIS & FR) showed a positive correlation with the profitability of SMEs.

The result is also statistically significant at a 1% significance level. The results show improvement in SMEs' accounting information systems and financial reporting practices improvements in the profitability of SMEs in Ghana. The result is consistent with previous studies and in line with the expectations of the study. Finally, the results of the Pearson correlation analysis showed a positive correlation between the use of capital budgeting techniques and working capital management and profitability of SMEs in Ghana. The result is also statistically significant at a 5% significance level. This result implies that SMEs make use of capital budgeting techniques in their investment decisions and management of the firm's fixed assets.

The Impact of Financial Management Practices and Growth of SMEs: The second aspect of the final objective of the study examined the effect of financial management practices on the growth of SMEs in Ghana. The growth of SMEs was measured by the percentage growth in total assets and growth in total sales. The results of the Pearson correlation analysis showing the relationship between financial management practices and the growth of SMEs in Ghana is presented below:

Table 7: Correlation Analysis between Financial Management Practices and Growth in Total Assets

	Growth in Assets	WCM	CSM	AIS&FR	CBM
Growth	1.00				
WCM	0.75***	1.00			
CSM	0.62**	0.41	1.00		
AIF&FR	0.55**	0.35	0.19	1.00	
CBM	0.70***	0.30	0.25	0.28	1.00

*** Significant at 1%, **Significant at 5%, * significant at 10%

Table 8: Correlation Analysis between Financial Management Practices and Growth in Turnover

	Growth in Turnover	WCM	CSM	AIS&FR	CBM
Growth	1				
WCM	0.68**	1.00			
CSM	0.4235*	0.41	1.00		
AIF&FR	0.756***	0.35	0.19	1.00	
CBM	0.57**	0.30	0.25	0.28	1.00

*** Significant at 1%, **Significant at 5%, * significant at 10%

The result from table 4.5 and table 4.6 shows that SMEs' working capital management practices are positively correlated with the growth of SMEs in Ghana. The relationship is statistically significant at a 1% significance level in the case of total assets growth and 5% in the case of total turnover growth. The result shows that good working capital management practices of SMEs help them to grow. The results of the Pearson correlation analysis showed a positive correlation between working capital management practices and profitability and growth of SMEs in Ghana. The results confirm the assertion that good working capital management practices improve SMEs' performance in terms of profitability and growth. The result is consistent with the findings of previous studies in Ghana and in other jurisdictions. For instance, the result is consistent with the findings of Selvanayaki (2016), Muneer (2017), Karadag (2015), Turyahebwa (2013) etc.

All these studies reported a positive association between working capital management practices and SMEs performance. The second variable capital structure management (CSM) and this is also positively correlated with the growth of SMEs in Ghana. The result shows that good management of a firm's capital structure helps it to grow. The correlation outcomes exhibited a positive association between capital structure management and performance of SMEs in terms of growth and profitability. The results show that proper management of SMEs financing structure improves their financial performance and helps them to grow. The result is consistent with the findings of previous studies such as Kilonzo and Ouma (2015), Mazzarol (2015) and several other studies. The third variable, accounting information systems and financial reporting practices show a positive correlation with the growth of SMEs. The results show that SMEs with good accounting information systems and financial reporting practices used in decision making improve the growth of SMEs.
The result is statistically significant at a 1% significance level for both growth in total assets and growth in total turnover. The correlation analysis showed a positive association between accounting information systems and financial reporting practices on the growth and profitability of SMEs. The results confirm the expectations of the study and are in line with the findings of previous studies. Several studies have reported a positive association between bookkeeping and financial reporting and analysis and performance of SMEs as these all provide the required information for management decision making. Firms can properly manage their finances if they have good accounting and financing reporting practices that will generate relevant financial information to support decision making. The results are consistent with the findings of several studies (Musah, 2017; Agbemava et al. 2016; Dawuda & Azeko, 2015; Owusu et al. 2015; Mutua 2015; Boame 2014; Amoako 2013; Maseko & Manyani, 2011).

Finally, the correlation result shows that there is a positive correlation between an SME's use of capital budgeting practices and management of its fixed assets increase their growth. The results are statistically

significant at a 1% significance level for growth in total assets and 5% significance level for growth in turnover and show that SMEs that use capital budgeting techniques in their investment decisions and proper management of their fixed assets have improvement in their growth. The descriptive statistics, however, showed that even though SMEs believe that the use of capital budgeting techniques improves their performance, it is the least preferred financial management practice among the selected SMEs. Overall, the results of the study revealed that financial management practices improve the financial performance and growth of SMEs in Ghana. The results reveal that when the major component of financial management practices is adopted and practiced in an organization, the organization will experience improvement in its financial performance and growth.

5. Conclusion

The results of the study show that when a specific component of financial management practices are properly adopted and implemented, SMEs' performance will improve in terms of profitability and growth. The results revealed that firms that want to improve their financial performance must ensure good working capital management practices, adopt and implement good financing reporting and bookkeeping practices relevant for decision making, manage their capital structure well and adopt capital budgeting techniques and fixed assets management. The descriptive statistics revealed weaknesses in some component of these financial management practices which have to be improved to ensure growth and profitability of these SMEs. It is recommended that the use of capital budgeting techniques be improved, as this area of financial management, even though it impacts positively on the performance of SMEs had the least score. Most importantly, the managers of SMEs should use discounted cash flow techniques to evaluate investment and projects before committing the resources of the company. SMEs are encouraged to adopt IFRS for SMEs to enhance their financial reporting practices. This will also improve their decision making and access to capital which will allow these SMEs to expand.

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Micro-Finance for Women Empowerment: A Rural-Urban Analysis

M Saiful Islam[1], Tarikul Islam[2]
[1]Economics and Finance Department, College of Business Administration, University of Hail, KSA
[2]Economics Department, Kalaroa Government College, Satkhira, Bangladesh
saifecon@yahoo.com

Abstract: This paper examined the micro-finance services towards empowerment of unprivileged women in the southwestern part of Bangladesh. A sample of 300 low profile unprivileged micro-finance service receiving women equally from rural and urban areas of Khulna district were surveyed during May, 2018. Data were collected on the usage and effectiveness of micro-finance services and were analyzed using STATA 12. Multiple regression model and descriptive statistics were used to interpret data. Economic empowerment, social empowerment, interpersonal empowerment and political empowerment were considered to measure women empowerment. The study found that proper use of microcredit, marital status of women, educational status of women and their husbands, personal income and their position in the family were the main determinants of women empowerment. Women empowerment score remained higher in urban areas than in rural areas. The availability of micro-finance services improved the status of unprivileged low profile sub-urban women in terms of income generation, saving mobilization, the creation of household assets and overall poverty reduction of rural women. Thus, microfinance has been a useful tool for women empowerment and economic development in both areas but more effective in urban areas.

Keywords: *Micro-finance, Unprivileged* W*omen, Economic Empowerment, Social Empowerment, Interpersonal Empowerment, Political Empowerment*.

1. Introduction

Women empowerment is a vital issue for any developing country like Bangladesh, because they are an integral part of the society, but their participation in economic activities as well as their status and decision making a role in social activities remains very negligible. Throughout the developing world women's status in general remains vulnerable that calls for their empowerment. Bangladesh being one of the least developed countries and predominantly rural based, women enjoy less power and freedom in society, and therefore remain vulnerable. Bangladesh has a population of 142.3 million, among which 50 percent are female (GOB, 2011). At the national level there exists 31.5 percent poverty, while at the rural area it is 35.2 percent and 21.2 percent in urban area (GOB, 2010). Of this total population, women are particularly vulnerable, as they financially depend on the male section of the society. Economic development is not possible for keeping this huge segment of society vulnerable. Micro-finance is a crucial tool to provide access to finance to this vulnerable group, and empower them to ensure economic development of the country. Micro-finance institution mainly targets women to cater to economic development and assists to empower them.

It assists women attaining control over the means to make a living. It is about women lifting themselves out of poverty and vulnerability. It enhances women acquiring economic and political empowerment within their homes, their village and their countries (Micro Credit Summit, 2000). Women empowerment is the process to attain the ability from which those who have been unable to make the strategic choices of life. Women empowerment augments the economic growth of the family and reduction in poverty in a developing country (Klasen, 1999). Women who are economically solvent have a positive role in household decision making with high bargaining power to boost spending on education and health (DFID, 2007). There is straightforward and direct link between access to micro-finance and raising the status of women within their households and societies: it is believed that micro-finance increase empowers of women (Hunt and Kasynathan, 2002). Empowerment is a person's capability set (Sen, 1993). The 'capability of an individual relies on different indicators involving individual characteristics and social arrangements. Empowerment is the ability to fulfill this ability and not just the choice to do so. Sen's opinion on women empowerment indicates that the focus should be on certain universally valued functioning which transmits to the basic fundamentals of survival and well-being. These involve proper nourishment, good health and shelter (Sen, 1990).

Women empowerment is the process of internal change (Mayoux, 1998) and the ability to make right decisions on the family and society and take ownership of their lives through spreading of their choice (Kabeer, 2001). Women are an equally important human resource as men, as half of the population of the country is female, and so without their participation the nation-building activities are not possible. Therefore, empowering women is crucially important for socio-economic development. This paper aims at analyzing women empowerment through the use of micro-finance in urban-rural comparative setup and is organized in four sections. Section 1 deals with introduction and objectives of the study and literature review, section 2 describes the methodology, section 3 highlights the empirical results and discussions, and finally section 4 concludes the paper with policy recommendations.

2. Literature Review

Armful researches are surfaced on micro-finance and women empowerment. These studies show that micro-finance admittance to women develops nutrition level and increase hope for children's education in the household (Panjaitan-Drioadisuryo and Cloud, 1999), enhance consumption expenditure of household (Pitt and Khandker, 1996) and contributes to the reduction of household poverty (Chowdhury et al., 2005). Several studies find that there is a positive relationship between microcredit and women empowerment (Khan et al., 2011; Simanowitz and Walker, 2002 and Lalitha and Nagarajan, 2002). Fayyaz (2002) considered three indicators such as economic, social and political indicators to measure women empowerment. Kumar and Sreedhara (2004) considered another three categories such as economic, social and general empowerment. Noreen (2011) described that working women assist to formulate national income of the country and contribute to a sustainable livelihood of the families and communities throughout the world. The study found that the empowerment status of rural women in Bahawalpur city of Pakistan can be significantly developed by enhancing their income generating activities by imparting loan without any collateral through different micro-finance programs. Regression result showed that age, education of husband, marital status, number of sons, father property and loan amount are influential factors rather than many other factors.

Asim (2008) found the impact of micro-finance on indicators of women empowerment in the urban centre of Lahore district in Pakistan. This study considered indicators involving economic decisions, social mobility decision, child and health-related decisions, resource allocation decision and autonomy based indicators involving household purchase decision. To investigate the relationship between women empowerment and micro-credit participants the study took three different estimates such as simple parametric framework of conditional mean dependence, randomization of treatment and bivariate probit model. The result showed that micro-credit program was insignificant in explaining all the outcome indicators of empowerment for the sampled household. Women empowerment is a multidimensional concept because it is determined by many socio-economic factors and cultural values. For measuring women empowerment, it took four indices in making a cumulative index. The results stated that married women and women having Islamic view have a statistically positive impact on women empowerment (Chaudhury and Nosheen, 2009). Husain (1998) reported that women's micro-finance involvement with BRAC acts as a change in lessening women economic dependence on their husbands and other male kin.

With the independent source of income, women don't rely solely on their husbands for purchasing personal and household items. Relationship with husbands improved because of providing capital for investment. Begum and Biswas (1998) found that education, women's income and employment had a positive impact on decision making the power of women. Participation of women in income generating activities of government and nongovernment organization increases women's decision making power. Goetz and Gupta (1994) revealed that women's empowerment only be achieved by increasing women's consciousness about gender and class relation and organizing them to engage in gross roots struggles for women's rights. Rahman et al. (2002) revealed that when women earn money, they have a more prominent role in family decision making with respect to the expenditure of income and other related family matters. This active participation by women may assist to improve their personality as well as help the family by making it possible to take more judicious decisions. Participation of women in credit programs of rural development organization (Grameen Bank and BRAC) enhanced the mobility, their capacity to buy and participate in major household decisions, their ownership of productive assets, their political and legal awareness and participation in public campaigns and protests.

Thus, women empowerment could be achieved through the involvement in various income generating activities as well as productive employment (Hashemi et al., 1996). Women empowerment is measured by various kinds of power such as economic, social, political and interpersonal powers. Economic power involves access to income, markets, assets, food and decision making power in economic activities. Social indicators include entrance of certain bases of individual indicators as education, age, marital status, family size and position in the family in social organization. Political power involves a decision on own future that affects future activities. Interpersonal power includes a person's sense of potency which is dependent on self-confident behavior and self-esteem (Friedman, 1992). Khan et al. (2011) studied the impact of microcredit scheme of Punjab Rural Support Program (PRSP) on women empowerment. This study compared the status of women before taking microcredit and after taking it. Microcredit program increased awareness of women and women's empowerment. It raised involvement in the children education, self-identity, literacy level, visiting shopping and participating in family budgeting. Malik and Luqman (2005) revealed that micro-finance raised the economic status of women. It assisted women to earn extra income through which they can earn significantly greater financial autonomy.

Zaman (2001) depicted that microcredit reduced the vulnerability of the poor by the creation of an asset, increasing income and consumption, provision of emergency support and empowering emboldening women by imparting them control over property and enhanced self-esteem and knowledge. From the discussion above it appears that women empowerment depends on different kinds of factors such as economic, social, political, and interpersonal factors. Women empowerment reduces the poverty level of the household, increasing the decision power of women in the household, enhancing income, increasing participation in the social and cultural organization, increasing self-sufficiency and self-esteem. Most of the researches conducted on women empowerment through micro-finance in Bangladesh are based on rural areas; very few studies investigated the urban areas. To best of the knowledge, there is also a literature gap on women empowerment through micro-finance in rural-urban comparison setup in Bangladesh. This study aims to bridge this gap up and link the study of micro-finance in women empowerment in the rural-urban context in a comparative manner.

3. Methodology and Study Area

This study was based on a primary survey, which was held in the south-west region of Bangladesh. This region has twelve districts namely- Khulna, Satkhira, Bagerhat, Jessore, Narial, Magura, Meherpur, Jhenaidaha, Khustia, Chuadanga, Rajbari and Faridpur. The sampling was designed following a purposive and multistage sampling technique. To select the study area, only Khulna district (10 percent) was conveniently selected. Khulna City Corporation (KCC) was selected as the urban area, where out of 31 wards in KCC, 3 wards (10 percent) namely Rupsha, Tutpara and South Tutparawards were selected. In the rural segment, Khulna district has 9 upazilas, out of which Batiaghata (10 percent) upazilawas conveniently selected. From Batighataupazila, we conveniently selected 6 villages namely, Jalma, Baliadanga, Kismoth Khulna, Hoglabunia, Tetultola, and Chokrakhali. A sample of 300 household respondents were randomly surveyed, 150 respondents from an urban area and another 150 respondents from a rural area. Theses households took micro-finance services from different MFIs namely Grameen Bank, BRAC, ASA, TMSS, JCF, SUS and Agrogati working in the region. An interview schedule containing both closed and open-ended questions was used as the research instrument to collect relevant information from the respondents of the selected urban and rural areas. Both qualitative and quantitative techniques were used for data collection. Numerical data has been quantitatively analyzed, while socio-political variables are qualitatively analyzed. STATA 12 and MS Excel 2010 were used to analyze data.

Dimensions of Women Empowerment: Women empowerment is measured from four different dimensions, e. g economic, social, interpersonal and political empowerment.

Dependent Variables of the Study: Women empowerment remains the only dependent variable. However, as four dimensions of women empowerment, e.g., economic, social, interpersonal and political empowerment were considered, we considered four separate dependent variables, each is translated by a set of explanatory variables. According to the above method we first formed economic empowerment index, social

empowerment index, personal empowerment index and political empowerment index and run with dataset but the result was not satisfactory at all.

Table 1: Description of Dependent Variables

Name of Dependent Variables		Unit of Measurement
Women Empowerment	Economic empowerment	Index
	Social empowerment	Index
	Interpersonal empowerment	Index
	Political empowerment	Index

Parveen and Leonhäuser (2005) calculated the dependent variables by Cumulative Empowerment Index (CEI) which was constructed by combining some key empowerment indicators like women contribution to household income, access to resources, ownership of assets, participation in household decision-making, perception on gender awareness, coping capacity to household shocks, access to the political activities etc. to get a complete idea of women empowerment. Each indicator again has a number of sub-indicators. The quantitative part corresponded to five categories e.g., Very low =1, Low=2, Average=3, High=4 and Very high=5.Each indicator assigned a quantitative rank from 1 to 5 according to the total score for each empowerment indicator received from its sub-indicators based on the field survey. The qualitative dimension was formed to rank of the key indicators. Then, we determine the dependent variables by applying the Bartlett method.

Bartlett Method: This method of averaging reduces the variance, compared to the original N point data segment. We collect the dataset of women empowerment by the Likert scale and determine the simple averages and apply data normality test like Cronbach alpha, and Kaiser-Meyer-Olikin (KMO) tests. Then we apply the Bartlett method of averaging.

Measurement Items: Likert scale value of 1 to 5(Very low =1, Low=2, Average=3, High=4 and Very high=5).

Table 2: Cronbach Alpha, Rabidity Coefficient

Cornbrash's alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Kaiser-Meyer-Oilskin (KMO) Test: KMO is the test for sampling adequacy. It is a measure of how suited the data is for factor analysis. The test shows sampling adequacy for each variable in the model. It is the proportion of variance among variables. The lower the proportion, the more the dataset is suited to factor analysis.

Table 3: Rule of Thumb for KMO Test

KMO Value	Degree of Fitness
0.00 to 0.49	Unacceptable
0.50 to 0.59	Poor
0.60 to 0.69	Questionable
0.70 to 0.79	Acceptable
0.80 to 0.89	Good
0.90 to 1.00	Excellent

Explanatory Variables of the Study: The explanatory variables used in this study are demographic factors, social factors, economic factors and micro-finance indicator. Table 4 describes variable categories, their name and unit of measurement.

Table 4: Description of Explanatory Variables

Variable Category	Name of Explanatory Variable	Unit of Measurement
Demographic Factor	Location	0=Urban, 1=Rural
Social Factors	Age of the respondent	Number of years
	Education	Year of schooling
	Household Size	Number of family members
	Marital status of women	0=unmarried, 1=married
	Position in the family	Number
Economic Factors	Earning members	Number of wage earners
	Working hour	Working hour per day
	Income	BDT per month
	Expenditure	BDT per month
Micro-finance Indicators	Amount of Loan	BDT

Source: Author's Compilation, 2018

Regression Model for Measuring Women Empowerment: Women empowerment depends on various factors as depicted in Table 2.1. To determine the impact those factors on women empowerment, four multiple regression models have been formulated. According to our country's situation and condition of the study area following models have been formed for identifying which factors influence women empowerment.

$WE = \beta_0 + B_i X_i + \mu_i$ ..... (i)

Where,

$WE = Women\ empowerent: economic\ empowerment, social\ empowerment,$
$personal\ empowerment, and\ political\ empowerment.$
$X_i = Set\ of\ explanatory\ variables$
$\mu_i = Error\ term$
$\beta_0\ and\ B_i\ is\ the\ coefficients.$

4. Results and Discussion

The micro-finance institutions (MFIs) caters loan to the poor people especially to the less privileged women. The MFIs go to the doorsteps of the people, and people need not go to the MFIs. The other vital characteristics of micro-finance are: collateral free, small size, minimum paperwork, demands driven, 95 percent women borrowers, over 90 percent loan recovery rate, workers make regular visits to the borrower's yard to advise and supervise and lastly loans are returned in instalments on the weekly or bi-weekly basis. More or less all the NGOs follow the above-mentioned characteristics to conduct the micro-finance program in Bangladesh (Islam, et al. 2010 cited by Islam and Reza, 2011).

Descriptive Statistics of Women Empowerment: Descriptive statistics are used to summaries the sample data. The basic interpersonal data of the respondents related to the women empowerment are presented in the following Table 5.

Table 5: Descriptive Statistics

Aspects	Category	Urban	Rural
Year of Schooling	No Education	2	2
	Primary	48	37
	High School	77	93
	College	19	12
	Higher Studies	4	6
	Total =	**150**	**150**
Marital Status	Married	134	134
	Single	0	2
	Widow	9	9
	Divorced	7	5
	Total =	**150**	**150**
Occupation	Housewife	113	122
	Business	11	4
	Labor	11	10
	Tailor	14	9
	Teacher	1	5
	Total =	**150**	**150**
Source of Family Income	Agriculture	40	66
	Service	23	25
	Business	46	40
	Other	41	19
	Total =	**150**	**150**
Type of Micro-finance service	Group loan	1	5
	Individual loan	6	3
	Cash loan	142	141
	In-kind loan	1	1
	Total =	**150**	**150**

Source: Author's calculation based on field survey data

It is evident that the overall most of the respondents are literate both in the urban and rural areas. Most of the women studied up to high-school level in both areas, some of them completed higher studies too. Thus, it provides a sound image of women's education which is crucial for women empowerment. The marital status of the respondent women is almost similar in both the areas. There is no considerable difference between urban and rural areas with reference to the marital status of the women. Occupation is an important determinant to women empowerment. It is found that 113 and 122 respondents were engaged to household activities in urban and rural areas respectively. The remaining women were more or less engaged in business, teaching and selling labor to the service sector. Source of family income also determines the empowerment level. Agriculture remained the key sector of family earnings to rural women, followed by agro-business and services. On the other hand, the urban women were almost equally engaged in agro-business, agriculture, business and other activities such as a warehouse, factory mill, ship breaking, and saw-mills. Type of micro-finance services revealed that almost exclusively cash loans were provided both in urban and rural areas, and in very few cases individual loans, followed by group loans were advanced. A micro-finance service is the key indicators of women empowerment and poverty reduction that is practiced throughout the rural and sub-urban area of Bangladesh since the last few decades. Sometimes it brings a positive result and sometimes not, but it is widely accepted and practiced all over the world especially third world countries.

Inferential Statistics of Women Empowerment: Based on a sample dataset, the regression analyses produced the following results.

Table 6: Results of Regression Analysis

Explanatory variables	Economic	Social	Personal	Political
Location(0=urban, 1=rural)	-0.019***	-0.0256*	-0.0387**	0.0290
	(0.0064)	(0.0135)	(0.0152)	(0.0234)
Age	0.000916	0.00297*	0.00388***	-0.00259
	(0.00151)	(0.00176)	(0.00140)	(0.00216)
Year of schooling	0.604*	-0.00316	0.00651**	-0.00678
	(0.325)	(0.00393)	(0.00313)	(0.00483)
Marital status (0=unmarried, 1= married)	0.0688*	0.00680	0.00685	0.0241
	(0.023)	(0.0290)	(0.0230)	(0.0356)
Household size	0.0987**	0.0661***	0.0533***	0.101***
	(0.048)	(0.0248)	(0.0197)	(0.0304)
Position in the family	0.0488**	0.0617	0.0275	-0.00857
	(0.0212)	(0.0703)	(0.0558)	(0.0862)
Number of earning members	0.146**	0.0412*	0.0207	0.0432
	(0.0602)	(0.0231)	(0.0184)	(0.0284)
Working hours	-0.00707	-0.00855***	0.00180	-0.00696***
	(0.0198)	(0.00166)	(0.00132)	(0.00203)
Income	0.0003***	2.25e-06	4.56e-06***	9.84e-07
	(0.00142)	(1.77e-06)	(1.40e-06)	(2.17e-06)
Expenditure	3.07e-06**	-6.88e-07	1.24e-06	-1.30e-06
	(1.51e-06)	(1.74e-06)	(1.38e-06)	(2.13e-06)
Micro-finance service	7.60E-04***	6.60e-08	-1.27e-06***	1.10e-06**
	-2.00E-04	(4.08e-07)	(3.24e-07)	(5.00e-07)
Constant	72.74***	0.612***	-0.0722	0.575***
	(9.644)	(0.117)	(0.0928)	(0.143)
Total observations	300	300	300	300
R-squared	0.28	0.19	0.27	0.16

Source: Author's calculation based on data from field survey, 2018
Note: Standard errors in parentheses, * = significant at 10 percent level, ** = significant at 5 percent level, *** = significant at 1 percent level.

The value of r-squared although not high is acceptable. The variations in women empowerment are explained by the variations in the explanatory variables used in the four models. It is found that urban women are more empowered than the rural women people in case of economic, personal and social empowerment. The result is statistically significant at 1 percent, 5 percent and 10 percent level of significance respectively. Age and education are also important factors for empowering women. It is found that age has a positive influence on personal and social empowerment of the women. The result is statistically significant at 1 percent and 10 percent level respectively. Similarly, the education level of women has a positive impact on personal and economic empowerment, as educated women are more aware of their rights. The result is significant at 5 percent and 10 percent level of significance respectively. The marital status also played an important role in empowering women. The married women were more economically empowered than the unmarried women, as an unmarried woman depends on the father's income as well as they get less opportunity to engage in economic activity. The result is significant at 10 percent level.

It is evident that family size empowers women positively. The bigger the family size, the higher is the earning potentials, and the lesser is the pressure on the family. The result is significant at 1 and 1 percent level of significance. Women's position in the family has a positive impact on economic empowerment, as a senior woman can easily engage in economic activity. The result is significant at 10 percent level. It is also evident that earning members have more economic and social empowerment. The result is significant at 5 percent and 10 percent level respectively. It is found that women's larger working hour dampens their social as well

as political empowerment, as longer working hours restrict them to spare time for sociopolitical activities. The result is significant at 1 percent level. It is evident that greater personal income empowers the women both economically and personally, and the result is statistically significant at 1 percent level. This is obvious because an increase in personal income empowers them to utilize money independently without depending on other family members. Similarly, it is seen that expenditure makes them economically empowered, the result is statistically significant at 5 percent level. This is might be because they can independently spend for their own purchases without any family interference.

5. Conclusion

It is found that micro-finance services made the women empowered economically and politically. This is because micro-finance services enable them to take decision independently. The result is statistically significant at 1 and 5 percent level. However, it makes them personally vulnerable when the borrowed money needs to be returned with interest. The result is statistically significant at 1 percent level. The foregoing discussion reveals that micro-finance services have been an effective tool for overall women empowerment in both areas urban as well as rural areas. It positively influences women's socioeconomic and political affairs. The influential factors of women empowerment were a proper use of microfinance, education and marital status of women, education status husbands, family size and number of earning members, age and position of women within the family, working hour, income, and expenditure.However, there is some gap in empowerment between urban and rural areas as women in urban areas are more conscious about their rights than in rural area.Therefore, MFIs while extending micro-finance services, should provide proper training, and monitor the credit recipients' activities to ensure proper utilization of borrowed fund. This will eventually reduce poverty and magnify the standard of living of the unprivileged rural women.

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Mobile Learning Approach in Higher Education Institutes (HEIS): Insights beyond the Acceptance Model of Technology

Abdelbaset Queiri[1], Araby Madbouly[2]
[1]Management and Tourism Department, Oman Tourism College, Sultanate of Oman
[2]Business and Accounting Department, Muscat College, Sultanate of Oman
abdelbaset.queiri@otc.edu.om, araby@muscatcollege.edu.om

Abstract: The purpose of the study is to develop a framework beyond the technology acceptance model (TAM) whereby the study aims to understand the slow adoption of M-learning approach in HEIs. For this purpose, this study carries out an extensive review of the literature in order to design a conceptual framework to investigate how to enhance the utilization of this technology among lecturers and learners/students. The investigation was carried out using a deductive approach to examine the proposed hypothesizes. The findings from this study suggest a wide range of factors such as cultural dimension (i.e. uncertainty avoidance), psychological factors (i.e. perceived risk, self-efficacy) technical skills (i.e. digital literacy). These factors are regarded to be relevant towards enhancing the utilization of M-learning in HEIs. This study has the originality of ideas by providing insights into M-learning utilization beyond the conventional TAM. These identified factors require to be substantiated in this context.

Keywords: *M-learning, TAM, adoption of M-learning, HEIs*

1. Introduction

In the digital age and as part of the pedagogical shift, Saudi Arabia is shifting from the teacher-centered approach to be more focusing on the learner-centered approach (Nassuora, 2012). With awareness to the need of such shift among younger generation and with the availability of sound technological infrastructure (i.e. smart devices, portable devices, wireless and etc..), Saudi Arabia Higher Education sector is seen a heavy investment, in order to promote learning and teaching approach that meet the requirement of digital age (AlShehri, 2009). Particularly for the younger generation in Saudi Arabia who is assumed to be technologically savvy and digitally connected. For this purpose, Saudi government had proposed mobile learning approach (M-Learning) with the aim of; 1) assisting all students from different social-economic levels to take part of the on-going educational process through enabling citizens to access seminars, training and lectures using their own devices, regardless of their places, 2) M-learning sought to provide lifelong experience of learning by enhancing the students 'engagement, performance and collaboration, in other words, M-Learning will create the kind of highly situated personal (Liu & Han, 2010). In the same vein, several Universities in Saudi Arabia had already responded to the Saudi government and the Ministry of Higher Education initiatives to adopt M-Learning approach. For instance, King Saud University enabled its students to communicate with each other and with the university from students' own platform, to respond to the students' inquiries and share the information among each other (Almutairy & Dimitriadi, 2014). Also, King Khalid University introduced synchronized virtual blackboard, whereby students are informed about university announcement while using social media websites.

Moreover, many other Saudi Universities signed a cooperation agreement with the famous international institute to implement M-Learning approach (Al-Shehri, 2009). Despite the initiatives to adopt M-Learning in Saudi Arabian Universities and the availability of the affordable and good Mobile phone infrastructure (Narayanasamy & Mohamed, 2013). Yet, the utilization of the M-Learning approach to the full potential is not attained at Universities level. Additionally, the use of M-learning in Saudi Arabia Universities is in its infancy stage. In 2015, Saudi Arabia M-Learning approach was considered at the developmental stages and the benefits of such an approach still have high potential (Almutairy & Dimitriadi, 2014). Many Universities are using M-Learning for the purpose of announcement and communication with students. For M-Learning successful transition with acquiring all the potential benefits, there is a need more than ever to adopt M-Learning in a teaching setting, in other words, using M-learning at an advanced level to deliver lectures. Several studies have focused on the factors influencing the acceptance of M-Learning approach among Saudi Arabia students, in order to understand the modest adoption of M-learning.

Majority of these studies have relied on the so-called Technology Acceptance Model (TAM) to fulfil such purpose. Other researchers turned the focus on the unified theory of acceptance and use of Technology model (UTAUT Model) to investigate the relevant factors which lead to the slow adoption of M-Learning in Saudi Arabian context, as in (Hujran, Lozi & Debei, 2014; Aljuaid, Alzahrani & Islam, 2014; Nassouora, 2012; Despite the superiority of UTAUT model over TAM, in terms of identifying more factors, such as social influence and facilitating conditions. Both models utilized in the aforementioned studies share similar factors such as performance expectancy and effort expectancy, which are regarded interchangeably as perceived usefulness and perceived ease of use in TAM. Also, some of these studies merely used the perceived usefulness and ease of use to understand the issue at hand. The use of the two models at the current stage, limit our understanding of the M-learning utilization and its challenges in the context of Saudi Arabia. There is a need for an expansion of these two theoretical models to increase the understanding of the modest adoption of M-learning in context of Saudi Arabian Universities. Moreover, these two models and the associated studies are specifically tailored for students in Saudi Arabia context, although lecturers are part of the process, nevertheless, a scant attempt has been located the focus on the issue from the lecturers' perspectives (Reference).

There is a need to deepen the studies to understand the mechanism of M-learning utilization and adoption among lecturers. This requires going beyond TAM and UTAUT models and incorporating other novel factors, such as; digital literacy (basic ICT literacy and mobile ICT literacy), self-efficacy (abilities), ICT anxiety, perceived risk (social and financial risk), cultural dimension (uncertainty avoidance), social support (management, peer and student supports). These factors have not been substantiated in the context of Saudi Arabia, nor how they interact with each other investigated. Moreover, the traditional factors of perceived usefulness and ease of use have been incorporated as suggested by the theory of technology acceptance. On the other hand, several other researches have concentrated on the challenges of the use of M-Learning in Saudi Arabia context; many were generic. These proposed challenges were either assessed subjectively or through descriptive studies. To fulfil the scientific inquiries, there is a need to develop a theoretical model and framework which is better than subjective opinions. With this said, there is a need of addressing the factors that inhibit the full adoption of M-Learning from lecturer perspective. This will provide the opportunities of transforming the lecturers to a highly situated personal, which may result in better engagement, collaboration and paying attention to provide education to different social economic classes.

2. Literature Review

Underpinning Theories: This study utilizes several core theories to assist in developing, the theoretical framework. However, this study will also enrich the theoretical discussion by incorporating, other secondary theories and expanding the core one. These theories will serve as input of identifying the relevant factors that will be the subject of investigation. Furthermore, these theories and the on-going literature of review studies will specify the reasons for selecting such factors over the others in the context of Saudi Arabia.

The Reasoned Action Theory: Following the work of Fishbein & Ajzen in 1975, the engagement in a certain behavior or in particular course of action is best predicted by the behavioral intention to perform such action. The behavioral intention since then was regarded to be a substitute for the actual behavior. With this said, it becomes more feasible to measure the behavioral intention to utilize M-learning approach rather than measuring the actual utilization or adoption. The actual adoption may be subjected to the availability of external resources and opportunities. Therefore, it becomes of first priority to measure the readiness and the intention to utilize.

Planned behavioral Theory: As a result of the development of reasoned action theory, Ajzen in 1991, argued that the despite the intention intensity of performing a course of action, however, the intensity will be attenuated when it is compared to the ability or the confidence in engaging into that specific course of action. Such ability was referred to the perceived behavioral control. The latter term and its definition were not devoid from the debate, however, the term was widely used to indicate self-efficacy, and confidence and ability to strengthening the intention's intensity. Nevertheless, with Saudi Arabia scores high in this dimension, the effect of uncertainty avoidance has received little attention be the reason for low utilization or slow adoption towards the M-learning approach.

Technology Acceptance Model: In 1989, Davis introduced the technology acceptance model (TAM). This model was originally derived from the aforementioned theories; reasoned action and planned behavioral theories. From the perspective that subjective norms, beliefs or attitudes affect behavioral intention, TAM model specifies two beliefs dimensions, which they are perceived ease of use and perceived usefulness which in return will influence the behavioral intention to use the technology. Thereafter, the TAM model has been extensively used to measure the behavioral intention to use technology, such as; distance learning, mobile banking, mobile learning and other innovativeness technological solutions.

Unified Theory of Acceptance and Use of Technology: In 2003, Vankatesh expanded the TAM, through incorporating the connotation of social cognitive principles (Venkatesh et al., 2003). His model composes of performance and effort expectancies, which they are regarded to be equal to perceived usefulness and ease of use. In addition to this, social influences and facilitating conditions were part of the newly introduced factors. This study uses the social influences and facilitating conditions in different perspective, both terms will be used as a moderator in terms of social organizational support. This moderator suggests that the behavioral intention to utilize M-learning among lecturers will be subjected to the perceived support received from university, colleagues and students. Then only, the utilization of M-learning approach will be adopted with the availability of perceived ease of use and perceived usefulness.

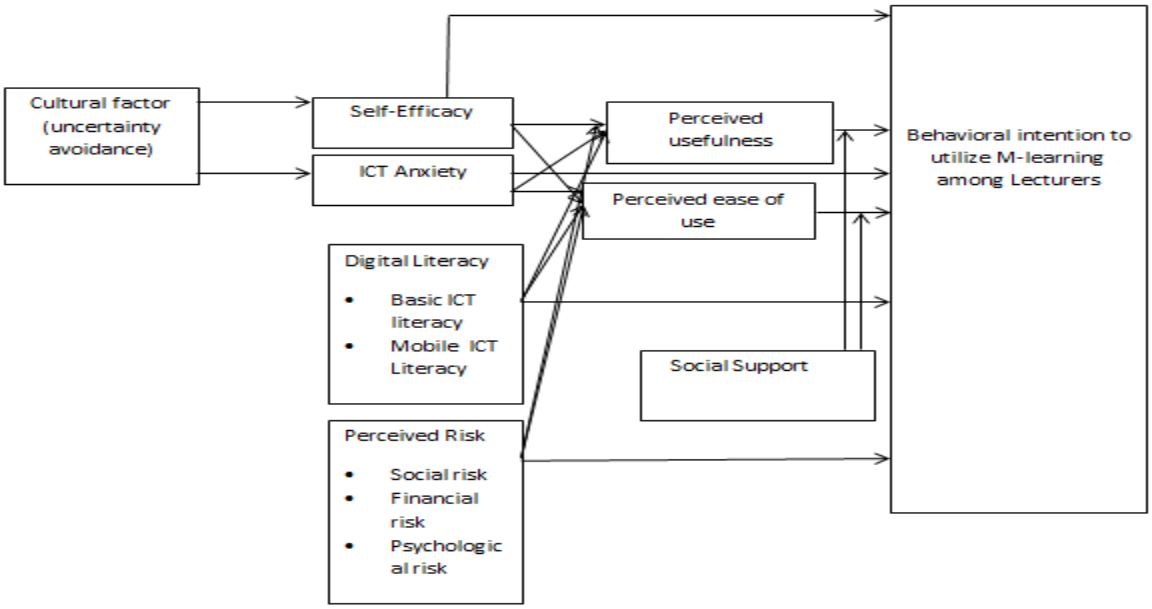
Hofstede's Cultural Dimension: Hofstede set forth broad cultural dimensions; collectivism vs. individualism, masculinity vs. femininity, uncertainty avoidance, long-term orientation, power distance and indulgence. In this study, the focus will be given to uncertainty avoidance, since it is related to the concept of the averting unexpected events or resistance to deal with the ambiguous. Furthermore, uncertainty avoidance deals with acceptance of the new and the unknown. People with low uncertainty avoidance are comfortable and open to change and more tolerant to accept the risk and have willing to adopt a new structure or system. The dimension has been traditionally incorporated into the context of technology adoption and reported to have an impact on the acceptance of technology (Mulaomerovic & Trappey, 2013).

Previous Studies of M-Learning Approach in Saudi Arabia: The extensive review of the literature revealed several studies conducted in the context of Saudi Arabia pertaining the adoption and utilization of M-learning approach in different settings (i.e. Universities and high schools). Nassuora (2012) surveyed around 80 students at Al-Faisal University to determine the level of acceptance of M-learning approach. In his study the UTAUT Model has been empirically investigated. Despite the study's initiative to empirically investigate the dimensions of UTAUT Model, the downside of this study was the small number of sample size along with the focus on a single private university to measure the acceptance level among students. Clearly, the use of a quantitative case study may limit the generalizability of findings to some extent to other universities in Saudi Arabia. Al-Hujran et al. (2014) similarly used the UTAUT model to investigate the behavioural intention to use M-learning approach in Saudi Arabia. The sample consisted of 215 students originated from Al-Faisal University. Despite the inclusion of more respondents, both studies confined itself to Al-Faisal University. Another study conducted in Saudi Arabia to investigate the adoption of M-learning approach was developed by (Narayanasamy & Mohamed, 2013). This study expanded the number of surveyed participants to 300, solely to be drawn from Jazan University.

This study provides a mere descriptive statistic on the awareness of mobile technologies, application, advantages and limitation. Furthermore, the study inquires on expectation of M-learning. These descriptive results were driven by the students' perception. Despite the large portion of sample size, this study confined itself to the descriptive analysis and the knowledge of what caused the adoption among users could not be established. Similarly, measured the interest of Students into M-learning approach in addition, the students were asked to rank the advantages and disadvantages associated with the use of M-learning approach. Also, Almutairy & Dimitriadi (2014) descriptively assessed the readiness of Saudi Arabian Students to use M-learning approach. Moreover, the literature enriched us with several subjective studies that were developed to address the challenges and prospects of M-learning approach in the context of Saudi Arabia. In the study of Alkhalaf (2014), the challenges were subjectively argued towards the adoption of M-learning at High School. The subjective study does not fulfil the scientific inquiry extended the TAM model, to incorporate other factors such as ICT anxiety and perceived innovativeness in order to measure the intention to use.

This study offers a hint for researchers to further expand the theoretical framework applied in Saudi Arabia and to incorporate other factors. Unlike the aforementioned studies, this study will give an insight of the utilization of M-learning from the perspective of lecturers, whereby several relevant dimensions will be the focus of this study, which goes beyond the conventional models (i.e. TAM and UTAUT). There is a dearth of studies on M-learning adoption from lecturers' perspective in Saudi Arabia. Exceptional, the study conducted by Aljuaid et al. (2014) who investigated the readiness of mobile learning among lecturers, nevertheless, the study has focused on two dimensions of the TAM model; perceived ease of use and perceived usefulness.

Proposed Theoretical Framework



3. Methodology

Research Strategy: This study will use a survey research strategy. Such a choice is guided by the proposed research questions. With the use of a survey, descriptive results and hypothesizes testing will be possible, since survey study allows to gather quantitative data. Furthermore, the survey study will assist in making an inferential statistical to reject or accept hypothesizes.

Population and Sampling Procedure: The target population of study will be the lecturers in Saudi Arabian Universities. Additionally, this study will have a target population of the knowledgeable lecturers who already have experience or knowledge in using M-learning approach. The rationale of choosing such a population is due to the nature of the questionnaire that requires from respondents to be fully aware of M-learning practices, advantages and challenges. Therefore, the nonprobability sampling method, in particular purposive – convenient sampling procedure is deemed to be the most appropriate for this study. This is because, the targeted respondents are selected based on certain criteria (to fulfil the purpose of research and solicit the most accurate answers), whereby the lecturers require to have previous knowledge and currently using M-learning approach at any level. Additionally, convenient sampling is chosen due to the freedom of participation and there is no particular sampling frame to guide the choice of respondents randomly.

Operationalization of Key Variables: This study will use a set of questionnaires and this questionnaire will be adopted from other studies. In a sense, the factors will be slightly or largely modified to reflect the particular interest of the study along with consideration of the context of the study. Unlike other studies which relied on a qualitative approach. This study will develop items to reflect the factors as depicted in the framework. The development of the questionnaire will be guided by an extensive review of the literature, validating the items and other process which will ensure the measurement effectiveness in terms of reliabilities and validities. Several types of validities will be used while constructing a questionnaire, such as;

face and content validities that will be achieved through experts' judgment of the developed items and other extensive review of the literature.

Data Analysis: This study relies on the two-step approach suggested by Anderson and Gerbing (1988) to perform the analysis stage, measurement and structural models. The measurement model aims to validate the constructs using confirmatory factor analysis (CFA), common method variance and invariance analysis. In addition, the structural model will assist in providing statistical inference on the proposed hypothesizes. For this purpose, Smart PLS3 will be used to conduct this analysis.

4. Conclusion

Technology acceptance model (TAM) has extensively used in the context of Saudi Arabia. Some of the studies were subjective in nature, others used the TAM model in terms of commonly used two dimensions. This study suggests the expansion of TAM to comprehensively comprehend the reasons behind the slow adoption of M-learning. The researcher developed a theoretical framework based on extensive review of the literature and found that there are a number of antecedents which are required to be investigated. The study puts this finding into such perspective; cultural factor, psychological factor and technical factor. The study also concluded that these factors interact with each other in a certain way to increase our understanding of the mechanism of M-learning adoption.

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