Organisational performance and the use of multiple performance measures in an emerging market

Abstract

Purpose: This study is an empirical investigation of the relationship between the use of 41 multiple performance measures (MPMs), including financial performance measures (FPM), non- financial performance measures (NFPMs), and organizational performance (OP) in Libya.

Design/methodology: The results are based on cross-sectional questionnaire survey data from 132 Libyan companies (response rate 61%), which were obtained just before the so-called Arab Spring.

Findings: MPMs are used by both manufacturing and non-manufacturing companies. Libyan business organizations are more likely to use FPMs than NFPMs. However, these companies still rely more heavily on FPMs. The relationships between the use of NFPMs and OP and the use of MPMs and OP are positive and highly significant. The relationship between the use of FPMs and OP is positive but not significant.

Research limitations/implications: The high-power distance associated with the conservative, Libyan, Arab context will reinforce the tendency to use FPMs more than NFPMs. This may provide a performance advantage to those organizations which do adopt NFPMs.

Practical implications: Although there may be institutional barriers to the use of NFPMs in Libya, and other emerging markets, these are not insuperable and there is a payoff to their use.

Originality/value: No previous studies of emerging markets, such as the Middle East or North Africa, have looked at the relationship between OP and the adoption of such a large array of MPMs.

Keywords *Multiple performance measures; financial performance measures; non-financial performance measures; organisational performance; Libya.*

Research paper

1. Introduction

A wealth of studies and reviews have identified that performance measurement is essential for organisational strategic goals to be implemented and a competitive advantage to be achieved and sustained (Abidi *et al.,* 2014; Melnyk *et al.,* 2014; Nawaz and Haniffa, 2017; Scarpin and Brito, 2018). Performance measurement systems (PMS) act as a catalyst for translating strategy into measurable objectives (Chatha and Butt, 2015; Micheli and Mura, 2017; Pollanen *et al.,* 2017). A performance measurement system represents a comprehensive set of performance indicators used to quantify the efficiency and effectiveness of organisations' operations (Busco and Quattrone, 2015; Stålberg and Fundin, 2016). Performance indicators enable an organisation to "convey the strategy to everyone else in terms they can understand, thus making the strategy concrete and meaningful" as Melnyk *et al.* (2014, 173) reported. These metrics can be financial or non-financial, short, or long term, internal or external (Neely, 2011; Santos *et al.,* 2012). The most common typology is a division into financial performance measures (FPMs) and non-financial performance measures (NFPMs).

There has been considerable research, on the move from so-called "conventional, traditional or financial" measures to more wide-ranging "non-financial, innovative, integrated, balanced or multiple" measures, which has been a key development in the performance measurement field (Garengo and Sharma, 2014; Cooper and Ezzamel, 2013; Kasperskaya and Tayles, 2013; Ittner *et al.,* 2003; Bourne *et al.,* 2000). Well-defined performance indicators direct organisations to achieve desired performance. However, the key characteristics of effective performance measurement systems remain unclear (Saunila *et al.,* 2017). There are unresolved issues relating to the role of NFPMs in strategic performance and management frameworks, particularly in relation to motivation, ability, and long-term firm value (O'Connell and O'Sullivan, 2014). An effective performance measurement system may be based on using a balanced set of key financial and non-financial critical success factors and key performance indicators, which stimulate involvement in continuous improvement (Andrews and Wulfeck, 2014). NFPMs and FPMs could both shape the PMS of organisations by using data on objective and subjective measures of performance, covering different parts of an organisation's operations (Brouthers, 2013; Wu and Liao, 2014; Singh *et al.,*2016). Indeed, there is a need for empirical research to examine to what extent the inclusion of both financial and non-financial indicators is more effective in enhancing organisational performance (Dossi and Patelli, 2010; Upadhaya *et al.,* 2014; Micheli and Mura, 2017).

This research draws on two bodies of literature - one that has explored the relationship between the use of MPMs and organisational performance; and one that has evaluated the use of MPMs and their impact on the Libyan emerging market setting. A regression analysis was conducted to analyse the quantitative data collected from 141 Libyan companies in a variety of industries (manufacturing and non-manufacturing). This study makes two main contributions to theory and practice. First, the paper contributes to the existing literature by identifying the relationship between the use of MPMs and organisational performance. Organisational performance may, at least in part, depend on the diversity of performance measures used. This means that a company may achieve superior performance when it uses a broad range of financial and non-financial performance measures (Asiaei and Jusoh, 2014). The studies on organisational performance have used a variety of performance indicators focusing on either the public (e.g., Liguori *et al.*, 2012; Pollanen *et al.*, 2017) or manufacturing sectors (Sidin and Wafa, 2014; Maletic *et al.*, 2015). However, there is a need for empirical investigation to be conducted to ascertain and validate the existing findings.

The second contribution of this research is related to the adoption of MPMs in the Libyan emerging market setting. Multiple performance measures (MPMs), such as quality, productivity, innovation, and customer satisfaction, have received a lot of attention from practitioners and academics since the early 1990s, particularly in developed economies. The much smaller number of studies in emerging market contexts has failed to provide clear evidence about the effectiveness of MPMs (Tjader *et al.*, 2014; Henri, 2004, 2006). The awareness and utilisation of NFPMs and MPMs is likely to be lower in an emerging market than in more advanced economies. Since institutions generally are less developed in emerging markets than in advanced economies (Khanna and Palepu, 2000), it is to be expected that there will be less familiarity with non-financial data and with "newer" measures of organisational performance.

The study finds that NFPMs are used to a significant extent by Libyan companies across different industries; however, FPMs are used more widely than NFPMs and MPMs. In other words, the Libyan companies surveyed in this research tend to rely on traditional (financial) measures more than multiple measures for evaluating their performance. The use of NFPMs and MPMs has a significant positive effect on Libyan companies' performance. A positive, but not significant, effect was found in the case of FPMs. Therefore, measurement diversity is found to have a positive effect on organisational performance.

The paper is structured as follows. The next section provides a comprehensive literature review of the links between MPMs and organisational performance. It also discusses research on the impact of MPMs on company performance operating in emerging market contexts. Subsequently, the quantitative data analysis is presented in section 3. Section 4 outlines and discusses the research findings, examining the main contributions to theory and practice. The conclusions, limitations and avenues for further research appear in Section 5.

2. Literature Review, Research Questions and Hypotheses Development

MPMs and organisational performance

Organisations need to embrace different strategic approaches to survive and compete with powerful new players entering the marketplace (Nawaz and Haniffa, 2017). Scholars focusing on this research area underpin the existence of different strategic approaches that trigger the use of diverse types of performance indicators (Lopes *et al.,* 2016; Micheli and Mura, 2017; Vallurupalli and Bose, 2018). Indeed, a cost-leadership strategy is tightly intertwined with the use of financial performance measures (FPMs). On the other hand, multiple performance measures (MPMs), both financial performance measures (FPMs) and non-financial performance measures (NFPMs), are utilised by differentiation strategies (Porter 1980; Homburg *et al.,* 2012; Bourne *et al.,* 2013).

Most organisations use FPMs because they are indicators of firms' profitability, performance, cost reduction and cash flow (Kim and Pennington-Gray, 2017; Agyei-Mensah, 2017). Merchant and Van der Stede (2007) explained that FPMs ensure the organisation's survival; provide a comprehensive measure of performance; are relatively precise and objective; and have wide applicability. However, they have also summarised the criticisms of the use of financial measures, stating that FPMs are numeric data that represent a certain period without taking into consideration factors that do not result in a transaction or cannot be measured accurately and objectively. He and Lu (2018) reiterated this by explaining that financial measures cannot incorporate the valuation of the company's intangible and intellectual assets. Similarly, Anil and Satish (2019) stated that although most organisations use customer satisfaction and cost to measure their performance, the development of other performance indicators, such as quality, will support organisations to outperform others in the competitive environment. Li et al. (2017) and Fakhri *et al.* (2009) explained that changes in a business environment, such as increased competition and technological advances, are another reason for the inadequacy of financial measures.

The potential importance of including both financial and non-financial indicators to enhance operational performance has become a developing research area (Dossi and Patelli, 2010; Upadhaya *et al.*, 2014). Yuliansyah *et al.* (2017) found that the adoption of a differentiation strategy leads to the development of superior performance and the achievement of competitive advantage. Similarly, Spencer *et al.* (2009) considered only firms pursuing a differentiation strategy and found a positive association between strategy and organisational performance using mainly non-financial indicators. Hussain *et al.* (2018) and Gómez-Bezares *et al.* (2017) argued that social and environmental indicators play a critical role in achieving manifold performance objectives and adopting sustainability performance. Maletic *et al.* (2015) concluded that the use of non-financial performance indicators, including operational performance, innovation performance, employee performance, environmental performance, customer performance and economic performance, measure effectively the organisational performance of manufacturing companies. In a similar vein, Sidin and Wafa (2014) found that Malaysia's manufacturing companies could improve their organisational performance though the use of a multidimensional construct, which considers leadership, employee participation, customer satisfaction, data analysis, process management and organisational culture. Liguori *et al.* (2012) stated that public organisations consider that NFPMs provide more meaningful information than FPMs; multiple aspects of public-sector performance cannot be measured considering only financial measures (Pollanen *et al.* 2017). Studies have showed that indicators of efficiency, effectiveness, responsiveness, and equity have a positive association with organisational performance and contribute to the enhancement of service quality (Andrews and van de Walle, 2013; Elbanna *et al.*, 2015).

Although there is widespread interest in diverse performance measurement systems (e.g., BSC), few empirical studies have looked directly at the effectiveness of the deployment of MPMs (Wellens and Jegers, 2014; Androwis *et al.*, 2018). Indeed, the association between the deployment of MPMs and organisational performance has been found to be inconsistent in several previous studies (Upadhaya *et al.*, 2014; Agyei-Mensah, 2017; Yuliansyah *et al.*, 2017).

Some have found a positive relationship between the use of multiple performance measures and organisational performance (Stede *et al.*, 2006; Fleming *et al.*, 2009; Akgun *et al.*, 2014). However, other studies have provided contradictory evidence (Ittner *et al.,* 2003; Braam and Nijssen, 2004; Neely, 2008).

In summary, it is unclear if there is a positive association between the use of MPMs and organisational performance. Some researchers have found convincing evidence of a positive relationship between both variables. Others have found that the use of performance measurement diversity might not be associated with enhanced organisational performance. As a result, this research aims to extend the existing literature by focusing on both the public and manufacturing sector and to re-investige the relationship between the use of multiple performance measures and organisational performance in a new, emerging market, setting. Therefore, the following hypotheses were developed, based on the preceding literature review:

H1: Organisational performance is negatively associated with the use of traditional (financial) performance measures.

H2: Organisational performance is positively associated with the use of non-financial performance measures.

H3: Organisational performance is positively associated with the use of multiple performance measures.

The adoption of MPMs in an emerging market

A fundamental difference between emerging and developed market economies is the existence in the latter of market supporting formal institutions (Alvi, 2012). Formal institutions include a country's laws and regulations. Informal institutions include the norms and values which are derived from a country's culture, language, and society (Dikova *et al.*, 2010). Institutions - formal and informal - provide "rules of the game" in an economy (North, 1990). The distinction between emerging and developed market economies is not an exact dichotomy however and a particular economy may display both emerging and developed market characteristics at any given point in time. Moreover, emerging markets are themselves not homogeneous and may display a variety of institutional contexts (Djankov and Murrell, 2002; Peng, 2003; Wright *et al.,* 2005; Hosskisson *et al.,* 2013; Wu, 2013). However, as emerging markets evolve, institutional structures tend to move from relationship based personal exchanges to those which are rule based and impersonal with third party enforcement.

Libya, the emerging market from which data was collected, is an Arab country. Therefore, its culture, management systems, and business environment need to be seen within an Arab context. Its politics, economy, and culture are all based on tribalism, Islam, and a lack of a democratic political culture (Al-Rasheed, 2001). Libya is also characterised by high power distance, high collectivism and high uncertainly avoidance (Hofstede *et al.,* 2010). These historical tendencies were re-inforced by the idiosyncratic nature of the Gadaffi regime, which was forced from power in 2011 (Pargeter, 2012). The nature of the regime and its isolation from the world acted as a barrier to the diffusion of management best practice. All of these features may lead to a preference for the use of, so called, hard data and the financial performance measures which make use of them. Furthermore, extant literature indicates that there is a need for an extended scholarly attention in performance management (Posthuma, 2011) in this emerging market (Iles *et al.,* 2012; Abdelzaher *et al.,* 2017).

The second aim of this paper is to identify the type of financial and non-financial performance measures adopted by Libyan business organisations. Several studies have addressed this issue in other geographical contexts (Neely, 2008; Yongvanich and Guthrie, 2009; Lau and Roopnarain, 2014). Most of these studies have been conducted in a manufacturing setting and in developed countries, especially the USA, UK and Australia. Only a few of them have been conducted in non – manufacturing settings and/or emerging economies (Yongvanich and Guthrie, 2009; Ismail, 2007). There has been significant research in Libya focusing on the banking industry (Musbah *et al.,* 2016; Agley-Mensah, 2017; Elnihewi *et al.,* 2017); quality management (Abusa and Gibson, 2013; Ahmad and Elhuni, 2014); asset management (Beitelmal *et al.,* 2017); healthcare management (Imhmed *et al.,* 2014) and marketing performance (Elkrghli, 2017). The use of financial measures is still of great importance to most companies in both developing and developed countries (Mintz and Currim, 2013; Al Sawalqa, 2011; Fakhri, 2010; Neely, 2008; Ismail, 2007). However, the use of multiple performance measurement systems remains uneven, particularly in emerging market contexts (Wei *et al.,* 2014). To fill this research gap, the following questions were posed:

What is the extent of the adoption of multiple performance measures by Libyan companies? Do Libyan companies place a greater emphasis on using traditional (financial) measures, rather than MPMs, in evaluating their performance?

3. Research Method

3.1 Sample and Research Strategy

The population of this research was defined as all Libyan companies, manufacturing and non-manufacturing, whether small, medium or large, except for new companies with little experience (less than three years of age) and very small companies (less than 10 employees). Since respondents were asked to describe selected research variables during the previous three years, very new companies were not suitable. In addition, earlier studies have indicated that the use of management accounting and financial performance measures within small companies is generally very low (Michalski, 2014; Verbeeten and Boons, 2009; Chenhall, 2003; Hussain and Hoque, 2002 and Hoque and James, 2000). The sampling frame consisted of 226 Libyan companies in a variety of industries (76 manufacturing and 150 non-manufacturing). Only headquarters were included, to obtain a more homogenous sample; subsidiaries, divisions and branches were excluded. The data collection was completed just before the revolution in Libya, which overthrew the Gadaffi regime, and the ensuing civil war.

Data was collected using a self-administered survey questionnaire. The questionnaire survey targeted finance directors, vice-financial managers, financial controllers, and senior accountants because they are responsible for designing and operating the performance measurement systems in their companies (MacBryde *et al.*, 2014; Verbeeten and Boons, 2009; Chenhall and Langfield-Smith, 1998).

The questionnaire was divided into three main parts. All three parts included closed questions, i.e., all the questions had a range of potential answers and the respondents had to select one of them. The first part consisted of questions concerning general information about the characteristics of participants and their organisations. The second and third parts were concerned with the independent and dependent variables of the study. In these parts, the questions were based on a 5-point Likert scale. 226 questionnaires were distributed and 141 were returned. 132 questionnaires were usable and valid for analysis (which represents a 61 % response rate). This is a good rate compared with other similar studies (Micheli and Mura, 2017; Koufteros, 2014; Salleh *et al.*, 2010; Mia and Winata, 2008 and Hoque, 2004).

3.2 Demographic Profiles of Respondents and Organisations

The first section of the questionnaire contained two questions about respondents and their organisations. This part of the survey aimed to provide a brief description of demographic information about the profiles of respondents and the manufacturing and non-manufacturing companies participating in the study. It was essential to ensure that the respondents held senior positions and that they were knowledgeable and experienced about organisational and environmental characteristics and MPMs. Table 1 summarises the general characteristics of respondents (job title, qualifications, expertise, and experience) which may affect the quality of their perceptions and their responses to the questionnaire.

Table 1: Frequency Distribution of Characteristics of Respondents

Items	*Manufacturing (N=49)*		*Non-manufacturing (N=83)*		*Both (N=132)*	
Job Title	*Frequency*	*Per cent*	*Frequency*	*Per cent*	*Frequency*	*Per cent*
Financial Manager	**18**	**36.7 %**	**40**	**48.2 %**	**58**	**43.9 %**
Vice-Financial Manager	**12**	**24.5 %**	**15**	**18.1 %**	**27**	**20.5 %**
Controller	**7**	**14.3 %**	**8**	**9.6 %**	**15**	**11.4 %**
Senior accountant	**9**	**18.4 %**	**14**	**16.9 %**	**23**	**17.4 %**
Other	**3**	**6.1 %**	**6**	**7.2 %**	**9**	**6.8 %**
Qualification	*Frequency*	*Per cent*	*Frequency*	*Per cent*	*Frequency*	*Per cent*
Secondary	**2**	**4.1 %**	**2**	**2.4 %**	**4**	**3 %**
Diploma	**6**	**12.2 %**	**3**	**3.6 %**	**9**	**6.8 %**
Bachelor	**25**	**51 %**	**48**	**57.8 %**	**73**	**55.3 %**
Post-graduate	**11**	**22.5 %**	**19**	**22.9 %**	**30**	**22.7 %**
Other	**5**	**10.2 %**	**11**	**13.3 %**	**16**	**12.1 %**
Subject	*Frequency*	*Per cent*	*Frequency*	*Per cent*	*Frequency*	*Per cent*
Accounting	**21**	**42.9 %**	**40**	**48.2 %**	**61**	**46.2 %**
Business Management	**6**	**12.2 %**	**10**	**12.1 %**	**16**	**12.1 %**
Finance	**15**	**30.6 %**	**23**	**27.7 %**	**38**	**28.8 %**
Economy	**3**	**6.1 %**	**2**	**2.4 %**	**5**	**3.8 %**
Other	**4**	**8.2 %**	**8**	**9.6 %**	**12**	**9.1 %**
Experience						
Items	*Experience (in the Job)*		*Experience (in the company)*		*Full experience*	
	Frequency	*Per cent*	*Frequency*	*Per cent*	*Frequency*	*Per cent*
Less than 5 years	**18**	**13.6 %**	**14**	**10.6 %**	**7**	**5.3 %**
5-10 years	**33**	**25 %**	**36**	**27.3 %**	**16**	**12.1 %**
10-15 years	**41**	**31.1 %**	**27**	**20.5 %**	**25**	**18.9 %**
15-20 years	**23**	**17.4 %**	**24**	**18.2 %**	**38**	**28.8 %**
20 years or more	**17**	**12.9%**	**31**	**23.5 %**	**46**	**34.8%**

It is clear that a large majority of the managers who responded to the survey were experienced – 60% had been in their current job more than 10 years. More than 80% had at least a Bachelor degree and more than 70% had their main qualifications in accounting or finance.

Table 2 presents the key characteristics of respondent companies. It covers six main features: the age of the company, the main type of industry, company size (in terms of number of employees and annual revenue) and ownership type.

Table 2: Frequency Distribution of Characteristics of Respondent Companies

Items	*Manufacturing (N=49)*		*Non-manufacturing (N=83)*		*Both (N=132)*	
Company age	***Frequency***	***Per cent***	***Frequency***	***Per cent***	***Frequency***	***Per cent***
Less than 5 years	**3**	**6.1 %**	**4**	**4.8 %**	**7**	**5.3 %**
5-10 years	**4**	**8.2 %**	**7**	**8.4 %**	**11**	**8.3 %**
10-15 years	**4**	**8.2 %**	**15**	**18.1 %**	**19**	**14.4 %**
15-20 years	**12**	**24.4 %**	**20**	**24.1%**	**32**	**24.2 %**
20 years or more	**26**	**53.1 %**	**37**	**44.6 %**	**63**	**47.7 %**
Type of Business	***Frequency***	***Percent***	***Frequency***	***Percent***	***Frequency***	***Percent***
Number of companies	**49**	**37.1 %**	**83**	**62.9 %**	**132**	**100 %**
Company size (CS)						
Number of Employees	***Frequency***	***Per cent***	***Frequency***	***Per cent***	***Frequency***	***Per cent***
Less than 100 people	**7**	**14.3 %**	**34**	**41 %**	**41**	**31.1 %**
100-250 people	**14**	**28.6 %**	**18**	**21.7 %**	**32**	**24.2 %**
250-500 people	**10**	**20.4 %**	**10**	**12 0%**	**20**	**15.2 %**
500-1000 people	**3**	**6.1 %**	**10**	**12 0%**	**13**	**9.8 %**
1000 people or more	**15**	**30.6 %**	**11**	**13.3 %**	**26**	**19.7 %**
Annual revenue/sales - *LD**	***Frequency***	***Per cent***	***Frequency***	***Per cent***	***Frequency***	***Per cent***
Less than 1 million	**8**	**16.3 %**	**31**	**37.3 %**	**39**	**29.5 %**
1 m-5 m	**17**	**34.7 %**	**28**	**33.7 %**	**45**	**34.1 %**
5 m-10 m	**5**	**10.2 %**	**12**	**14.6 %**	**17**	**12.9 %**
10 m-15 m	**3**	**6.1 %**	**4**	**4.8 %**	**7**	**5.3 %**
15 million or more	**16**	**32.7 %**	**8**	**9.6 %**	**24**	**18.2 %**
Type of ownership	***Frequency***	***Per cent***	***Frequency***	***Per cent***	***Frequency***	***Per cent***
State-owned company	**21**	**42.9 %**	**27**	**32.5 %**	**48**	**36.4%**
Private company	**14**	**28.6 %**	**41**	**49.4%**	**55**	**41.7 %**
Joint-venture (State & foreign)	**3**	**6.1 %**	**5**	**6.0 %**	**8**	**6.0 %**
Joint-venture (State & private)	**6**	**12.2 %**	**4**	**4.8 %**	**10**	**7.6 %**
Joint-venture (private & foreign)	**5**	**10.2 %**	**6**	**7.3%**	**11**	**8.3 %**

** LD: Libyan Dinar. 2.11 LD equals 1 UK pound (Aug. 2012)*

Most companies were state owned and had been established for 20 or more years. More than 60 per cent were small or medium sized. This relationship between size and ownership is different from that which has been typically found in earlier studies which, as was noted earlier, have been conducted predominately in developed, and Western, countries.

3.3 Measurement of Variables

During the preparation of measures and constructs for the research variables, any terms or measures, which were specific to a particular sector were excluded in order to make the questionnaire applicable to all sectors (manufacturing and non-manufacturing). The conceptual definitions of these variables are provided in the next sub-sections.

The use of multiple performance measures (MPMs) refers to the extent to which managers utilise a broad scope of information, derived from financial and non-financial measures, for assessing performance. This approach was spilt into five major categories which are commonly used by both manufacturing and service organisations. The first four categories were adapted from the studies of Jusoh (2010); Bento and White (2010); Salleh *et al.,* (2010); Ismail (2007); Van der Stede *et al.,* (2006); Henri (2006); Hoque (2004, 2005); Bryant et al., (2004); Ittner *et al.,* (2003); Hoque and James (2000) and Scott and Tiessen (1999), which are based on the work of Kaplan and Norton (1992). The fifth category (community/environment perspective) was modified from the work of Fakhri (2010); Youssef (2007); Yaghi (2007) and Zuriekat (2005). The instrument includes 41 different measures[1]. The respondents were requested to indicate on a five-point Likert-type scale ranging from 1 (not used at all) to 5 (used considerably), the extent of their organisation's use of the identified performance measures over the previous three years. The responses to a scale ranging from "not used at all" to "used considerably" with a neutral response of "used moderately" in the middle, may be considered to be equivalent to providing a 'yes' or 'no' and a confident response (the strength or confidence of measurement in this scale is assessed as the distance away from the neutral response) (Horenbeek and Pintelon, 2014; Youssef, 2007; Fakhri, 2010).

Organisational performance (OP) refers to the extent to which the organisation is successful in achieving its planned targets or stated aims (Pinhoet *al.,* 2014; Mia and Clarke, 1999). It is described as the ultimate outcome variable (dependent variable) in the contingency literature because it explains the implications of a fit between control systems design and other organisational characteristics of a company. It was assessed by a self-rating multiple instrument. The scale included 13 items developed originally by Govindarajan (1984) and used subsequently in several studies (Van der Stede *et al.,* 2006; Hoque 2004, 2005 and Chong and Chong, 1997). Respondents were required to rate each of the 13 dimensions on a five-point Likert-type scale, ranging from 1 (poor) to 5 (outstanding), to assess their organisation's

[1] Firstly, the extent of FPMs usage is the overall mean of responses for the first 11 measures. Secondly, the other 30 measures were selected to measure NFPMs' usage. Thirdly, the extent of MPMs usage is the overall mean of responses to all 41 measures.

performance compared to that of their main competitors over the previous three years. The organisational performance score for each organisation was calculated by taking the mean for all items (Dusterhoff *et al.*, 2014; Hoque, 2005) and it is shown in Table 3.

Table 3: Descriptive Analysis of Organisational Performance

Items	*% (N = 132)*					*Mean*	*S.D*
	1	*2*	*3*	*4*	*5*		
Net income	8.3	15.9	25.0	37.1	13.6	3.318	1.148
ROI	9.1	13.6	28.0	40.2	9.1	3.265	1.097
Revenue/sales growth	1.5	21.2	22.0	44.7	10.6	3.417	.9888
Cost reduction	2.3	26.5	23.5	36.4	11.4	3..280	1.051
Product/service quality	1.5	22.7	16.7	41.7	17.4	3.508	1.074
Productivity	2.3	18.9	27.3	38.6	12.9	3.409	1.011
Customer satisfaction	2.3	16.7	24.2	45.5	11.4	3.470	.9764
Market share	3.0	28.8	26.5	29.5	12.1	3.189	1.078
Employee satisfaction	6.1	16.7	33.3	35.6	8.3	3.235	1.025
Research and personnel development	3.8	17.4	34.1	33.3	11.4	3.311	1.012
New product/service innovation	5.3	21.2	33.3	28.8	11.4	3.197	1.066
Competitive position	5.3	10.6	29.5	42.4	12.1	3.455	1.014
Achieving company’s strategic aims	0.0	13.6	31.8	50.0	4.5	3.455	.7850

Dependent Variable (overall)					
	N	Min	Max	Mean	S.D
Organisational performance (OP)	132	1.62	5.00	3.347	0.5580

1= Poor, 2 = Less than average, 3 = Average, 4 = Good, 5 = Outstanding

3.4. Analytical procedures

The instrument was assessed by a pilot study and a reliability test. Specifically, the results indicate (Table 4) that the Cronbach’s alpha coefficients of all the variables were above the minimum acceptable level of 0.60: multiple performance measures usage (0.919); financial performance measures usage (0.767); non-financial performance measures usage (0.939); and organisational performance (0.800). An assessment of normality was performed for the dependent variable only (Bakker *et al.*, 2014; Field, 2005). The Kolmogorov-Smirnov test was used to evaluate the normality of the dependent variable (organisational performance). The findings confirm that the dependent variable follows a normal distribution[2]. The relationship between the use of MPMs and organisational performance was identified by simple regression analysis.

Table 4: Reliability Coefficients (Cronbach's Alpha) for Research Variables

No	Research variables	Number of items	Cronbach's alpha
1	Financial performance measures	11	0.767
2	Overall non-financial performance measures	30	0.939
3	Multiple performance measures' usage	41	0.919
4	Business strategy	7	0.877
5	Environmental uncertainty	7	0.654
6	Market competition	6	0.785
7	Decentralisation	7	0.906
8	Formalisation	5	0.728
9	Information technology	10	0.862
10	Company size (NOE)	1	N/A*
11	Company size (AR)	1	N/A*
12	Organisational performance	13	0.800
** Not available due to the nature of these variables*			

4. Results and Discussion

This section, initially, deals with the testing of the three hypotheses of the first research objective (H1-H2-H3) and assesses the nature and type of direct relationships between the use of financial performance measures, non-financial performance measures, multiple performance measures, and organisational performance. The statistical technique employed for testing these hypotheses was simple regression analysis. Subsequently, this section presents and discusses the descriptive statistics relating to the second research objective, which is the status and extent of the use of MPMs among Libyan companies.

4.1 Testing the relationship between the use of MPMs and organisational performance

Traditional (financial) performance measures (FPMs), non-financial performance measures (NFPMs) and multiple performance measures (MPMs) were employed as independent

[2] The Kolmogorov-Smirnov test reports the following results: Statistic (.078), df (.132) and Sig. (.059).

variables (predictors), with organisational performance (OP) as a dependent variable in all three models respectively. Table 5 presents the findings of the regression analysis concerning these hypotheses (H1-H2-H3).

Table 5: Relationship between the use of MPMs and Organisational Performance

Variable (Predictors)	***Dependent variable (Organisational performance)***				
	Unstand. coefficient		***Stand. coefficient***	***t-value***	***Sig.***
	B	***Std. Error***	***Beta***		
FPMs' usage	**.110**	**.090**	**.107**	**1.223**	**.223**
R = .107, R^2 = .011, Adjusted R^2 = .004 , F-value = 1.496, Sig. = .223					
NFPMs' usage	**.365**	**.061**	**.467**	**6.022**	**.000**
R = .467, R^2 = .218, Adjusted R^2 = .212 , F-value = 36.26, Sig. = 000					
MPMs' usage (overall)	**.477**	**.078**	**.471**	**6.083**	**.000**
R = .471, R^2 = .222, Adjusted R^2 = .216 , F-value = 37.000, Sig. = 000					

The effect of FPMs on organisational performance was positive; however, it is not statistically significant ($R^2 = .011$, $\beta = .107$, $p > .05$). Hypothesis H1 was not supported at the .05 significance level; therefore, it is rejected. It can be concluded that the use of FPMs has no significant impact on the performance of Libyan organisations (H1). This result is in line with that of most previous research (e.g., Gharbal *et al.*, 2014; Van der Stede *et al.,* 2006 and Ittner *et al.,* 2003). Although we hypothesised that using FPMs alone in the Libyan business environment would influence negatively organisational performance, this does not mean that FPMs are not important. Most authors contend that FPMs are still crucial in assessing performance in any organisation, as they are necessary in order to track revenue, profit and costs (Kim and Pennington-Gray, 2017; Agyei-Mensah, 2017; Kang and Montoya, 2014; Kaplan and Norton, 1992). Micheli and Mura (2017) and Singh *et al.,* (2016) explained that organisations adopt different strategic approaches that require the use of diverse types of performance indicators. Indeed, Henri (2004) argued that NFPMs do not have to replace FPMs. Rather it is better to supplement FPMs with a diverse set of NFPMs that are believed to provide better information and contribute to improving organisational performance. Scarpin and Brito (2018) considered quality as a foundation capability that assists organisations to achieve improved performance; however, they suggested that measuring financial performance is still important as quality does not always lead to a reduction in cost. Agyei-Mensah (2017) and Lingle and Schiemann (1996) argued that leading organisations utilise both FPMs and NFPMs to enhance their performance and develop their strategies. Franco-Santos, Lucianetti and Bourne (2012) highlighted the importance of NFPMs, along with core FPMs, and their positive impact on organisational performance. There is widespread recognition that the development of a differentiation strategy that considers both financial and non-financial indicators have a positive impact upon operational performance, thereby providing a competitive advantage (Yuliansyah *et al.,* 2017; Nawaz and Haniffa, 2017).

The impacts of both NFPMs and MPMs on organisational performance are positive and statistically highly significant (R^2 = .218, β = .467, p < .05; R^2 = .222, β = .471, p < .05 respectively). Hypothesis H2 was supported at the .05 significance level; therefore, it is accepted. One explanation for the positive results regarding the NFPMs-OP relationship (H2) is that the NFPMs are future-oriented measures. This is also supported by the research conducted by Spencer *et al.* (2009). Hence, top management tries to rely heavily on these measures in making decisions that will be useful to their organisations in the long run (Yuliansyah *et al.,* 2017; Pollanen *et al.,* 2017; Saunila *et al.,* 2017; O'Connell and O'Sullivan, 2014; Chenhall and Langfield-Smith, 2007). Upadhaya *et al.,* (2014) and Hoque (2004) concluded that the use of non-financial indicators, including leadership, organisational culture, employee performance, customer satisfaction and process management, is tightly intertwined with organisational effectiveness.

It is clear from the results above that MPMs introduce valuable diverse information, which contributes to improving business performance (Andrews and van de Walle, 2013; Elbanna *et al.,* 2015). This suggests that the more extensively MPMs are used, the better the organisational performance. Hypothesis H3 was supported at the .05 significance level; therefore, it is accepted. This indicates that relying solely on FPMs is not sufficient to enhance company performance. The significant and positive findings in relation to H3 are consistent with most previous research, which finds that the use of the combination of FPMs and NFPMs is positively associated with organisational performance (Androwis *et al.,* 2018; Ho *et al.,* 2014; Al-Sawalqa, 2011; Jusoh, 2010; Yongvanich and Guthrie, 2009; Fleming *et al.,* 2009; Govindarajan and Gupta, 1985; Hoque and James, 2000; Zuriekat, 2005; Van der Stede *et al.,* 2006; Bryant *et al.,* 2004). Vallurupalli and Bose (2018) and Micheli and Mura (2017) found that the use of different types of performance indicators positively impact upon innovative performance. Eklof et al. (2017) stated that measuring customer satisfaction, which is a NFPM, enhances organisations' financial performance.

On the other hand, the results in relation to H3 contrast with others, which have found no evidence for the proposition that measurement diversity is positively associated with organisational performance (Ittner and Larcker, 1998; Ittner *et al.*, 2003; Braam and Nijssen, 2004; Hoque, 2005; Franco-Santos, 2007; Neely, 2008).

4.2 The Extent of the Use of MPM~~s~~

Table 6 summarises the responses relating to the extent to which the 41 performance measures are used within Libyan companies across different industries. The results show that MPMs have widespread use; however, a comparison of the mean scores among performance measures indicates, as expected, that the extent of the use of FPMs is greater (mean = 3.88) than for NFPMs and MPMs, which have mean values of 3.52 and 3.62 respectively. Most prior studies conducted in emerging market contexts have found that many companies use MPMs (financial and non-financial) but to different extents (Abdelzaher *et al.*, 2017; Upadhaya *et al.*, 2014; Al Sawalqa, 2011; Fakhri, 2010; Ismail, 2007; Youssef, 2007 and Hutaibat, 2005). Fakhri (2010) found that although Libyan banks used FPMs more extensively, they use a variety of NFPMs to ensure the accuracy and validity of their outputs. Elnihewi et al. (2018) also highlighted the importance of using MPMs in the Libyan service industry. Abdelzaher *et al.*, (2017) stated that employee engagement is significantly associated with organisations' survival in Muslim-majority markets.

Table 6: Descriptive Analysis of the Use of MPMs in Libyan Companies

Items	*% (N = 132)*					*Mean*	*S.D*
	1	*2*	*3*	*4*	*5*		
Net income	**0.0**	**3.0**	**7.6**	**32.6**	**56.8**	**4.43**	**0.764**
Revenue/sales growth	**1.5**	**0.8**	**13.6**	**41.7**	**42.4**	**4.23**	**0.825**
ROI (Return on investment)	**1.5**	**3.0**	**15.9**	**34.1**	**45.5**	**4.19**	**0.917**
ROA (Return on asset)	**0.8**	**6.8**	**16.7**	**37.1**	**38.6**	**4.06**	**0.947**
ROE (Return on equity)	**0.8**	**5.3**	**11.4**	**40.9**	**41.7**	**4.17**	**0.887**
ROS (Return on sales)	**1.5**	**1.5**	**17.4**	**33.3**	**46.2**	**4.21**	**0.891**
Budgets	**0.0**	**4.5**	**18.2**	**29.5**	**47.7**	**4.20**	**0.897**
Cash flows	**1.5**	**6.1**	**17.4**	**31.1**	**43.9**	**4.10**	**0.995**
Earnings per share (EPS)	**0.8**	**7.6**	**19.7**	**26.5**	**45.5**	**4.08**	**01.01**
EVA (Economic value added)	**25.0**	**27.3**	**23.5**	**12.9**	**11.4**	**2.42**	**01.30**
Market value added (MVA)	**34.1**	**23.5**	**19.7**	**14.4**	**8.3**	**2.39**	**01.31**
Overall financial perspective-based performance measures						**3.88**	**0.543**
Non-financial performance measures							
Safety	**16.7**	**5.3**	**22.7**	**30.3**	**25.0**	**3.42**	**01.37**
Cycle time/lead times (product/service)	**16.7**	**6.1**	**21.2**	**34.1**	**22.0**	**3.39**	**01.35**
Product/service development	**7.6**	**12.9**	**22.0**	**26.5**	**31.1**	**3.61**	**01.26**
Defects rate (product/service)	**12.1**	**8.3**	**17.4**	**29.5**	**32.6**	**3.62**	**01.34**
Product/service quality	**8.3**	**9.1**	**22.0**	**33.3**	**27.3**	**3.62**	**01.21**
Cost savings	**10.6**	**12.9**	**14.4**	**32.6**	**29.5**	**3.58**	**01.32**
Productivity	**8.3**	**8.3**	**15.9**	**41.7**	**25.8**	**3.68**	**01.19**
Overall internal operations perspective-based performance measures						**3.56**	**1.10**
Market share	**3.0**	**5.3**	**21.9**	**34.8**	**35.6**	**3.95**	**1.03**
Customer satisfaction	**2.3**	**3.8**	**12.9**	**48.5**	**32.6**	**4.05**	**0.902**

Customer service	**12.1**	**3.0**	**18.9**	**40.9**	**25.0**	**3.64**	**1.24**
Number of customer compliances	**5.3**	**11.4**	**17.4**	**37.9**	**28.0**	**3.72**	**1.15**
Customer retention	**3.8**	**5.3**	**23.5**	**34.1**	**33.3**	**3.88**	**1.06**
Customer loyalty	**14.4**	**8.3**	**20.5**	**30.3**	**26.5**	**3.46**	**1.35**
Customer response time	**9.8**	**6.8**	**20.5**	**43.9**	**18.9**	**3.55**	**1.17**
On-time delivery (product/service)	**6.1**	**4.5**	**22**	**38.6**	**28.8**	**3.80**	**1.10**
Overall customer perspective-based performance measures						**3.76**	**.819**
Employee satisfaction	**3.8**	**6.8**	**34.1**	**46.2**	**9.1**	**3.50**	**0.895**
Employee loyalty	**3.0**	**8.3**	**31.8**	**41.7**	**15.2**	**3.58**	**0.950**
Skills development	**4.5**	**7.6**	**32.6**	**37.1**	**18.2**	**3.57**	**1.02**
Competitive position	**5.3**	**7.6**	**31.1**	**41.7**	**14.4**	**3.52**	**1.01**
Research and development activities	**3.8**	**14.4**	**28.8**	**35.6**	**17.4**	**3.48**	**1.06**
Employee training	**6.1**	**10.6**	**25.8**	**35.6**	**22.0**	**3.57**	**1.13**
Adapting to changes	**6.1**	**8.3**	**33.3**	**36.4**	**15.9**	**3.48**	**1.05**
New products/service innovation	**6.8**	**9.8**	**26.5**	**33.3**	**23.5**	**3.57**	**1.15**
Overall innovation and learning perspective-based performance measures						**3.53**	**.866**
Meeting environmental commitments *(environmentally friendly)*	**13.6**	**12.1**	**18.9**	**34.1**	**21.2**	**3.37**	**1.32**
Support of charity projects	**16.7**	**19.7**	**28.8**	**15.9**	**18.9**	**3.01**	**1.34**
Support of social activities	**13.6**	**25.0**	**25.0**	**20.5**	**15.9**	**3.00**	**1.28**
Community regulations	**13.6**	**22.7**	**28.8**	**22.7**	**12.1**	**2.43**	**1.22**
Government citations/certification	**11.4**	**20.5**	**28.8**	**26.5**	**12.9**	**3.09**	**1.20**
Participation in training and education *(Community involvement)*	**13.6**	**15.2**	**18.9**	**29.5**	**22.7**	**3.33**	**1.35**
Public image	**8.3**	**14.4**	**12.1**	**27.3**	**37.9**	**3.72**	**1.33**
Overall environmental and community perspective-based performance measures						**3.21**	**1.01**

Overall

	Variables	**N**	**Min**	**Max**	**Mean**	**S.D**
1	**Financial performance measures (FPMs)**	**132**	**2.00**	**4.91**	**3.88**	**0.543**
2	**Non-financial performance measures (NFPMs)**	**132**	**1.13**	**4.90**	**3.52**	**0.713**
3	**Multiple performance measures (overall 1 and 2)**	**132**	**1.83**	**4.68**	**3.62**	**0.551**

1= Not used at all, 2 = Slightly used, 3 = Moderately used, 4 = Significantly used, 5 = Considerably used

The results of the descriptive statistics for all 11 FPMs show that except for the last two financial measures (EVA and MVA), all other financial measures were ranked as *"used significantly"* or *"used considerably"* by more than 70%[3] of the participating companies, with means ranging from 4.06 to 4.43. As can also be seen in this table, EVA and MVA measures were not used frequently - they were the only financial measures to be used less than average (under *"used moderately"*, 3) among Libyan companies as they have mean scores of 2.42 and 2.39 respectively. A possible explanation for this is that, as earlier research has concluded, recently developed accounting measures, such as EVA, have been criticised as being complex, difficult to use and understand, costly and not superior to traditional accounting measures (Chiwamit *et al.,* 2014; Ittner and Larcker, 1998). These limitations may be one of the reasons for the low usage of these measures among Libyan companies. However, the fact that

[3] To describe the levels of significance rates of all performance measurement groups (financial and non-financial), they were counted as the respondents' answers for the equivalent answers of 4 and 5 in their companies.

institutions in emerging markets such as Libya are less developed than in more mature markets is likely to lead to there being less trust in other measures, especially those which rely on non-financial data or on government data. Meier and O'Toole (2013) suggested that the use of NFPMs might lead to inaccurate performance assessment as they tend to overestimate organisational performance. Singh *et al.* (2016) and Elnihewi *et al*. (2018) stated that some organisations, especially in developing countries such as Libya, are not able to collect consistent and reliable non-financial data. The high-power distance associated with Libyan society is more likely to lead to the use of FPMs which require "hard" data.

The descriptive statistics shown in Table 6, concerning non-financial measures, suggest that respondents ascribed the highest score to the usage of customer perspective-based PMs, followed by internal operations-based PMs and innovation and learning - based PMs, while environmental and community-based PMs were the least used by Libyan companies. Customer satisfaction was the most used non-financial measure of performance evaluation. By contrast, the results indicate that the community regulations-based measure was not a popularly used non-financial measure of performance evaluation; it was used by only 34.8% of the respondent companies with a mean of 2.43. This result was like that of Ismail (2007) who found evidence that customer satisfaction was the most used non-financial performance measure in an Egyptian setting. One possible explanation for this is that most decision-makers in the Libyan companies studied might be unaware of the potential importance of environmental and community-based measures in improving the performance of their companies (Ahmad and Mousa, 2010).

The findings shown in Table 6 indicate that the use of customer-based PMs is quite common among Libyan companies (mean = 3.76). Market share (3.95) and customer satisfaction (4.05) are measures commonly used by Libyan companies. Both customer retention measures and on-time delivery (product/service) measures were ranked as *"used significantly"* or *"used considerably"* by 67.4% of companies. Furthermore, several customer compliances and customer service levels[4] were ranked by 65.9% of the participating companies, while customer loyalty and customer response time seem to be used to a moderate extent as they were ranked as *"used significantly"* or *"used considerably"* by 62.8% and 56.8% of the respondent companies. These results are in line with Jusoh and Parnell (2008) who found that the use of customer measures such as on-time delivery, survey of customer satisfaction and number of

[4] To describe the levels of significance rates of all performance measurement groups (financial and non-financial), they were counted by the respondents' answers for the equivalent answers of 4 and 5 in their companies.

customer complaints was high among Malaysian manufacturing companies. Similar results were found by Gosselin (2005).

It can be seen from Table 6 that Libyan companies place a similar emphasis on the use of both internal business process-based PMs (mean = 3.56) and innovation and learning-based PMs (mean = 3.53). For the first category, productivity was at the top of the list because it was ranked as "*used significantly"* or *"used considerably"* by 67.5% of respondents. There were two other measures - cost savings and defects rate of product/service - which were ranked by a similar percentage (62.1%) of the participating companies. Product/service quality, product/service development, safety, cycle time/lead times (product/service) were ranked as *"used significantly"* or *"used considerably"* by 60.6%, 57.6%, 55.3% and 56.1% respectively. Innovation and learning-based PMs appear to be used to a moderate extent as they all were ranked as *"used significantly"* or *"used considerably"* by between 57.6% and 52.3% of the respondent companies.

Finally, the results indicate that environment and community-based PMs are the least used measures among Libyan companies compared to the other four types of PM. Public image was ranked first among these measures - being reported by 65.2% of respondents as *"used significantly"* or *"used considerably"*. The findings indicate that 52.2% of the respondent companies use environmental commitment-based PMs and 55.3% of them use community involvement-based PMs, whereas measures based on support of charity projects, support of social activities and government citations perspectives were at the bottom of this list as they were ranked as *"used significantly"* or *"used considerably"* by 34.8%, 36.4% and 39.4% respectively. By contrast, community regulations-based PMs were not commonly used by Libyan companies since they have a usage rate of only 34.8%.

To sum up, MPMs are commonly used by Libyan companies. However, they tend to place a greater emphasis on traditional (financial) measures (mean = 3.88) than on multiple measures (3.62), in evaluating their performance, although organisations are aware of the benefits and importance of measurement diversity in serving their needs and purposes. A possible explanation for the above result is that the implementation of innovative information systems and techniques (ABC, BSC, etc.) is difficult in emerging markets due to the lack of appropriate infrastructure (Peasnell, 1993). There are also institutional barriers to their adoption since, as was noted earlier, the idiosyncratic nature of the Gadaffi regime and its isolation from the world generates difficulties in adopting best management practices (Pargeter, 2012). All of these features may lead to a preference for the use of so called, hard data and the financial performance measures which make use of them. In fact, it is perhaps surprising that the preference for FPMs is not greater.

5. Conclusions

This study has examined the relationship between the use of MPMs and organisational performance and evaluated the use of MPMs and their impact on the Libyan emerging market setting. It is found that NFPMs are used to a significant extent by Libyan companies across different industries; however, FPMs are used more widely than NFPMs and MPMs. In other words, Libyan companies tend to rely on traditional (financial) measures much more than multiple measures for evaluating their performance, although respondents were aware of the potential benefits of measurement diversity. The preference for FPMs in Libyan companies can be explained by the high-power distance in Libya's conservative society which leads to a preference for performance measures which are underpinned by what are perceived to be hard data. Due to the fact that formal institutions in Libya, and in many other emerging markets, are relatively underdeveloped, there is likely to be less trust in non – financial data, especially that emanating from government, than in traditional, and self-generated, accounting measures.

It is also found that the use of NFPMs and MPMs has a significant positive effect on the performance of Libyan companies, but no significant effect was found in the case of FPMs. Measurement diversity is found to have a positive effect on organisational performance; thereby contradicting the findings of several earlier studies. Therefore, although there is a preference for FPMs in Libyan organisations, there is a significant pay off arising from the use of NFPMs and MPMs for those organisations which are prepared to use them. Measurement diversity results in a positive effect on organisational performance.

This study adds to the body of literature which looks at the adoption and deployment of MPMs by investigating the extent to which financial and non-financial measures are used in Libyan companies. The research can therefore be used as a reference point for future work in emerging market contexts. Libya is an under-studied country and one which lacks oft-reported empirical and sample-based evidence. The collection of data from non-manufacturing sectors is a further element of novelty associated with the study since most previous studies, in both developed and emerging market contexts, have focused on manufacturing companies. The study assists researchers to investigate the use of FPMs, NFPMs and MPMs in other emerging market contexts

This research has limitations that could be addressed in future studies. In particular, the study did not investigate the impact of each category of the measurement diversity approach (e.g., customer measures, innovation measures, etc.) on organisational performance; in turn, it also did not consider the impact of the identified contingencies on each category of measurement diversity approach. Rather, it focused on the three main categories of the measurement diversity approach: namely, FPMs, NFPMs and MPMs. Therefore, future research could evaluate these individual relationships to gain a deeper understanding and provide explanations for these issues.

The evaluation of organisational performance by a self-rating scale is subject to criticism in terms of validity or reliability (Abernethy and Guthrie, 1994), but most relevant literature uses this approach (e.g., Chong and Chong, 1997; Hoque, 2004, 2005; Jusoh and Parnell, 2008). Thus, the search for adequate methods and manners (e.g., archival data, records) of tackling such issues could be an interesting avenue for further research. In addition, the current study adopted a cross-sectional design (i.e., it was conducted at one point in time and did not show the use of performance measures over time) to investigate the cause-and-effect relationships between identified research variables via regression analyses. Future research should evaluate these causal relationships through longitudinal field research methods, to find out whether the interactions among the contingencies, MPMs and performance are consistent over time.

This study was carried out across different industries in Libya (manufacturing and non-manufacturing). Although the data that was analysed by sector (ie manufacturing versus non-manufacturing), the assessment of research hypotheses was based on the results for the whole sample (different industries). This means that in the final sample some industries might be more represented than others. For example, there were a greater proportion of companies operating in a non-manufacturing sector compared to those operating in manufacturing. Therefore, caution is required in generalising the results of this research. Thus, the search for an approach to address such problems could be an interesting avenue for further research.

The study has managerial implications in that it identifies the measures which might assist Libyan companies to develop and improve suitable performance measurement systems to reach their strategic goals. It also enables practitioners to develop performance measurement systems which are conducive to the achievement of the strategic objectives of Libyan firms.

In particular, the findings indicate that Libyan companies should be encouraged to use a diversity of performance measures, particularly non-financial measures which focus on customers, employees, innovation, and the environment, to enhance the loyalty of customers and attract new ones as well as to serve the other needs of their stakeholders. These implications may also be applicable in other emerging market contexts. However, the results of future research may inform this possibility.

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