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Super-Items Created by Mere Presence of Visual Material on Retail Displays

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Abstract

This study focuses on the perception of numerosity of item sets placed in retail displays. Previous studies have demonstrated that the item sets' perceived numerosity decreases as the number of polygonal shapes placed in a panel behind a display increases. Such a result was explained by a non-spatial clustering phenomenon exerted by the shapes. Our research reveals the perceptual mechanisms underlying the described effect. Using an eye-tracking procedure, we highlight that upon augmenting the number of polygonal shapes in the decision-making context: (a) there is a significant decrease in the number of total fixations per display; (b) there is an underestimation of the perceived numerosity of item sets involved. The findings suggest that the mere presence of visual shapes can alter perception generating complex objects or "super-items", which tend to perceptually replace entire item sets. We also propose managerial implications in terms of category management and merchandising.

Keywords: category management, merchandising, eye-tracking technology, retailing, shelf-based scarcity.

1. Introduction

The present study aims at analyzing the numerosity perception of item sets placed in retail displays. Previous research showed that the relative numerosity perception of item sets on a display decreases by increasing the number of polygonal shapes placed on a panel behind the same display (see Porcheddu and Pinna, 2015). This underestimation effect has been hypothesized as the creation of perceptual super-items that "replaces" the item sets involved, however, we do not know what are the perceptual mechanisms underlying such an effect. Based on a lab experiment on eye-tracking, this research aims at empirically finding the existence of super-items, shedding light on the details of the perceptual process involved. In fact, although eye tracking procedures still represent a niche in consumer behavior studies, previous research has shown that eye tracking data provides reliable measures of attention to stimuli in complex scenes such as retail displays (Chandon et al., 2009).

2. Literature Review

Koesling and colleagues (2004) highlighted a phenomenon of numerosity underestimation concerning dot-like item sets provided with "additional information" in terms of randomly arranged polygonal shapes. They explained their findings in terms of a "masking effect": each polygon inserted into the decisional context perceptually "replaced" the items located inside it, as if it was perceptually "hiding" them. Consequently, the evaluation of the numerosity of the examined set with the polygons resulted inferior respect to the set without additional information. An extension of Koesling et al.'s analysis (2004; 1998) on the comparison of realistic sets of products on simulated retail displays has been recently proposed by Porcheddu and Pinna (2015). Per them, the placement of polygonal shapes inside the decisional field leads to the emergence of perceptual super-items that significantly influence the perception of numerosity. Using as a reference the experiments of Ponzo (1928), Porcheddu e Pinna (2015, p.373) extended their applicability to non-spatial clustering introducing the notion of "super-item" or "higher level item". Ponzo had hypothesized a spatial clustering effect and the existence of a superior level group unit in which each single item "loses" part of its individuality and independence to "congregate" into a (superior) collective entity (see Ponzo, 1928, pp.16-17). To illustrate the depressive effect, in

Figure 1 we show, by way of illustration, a hypothetical comparison between two sets of wine bottles. In the upper part of the Figure 1 there is a set of wine bottles arranged to form groups, while, at the bottom, bottles are arranged homogeneously along an imaginary line. Wine bottles arranged in clusters tend to appear less numerous than homogeneously distributed, even if this is not objectively true (in fact, the number of bottles is identical, as is the length of the segment on which they are arranged) (see. Saiu, 2017; Porcheddu and Massara, 2015).



Figure 1. The spatial clustering effect (Adaptated from Saiu, 2017)

Porcheddu and Pinna (2015), using some of the experiments suggested by Koesling et al. (2004; 1998), observe that the agglomeration of items occurs because the items belong to (or are contained into) the same “additional” structure (in this specific case a polygonal structure). Figure 2 shows how polygons can form a non-spatial agglomeration (i.e., not based on objective spatial distance) with respect to circumscribed dots. To exemplify, while the dots A and B are visually part of the same cluster, this does not happen for the dot C, although it is closer to B than A)¹.

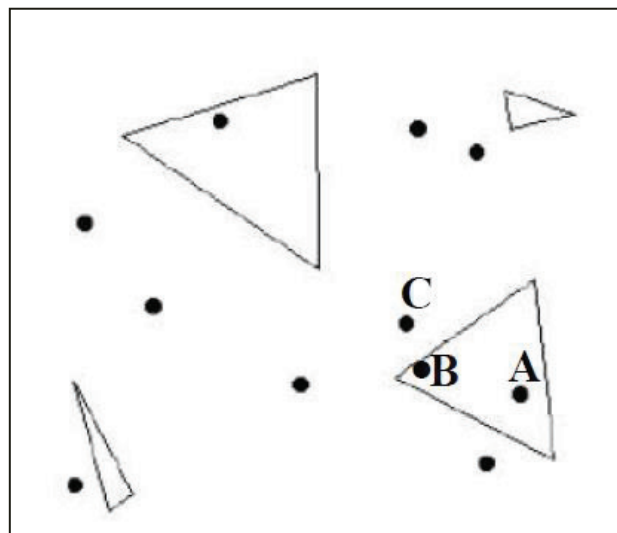


Figure 2. An example of non-spatial clustering (Adaptated from Koesling et al., 1998)

¹ We can mention further non-spatial clustering mechanisms such as that based on the different color of the items (Redden and Hoch, 2009; Frith and Frith, 1972; Porcheddu and Pinna, 2015).

Although the above mentioned studies refer to a “higher level unit” (Ponzo, 1928) and “super-item” (Porcheddu and Pinna, 2015), respectively, the cited authors limited their studies to the perceptual “conditioning” effects on the evaluation of relative numerosity presumably exerted by these entities, without producing any additional evidence. According to Goldberg and Kotval (1999), the number of fixations is positively correlated to the number of components/items processed by the observer. The potential reduction in fixation points, which may occur with the insertion of polygonal shapes, would suggest a simplification of the overall perception process and of the resulting enumeration task. Basically, it is as if visual perception would become more efficient or simplified thanks to the mere presence of visual material whose informativity is implicitly induced by the observer. On the other hand, when no simplifiers are introduced there should be a high number of visual fixations, implying that the decision maker should “sample” from the visual display a high number of items to fulfil the assigned task (as if he/she was “distracted” or “limited” while carrying out his/her task, see Goldberg and Kotval, 1999). Basically, a lower number of fixations in a setting with polygonal shapes shows that the selective attention is at work synthesizing information. Due to this fact, the perception process becomes more efficient reducing the need for cognitive resources. The opposite, on the other hand, seems to occur in the case of patterns free from additional information. Thus, the mere presence of polygonal shapes seems to improve visual search efficiency (see Goldberg and Kotval, 1999; 1998; also Kotval and Goldberg, 1998), while the contrary happens in displays free from polygonal shapes.

Based on the cited literature, the following hypothesis is formulated:

Hp.1: given an approximate enumeration task of a comparative type set up for item sets having identical numerosity, the number of fixations involving each display tends to decrease with the increase of the number of polygonal shapes introduced in the visual context.

Moreover, we expect results consistent with this empirical hypothesis:

Hp.2: results expected in Hp1 are independent by the polygonal shape adopted.

3. Materials and Methods

One hundred and sixty university students were enrolled in the present study as volunteers². Based on anamnesis, inclusion criteria were: 1) normal visual acuity (natural or o corrected by using corneal lenses); 2) no history of ophthalmological or neurological disorders. Once carried out the postural protocol and after having completed the procedure to set-up an eye-tracking device (Gazepoint® GP3)³, each subject was exposed to visual stimulation according to a free-viewing approach (Nicholls et al., 1999)⁴. Specifically, a 17.3" HD+ antireflect 1920x1080 pixels at 48 Hz portable monitor was placed on the desk, 100 cm away from the subjects. Each participant, from a sitting position, was asked to observe an image on the screen. Images were casually extracted from a database and showed a set of three retail displays placed side-by-side, partially completed, frontally seen and characterized by 5 shelves, where up to 200 items could be placed in total (see Figure 3)⁵.



Figure 3. Example of the stimuli used during the experiment.

² Considering the statistical test we run in our study, the necessary sample size to detect a medium effect size (at power=0.80 for $\alpha=0.05$) is between 120 and 140 (see Clark-Carter, 2004, p. 603).

³ Once the subject was seated in front of the monitor, as per best practice, we have begun the eye tracker's calibration procedure. For each subject, the calibration session is different; the device adapts to the participant's face morphological features and peripheral organs of sight.

⁴ According to this approach, the same stimulus jointly involves both participant's visual hemifields and therefore affects both his/her cerebral hemispheres (Porcheddu et al., 2011).

⁵ We created a set of 160 high resolution coloured images, with size 1920x1080 pixels, 2540 dpi resolution, through the support of the graphic design software (3-D Google Sketchup Pro, version 8.0). All the images were subsequently rendered.

In Figure 3, the number of polygons placed on the back panel increases from left to right.

In order to ensure that displays had an elevated similarity to real life, we showed images of UHT milk cartons with the packaging of five brands really existing on the market, placed on the shelves according a horizontal “brand blocking” logic (Young, 2005). Figure 4 shows in detail one of the images used during our study. An elevated degree of similarity to real products can be noticed.



Figure 4. A close-up view of one of the images used during the experiment

The three displays were characterized by the same degree of “incompleteness” (equal to the 20% of the total products that potentially could be stocked) and by a randomized distribution of items on the shelves. Visual stimuli resulted from the a computer application based on Java. We first generated 10 casual vectors consisting of 160 numbers each; in fact, the number of products placed on each display had to be equal to 160, having selected an incompleteness degree of 20% on a total of 200 products that could potentially fill up the shelves. The use of random vectors and, therefore, of random empty shelf positions on the displays, was functional to randomly distribute possible effects deriving from the qualitative characteristics of the distribution of the missing items (Akin e Chase, 1977). Going into more detail, the casual vectors had the following characteristics: 1) numbers inside the series were positive integers different between each other; 2) their value was included between 1 and 200 and univocally expressed a specific position – along the vertical/horizontal dimension – inside the display where the item was going to be placed. From each casual vector were obtained: 1) a display without any additional information on the panel behind the shelves; 2) a display with a panel characterized by the placement of two rectangles or two rhombuses; 3) a display with four polygons having total sizes identical to the rectangles/rhombuses of the previous configuration. Based on this system, 30 different displays were created, grouped in 3 different families: 10 displays without polygonal shapes; 10 displays with two shapes (i.e. displays showing two rectangles/rhombuses); 10 displays with four shapes (i.e. displays with four rectangles/rhombuses placed on the panel at the back of the display). Starting with these 30 displays, we generated an elevated number of combinations of displays in sets of three. More precisely, one hundred and sixty stimuli were created: a set of 80 images contained additional information in the form of rectangles, the remaining 80 images had rhomboid stimuli. We carefully selected the display from each family, avoiding that two or more displays were derived from the same casual vector. Each group of three displays was formed by displays having the following characteristics: 1) one did not show any additional information; 2) one was characterized by polygonal forms placed on the panel at the back (two rectangles or two rhombuses); and, 3) one display was characterized by four rectangles (or rhombuses). The position of the three displays relative to the observer was also randomized. Each visual stimulus persisted on the screen for 30 seconds and the fixation points pattern was recorded by the eye-tracker (see in Figure 5 the output of one of the individual sessions). Each participant’s task was to rank, without counting the number of items, the three-displays based on the ascending order of items located on shelves, thus starting from the display which was believed to contain the lower number of items.

The order based on relative numerosity was verbally communicated to the supervisor and it was meant to involve all items on each display.

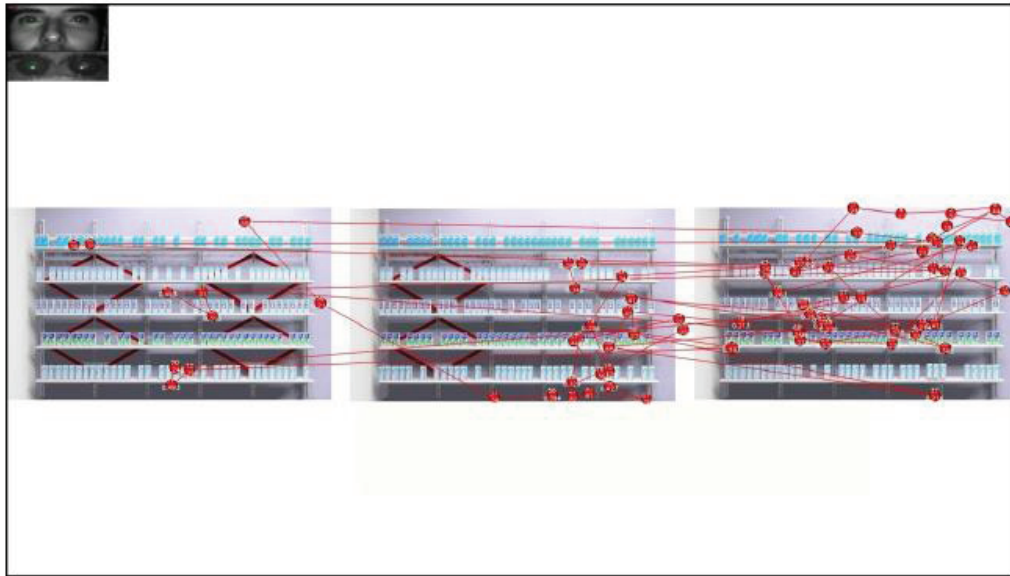


Figure 5. A combined three-display set showing rhombus-shaped additional information and relative fixation map recorded during one of the individual experimental sessions

Statistical analysis was performed through a two-factor mixed factorial ANOVA. The experimental design was: POLYGONS×SHAPE. In detail, POLYGONS (i.e., Polygons Quantity) as within-subjects factor, based on three levels: 1) no polygons; 2) two polygons; 3) four polygons; while, SHAPE (i.e., Type of Polygonal Shape) as between-subjects factor, indicated by the polygonal-shape used. Shape was varied using: 1) rectangular polygons for half of the experimental sample; 2) rhomboidal polygons for the rest of the sample.

4. Results

One hundred and sixty subjects (equally distributed between the genders) (total mean age=24.58 years; SD=5.69) were enrolled into the study.

R1: The inferential analysis on distribution of fixation points on displays, based on a two-factor mixed ANOVA, highlighted that the POLYGONS factor is significant beyond 0.01 [$F(2, 316)=76.896$; $p<0.01$; partial $\eta^2=.327$, i.e. a large effect (see Cohen, 1988)]. Conversely, the SHAPE factor is not significant [$F(1, 158)=0.010$; ns]. Likewise, the POLYGONS×SHAPE interaction was not statistically significant [$F(2, 316)=0.387$; ns]. The post hoc tests on POLYGONS, based on the Bonferroni method, highlighted statistically significant differences in any pairwise comparisons. Specifically, it has been observed: a) a significant reduction of the average number of fixations recorded respect to the four polygons conditions, both respect to two polygons ($p<0.001$) and in the context free of polygonal shapes ($p<0.001$); b) a significant decrease of the average number of fixations recorded in the two polygonal shapes respect to the context free from polygonal shapes ($p<0.001$).

R2: We carried out a non-parametric statistical analysis on the explicit ranking formulated by participants in terms of ascending relative numerosity of items displayed on the compared displays. Specifically, the null hypothesis on equality of mean ranks associated to the three levels of polygonal shapes (4, 2 and 0) has been rejected based on a Page's Ordered Alternative Test (Page, 1963; Sawilowsky and Fahoome, 2005; Gibbons and Chakraborti, 2003). The alternative hypothesis was the descending monotonic tendency of central trends (in this case: the mean ranks) while increasing the amount of polygons placed in the visual display [$L=2058$; $p<0.01$; effect size measure (i.e. standardized L; cf. Peng and Chen, 2015): $L_s=7.71$; 95% CI for Standardized $L=7.71\pm 1.96=(5.75, 9.67)$].

5. Discussion

R1 results are consistent with H1 and H2 formulated in section 3: the number of fixations by observer tends to decrease with the increase in the amount of polygonal shapes placed into the visual context and this result is independent by the type of shape on the display.

The lower number of fixations in contexts characterized by the presence of polygonal shapes supports the idea

that the selective visual attention performs a non-spatial clustering process (as mentioned into section 2 above) creating “super-items”. Due to this fact, visual search seems to be more efficient. The opposite seems to occur in the case of patterns/displays free of polygonal shapes.

The “simplification” that occurs during the visual stimulation tested by the present study empirically demonstrate the existence of super-items, or non-spatial clusters, “enclosed” within the polygonal shapes that we used as additional information in the experimental setting. The results lend support to the reduced perceived numerosity of item sets placed on displays, when the amount of polygonal shapes introduced into the visual setting increases. This result had already been reported in the literature (see Porcheddu and Pinna, 2015) and it is here confirmed by the analysis of “explicit” ranking generated during our experiment (see above R2 results).

6. Managerial Implications

We reckon that the results shown above provide a better understanding of a perceptual phenomenon that has several managerial implications for merchandising and category management.

Our findings highlight that perception of items stocked on supermarket shelves can be “conditioned” through the introduction of polygonal shapes on the display. The mere presence of such shapes generates a grouping illusion of the items enclosed within the boundaries of the shape. We also find that the effect increases with the number of polygons introduced in the display.

It should be noted that, in the retailing field, the polygonal figures such as those used in this study can be classified in the “universe” of POP material (Buttle, 1984).

The polygonal figures could, therefore, be placed in correspondence of a set of items to reduce their perceived numerosity, compared to neighboring item sets, with the likely result to produce a shelf-based scarcity effect promoting their sales. In effect, as it has already been highlighted by the shelf-based scarcity literature, through laboratory and field experiments (see Usai et al., 2018; Hatton-Jones et al., 2017; Robinson et al., 2016; Massara et al., 2014; Porcheddu, 2013; Parker and Lehmann, 2011; van Herpen et al., 2009; Razzouk et al., 2002), there is a link between shelf-based scarcity and consumer preferences. The studies just mentioned have shown that customers tend to choose products characterized by a greater relative shelf-scarcity (i.e. relatively less numerous items). The phenomenon is explained by referring mainly to the so-called Bandwagon Effect Theory (Corneo and Jeanne, 1997), which postulates that, in certain conditions, people purchase products by letting themselves be guided by the other clients’ preferences. These preferences may result from peer observation at the point of purchase (Baxendale et al., 2015) or they can be inferred by the choices of other customers traced on the basis of empty shelf-positions on the displays.

Therefore, retailers could use the polygonal shapes to increase the sales of one subcategory compared to the others, and, within a subcategory, to increase the sales of some brands respect to others. Presumably retailers could use the super-item logic to benefit private labels over national brands.

7. Limitations and Suggestions for Future Research

In this study, we show that perception of numerosity may be altered by mere presence of visual material, providing solid evidence with eye-tracking data that the number of fixations diminishes as the amount of additional visual information – in terms of polygonal shapes – on a display increases. While the finding per se is interesting, it says nothing respect to the effects that it may have on the final choice, therefore whether the mentioned shelf-based scarcity effect may truly occur, is for the moment just a speculation. Additional studies may investigate outcome variables such as choice and satisfaction with choice, which have already been investigated in mere effects literature concerning the perception of grouping and categories (Molginer et al., 2008).

We cannot exclude the possibility that the experimental nature of our research and the lack of representativeness of the sample with respect to the entirety of those who everyday makes use of modern retail outlets, reduce the external validity of the results.

Future research using more representative samples could support the robustness of our results in more realistic laboratory situations, or even in real stores.

8. Ethical Aspects

There was no financial interest whatsoever in any material used or result obtained in this research. We did not appeal the local Bioethics committee since the experiments involved healthy subjects in non-invasive procedures. All participants received detailed information and gave written consent for participation in the experiment in accordance with the declaration of Helsinki (see e.g. World Medical Association, 2015). No compensation was offered to the subjects. From an ethical point of view, we suggest that retailers may explicitly indicate the use of

additional information as in our study (in fact, only a negligible number of participants – overall less than 5% – reported verbally, at the end of the experimental task, the presence of the polygonal figures placed behind the items).

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An Exploratory Study of Middle Manager's Roles in Continuous Improvement

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Abstract

Floyd and Wooldridge have developed a widely used model regarding the middle managers' contribution to strategic change, in which four strategic roles for middle managers are considered: championing, synthesizing, facilitating and implementing. Although there is an extensive body of knowledge about the roles and influence of middle managers in implementing strategy, insight in which roles are activated in continuous improvement (CI) initiatives is underdeveloped and highly dispersed. Therefore, in this study we seek to understand which middle management roles (i.e. championing, synthesizing, facilitating, implementing) contribute to accomplishing CI. To explore which of these roles are activated when middle managers are confronted with a CI initiative, we developed a scenario experiment. Our findings indicate that the implementing and synthesizing roles appear to be of key importance in the context of CI initiatives, while the facilitating and championing roles appear to be less relevant.

Keywords: continuous improvement, middle management, implementation, synthesis, experiment

1. Introduction

Accomplishing continuous improvement (CI) in an organization is a challenging process and demands substantial organizational changes as well as commitment of the people involved (Drew et al. 2004). While most of these changes are initiated as sustainable improvement plans, they often end up as a quick fix without deliberate efforts to create and maintain the conditions needed (Bhasin 2011, 2012a; Bhuiyan et al. 2006; Snee 2010). Accomplishing CI thus requires a sustainable change in mindset and behavior among the organization's top and middle management (Hermkens et al. 2017; Mann 2009).

Creating a CI culture requires creating new ways of working (i.e. continuously improving operational processes) and it requires that CI is integrated as a core activity in the daily routines of the organization (Anicich & Hirsh 2017; Bateman 2005; Bateman & David 2002; Fine et al. 2008; Holmemo & Ingvaldsen 2016). Middle managers can be considered to be key agents in facilitating this kind of change and striking a functional balance between continuity and change (Embertson 2006; Guo et al. 2017; Huy 2002; Moss Kanter 1982). Their unique position between operational and top management and their knowledge about what motivates the employees in their unit or department (Huy 2001; Moss Kanter 1982) allows middle managers to enhance the chances of realizing sustainable change (Currie & Procter 2005; Engle et al. 2017; Floyd & Wooldridge 1992, 1997; Moss Kanter 1982). As accomplishing CI requires a controlled change strategy (Bhasin 2011, 2012a), middle managers can play an important role during this change as they can help to bridge the gap between top management and employees at the operational level (Ahearne et al. 2014; Gatenby et al. 2015; Kim et al. 2014; Likert 1961; Raes et al. 2011; Shi et al. 2009; Stoker & De Korte 2001). Their unique position and pivotal role makes middle managers important for strategical renewals (Floyd & Lane 2000; Osterman 2008; Raes et al. 2011; Wooldridge et al. 2008) such as CI (Collis 2016; Jayaram et al. 2008; Rahman et al. 2010). Middle managers translate top management strategy into operational activities and at the same time need to pay attention to problems on the shop floor on a daily basis (Anicich & Hirsh 2017; Currie & Procter 2005; Floyd & Lane 2000; Sims 2003).

With regard to middle managers' contribution to strategic change, a widely-cited model is that of Floyd and Wooldridge (1992, 1996, 1997), who link organizational performance directly to middle management. Floyd and Wooldridge (1992, 1996, 1997) define four strategic roles for middle managers: Championing, Synthesizing,

Facilitating and Implementing. These four roles provide “a framework that combines upward and downward influence with behaviors that integrate and support strategies on one hand and diverge from official strategy on the other” (Floyd & Wooldridge 1996, p. 42).

Middle managers perform a downward support role by implementing deliberate strategy through the translation of objectives from top management into effective operational plans, and an upward influence role by synthesizing information for top management, thus filtering important strategic feedback upwards (Tarakci et al. 2018; Van Rensburg et al. 2014). Middle managers can also facilitate in a downward manner, in the search for new strategic initiatives and adaptability by organizational experiments; and successful experiments can be championed upward to top management (Tarakci et al. 2018; Van Rensburg et al. 2014).

In sum, middle managers’ integrative role is important for organizational performance while the divergent role is more important for organizations that want to innovate (Floyd & Wooldridge, 1997). Although there is a broad body of knowledge about the roles and influence of middle management in implementing strategy, insight in which roles are activated in CI initiatives is underdeveloped and highly dispersed. Therefore, in this study we seek to understand *which middle management roles (i.e. championing, synthesizing, facilitating, implementing) contribute to accomplishing CI?*

To this end, we developed a scenario experiment to explore which of these roles are activated when middle managers are confronted with a CI initiative. Our findings indicate that some middle management roles appear to be of key importance in the context of CI initiatives, such as the implementing and synthesizing roles, while the facilitating and championing roles appear to be less relevant. The remainder of this article is structured as follows. First, we further explore CI initiatives and middle manager roles in the following section. We then describe our experimental method and procedure. After that, we report the results on which middle manager roles are likely to contribute to accomplishing CI. Finally, we discuss our findings and the implications for both theory and practice, followed by several conclusions.

2. Theoretical Perspective

This study aims to enhance our understanding of Floyd and Wooldridge’s middle manager roles in the context of CI initiatives. In this section, we further develop the theoretical background of this study.

2.1 Floyd and Wooldridge’s Middle Management Roles

Middle managers are crucial in connecting top management’s vision to the shop floor (Ahearne et al. 2014; Heyden et al. 2017; Holmemo & Ingvaldsen 2016; Kras et al. 2017). Their involvement in the formation of strategy is thus associated with the improvement of organizational performance (Mair 2017; Ouakouak et al. 2014; Wolf & Floyd 2017). In this respect, there are two ways in which middle management involvement could enhance organizational performance: higher quality strategic decisions and more efficient implementation (Wooldridge & Floyd 1990).

Floyd and Wooldridge (1992, 1996, 1997) and Wooldridge et al. (2008) identified four ‘roles’ through which middle managers can influence organizational performance. These roles (Floyd & Wooldridge 1992) are:

- **Championing strategic alternatives:** the middle manager engages in persistent and persuasive communication of proposals that either provide the firm with new capabilities or allow the firm to use existing capabilities differently.
- **Facilitating adaptability:** the middle manager encourages cross-functional problem solving, experimentation and idea generation, and creates arrangements that increase organizational flexibility.
- **Synthesizing information:** the middle manager derives strategic meaning from events, connects ideas to strategic issues, and sells issues to top management and others in the organization.
- **Implementing deliberate strategy:** the middle manager aligns the unit’s actions with the firm’s strategic intent.

These four roles (figure 1) provide “a framework that combines upward and downward influence with behaviors that integrate and support strategies on one hand and diverge from official strategy on the other” (Floyd & Wooldridge 1996, p. 42). Downward influence impacts how well the organization is aligned with the new strategy, whilst upward influence affects the opinion of top management on organizational circumstances and alternative strategic options. Divergent ideas are not in line with the organization’s given strategy, whereas integrative ideas support the organization’s strategic alignment (Floyd & Wooldridge 1996). Thus, depending on the organizational context, type of strategic change, issues faced by top management, and leadership style of top managers, as well as their personal disposition, middle managers can play one or more of these roles (Floyd &

Wooldridge 1992, 1994, 1997; Floyd & Lane 2000).

		Behavioral dimension	
Cognitive dimension		<i>Upward</i>	<i>Downward</i>
	<i>Divergent</i>	Championing	Facilitating adaptability
	<i>Integrative</i>	Synthesizing information	Implementing deliberate strategy

Figure 1. Middle management’s four strategic roles (Floyd & Wooldridge 1992, 1996; Jaoua 2016; Neto & Lavarda 2017)

Middle managers should be engaged with strategy implementation due to their structural positions in managing resources, providing information to decision makers and communicating strategic intent of top management throughout the organization (Salih & Doll 2013). Their integrative strategic behaviors entail implementing the deliberate organizational strategy by translating it to lower levels and synthesizing new information to top management regarding implementation (Floyd & Wooldridge 1992; Van Rensburg et al. 2014). Table 1 provides illustrations of the behaviors typical to each role.

Table 1. Examples of middle management’s strategic influence activities in each strategic role (Floyd & Wooldridge 1997, p. 467)

Upward	
Synthesizing information	Gather information on the feasibility of new programs Communicate the activities of competitors, suppliers, etc. Assess changes in the external environment
Championing	Justify and define new programs Evaluate the merits of new proposals Search for new opportunities Propose programs or projects to higher level managers
Downward	
Facilitating adaptability	Relax regulations to get new projects started ‘Buy time’ for experimental programs Locate and provide resources for trial projects Provide a safe haven for experimental programs Encourage informal discussion and information sharing
Implementing deliberate strategy	Monitor activities to support top management objectives Translate goals into action plans Translate goals into individual objectives Sell top management initiatives to subordinates

To conclude, middle managers typically play a significant role during change (Balogun 2003; Balogun & Johnson 2004, Floyd & Wooldridge 1992, 1997), and make a major contribution towards achieving of top management’s strategic ambitions (Balogun 2003; Currie & Procter 2005; Van Rensburg et al. 2014) by implementing top-level decisions and coordinating activities at the operational level (Floyd & Lane 2000).

2.2 Continuous Improvement

Continuous Improvement (CI) is one of the most frequently sought-after organizational change initiatives. CI can be defined as a culture of sustained improvement in which all members of the organization contribute to

performance improvement by continuously realizing small changes in their work processes (Jørgensen et al. 2003). Not surprisingly, many organizations strive for CI in hope of improving performance, staying competitive and lowering costs (Bhuiyan et al. 2006; Nyhuis et al. 2010; Snee 2010). Many organizations in financial services and other industries effect a strategy of CI to adapt to their changing environment (Bessant et al. 2001; Bhuiyan et al. 2006; Collis 2016).

Hernández and Mateo (2012) describe continuous improvement as an ongoing effort to continuously improve products, services or processes, which can be incremental over time or take the form of larger breakthrough improvements. Due to its popularity, CI practices such as Lean have developed and become more professional in recent years (Aloini et al. 2011; Hines et al. 2011; O'Rourke 2005; Rother 2010). While the initial focus was on cutting cost, CI methods have evolved towards an emphasis on changing the organizational culture (Basu & Ahmed 2012; O'Rourke 2005). In this respect, Dale (1996) describes CI as the means to enhance process performance on a continual basis. The primary focus of CI practices such as Lean is to eliminate activities that do not add customer value and simultaneously address value-adding activities (Cudney & Elrod 2011).

Yet, achieving CI often proves to be difficult (Bateman 2005). CI initiatives have to be included in the organizational culture; otherwise they will fail (Bicheno 2008). As such, CI implementations such as Lean are less likely to be successful if one or more of the following conditions exist in the organization: the absence of a CI culture, short-term commitment (if any) among middle managers and employees, lack of knowledge transfer regarding CI, or too much focus on tools and techniques. In these conditions, the execution of CI practices is not likely to lead to any significant improvements in organizational behavior and performance (Atkinson 2010; Bhasin 2011, 2012a, 2012b; Cudney & Elrod 2011; Dahlgaard & Dahlgaard-Park 2006; Holweg 2007; Saurin et al. 2011). As such, the momentum of CI efforts often comes to a halt, after which the organization falls back into its established routines (Bateman & David 2002; Hines et al. 2018).

As a result, it appears that organizational culture is important to achieve a CI practice over time. Top management has to reinforce a culture of CI and make it successful through management and workers' involvement and active participation (Angelis et al. 2011; Boyle et al. 2011; McLean et al. 2017). If employees do not feel sufficiently involved, this can have a negative effect on the execution of CI (McLean et al. 2017; Van Assen 2016).

Research shows that middle managers play an important role in enabling and sustaining change in organizations (Huy 2002). They can enable organizational change, because they may have value-adding ideas for making the organization better and tend to have a big informal network as well as detailed knowledge about what motivates each employee (Huy 2001, 2002; Moss Kanter 1982). Moss Kanter (1982) therefore argues that the success of any attempt to improve performance is directly related to the creative and innovative skills of the middle manager. By focusing on the role of the middle manager, an organization can make the implementation process successful (Found et al. 2009) and gain more sustainable results in terms of savings, customer satisfaction and reaching CI within the organization. Previous studies acknowledge the role of the middle managers in facilitating change into a lean organization and making it adhere. However, as Osterman (2008, p.2) states: "our understanding of middle management is remarkably thin, compared with research conducted on higher management". Hence, more insight is needed to understand which middle management roles are likely to contribute to accomplishing CI.

3. Method and Procedure

To investigate which middle manager roles may contribute (in particular) to achieving CI, we draw on an exploratory quasi-natural experimental design (Miles et al. 2014; Saunders et al. 2009), involving 107 middle managers working within a large bank. As part of the experiment, the managers were first asked to complete an existing self-test questionnaire (Floyd & Wooldridge 1996) to characterize their natural individual middle manager role profile. Subsequently, managers were asked to evaluate a realistic, yet fictitious scenario of a CI initiative by indicating how they perceived this initiative and what action they would take. This experimental setup allows us to explore which middle managers roles are most likely to contribute to achieving CI.

3.1 Data Collection

This experiment was carried out at a large bank in the Netherlands. Based on the lead author's extensive professional experience within banks, a hypothetical scenario of a bank, called "The Piggy Bank", was prepared. As part of the experiment, all participants received the scenario in which they work as a manager at "The Piggy Bank". The scenario describes top management's request to the managers (participants) to implement the CI initiative "GOLD".

3.2 Sample Selection

To obtain participants for the experiment, one of the authors contacted program managers (involved in CI changes) and management team members from the various business lines within the bank to construct a list of the names and business e-mail addresses of all middle managers. This resulted in a total number of 474 potential participants. Each of these middle managers received an e-mail including a password-protected link to the online environment. The unique login information ensured confidentiality of their responses. The participants were asked to provide the following personal information: gender, age, business line, reporting line, level of education, years of experience at the bank, years of experience at current department, and years of experience with CI.

3.3 Questionnaire Development

To collect the experimental data, the authors made use of two lists of statements. The “Self-test of Middle Management Strategic Involvement Integrative Behavior” (Floyd & Wooldridge 1996) was used to capture middle manager roles. This is a validated list of statements (see appendix 1) to determine the different roles of the middle manager. The middle manager can indicate on the basis of a 5-point Likert scale (never, rarely, sometimes, regularly or often) to what extent he or she has a preference for the activities mentioned.

Second, based on the professional experience of one of the authors in working with various middle managers at a bank, we developed a questionnaire to capture the middle managers’ perception of the CI initiative as well as their intended response or action (see appendix 2) with respect to e.g. culture, customer satisfaction, efficiency, role, job security, work atmosphere and top management support (De Waal 2018; Delizonna 2017; Netland 2016; Nguyen 2018; Sreedharan & Sunder 2018). To ensure that the experiment and the questionnaire reflect a realistic situation, the research team pre-tested the experiment. This test included eight employees of the bank participating in this study and four employees of other large banks where a similar CI program was introduced. Based on their feedback, the experiment was further refined.

3.4 Characteristics of the Sample

Table 2 provides descriptive information on the sample of middle managers participating in this study. The sample of participants included 72 male (67,3%) and 35 female (32,7%) managers, ranging in age from 33 to 64 (M = 47.3). On average, the participants had 3,4 years of experience in working with CI. In terms of work experience, 95 (88,8%) participants had more than ten years of experience. In terms of the highest level of education obtained, 6 managers hold a postgraduate degree (5,6%), 37 hold a master’s degree (34,6%) and 58 have a bachelor’s degree (54,2%).

Table 2. Descriptive statistics of the sample

	<i>Mean/Frequency</i>
N	107
Male	72 (67.3%)
Female	35 (32.7%)
Mean age (in years)	47.27
Experience (in years)	
0-2	3 (2.8%)
3-5	2 (1.8%)
6-10	7 (6.5%)
>10	95 (88.8%)
Experience department (in years)	
0-2	47 (43.9%)
3-5	31 (28.9%)
6-10	20 (18.7%)
> 10	9 (8.4%)
Mean experience with CI (in years)	3.4

Highest degree	
Postgraduate	6 (5.6%)
University	37 (34.6%)
HBO	58 (54.2%)
MBO	2 (1.9%)
High school	4 (3.7%)

3.5 Experiment

The participating middle managers received a scenario in which they are a manager at ‘The Piggy Bank’. The scenario describes how The Piggy Bank is going through turbulent times. This bank’s top management wants to improve the cost-income ratio every year, but is facing stricter requirements of regulators; moreover, they want any changes not to come at the expense of customer satisfaction. At the same time, the (banking) world is not free from radical changes. In order to be able to cope with all these changes, top management aims to roll out the “GOLD” CI program in this bank, with the help of the manager (participant).

Before reading and evaluating the scenario, the participants were asked to fill out the self-test developed by Floyd and Wooldridge (1996) (see Appendix 1). The purpose of this self-test is to get a general picture of the middle manager role. After the participants had read the scenario, they were asked to answer the newly developed questionnaire on the basis of the scenario description (see Appendix 2).

3.6 Questionnaire

The questionnaire includes 22 statements (see table 3) that aim to capture both how middle managers perceive CI initiatives and what actions they would take to put this into practice. We focus particularly on these dimensions because they are vital and critical aspects of the practice of CI programs (e.g. De Waal 2018; Delizonna 2017; Netland 2016; Nguyen 2018; Sreedharan & Sunder 2018). First drafts of these statements were discussed with several managers in the financial service industry to make sure the statements were realistic and representative of how middle managers evaluate such initiatives, and adapted accordingly. This resulted in statements more focused on the perception of the middle managers (e.g. “I consider Gold as an implementation of the CI philosophy”) and statements more focused on the actual practice (e.g. “I will steer the department on achieving CI”). This distinction is made because in practice there is often a discrepancy between the actual practice and perception of middle managers (e.g. Argyris 2004; Van Baarle et al. 2019). In this respect, there is a difference between what middle managers say they are going to do and what they will actually do (e.g. Argyris 2004). The statements reflect important dimensions of CI initiatives such as culture, customer satisfaction, efficiency, own role, job security, work atmosphere, tool and top management support. In addition, they correspond to the experiences from the professional practice of one of the researchers. Participants were asked to respond to the statements on a 5-point Likert scale (totally disagree – disagree – agree nor disagree – agree or totally agree).

Table 3. Statements used in experiment grouped on basis of CI aspects

Perception	CI aspects	Statements
1	Culture	I consider GOLD as an implementation of the continuous improvement philosophy.
2	Culture	I consider GOLD as a program that results in a permanent shift of our organizational culture.
5	Culture	GOLD results in the implementation of continuous improvement within our culture.
3	Efficiency	I consider GOLD as an effort to increase the efficiency of the organization.
6	Efficiency	GOLD results in a drastic cost decrease.
7	Work atmosphere	The working atmosphere will improve due to the implementation of GOLD
4	Job security	I consider GOLD as a threat to my function.
10	Own role	I perceive my role as crucial within the GOLD program.
Practice		
13	Culture	I will integrate GOLD and adapt it to the current way of working within my department(s)
22	Culture	Because of GOLD, I will steer the department on achieving continuous improvement and the adaption to a new organizational culture.
20	Efficiency	Because of GOLD, I will steer the department on efficiency.
17	Efficiency	I will determine specific KPI’s to timely realize the efficiency objectives of GOLD.
18	Efficiency	In the context of GOLD, I actively monitor individual and team KPI’s in order to

		identify improvement possibilities.
19	Own role	By implementing GOLD, I will solely focus on activities that are beneficial for me.
9	Own role	I will fulfil a pioneering role in making GOLD a success.
11	Customer satisfaction	Because of GOLD, I focus on fulfilling customer needs.
14	Customer satisfaction	In the context of GOLD, I will adapt the organization in order to meet customer needs in the best possible way.
15	Customer satisfaction	Because of GOLD, I focus on fulfilling customer needs at the lowest possible costs and shortest lead time.
21	Customer satisfaction	Because of GOLD, I will steer the department on customer satisfaction.
12	Customer satisfaction	I will investigate how GOLD can contribute to customer satisfaction.
16	Tool	I select the proper tools to achieve and monitor the GOLD objectives.
8	Top management support	I will support top management during the implementation of the change (GOLD).

4. Results

Table 4 reports the results of the experiment (see also Appendix 2). We found significant P-values regarding the four Floyd and Wooldridge roles on 17 out of the 22 statements. These are statements concerning dimensions of CI such as culture, customer satisfaction, efficiency, own role, job security, work atmosphere, tool and top management support. The results show that the implementing and synthesizing roles in particular play a role in activating middle managers to achieve CI.

Table 5 provides an additional overview of the results, with the statements grouped on the basis of role significance. This table shows that the implementing role, in particular, plays a role in activating middle managers to achieve CI. More specifically, the implementing role has a significant P-value, a high F-value and a positive B-value in 11 statements. This suggests that the implementing role has a positive impact on the different statements regarding CI.

The synthesizing role has a significant P-value and a high F-value in 8 statements. However, Table 5 also implies that four statements regarding the synthesizing role have a positive B-value and four statements have a negative B-value. With regard to the synthesizing role, two negative B-values (regarding statements 4 and 20) can be interpreted as a positive impact. So, based on these results the synthesizing role appears to have a positive influence on achieving CI.

Moreover, our results show that the facilitating role (i.e. 3 statements) and championing role (1 statement) are less likely to be activated in CI initiatives. For the facilitating role, we found a significant P-value and a high F-value in 3 statements. Regarding these 3 statements, Table 5 implies that we have 1 statement with a positive B-value and 2 statements have a negative B-value. But the negative B-values (regarding statement 4 and 19) can be interpreted as a positive impact. So, based on these results the facilitating role appears to make a minor contribution to achieving CI.

The championing role has a significant P-value and a high F-value for one statement (statement 19), with a positive B-value that can be interpreted as implying a negative impact.

Table 4. Results of regression analyses

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Championing	.046	.036	-.019	.062	-.029	-.070	-.022	-.016	-.020	-.030	-.003	.054	-.038	0.19	.057	.015	0.23	.037	.074**	.071	.007	-.017
Facilitating	.015	-.021	-.013	-.065**	.036	-.007	-.013	-.041	.021	.058**	.006	-.016	.027	.005	-.002	-.009	-.012	-.062	-.063**	.007	-.016	.031
Synthesizing	-.034	.024	.031	-.065**	.046	.067*	.068**	.070**	.082***	.041	.029	.034	-.072*	.008	.001	.008	.008	-.027	-.024	-.098**	.003	-.074*
Implementing	.062*	.071*	.096***	.012	.071*	.053	.057*	.058**	.034	.006	.030	.024	.161***	.018	.010	.074***	.124***	.143***	-.021	-.036	.033	.086**
Gender	.173	.270	-.001	-.397	.308	-.120	.156	.138	.076	.259	.076	.373	.432	.051	.103	-.050	.112	-.059	-.229	.148	-.221	-.159
Age	.025	.007	-.003	.025	-.011	-.010	-.009	.003	.000	.007	-.005	.006	-.003	.013	.022	-.003	-.020	.000	-.007	.006	.029	.002
Type of department	.033	.164	.123	-.139	.077	.023	.100	.117	.092	.033	.068	.055	.140	.055	-.025	.057	-.095	-.106	-.039	-.148	-.061	.012
Function level	-.067	-.061	.047	-.076	.075	-.031	-.121	.007	.054	.055	-.180	-.024	-.079	.054	-.101	.056	.035	.044	-.157	-.014	-.052	-.038
Education	.162	-.192	-.064	-.033	.049	-.196	-.076	-.096	-.142	-.049	.039	-.168	.000	-.013	-.064	-.055	.179	.077	.020	.078	.095	.246
Years at organization	-.413	-.149	-.048	-.086	-.003	-.062	-.193	-.164	-.230	-.131	-.233	-.021	.003	-.180	-.276	-.214	-.008	.058	.039	.004	-.040	-.069
Years at department	.102	.125	.054	.117	-.029	-.120	.057	-.077	-.055	-.015	-.049	.087	.154	.054	.048	.084	.113	.057	-.011	-.028	-.110	-.008
Years of improvement experience	-.027	-.060	-.038	-.077	-.061	-.007	-.012	.037	.029	.006	.048	-.012	-.093	.012	-.038	.007	-.017	.010	-.143	.020	.044	.008
Philosophy	.144	.426	-.049	-.284	.561	-.067	.504	.144	.159	-.135	.561	-.179	.085	.072	-.121	.051	.234	.063	.173	-.015	.350	.492
Pressure	.245	.021	.293	-.186	.222	-.013	.341	.210	.063	.035	.042	-.007	.093	.245	.151	.152	-.156	-.362	-.272	-.029	.121	.039
Constant	1.469	1.663	2.151	3.389	.713	3.998	3.067	4.102	3.810	3.408	2.466	2.508	1.863	2.647	2.510	3.342	1.009	1.418	4.374	3.037	1.263	1.760
N	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107
F-value	2.033	1.875	1.476	2.691	1.823	.988	3.261	2.996	2.937	1.020	1.698	1.501	2.661	.859	.900	1.566	2.407	2.725	2.381	.803	1.072	1.534
R Square	.238	.224	.185	.293	.219	.132	.334	.315	.311	.136	.207	.188	.290	.117	.122	.194	.270	.295	.268	.110	.142	.191

*P≤0.10 **P≤0.05 *P≤0.01

We also found that 4 statements have a significant score on both integrative roles. However, 2 out of the 4 statements had a combined positive and negative effect (B- value) from the 2 roles involved (in table 5: statements 13 and 22), making it difficult to draw a clear conclusion. Also, one statement has significant results on both divergent roles, but again a combined positive and negative effect was found on the 2 roles involved (statement 19); thus, here we can also not draw a clear conclusion.

Remarkably, none of the four roles show any significant evidence for the five statements regarding customer satisfaction.

Table 5. Statements used in experiment, grouped on the basis of role significance

Perception	CI aspects	Statements	Significant Role	Effect
1	Culture	I consider GOLD as an implementation of the continuous improvement philosophy.	Implementing	Positive
2	Culture	I consider GOLD as a program that results in a permanent shift of our organizational culture.	Implementing	Positive
5	Culture	GOLD results in the implementation of continuous improvement within our culture.	Implementing	Positive
3	Efficiency	I consider GOLD as an effort to increase the efficiency of the organization.	Implementing	Positive
6	Efficiency	GOLD results in a drastic cost decrease.	Synthesizing	Positive
7	Work atmosphere	The working atmosphere will improve due to the implementation of GOLD	Implementing/ Synthesizing	Positive/ Positive
4	Job security	I consider GOLD as a threat to my function.	Facilitating/ Synthesizing	Negative/ Negative
10	Own role	I perceive my role as crucial within the GOLD program.	Facilitating	Positive
Practice				
17	Efficiency	I will determine specific KPI's to timely realize the efficiency objectives of GOLD.	Implementing	Positive
18	Efficiency	In the context of GOLD, I actively monitor individual and team KPI's in order to identify improvement possibilities.	Implementing	Positive
16	Tool	I select the proper tools to achieve and monitor the GOLD objectives.	Implementing	Positive
9	Own role	I will fulfil a pioneering role in making GOLD a success.	Synthesizing	Positive
20	Efficiency	Because of GOLD, I will steer the department on efficiency.	Synthesizing	Negative
13	Culture	I will integrate GOLD and adapt it to the current way of working within my department(s)	Implementing/ Synthesizing	Positive/ Negative
22	Culture	Because of GOLD, I will steer the department on	Implementing/	Positive/

		achieving continuous improvement and the adaption to a new organizational culture.	Synthesizing	Negative
8	Top management support	I will support top management during the implementation of the change (GOLD).	Implementing/ Synthesizing	Positive/ Positive
19	Own role	By implementing GOLD, I will solely focus on activities that are beneficial for me.	Facilitating/ Championing	Negative/ Positive
11	Customer satisfaction	Because of GOLD, I focus on fulfilling customer needs.	None	None
14	Customer satisfaction	In the context of GOLD, I will adapt the organization in order to meet customer needs in the best possible way.	None	None
15	Customer satisfaction	Because of GOLD, I focus on fulfilling customer needs at the lowest possible costs and shortest lead time.	None	None
21	Customer satisfaction	Because of GOLD, I will steer the department on customer satisfaction.	None	None
12	Customer satisfaction	I will investigate how GOLD can contribute to customer satisfaction.	None	None

5. Discussion and Conclusions

The role and added value of middle managers have been subject to debate for a long time (Dopson & Stewart 1990, 1993; Harding et al. 2014; Tabrizi 2014). Some consider middle management to be a bureaucratic barrier (Guth & MacMillan 1986; Hammer & Champy 1993) or obstacle to change (Blom 2018; Cândido & Santos 2019), even suggesting that middle management might cease to exist altogether (Clarke 1998, p. 191): “Middle management is an endangered species that has been delayered and subject to many change programs.” Others, however, argue in strong favor of the role and impact of middle management, by regarding it as a strategic asset (Balogun 2003; Van der Voet et al. 2016) that can have an important contribution (Kuyvenhoven & Buss 2011; Osterman 2008; Wooldridge et al. 2008), in particular in the context of responding to organizational change (Nonaka 1994). Despite the fact that scholars have argued that middle managers play an important role in facilitating change in organizations (Buick et al. 2018; Engle et al. 2017; Huy 2011), our understanding of middle management remains remarkably thin (Osterman 2008). Organizations in financial services and other industries are constantly trying to adapt to this ever-changing environment (Birkinshaw et al. 2008; Madhani 2017; Saha et al. 2017), among others by implementing a CI strategy (Bessant et al. 2001; Bhuiyan et al. 2006; Collis 2016). Therefore, in this study, we set out to explore which middle management roles (as established in the framework by Floyd and Wooldridge) may contribute to or hinder accomplishing organizational change in the form of CI.

Our findings indicate that some middle management roles appear to be of importance in the context of implementing CI initiatives, such as the implementing and synthesizing roles, while the facilitating and championing roles appear to be less relevant. In line with Floyd and Wooldridge (1997), our results suggest support for the integrative roles (i.e. implementing and synthesizing) that middle managers may engage in when top management seeks to adopt CI. However, for the synthesizing role we found a negative effect of this role on achieving CI (see statement 13 and 22). But, for the majority of the statements, there is a positive effect of the integrative roles. So, for our sample, one can state that middle managers who prefer an integrative role within the organization are more likely to perceive CI initiatives as a sustainable cultural change and are more likely to take action in this respect. According to Bessant and Francis (1999), the implementing role can be seen as a critical component in CI development, thereby helping to ensure that CI activities are in line with the organizational strategy developed by top management (Oakland 2011). Thus, for the integrative roles of implementing and synthesizing, our findings suggest that middle managers tend to help bridge the gap between top management and employees at the operational level, thereby translating top management strategy into operational activities (Ahearne et al. 2014; Anicich & Hirsh 2017; Gatenby et al. 2015; Kim et al. 2014; Shi et al. 2009; Stoker & De Korte 2001).

This study found less support for the two divergent roles of facilitating and championing as contributing to accomplishing CI. In the facilitating role, middle managers facilitate employees to exchange knowledge and information, to come up with new ideas, to experiment and realize CI (Floyd & Lane 2000). One explanation for the lack of support for this role can be found in earlier research conducted by Delbridge and Barton (2002). They indicate that organizations tend to use external knowledge and skills for facilitating CI instead of placing this role with the current middle management. In addition, almost no support was found for the championing role

with respect to accomplishing CI. In this role, middle managers may influence the change process by bringing innovative concepts to the attention of top management (Floyd & Wooldridge 1996). This would for example imply that middle managers would develop alternatives to the current strategy and present them to top management (Floyd & Wooldridge 1992). The insignificance of the championing role in the data analysis can possibly be explained by the fact that top management does often not support or appreciate divergent behavior (Floyd & Lane 2000).

5.1 Interpretation of Key Findings

Understanding the role of middle managers is critical because, as stated by Tabrizi (2014): the key to change is middle management. In addition, Holmemo and Ingvaldsen (2016) define the middle manager as the missing link in Lean implementation. Our experiment aims to explain which middle management roles contribute to accomplishing CI. To achieve that, we have made the concept of CI practical by focusing on a number of important CI aspects such as culture, customer satisfaction, efficiency, own role, job security, work atmosphere and top management support (De Waal 2018; Delizonna 2017; Netland 2016; Nguyen 2018; Sreedharan & Sunder 2018).

Regarding the embedding of CI in the culture of the organization, our study indicates that the implementing role of middle managers is probably a key driver for them to develop a deliberate intention toward embedding CI in the organization. For all statements related to the cultural aspect, there is a significant and positive correlation between the statement and the implementing role. Thus, our results underline the idea that middle managers are executors of the deliberate strategy created by top management (Floyd & Wooldridge 1992; Nonaka 1994). This is important because creating a CI culture that needs to be sustained over many years requires the commitment, involvement and leadership of the entire management of the organization (Dahlgaard & Dahlgaard-Park 2006; Snee 2010).

Furthermore, our results also show that the implementation role has a high degree of significance when it comes to efficiency statements. Out of the five statements related to efficiency aspect three have a significant relationship concerning the implementing role. The other two statements show significance related to the synthesizing role. This can be supported by the view that the pursuit of efficiency is an important point because optimized processes can increase reliability and increase competitiveness (Carlborg et al. 2013; Van Dun & Wilderom 2016). By gathering information (synthesizing role) about competitors' activities and evaluating major changes in the business environment, middle managers can play an important role in accomplishing the necessary changes to stay competitive and contribute to accomplishing CI within the organization.

From a more integrative perspective, the implementing and synthesizing roles indicate a significant positive relationship between the (expected) work atmosphere and top management support. Our results suggest that middle managers pay attention to these CI aspects from the perspective of both roles. A possible explanation is that middle managers expect that executing CI may offer opportunities for learning and for new and extensive role interpretation (Angelis et al. 2011; McQuade 2008; Nelson & Yeo 2012). Moreover, middle managers can increase the skills and knowledge of the entire workforce and stimulate workers to develop themselves (Lam et al. 2015; Poksinska et al. 2013; Van Assen 2018). In other words, middle managers can adopt a learning mindset and stimulate employee participation within the organization (Buick et al. 2018; Delizonna 2017; Vänje and Brännmark 2017). This underlines the idea that middle management enables the exchange of knowledge and new ideas and plays a key role in strategic renewal (Chandler 1977). Overall this is in line with the fact that an integrative role in support of intentional strategy is predefined and openly expected (Floyd & Lane 2000).

As already mentioned, only a few of the statements indicated that there is a significant relationship with the facilitating and championing role. A possible explanation is the fact that divergent behavior is often not supported and appreciated by top management (Floyd & Lane 2000).

Lastly, our findings imply no significant relationship between the statements about customer satisfaction and any of the four roles identified by Floyd and Wooldridge (see Table 5). This finding fails to support the idea that the primary focus of CI practices such as Lean is to eliminate activities that do not add customer value and address value-adding activities (Cudney & Elrod 2011). If middle managers adopt a more synthesizing role here, the organization would be better able to monitor and evaluate the impact of changes in the environment, including activities of competitors and suppliers (Floyd & Wooldridge 1992). In line with this, the implementing role of middle managers regarding CI may help safeguard customer focus among employees (Floyd & Wooldridge 1992; Gulati & Oldroyd 2005). One possible explanation of this result of the experiment is that the description of the customer and customer needs was not clear enough in the GOLD case text and survey.

5.2 Limitations

This study has a number of limitations. First, although the results are insightful, our study was performed within a single organization, which makes the results potentially less generalizable. Replications of this study in other financial service organizations are thus recommended.

Second, the findings may not be generalizable outside the Netherlands. We have no direct evidence for this limitation, because the national cultural dimension has not been explicitly addressed in this study. Thus, future work should explore the potential impact of national culture.

Third, more conclusive results could have been generated if the sample size had been bigger. For future work in this area, obtaining a larger sample size would therefore be important.

Fourth, the simulated nature of the experiment may, when it comes to the emotional side of human perception (e.g. middle management roles), not provide the same setting as a real-life organizational context. As a result, our experiment is limited in its external validity (Roe & Just 2009; Schram 2005). On the other hand, the substantial number of years of management experience of the participants in our sample implies that the vignettes provide a context they are familiar with based on their professional experience. In turn, this positively affects external validity (e.g. Barends et al. 2014; Buchanan 2008; Rouleau & Balogun 2011). Hence, we hope that future work will replicate and extend our findings in field studies of real-life CI initiatives.

Fifth, the effect size of the various statements is quite small. This does not mean that the outcomes are not valuable, but they need to be interpreted with caution and thereby invite further investigation.

Finally, this study did not consider in an objective manner the extent to which CI was *accomplished* in a specific organization, and what the impact of the different roles was on this accomplishment. Rather, the study focused on perceptions, intentions and expectations that the participants had with respect to the impact of the roles investigated. One could, therefore, state that the internal validity of the findings arising from this study are limited (cf. Roe & Just 2009; Schram 2005). As such, it would be valuable to examine real-life cases in which CI is implemented and determine the impact the various roles have in these cases. The proposed causal relationships arising from our study can inform such investigations.

5.3 Conclusion and Further Research

In sum, middle management can be expected to have a role in accomplishing CI throughout the organization, by acting as “a cornerstone between top management and bottom line workers” (Al-Najem 2012, p. 119). In addition, if middle managers feel they are not sufficiently involved at an early stage of the CI effort, they are not likely to become the change agents they possibly can be (Holmemo & Ingvaldsen 2016; Lleo et al. 2017). In successful interventions middle managers have been included and activated at an early stage of the process (Davis & Fisher 2002) and top management creates a culture that makes it easier for middle managers to be involved in quality improvement and embed it in the organization (Balding 2005). Our findings indicate that the implementing and synthesizing roles of middle management appear to be of importance in the context of CI initiatives, while the facilitating and championing roles appear to be less relevant.

The main findings from this study demonstrate that middle managers can be seen as change agents, in line with existing work (Balogun 2003; Buick et al. 2018; Kuyvenhoven & Buss 2011; Westley 1990), involving both upward and downward activities (Wooldridge et al. 2008). Following research by Reid (1989), our findings show that most middle managers in our sample think of themselves as implementers and that they engage in this role much more than the other three roles (Floyd & Wooldridge 1992).

Changes within organizations have become the norm rather than the exception (Schaffer 2017). This requires even more adaptive organizations that are willing and able to change. To accomplish this, organizations are increasingly using the concept of agility, in addition to Lean and other CI methods (Harraf et al. 2015; Rigby et al. 2016), which changes the role of middle managers (De Smet 2018). It is expected that middle management will continue to play an important role within them. The importance of effective management has apparently not changed, but the way one engages in management may be changing fundamentally. In response to altering customer behavior, shorter times-to-market, shifting expectations of employees, and increasing digitalization, organizations are changing rapidly and need to become more agile. Middle management is an important link in these transformation processes. This in itself requires personal adaptability and a new interpretation of the role of middle management. Thus, the impact that an agile way of working has on the role of middle management is an interesting area for future research, in particular to find out which roles (i.e. championing, synthesizing or implementing) can contribute the most to accomplishing organizational agility.

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Appendix 1. Floyd and Wooldridge Self-Test of Middle Management Strategic Involvement

1) Monitor and assess the impact of changes in the organization's external environment.

Never Rarely Occasionally Regularly Frequently

2) Implement action plans designed to meet top management objectives.

Never Rarely Occasionally Regularly Frequently

3) Integrate information from a variety of sources to communicate its strategic significance.

Never Rarely Occasionally Regularly Frequently

4) Evaluate the merits of new proposals.

Never Rarely Occasionally Regularly Frequently

5) Evaluate the merits of proposals generated in my unit, encouraging some, discouraging others.

Never Rarely Occasionally Regularly Frequently

6) Translate organizational goals into objectives for individuals.

Never Rarely Occasionally Regularly Frequently

7) Provide a safe haven for experimental programs.

Never Rarely Occasionally Regularly Frequently

8) Assess and communicate the business-level implications of new information to higher-level managers.

Never Rarely Occasionally Regularly Frequently

9) Search for new opportunities and bring them to the attention of higher-level managers.

Never Rarely Occasionally Regularly Frequently

10) Communicate and sell top management initiatives to subordinates.

Never Rarely Occasionally Regularly Frequently

11) Define and justify the role of new programs or processes to upper-level managers.

Never Rarely Occasionally Regularly Frequently

12) Encourage multidisciplinary problem-solving teams.

Never Rarely Occasionally Regularly Frequently

13) Proactively seek information about your business from customers, suppliers, competitors, business publications, and so on.

Never Rarely Occasionally Regularly Frequently

14) Monitor and communicate to higher-level managers the activities of competitors, suppliers, and other outside organizations

Never Rarely Occasionally Regularly Frequently

15) Justify to higher-level managers programs that have already been established.

Never Rarely Occasionally Regularly Frequently

16) Provide resources and develop objectives/strategies for unofficial projects.

Never Rarely Occasionally Regularly Frequently

17) Translate organizational goals into departmental action plans.

Never Rarely Occasionally Regularly Frequently

18) Relax regulations and procedures in order to get new projects started.

Never Rarely Occasionally Regularly Frequently

19) Propose new programs or projects to higher-level managers.

Never Rarely Occasionally Regularly Frequently

20) Monitor activities within your unit to ensure that they support top management objectives.

Never Rarely Occasionally Regularly Frequently

Appendix 2. Experiment Questionnaire

Please answer the questions below. Do this by answering each question with: totally disagree, disagree, not disagree/ not agree, agree or totally agree.

1) I consider GOLD as an implementation of the continuous improvement philosophy.

totally disagree disagree not disagree/not
agree agree totally agree

2) I consider GOLD as a program that results in a permanent shift of our organizational culture.

totally disagree disagree not disagree/not
agree agree totally agree

3) I consider GOLD as an effort to increase the efficiency of the organization.

totally disagree disagree not disagree/not
agree agree totally agree

4) I consider GOLD as a threat to my function.

totally disagree disagree not disagree/not
agree agree totally agree

5) GOLD results in the implementation of continuous improvement within our culture.

totally disagree disagree not disagree/not
agree agree totally agree

6) GOLD results in a drastic cost decrease.

totally disagree disagree not disagree/not agree agree totally agree

7) The working atmosphere will improve due to the implementation of GOLD.

totally disagree disagree not disagree/not agree agree totally agree

8) I will support the top management during the implementation of the change (GOLD).

totally disagree disagree not disagree/not agree agree totally agree

9) I will fulfil a pioneering role in making GOLD a success.

totally disagree disagree not disagree/not agree agree totally agree

10) I perceive my role as crucial within the GOLD program.

totally disagree disagree not disagree/not agree agree totally agree

11) Because of GOLD, I focus on fulfilling customer needs.

totally disagree disagree not disagree/not agree agree totally agree

12) I will investigate how GOLD can contribute to customer satisfaction.

totally disagree disagree not disagree/not agree agree totally agree

13) I will integrate GOLD and adapt it to the current way of working within my department(s)

totally disagree disagree not disagree/not agree agree totally agree

14) In the context of GOLD, I will adapt the organization in order to meet customer needs in the best possible way.

totally disagree disagree not disagree/not agree agree totally agree

15) Because of GOLD, I focus on fulfilling customer needs at the lowest possible costs and shortest lead time.

totally disagree disagree not disagree/not agree agree totally agree

16) I select the proper tools to achieve and monitor the GOLD objectives.

totally disagree disagree not disagree/not agree agree totally agree

agree

17) I will determine specific KPI's to timely realize the efficiency objectives of GOLD.

totally disagree disagree not disagree/not agree agree totally agree

18) In the context of GOLD, I actively monitor individual and team KPI's in order to identify improvement possibilities.

totally disagree disagree not disagree/not agree agree totally agree

19) By implementing GOLD, I will solely focus on activities that are beneficial for me.

totally disagree disagree not disagree/not agree agree totally agree

20) Because of GOLD, I will steer the department on efficiency.

totally disagree disagree not disagree/not agree agree totally agree

21) Because of GOLD, I will steer the department on customer satisfaction.

totally disagree disagree not disagree/not agree agree totally agree

22) Because of GOLD, I will steer the department on achieving continuous improvement and the adaption to a new organizational culture.

totally disagree disagree not disagree/not agree agree totally agree

General questions

Gender	
Age	
Function	
Education level	<input type="checkbox"/> Elementary school <input type="checkbox"/> High school <input type="checkbox"/> MBO <input type="checkbox"/> HBO <input type="checkbox"/> University <input type="checkbox"/> Post-doctoral education
Amount of years working at ABN AMRO	<input type="checkbox"/> 0-3 years <input type="checkbox"/> 3-5 years <input type="checkbox"/> 6-10 years <input type="checkbox"/> more than 10 years
Amount of years at current department	<input type="checkbox"/> 0-3 years <input type="checkbox"/> 3-5 years <input type="checkbox"/> 6-10 years <input type="checkbox"/> more than 10 years
Years of experience with CE/CI	

Open question

Do you believe that your organization will still work according to Customer Excellence within 5 years? Why yes/no?

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Multimodal Metaphor Analysis of Print Advertisements Based on the Conceptual Blending Theory

Exploring the Hidden Ideology---Sign-Consumption

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Abstract

In today's industrial society with great affluence in material goods, consumption in our mind no longer aims at objective function, but at the sign-value connoted in the objects. Advertisement is the main carrier of sign-consumption ideology with rich multimodal metaphorical resources. This study follows the analytical mode of Critical Discourse Analysis (CDA), by analyzing multimodal metaphor in print magazine advertisement from the perspective of Conceptual Blending Theory (CBT) to explore the hidden sign-consumption ideology. The main findings of the research are: 1) metaphors in selected ads are all novel metaphors, in which the target domain is always presented by the advertised products while source domain is always presented in form of image; 2) counterpart correspondences mapped between two input spaces are the imposed selling points and sign-value, which take the main marketing functions; 3) relegating and weakening the objective function but advocating sign-value of goods is essentially because of people's desire for differentiation in homogenized industrial society, which would allow the market more space to conduct secondary exploitation to people instead of labor exploitation. This interdisciplinary study not only adds new content to linguistics but also provides new perspective to consumption issue of sociology and economics. Besides, it provides a rational warning for people to reflect their consumption behavior.

Keywords: Conceptual Blending Theory, CDA, multimodal metaphor, print advertisement, sign-consumption

1. Introduction

1.1 Rationale of the Study

Today's world has stepped into a highly industrialized society which brings the great affluence of material goods to our life. There is all around us today a kind of fantastic conspicuousness of consumption and abundance, constituted by the multiplication of objects, services and material goods, and this represents something of a fundamental mutation in the ecology of the human species (Baudrillard, 1970).

In illustrating the relationship of people's needs and satisfactions to objects, Jean Baudrillard (1970) explains that outside the field of its objective function, where it is irreplaceable, outside the field of its denotation, the object becomes substitutable in a more or less unlimited way within the field of connotations, where it assumes sign-value. For instance, the washing machine, in the field of its objective functions, serves as an appliance to reduce household chores and lighten housewives' burden; while in the field of its denotation, it acts as an element of prestige, comfort, etc. In our today's society, consumption in our mind no longer aims at the former field, but at the sign-value connoted in objects. No matter in the logic of signs or in that of symbols, objects are no longer linked in any sense to a definite function or needs. Precisely because objects here respond to the social logic or the logic of desire, in which objects are regarded as unconscious and changeable sign system (Baudrillard, 1970).

Nowadays, what people need is never so much the need for a particular object but the need for difference, or the desire for the social meaning. In most people's mind, consumption is of their own free will. However, no matter

from the perspective of sociology or economics, consumption is not an individual behavior for enjoyment or satisfaction, but a collective behavior controlled by the society, and the market, which to some extent corresponds to John Kenneth Galbraith's "revised sequence" theory. The manufacturers control market behavior, and guide and model social attitudes and needs, which is opposed to the "accepted sequence", where the initiative is supposed to lie with the consumer who has needs first and then brings feedback back to the manufacturers through the market (Baudrillard, 1970). The "revised sequence" also presents the total dictatorship of the order of production and to some extent reveals the origin and motivation of marketing and consumerism. It is notice-worthy that people conduct sign-consumption even without realizing it because consumption is not an individual behavior, but a social and collective behavior. The society and market exert a subtle influence on people's mind and ideology even without being noticed.

Based on the above statement, consumption is a social activity and sign-consumption, to some extent, is an illusion or a trick created by the society and market. If people are always guided by such ideology and never realize the truth of consumption and without a correct and comprehensive understanding of it, on the individual level, it will cause some irrational consuming behaviors, such as comparison consumption, conspicuous consumption, etc. And on the social level, it even causes some social unsettlement or economic crisis.

Mass media is one of the most common, powerful and efficient tools for seller to reach customer, to propagate the consumption concepts and new consumption patterns and, to a large degree, to help the consumerism grow in the whole society. It is a strong and dominate tool to shape and influence people's belief and ideology in today's life of great affluence. Magazine, as an influential and enduringly popular media, takes on great marketing function of material goods. Usually in an issue of magazine, there will be many verbal and pictorial advertisements being inserted as a way to attract customer's attention, stimulate customer's needs or desire. Among these advertisements, there are plenty of multimodal metaphorical resources employed to persuade customer, to instill the sign-consumption thoughts to customer's mind.

1.2 Objectives and Significance of the Study

Metaphor is an important cognitive tool. Lakoff and Johnson (1980) further develop the concept of metaphor, where it is not merely a linguistic characteristic, but a way in people's mind to understand the world better. Taking this into consideration, this study, under the research framework of Critical Discourse Analysis(CDA),by finding linguistic resources used in multimodal metaphors, disclosing the cognitive operation mechanism behind multimodal metaphors with the help of conceptual blending theory, tentatively explores the sign-consumption ideology hidden in multimodal metaphors of print magazine advertisements.

The significance of this study can be demonstrated in terms of its theoretical and practical values.

Theoretically, conducting an analysis of print magazine advertisements from the perspective of cognitive linguistics can contribute greatly to the development of metaphor study because these advertisements deploy rich metaphorical resources and different modes which provide a good and typical research subject for metaphor research. Besides, existing researches on sign-consumption mainly from economic, sociological or philosophical field, it is rarely touched upon from the perspective of cognitive linguistics, and few researches give interdisciplinary account to it. The author of this study attempts to uncover sign-consumption ideology from the perspective of cognitive linguistics. The study enlarges the academic vision of sign-consumption and the sociocultural vision of metaphor and provides enlightenment for relevant study in the future.

Practically, conducting cognitive analysis of the multimodal metaphor in print advertisements is conducive to reproduce the cognitive working process of people's mind and therefore, to figure out how sign-consumption are instilled in people. In this way, this study can make more people understand consumption, especially sign-consumption correctly. From individual perspective, it helps people keep rational when facing various marketing strategies. From social perspective, it helps to uphold healthy market order and harmonious social atmosphere in the long run.

1.3 Research Questions

This paper, based on the hypothesis: there is sign-consumption ideology connoted in multimodal metaphor of ad, follows the research path of CDA which involves three dimensions---text, discourse practice and social practice. Therefore, this study analyzes multimodal metaphors in print advertisements by figuring out the following questions from three levels.

In micro-level, it identifies multimodal metaphor of advertisement to answer the question:

1. What multimodal metaphors are manifested in the print advertisements and how do visual and verbal modes interact to present source and target domain?

In meso-level, it analyzes multimodal metaphor with conceptual blending theory to answer the second question:

2. What features are mapped from one input space on to the other in the process of blending? How do multimodal metaphors reach marketing effects in ads?

In macro-level, it gives sociocultural account to multimodal metaphor, aiming to answer the third question:

3. Whether is there sign-consumption ideology hidden in the ads? If there is, why does sign-consumption ideology exist in society?

2. Literature Review

2.1 Previous Studies on Multimodal Metaphor

The last few decades have witnessed a growing interest in metaphor. However, the vast majority of relevant publications focus on verbal metaphors, or at least on verbal manifestations of metaphor (Forceville, 1996). The Cognitive Metaphor Theory developed by Lakoff and other scholars is a landmark in metaphor investigation. The view that metaphor is not primarily a matter of language, but structures thought and action is systematically presented by George Lakoff and Mark Johnson's influential book *Metaphors We Live By* (1980), which signposts promising scholarly avenues for investigating whether other media than language can manifest metaphor as well. Charles Forceville (2009) believes that a healthy theory of cognitive metaphor must systematically study non-verbal and multimodal metaphor, and that the excessive emphasis on the verbal manifestations of metaphorical thought has blinded researchers.

It is Charles Forceville who has extended studies on metaphor into the realm of multimodality and has exerted a considerable influence on metaphor studies. Forceville & Urios-Aparisi's collection *Multimodal Metaphor* (2009) shows all the latest research results at abroad. All scholars are primarily concerned with the respects like the value and effect of modality as well as its interaction, dynamic interplay of metaphor and metonymy, stylistic dimensions of metaphor as well as the cultural and the embodiment foundation of metaphor. The term multimodal metaphor refers to "metaphors whose target and source are rendered exclusively or predominantly in two different modes/modalities" (Forceville & Urios-Aparisi, 2009). Multimodal discourse is a vast territory, comprising a multitude of material carriers (paper, celluloid, videotape, bits and bytes, stone, cloth...), modes (written language, spoken language, visuals, sound, music, gesture, smell, touch), and genres (art, advertising, instruction manual) (Forceville & Urios-Aparisi, 2009). In recent decade, more and more scholars have turned their attention to multimodal metaphor in various genres, like advertising, political cartoons, comics, animation, musical compositions, oral conversations and lectures, feature films, etc. Among which, advertising attracts most scholarly attention for that it can at the same time integrate with the modes of language, visuals and sound/music and that it has vast group of target audience. In the following, a rather detailed review of the research on multimodal metaphor in advertisements will be stated.

2.2 Previous Studies on Multimodal Metaphor in Advertisements

The previous studies concerning multimodal metaphor in advertising can be tentatively classified into three aspects.

Firstly, some of the studies focus on the distribution of multimodal metaphor and metonymy and how the two mechanisms interact to fulfil different cognitive and persuasive roles. Pan & Zhang (2013), Liu & Yang (2017), Zhang & Zhan (2011), Pan & Zheng (2017) and Qiu (2013) propose that metaphor and metonymy are important representation of mind and society, based on which social reality is reconstructed and which are also mechanisms for multimodal discourses to achieve textual cohesion and coherence, to increase ads' persuasiveness and vividness. Urios-Aparisi (2009) argues that how metaphor and metonymy interact hinges on cognitive as well as communicative roles and motivations.

Secondly, some of the studies note what modes are chosen to represent conceptual operations and the advertised product and how these different modes interact. In early years, researches on print ads are followed with interest. Forceville's book *Pictorial Metaphor in Advertising* (1996) shows us how metaphor can occur in pictures and how to analyze pictorial metaphor. The communicative effect of many (print) ads is to be found in the combination of the visual and verbal modes. The image-text integration makes it possible to construe the metaphor and metonymy underpinning the adverts (Alousque, 2013). In recent years, more attention shifts to dynamic video TV ads. Lan & Cai (2013), Wang & Wang (2018), Huang & He (2019), Zhang & Xu (2018) and Sweetser (2017) explore dynamic TV ads and conclude that visuals, sound and words coordinate to represent multimodal metaphor in TV ads. Multimodal metaphor represented by visuals, sound and words has both similarity and difference with monomodal metaphor mainly constructed by verbal modes, which exactly indicates the adaptability of conceptual metaphor to different modes.

Thirdly, few of the studies notice the pragmatic functions of multimodal metaphor in ads, especially the marketing effects. Multimodal metaphor can contribute to product promotion (Urios-Aparisi, 2009). Zhang & Xu (2018), by analyzing a video commercial concerning a Chinese tobacco brand, argue that multimodal metaphorical argumentation helps to highlight the positive aspect of smoking this brand and overshadows its side-effects, and it can be regarded as a strategy to evade sanctions for ignoring institutional constraints. Caballero (2009) illustrates multimodal metaphor plays a role in wine jargon and audiovisual promotion by translating a sensorial and highly subjective experience into comprehensible and shareable terms. Some notice the cultural background behind multimodal metaphor in ads. Chen & Sun (2018) suppose that multimodal metaphor become the carrier and reinforcer of the social identity and gender stereotype of a consumer group on the one hand, and a positioning implement for shaping its brand personality by a company on the other.

From the above, we can conclude that most studies work on either the interaction of metonymy and metaphor or the coordination of different modes, both of which are explained in figurative or semiotic level. In recent years, some attention is turned to the pragmatic functions and social meanings of multimodal metaphor in ads, delineating systematically and critically how multimodal metaphor of ads work to position the brands or increase the persuasiveness. Unlike most of the existing research, seemingly dedicated to finding ways to maximize the marketing effects, this paper, other than putting emphasis on linguistic analysis on multimodal metaphor, also takes a critical metaphor blending perspective to reveal the sign-consuming ideology articulated in the multimodal metaphor and the potential social and ethical impact these ads have on audience.

3. Theoretical Basis

3.1 Conceptual Blending Theory

3.1.1 Development

Conceptual Blending Theory (hereafter this paper will be abbreviated as CBT), also named conceptual integration theory, was firstly put forward by Gills Fauconnier. This theory initially sprouted from the Mental Space Theory. Building an integration network inevitably involves setting up mental spaces, matching across spaces, projecting selectively to a blend, etc. Therefore, mental space is the foundation for people to constructing a blended network. The publication of a book named *Mapping in Thought and Language* (Fauconnier,1997) marks the formal establishment of CBT. Fauconnier(1997) proposes that that mappings among spaces are at the heart of the unique human cognitive faculty of producing, transferring, and processing meaning which yields general procedures and principles for a wide array of meaning and reasoning phenomena, including conceptual projection, conceptual integration and blending, analogy, reference, and counterfactuals, etc. In the book *The Way We Think* (Fauconnier & Turner, 2002), the authors further develop CBT into a more systematic, mature and adaptive theory. They devote to applying conceptual blending to more fields and argue that blending underlies and makes possible all these diverse human accomplishments, that it is responsible for the origins of language, art, religion, science, and other singular human feats, and that it is as indispensable for basic everyday thought as it is for artistic and scientific abilities.

3.1.2 Operation Mechanism of CBT

Fauconnier (1997) defines Mental Spaces as “the domains that discourse builds up to provide a cognitive substrate for reasoning and for interfacing with the world”. In 2002, he once again illustrates the definition as “a small conceptual package built during the process of human thinking and acting to get a local understanding of the actions and conversations.” Meaning construction is a cornerstone of cognitive science (Fauconnier,1997). Between the language expression and the real or metaphysical world, there should be a construction of cognitive level, which is neither the simple representation of language expression, nor the faithful representation of the world. Mental spaces are the state of the cognitive construction, which are built up when the language expression arises. They also connect the discourse with the context, which includes social framing, pragmatic conditions. Mental spaces, as a cognitive mechanism, interconnect the semantic and pragmatic meaning with the real world. Blends arise in networks of mental spaces.

Conceptual blending is a dynamic cognition process, which is constructed according to the real-time context and complexity of the knowledge patterns. Therefore, a conceptual blending network can be composed of several input spaces and even multiple blended spaces. But in order to make the operating mechanism of conceptual blending easier to understand and apply, Fauconnier and Turner (2002) explain it in form of basic diagram of blending network containing essential and indispensable features (see Figure 1), which is composed of four mental spaces. Two input spaces are organized through information from individual domains of knowledge, playing the role of base structures to transfer needed information to other spaces. One is generic space which covers something in common from two inputs, and one is blended space which contains selected aspects of

information from both two inputs as well as an emergent structure of its own. As illustrated in Figure 1, in basic diagram, one circle represents one mental space, the solid lines suggest the matching and cross-space mapping between the inputs, the dotted lines imply connections between inputs and either generic or blended spaces, and the solid square in the blended space represents emergent structure.

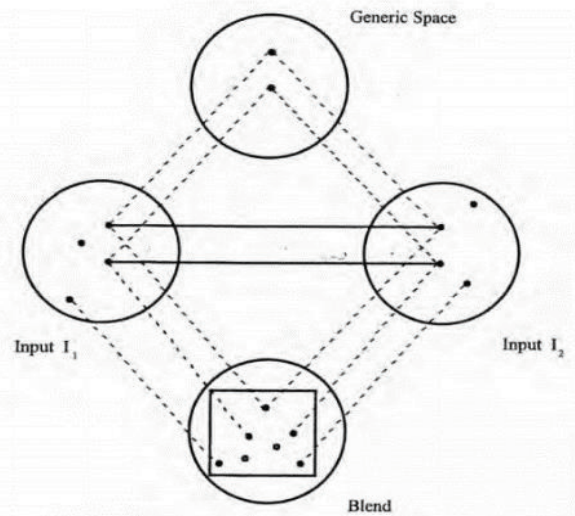


Figure 1. The Basic Diagram of CBT (Fauconnier & Turner, 2002)

Mapping is a general cognitive procedures and principles for many meaning and reasoning phenomena including conceptual projection, conceptual integration, analogy, reference, and counterfactuals, which in turn is vital to understanding of metaphor and metonymy, narrative structure, speech acts, rhetoric, and general reasoning (Fauconnier, 1997). Mapping also grants us an access to the black box of cognitive domains which we usually are unconscious of. But here, it works, on narrow sense, as a cognitive procedure to connect and match counterparts among the input mental spaces. Through mapping and projection, the four spaces (taking the Basic Diagram as instance) interconnect and construct a conceptual blending network.

Emergent structure arises in the blended space (also the blend), which is the final product of creativity and novelty of conceptual blending process. The blend is selective projection from two input spaces, and the emergent structure is not copied directly from any inputs. Fauconnier (2002) pointed out that emergent structure is generated in three ways: the first way is COMPOSITION that composes elements from the input spaces to create relations that do not exist in the any inputs. The second way is COMPLETION. Blends recruit great ranges of background knowledge and structure. Knowledge of background frames, cognitive and cultural models will inevitably make us project the composite structure into the blend from the inputs. Such composite structure is viewed as a part of a larger independent structure in the blend. The pattern in the blend triggered by the inherited structures is "completed into the larger, emergent structure". The third way is ELABORATION. The structure in the blend can then be elaborated. This is the so-called "running the blend." It consists in cognitive work performed within the blend, according to its own emergent logic. The emergent structure is a dynamic and complex cognitive process which requires not only vivid imagination but also subtle understanding to the world. In the cognitive process of conceptual blending, context is an indispensable part for understanding the concepts and we will mainly take it as the starting point. Besides, we will dynamically blend concepts according to layered logic and inherited knowledge.

In this study, CBT is used in meso-level to interpret pragmatism practice of multimodal metaphors in ads. Firstly, under the guide of mental space thought, this study pinpoints two main base inputs which cover most of ideas the advertiser aims to convey. Secondly, connecting with pictorial context, this study deduces features mapped from one input space on to the other with the help of the cognitive procedure---cross-space mapping. Based on the information transferred from inputs, this study concludes common places composing generic space and emergent structure. Basic diagram is applied here to clearly demonstrate the cognitive blending process. Through the cognitive analysis, we can get selling points or sign-value the advertiser imposes on products. Consequently, marketing functions performed by multimodal metaphors in ads can be revealed.

4. Research Method and Data Collection

4.1 Critical Discourse Analysis (CDA)

Critical Discourse Analysis (CDA) is not so much a direction, school, or specialization next to the many other "approaches" in discourse studies. Rather, it aims to offer a different "mode" or "perspective" of theorizing, analysis, and application throughout the whole field (Fairclough & Wodak, 1997). It is considered as an interdisciplinary analysis tool to the study of discourse that views language as a form of social practice.

Fairclough (1995) illustrates the distinction between text and discourse. In his opinion, text is the end product of the text (written or spoken) producing process while discourse refers to the whole process of social interaction. Fairclough's three-dimensional model clearly explain the relationship between text and discourse. He (1995) suggests that discourse or any specific discursive practice is simultaneously: 1) a language text (written or spoken); 2) discursive practice (text production, distribution and consumption); 3) social practice (any discourse is embedded within sociocultural practice at a number of levels: in the immediate situation, in the wide institution or organization, and at a societal level).

The three-dimensional concept of discourse corresponds to the three-stage critical discourse analysis put forward by Fairclough (1992) ---description, interpretation and explanation. This study adopts Fairclough's three-dimensional model to build its whole research framework.

Description centers on the analysis of text---the end product of discourse producing process, giving linguistic description to language text. Here in this study, description focus on the end product of advertising---the print pictorial ad. It works in the micro-level to conduct a semiotic description of what elements and modes are employed in the ads. After making clear metaphorical resources, metaphors can be tentatively identified and visual and verbal representations to source and target domain can be figured out.

Interpretation concerns with the analysis of discourse practice, interpreting the relationship between the interpretative discursive processes and the text, with attention paid to the situational contexts in which text production, distribution and consumption occurs. In this study, interpretation works in the meso-level by conducting pragmatical and cognitive analysis of ads with the aid of CBT. Combining with the pictorial context and the genre in which the metaphor occurs, we get the specific counterpart correspondences mapped between the two spaces and marketing effects created by metaphors in the specific context.

Explanation, focus on the analysis of social practice, explaining the relationship between the discursive process and the social process. It aims to analyze the discourse within a wider social practice or identify the social determination and social effects of the discourse. In this study, explanation works in the macro-level by exploring the underlying ideology---sign-consumption ideology connoted in ads. Jean Baudrillard's thought to consumerism allows us to give a sociological explanation to sign-consumption phenomenon behind discourse with a critical perspective.

4.2 Data Collection

To illustrate how multimodal metaphor works in advertising, the author has selected some print advertisements from two famous international fashion magazines---*Vogue* and *Bazaar*, which boast a huge international reader base, having rich advertisements in it. The two magazines are acknowledged as "fashion Bible" in many young people's mind for they leading new trend and pioneering new consumption concepts. Advertisements retrieved from the two monthly magazines are published between January and December, 2019, 12 issues, covering industries like garment, jewelry and beauty.

Three ads with typical metaphorical manifestation are selected as research subjects and our choice is justified on the following grounds:

- a) Selected adverts should bring into full play the modes of language and visuals.
- b) Selected adverts should differ from each other in terms of their types.
- c) The selection of ads has been determined by their figurative potential.

5. Analysis of the Data

As illustrated above, the whole research framework follows Fairclough's three-dimensional CDA model. Analysis of multimodal metaphors in ads will also be conducted in three stages, aiming to answer three-level research questions accordingly. The first stage is giving semiotic description to metaphorical resources in pictorial ads and then identifying the metaphors. The second stage is conducting pragmatical interpretation of metaphors with the help of CBT. On the one hand, through cognitive analysis in conceptual blending network,

we can reach the black box of people’s cognition to metaphors. On the other hand, taking the pictorial context and marketing function of advertisement genre into consideration, we can get the selling points or sign-value the advertiser imposes on material goods. The third stage is giving sociological explanation to sign-consumption ideology by digging out social causes behind it.

The first ad is about CLOUDNINE hair straightener. In the critical analysis of this ad, we will first give a semiotic description of the metaphor used in the ad.

AD 1. CLOUDNINE Straightener (British *Vogue*, December 2019)



Semiotic Description

In the center of AD 1 is the product advertised---CLOUDNINE hair straightener. As is depicted in the picture, a special liquid looks like shiny gold paint flowing through the straightener, with the color of gold occupying most of the picture, catching people’s eyes in first glance and creating modern and noble atmosphere. In common sense, we know that straightener is used to straighten our hair while here this special liquid flows across it. Therefore, readers easily associate such liquid with hair in this context even though hair is not presented here. Metaphor employed in this advert is HAIR IS SPECIAL LIQUID. The target domain is HAIR, more specially, the hair after using CLOUDNINE straightener, namely the product effect. Hair after using the straightener is not presented visually but in form of word below the figure---“the mastery to create your best hair yet”. However, it is too abstract to imagine how ‘best’ the hair is. The source domain is LIQUID, the touch sense to which is familiar to us. Besides, visual representation of it also helps a lot to understand and imagine the hair quality. The above semiotic description can be illustrated in Figure 1a.

Cognitive analysis	Metaphor: HAIR IS SPECIAL LIQUID
	- Source domain: liquid
	- Target domain: hair
Modality	Multimodal
	- Visual representation of the source
	- Verbal representation of the target

Figure 1a. Metaphor description of AD1

Pragmatical Interpretation

In this example, there are two mental spaces constructed through the cognitive process to this advert---HAIR Space and LIQUIDE Space, and the straighter belongs to the former. We connect the two space by cross-space mapping in our mind. The whole cognitive operation process is presented as Figure 1b. The gold color of liquid occupies almost all of the figure, which makes people naturally associate it with blond hair in this context. Blond hair is always regarded as the fashionable and modern symbol. Besides, gold color also represents noble, luxurious and glorious. Liquid here is special one with dull sheen in it, so it looks shiny and lustrous. Mapped into the HAIR Space, we will think of hair with a healthy sheen. As for the sense of touch to liquid, it is not strange to everyone. Most liquid in daily life flows freely and feels soft and gentle. The liquid here in this picture also has these features. Besides, it looks smooth and soft which is similar to the quality of great hair. Liquid in this advert is not static but is flowing or moving, which can remind us about supple and healthy hair fluttering with the breeze in the HAIR Space. Straighter is an electronic product whose working principle is to heat the board to about 200 Celsius to straighten hair. Therefore, it is always criticized for its high temperature which damages the hair and makes it dry and dull. Generic space in this example mainly contains the similar characteristics between HAIR Space and LIQUID Space. What are mapped between the two inputs are the concerns of straighter buyers and also the selling points the advertiser wants to convey. Besides, sign-value like modern, charming and confident images are built with the aid of multimodal metaphor. Based on information transferred from two inputs and considering the context and the marketing purpose, the emergent structure in blended space can be expressed as that CLOUDNINE Straighter provides solutions to your hairdos, not only changing your hairstyle, but also keeping hair shiny, lustrous, smooth and making you charming and unique. This metaphor’s conceptual blending process is demonstrated as in Figure 1b below:

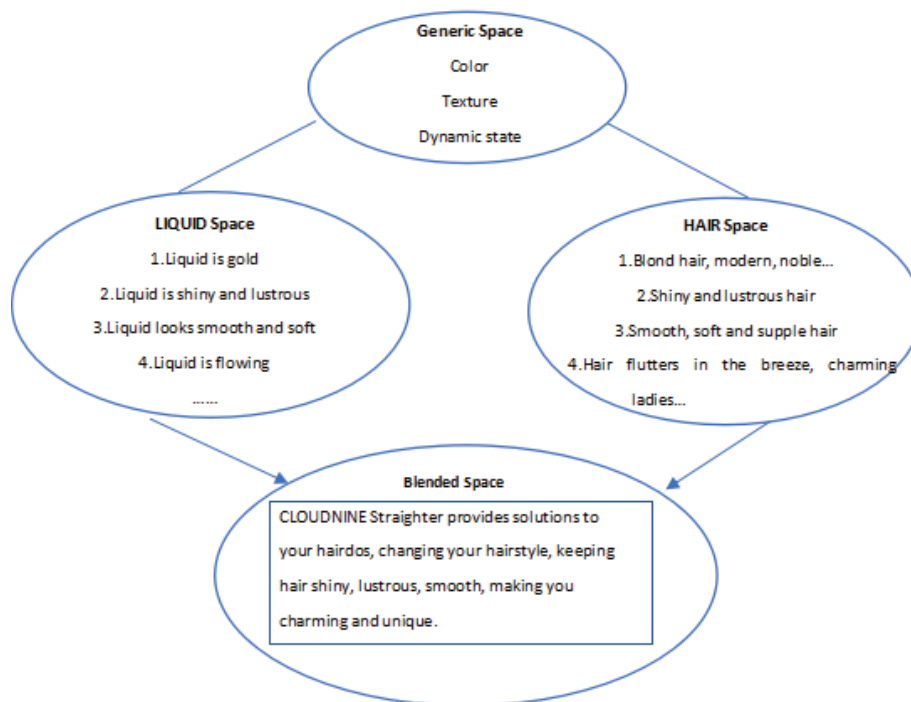


Figure 1b. Conceptual Blending Network of AD1

Sociological Explanation

“The confidence to experiment. The power to transform. The mastery to create your best hair yet.” The caption of the product perfectly accords with the meaning connoted in metaphor. Changing hairstyle is an important moment because it symbolizes a transform not only in appearance but even in mental state. Therefore, it is self-evident that people has little tolerance to hairdos fault because they all want to present their gorgeous and perfect side to others. But CLOUDNINE Straighter is the special tool making people brave to transform and confident to experiment because it brings no hurt to hair as the metaphor conveys. However, only a straighter cannot give your power and confidence and make you become as modern and lustrous as a pretty blond girl. All

it can do is just straightening hair, which is its objective function. And the other 'functions' as expressed in the advert are imposed on the product by seller, advertiser and other operator in market, which accords with the 'functionalization' of an object put forward by Jean Baudrillard (1970). Functionalization is a coherent abstraction which superimposes itself upon or substitutes for its objective function and 'functionality' is not use-value, but sign-value (Baudrillard,1970). It is an old trick of market to connect products with beautiful, elegant and different things, instead of directly selling material goods. By employing multimodal metaphor in ad, it inconspicuously but vividly stimulates people's desire, persuades them to buy and meanwhile instills sign-consumption ideology into their minds.

The next is a perfume ad which is a typical example because perfume is born with rich connotation imposed by people.

AD 2. AMAFFI Perfume (British *Vogue*, December 2019)



Semiotic Description

As presented in AD 2, there is the perfume for man with gold and diamond-like bottle standing in the middle. The background against it looks like black backdrop of stage, and the foreground before it is the pulling back red curtain. The configuration of light and shade is center-surrounding structure. From center to surround, light fades out to total dark, while in the center around the Amaffi perfume is brightest with purple halo, which is like a protagonist in the limelight of stage. There is a conventionalized metaphor that underlies this ad---LIFE IS A STAGE. Conventionalized metaphoric patterns stored in long-term memory may provide "ready-made" counterpart connections for the real-time construction of blends, which allows us to combine conceptual material with astonishing speed, fluency and freedom (Grady, 2006). With the help of this conventionalized metaphor in our mind, we can immediately recognize that this ad promotes the perfume brand by attempting to render a view of the Amaffi Perfume as a protagonist in stage, which is also a personified expression. The ad conveys the metaphor A PERFUME IS A PROTAGONIST, which is incorporated into LIFE IS A STAGE. The source domain is PROTAGONIST of STAGE cued by visual form, the target domain is PERFUME. Specially speaking, it is the person possessing PERFUME cued by language and image simultaneously. It is notice-worthy that in this example, the caption to this perfume is limited to only pointing out the brand name and product name. The interaction of visual and verbal modes is listed in the following Figure 2a:

Cognitive analysis	<p>Metaphor: LIFE IS A STAGE A PERFUME IS A PROTAGONIST</p> <ul style="list-style-type: none"> - Source domain: stage; protagonist - Target domain: life; Amaffi perfume
Modality	<p>Multimodal</p> <ul style="list-style-type: none"> - Visual representation of the source - Visual/Verbal representation of the target

Figure 2a. Metaphor description of AD2

Pragmatical Interpretation

There are two mental space encoded in this ad as Figure 2b presented. In the STAGE Space, black backdrop and red curtain implies that it is a formal occasion like theater, in which all gentlemen and ladies wear decent clothes and exquisite accessories. This feature mapped into PERFUME Space will make people believe that this perfume is suit for important and formal occasion. Protagonist in STAGE Space stands in the center, on which light converges. Mapped into the PERFUME Space, our mind will connect it with people possessing Amaffi perfume who is in the limelight, wherever he goes, he can earn enough attentions. Around the protagonist is purple halo which represents dignity, nobility and mystery. Our mind maps it into PERFUME Space by thinking of a man with this perfume who has an aura of dignity, nobility and mystery. The red curtain is pulling back which implies the show time begins and important person shows up. The personified perfume stands behind the pulling back curtain means a person in PERFUME Space will be the important one. What are mapped between the two spaces are the selling points of Amaffi perfume the advertiser wants consumers get. That is also the counterpart common features composing generic space. A person with Amaffi perfume can earn as much attention as the protagonist of the stage. The perfume helps to build up an attractive, noble and important image like the protagonist. It is suitable for formal and important occasion. In this context, combining these counterpart conceptual materials, we can conclude the emergent structure as that Amaffi perfume can manifest your unique taste and style and help you earn as much attention as a protagonist, and that important figure deserves possessing it for formal occasion. The metaphorical blending between STAGE Space and PERFUME Space is illustrated as the following Figure 2b:

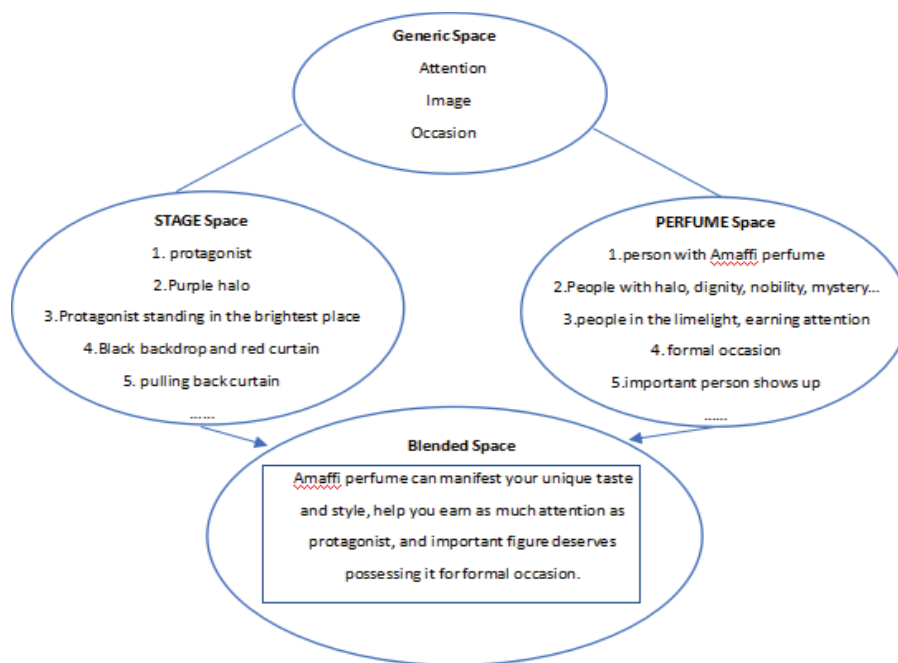


Figure 2b. Conceptual Blending Network of AD 2

Sociological Explanation

Perfume is just a liquid put on skin to make people smell nice, which is its fundamental objective function. Even we ourselves cannot make clear why our mind will connect perfume automatically with elegance, delicacy and civility. These symbolic meanings are unconsciously stored in our mind since we first know what perfume is, and most people take it for granted without realizing that they are paying for its sign-value added artificially. Market makes a lot effort to increase its sign-value by designing complicated and dazzling packet and bottle, building up different brand image, developing various product lines and different scent. In this example, no matter the design of this perfume bottle or the counterpart materials mapped between the two spaces tells people that this perfume is more than a liquid making you smell well but a symbol of unique status and taste, a way to differentiate you from others. However, according to Baudrillard (1970), such 'differentiation' adheres to the order of the industrial production of differences which defines system of consumption. This is an absurd formula: monopoly and difference are logically incompatible. However, in our today's society, it seems that they can be combined. It is precisely because the differences are not true differences. Instead of marking a person out as someone singular, these differences mark his conformity with a code, his integration into a sliding scale of values. It is upon the loss of differences that the cult of difference is founded. When we are struggling to seek the difference which will make us ourselves, can we realize that we fell into the trap of industrial production? Besides, the hierarchy behind some marginal difference are deep-rooted. Though we can afford a particular object because all men are equal before objects as use-value, but they are by no means equal before objects as signs and differences, which are profoundly hierarchical. Same way with this example, though we can possess this perfume, we may not change our status or become important figures just because of possessing it. The next example is a jewelry ad, whose connotation is as rich as perfume.

AD 3. CHAUMET Jewelry (American *Bazzard*, December 2019)



CHAUMET
PARIS

Semiotic Description

In this ad, CHAUMET ring advertised is in the up-middle placed above three cubes, behind which is the famous Vendôme Column erecting in Place Vendôme, the original one was completed in 1810 at Napoleon's direction to celebrate the victory of Austerlitz. A statue of Napoleon, bare-headed, crowned with laurels and holding a sword in his right hand and a globe surmounted with a statue of Victory in his left hand, was placed atop the column. In 1874, the column was re-erected at the center of Place Vendôme with a copy of the original statue on top. Overall color of the ad is dark blue bringing out the shiny diamond of ring. Both the ring and the statue of Napoleon are at the top part of the figure, and it seems that we need to look up to them. Napoleon, as a famous French emperor in history, is the symbol of power. The conventionalized orientation metaphor---MORE IS UP, GOOD IS UP enables us to fast get the metaphor POWER IS UP in this ad. As the Vendôme Column stands farther away from

us than the ring, presenting just its vague outline, it is a far echo to the ring which standing in the center of attention. And our mind will inevitably regard the statue of Napoleon as counterpart of ring. In this context, sign-value behind RING is abstract, thus it should be taken as target domain. While POWER based on the conventionalized metaphor and with the knowledge background of Napoleon is more concrete, thus it should be taken as source domain. RING in this ad is visually presented, and the brand name and origin of brand are verbally pointed out. POWER is presented visually by various conceptual materials. Basic description to metaphors in this ad is concluded as below:

Cognitive analysis	<p>Metaphor: POWER IS UP RING IS POWER</p> <ul style="list-style-type: none"> - Source domain: power - Target domain: ring
Modality	<p>Multimodal</p> <ul style="list-style-type: none"> - Visual representation of the source - Visual/Verbal representation of the target

Figure 3a. Metaphor description of AD3

Pragmatical Interpretation

POWER Space and RING Space are two main corresponding mental spaces in this ad. Emperor standing in the top of the column mapped into the RING Space will make people think of that people with luxurious ring has high status. The emperor stands so high that people should look up to him, which is a behavior representing respect. This feature is mapped into RING Space as a prestigious and respectable person. There is no doubt that an emperor possesses great affluence, which is mapped into RING Space as a wealthy person.

What deserves to be more mentioned is the long historical background behind this metaphor. CHAUMET is a time-honored jewelry brand originated in Place Vendôme, the center of high jewelry of the world. It has been creating tiaras, high jewelry pieces and unique timepieces since 1780. Chaumet's founder, Marie-Etienne Nitot, was Napoleon's official jeweler. He designed jewelries for Napoleon's two marriage, for which Nitot became the most sought-after jeweler in Europe and established a loyal and prestigious clientele. This brand's deeply connecting to Napoleon endows it unmeasured brand value and rich brand history. Mapping this feature into RING Space, it will be understood as that people having ring of this brand gets cultural identity because he or she agrees with the brand history and brand value. Generic space here contains counterpart correspondence between two inputs, which is also the underlying values expressed by mapping between two inputs---the seeking to status, prestige, wealth and cultural identity. We can understand the emergent structure as CHAUMET Ring is the symbol of status, prestige, wealth and knowledge. The following Figure 3b illustrates the metaphorical blending between Power Space and Ring pace:

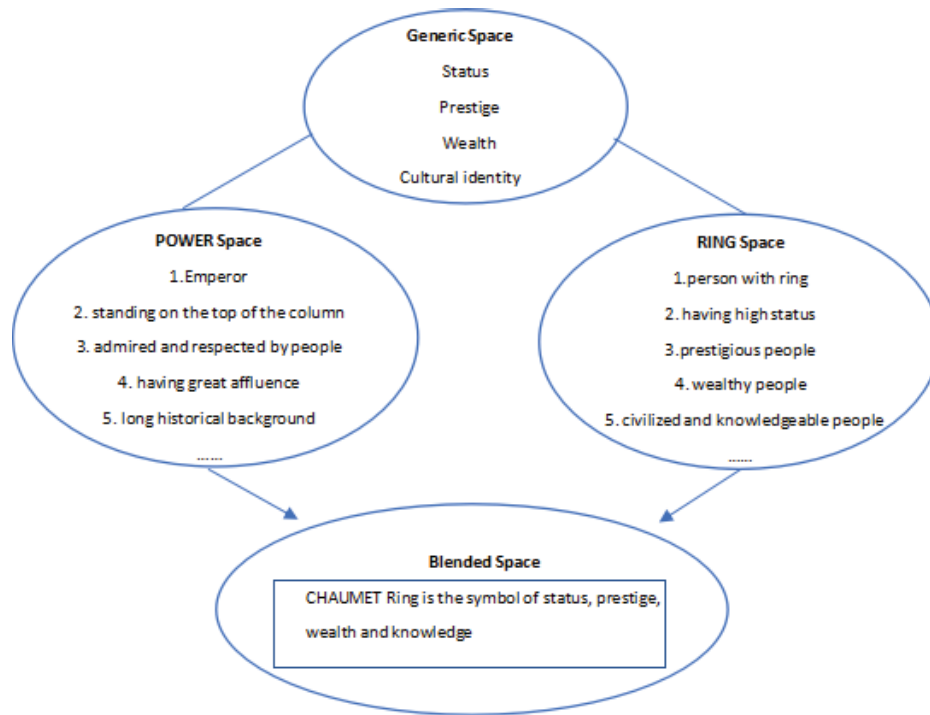


Figure 3b. Conceptual Blending Process of AD 3

Sociological Explanation

In daily life, we are even unable to give a concrete definition to jewelry’s objective function. It has long been closely connected with beauty, luxury, elegance and romance. The exploitation of objects as differential, as signs - the level which alone specifically defines consumption - is precisely established upon the relegation of their use-value (Baudrillard, 1970). Many consumption behaviors nowadays care few about use-value or objective function, which is the result of market’s creating various sign-concepts and instilling relative aesthetic standards, thoughts and ideology gradually and inconspicuously. People get accustomed to such consumption patterns even without noticing that their choice and behaviors are guided by others.

Culture consumption is a phenomenon which deserves to be discussed. More and more brands keen on advertising themselves as boasting a long history or having relationship with art so as to differentiate themselves. In this way, they build up brand image and satisfy customers’ need to differentiation. Cultural consumption may thus be defined as the time and place of the caricatural resurrection, the parodic evocation of what already no longer exists - of what is not so much 'consumed' as 'consummated' (completed, past and gone) (Baudrillard, 1970). The logic of “culturalization” is the same as “personalization” and “differentiation”. It is industrial monopoly concentration which abolishes the real differences between human beings and homogenizes persons and products. Therefore, people urgently require signals of differences in their mind. However, as illustrated before, the differences are not true differences. Possessing this ring doesn’t mean we have status, prestige, wealth or knowledge, but maybe it is an evident of succumbing to sign-codes and sign-value encoded by market.

6. Conclusion

Through analyzing multimodal metaphor from three dimensions, the hypothesis that there is sign-consumption ideology connoted in ads is verified. In the micro-level, metaphors in selected ads are all novel metaphors, some of which need be understood based on conventionalized metaphor. Products advertised or elements connecting with it always represent target domain because underlying sign-value is abstract to reach. Source domain, as an important media to understand target domain, is always presented in form of image because it should be concrete. Multimodal metaphor is a more practical tool to express thoughts in unconscious but vivid way than verbal metaphor. In the meso-level, counterpart correspondences mapped between two input spaces are the imposed selling points and sign-values, which take the main marketing functions. Through conceptual blending process, we can efficiently get the selling point and sign-consumption ideology the advertiser wants to convey. In the

macro-level, delicately wrapped with multimodal metaphor, sign-value conceals itself perfectly. No matter what value it connotes: beauty, confidence, status, attractiveness, wealth or prestige, it essentially satisfies people's desire for differentiation in homogenized industrial society. Relegating and weakening the objective function but advocating sign-value of goods allows the market more space to stimulate people's desire and conduct secondary exploitation to people (the first is labor exploitation).

This study is an interdisciplinary attempt in studying multimodal metaphor. Three-dimensional analysis to pictorial cases requires relatively large space, therefore, the amount of cases analyzed is insufficient and advertisements selected as research cases cover limited industries. Therefore, the persuasion and universality are limited, even if typical cases can provide us with a window to see the vast and colorful metaphor world. Besides, as the qualitative method is the one which requires high researchers' involvement, the process of analyzing data may be influenced by researcher bias. Considering the insufficient amount of cases, corpus method will be a practical solution to overcome it. With the aid of some multimodal corpus tool, more pictorial cases can be collected. Collecting more typical cases, classifying them into different categories and analyzing systematically are the goals which multimodal metaphor research should strive for. As for the influence of researcher bias, triangular verification to analysis can be applied to reduce subjectiveness, for example, collecting other people's understanding to the hidden message conveyed in ads.

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Value Relevance of Accounting Information in the Botswana Listed Companies

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Abstract

The main purpose of the study was to examine the statistical relationship between four sets of accounting information and market share prices using the data of companies listed on the Botswana Stock Exchange over the period from 2012 to 2018. Annual reports and Botswana Stock Exchange – Equity Statistics data bank were the sources of accounting information and market prices respectively. The Ordinary Least Square regression method was used to analyse data. The results suggest that earnings are the most value relevant information to share prices followed by dividends and lastly book value. While book value yielded weak value relevance operating cash flows did not explain changes in share prices in the Botswana equity market. The combination of earnings and dividends was more value relevant than any other mix of accounting amounts. The study further revealed that the market share price at the end of the 6th month from the year end was the most influenced price. These results have implications to quoted companies regarding the importance they attach on earnings and dividends information and their timely publication. The paper recommends for speedy dissemination of earnings and dividends information since investors significantly consider such information in market share pricing decisions.

Keywords: value relevance, earnings, dividends, book value, cash flows, Botswana

1. Introduction

1.1 Background Information

Financial reporting is concerned with the dissemination of useful information to financial statements users to assist them to make various informed decisions. According to accounting standards setters worldwide in order for the information to be useful to users it must bear two key qualitative characteristics of relevance and reliability. It is worth mentioning that in recent conceptual frameworks of financial reporting, particularly those of Financial Accounting Standards Board (2010) and International Accounting Standards Board (2018), the attribute of reliability has been replaced by the characteristic of faithful representation (BrainMass, n.d). The attribute of relevance refers to information being capable in making a difference in the decisions made by users. In addition, information capable of making a difference in decisions must have a predictive value (should be able to predict future outcomes) and/or must have confirmatory value (should be able to provide feedback on the previous evaluations (Financial Accounting Standards Board, 2010; International Accounting Standards Board, 2018). Alexander, Britton and Jorissen (2007) add that to be relevant the information must resonate with why the user needed that information in the first place. The information that does not satisfy the users' interests is irrelevant to them.

The characteristic of faithful representation refers to the reported information being capable of displaying the substance it intended to provide. Moreover, faithfully presented information is considered to be complete, neutral and error free and is affected by the level of uncertainty with which it was determined. The reported information is telling the true story of what actually transpired and therefore can be trusted by users. The usefulness of information is said to be boosted by the characteristics of comparability, verifiability, timeliness and understandability (Financial Accounting Standards Board, 2018). The quality of comparability implies that the user would find the reported information useful if the user can identify similarities or differences among similar items reported by different entities or provided by the same entity in different reporting periods. The quality of verifiability is whereby different knowledgeable and independent users would arrive at the same conclusion that

the reported information is faithfully depicting what it purported to depict (Financial Accounting Standards Board, 2010; International Accounting Standards Board, 2018). The characteristic of timeliness refers to making the information available to users on time to influence their decisions. Understandability means that the manner the information is reported should consider the ability and knowledge of users in comprehending it (Alexander, Britton & Jorissen, 2007).

It is a commonly accepted view among researchers and accounting standards setters that general purpose financial statements are primarily prepared for existing and potential investors who make decisions involving buying, selling or holding shares of the reporting entity (Financial Accounting Standards Board, 2010; Olugbenga & Atanda, 2014). Barth, Beaver and Landsman (2001) assert that a primary focus of financial statements is to assist shareholders in their equity investment decisions. Holthausen and Watts (2001) note that most authors assume that accounting's dominant role is to provide information relevant to equity valuation. Due to the perceived nexus between investors, their requirement of relevant information and the resultant capital markets sustenance, the accounting research has increasingly concentrated on investigating the value relevance of accounting information. The key question has been whether the accounting information disclosed in the financial statements incorporates the information that investors can consider value relevant for their decisions to predict the value of the reporting entity.

Since the seminal work of Ball and Brown (1968) which focused on the relevance and timeliness of reported earnings on share prices (Ball and Brown, 2014) accounting researchers have dedicated themselves on establishing the relationship between the changes in share prices or returns and the changes in the accounting amounts. Several issues have emerged from prior studies on relevance of accounting information such as which accounting information has more predictive power of market share price than others (Badu & Appiah, 2018; Kwon, 2009; Akeem Adetunji, 2016); changes in the value relevance of accounting information- whether it is declining or increasing (Barth, Li and McClure, 2018; Badu & Appiah 2018); the significance of value relevance studies to accounting setters (Holthausen & Watts, 2001; Barth, Beaver & Landsman, 2001); and the value relevance of other information, for instance reports on corporate social responsibility (de Klerk & de Villiers, 2012), to mention just a few.

According to Barth, Beaver and Landsman (2001) an accounting amount would be described as value relevant if it has a predicted association with share market values. The authors elaborate that the key commonality in various definitions of value relevance is that an accounting amount is deemed value relevant if it has a significant association with equity market value. Akeem Adetunji (2016) views value relevance implying the degree of statistical relationship between information included in accounting statements and market value of shares or returns. In other words, the reported accounting amount, for example earnings or book value that is proved to provide more information to investors to consider in arriving at market value of shares is believed to be value relevant. Barth (2000) points out that the information that help the investors to assess the value of the firm for the purpose of making informed investment choices is value relevant. Barth, Beaver and Landsman (2001) distinguish value relevant from decision relevant in that information can be value relevant but not be decision relevant if it is superseded by more timely information. The value relevant information influences valuation of a share and what is decision relevant influences what alternative course of action to take. The current study seeks to establish the statistical link between the earnings, book value, dividends and operating cash flows per share and share prices using the financial statements of companies listed in the Botswana Stock Exchange.

1.2 Botswana Stock Exchange Background

Botswana stock exchange (BSE) formally began trading in 1989 as the Botswana Share Market and it was later promulgated by Act of parliament in 1994. Its main mandate is to operate and regulate the equities and fixed interest securities market. The BSE commenced with 5 listed companies and one stock broker. It has now grown to 37 entities made up of domestic companies and dual listed foreign companies. At the time of the current study in mid-2019, BSE had 4 brokers and 4 primary dealers who were allowed to trade in government and corporate bonds which stood at 33 in number. From a single index known as Botswana Share Market index (BSI) in 1989 BSE has grown into 3 indices namely: Botswana Domestic Companies Index (DCI), Foreign Companies Index (FCI) and the All Company index (ACI). The Botswana Domestic Companies Index is the main index used to gauge the performance of the exchange. As a result of market diversification stemming from consistent growth of the Botswana economy, the composition of BSE at the time of the study was categorised into nine industrial sectors: Wholesaling and Retailing, Financial Services and insurance, Banking, Property and Property trust, Mining, Security services, Transport and Tourism, Energy, and Health care and Emergency services. The BSE boasts of its phenomenon growth from initial market capitalisation of 225 million pula in 1989 to 413,168.3

million pula at the end of 2018. The BSE is one of Africa's best performing stock exchanges, averaging 24% aggregate return in the past decade (Botswana Stock Exchange, n.d.). This has allowed the BSE to be the third largest stock exchange in terms of market capitalization, in Southern Africa behind the Johannesburg Stock Exchange and the Namibian Stock Exchange. The BSE has contributed significantly to the national economy as it plays a critical role of providing the platform on which government; *state-owned entities* and the private sector can raise debt and equity capital (Botswana Stock Exchange, n.d.).

The application of International Financial Reporting Standards (IFRS) in preparing financial statements in Botswana was given a legal mandate by Companies Act of 2003 which required all public companies and non-exempt companies to use IFRS. Non-exempt companies are private companies that are above a specified threshold of turnover and total assets for mandatory audit. In Botswana the authority to adopt, issue and update financial reporting standards for public interest entities and ensuring that they are consistent with IFRS is vested upon the Botswana Accountancy Oversight Authority (BAOA) which was established by the Financial Reporting Act of 2010. At time of this study the BAOA had adopted IFRS issued by IASB and therefore all BSE listed companies as part of Public Interest Entities (PIEs) applied the IFRS in wholesome. It is mandatory for all Companies listed with BSE to release their interim and abridged audited financial statements within 3 months of their production (Botswana Stock Exchange, 2018).

1.3 Problem Statement

Numerous studies have been conducted to investigate the relationship between accounting information disseminated through the financial statements and the market share price. However, the available literature is still not conclusive on the questions of which financial variable is more predictive of the market share value than the others (Barth, Li and McClure, 2018; Badu & Appiah 2018); and which share price mostly reflects investors' consideration of accounting information (Jabar, 2012). Moreover, most of the value relevance research emanates from the developed world such as America and Europe although a growing number of such studies can be traced in the two big economies of Africa, Nigeria and South Africa. See for example, Ernest and Oscar (2014); Olugbenga and Atanda (2014) and Busari and Bagudo, (2018) in Nigeria; and Baboukardos and Rimmel (2016), Venter, Emanuel, and Cahan (2014), and de Klerk and de Villiers (2012) in South Africa. Knowledge about how and when the investors respond to the accounting information announcements is vital for the development of capital markets whose growth is pivotal to the economic survival of any country. It is therefore appropriate to extend the literature about value relevance of financial information on the share prices by examining variables from developing countries' sources. This study contributes to the extant literature by focusing on four independent financial variables namely earnings per share, book value per share, dividends per share, and operating cash flows per share. The study also compares the effect of the four independent variables on the market share price as at 3 different dates: at year end date, 3 months after year end date and 6 months after year end date.

1.4 Objectives

The general objective of this study is to examine the relationship between accounting information and market share values using the data of companies listed on the Botswana Stock Exchange over the period of seven years from 2012 to 2018. Specifically the study has the following objectives:

1. To establish the relationship between market share prices at the end of the year with earnings, book value, dividends and cash flows per share.
2. To establish the relationship between market share prices 3 months after year end with earnings, book value, dividends and cash flows per share.
3. To establish the relationship between market share prices 6 months after year end with earnings, book value, dividends and cash flows per share.
4. To determine the share price that mostly reflects the investors' consideration of accounting information.

2. Literature Review

2.1 Theoretical Review

This study is hinged on the market share valuation model initially developed by Ohlson (1995). The model represents firm value as a linear function of book value of equity and the present value of expected future abnormal earnings (Barth, Beaver & Landsman, 2001; de Klerk & de Villiers, 2012; Kumari & Mishra, 2017). The model advocates that investors should pay more than the book value of equity for the share if the present value of expected earnings is higher than the book value or should pay less if the expected earnings are less than

anticipated. Applied in this sense the model is used to forecast the share value of a firm. Barth, Beaver and Landsman (2001) however expound further that with additional assumptions of linear information dynamics, firm value can be re-expressed as a linear function of equity book value, net income, dividends, and other information. Used in this manner the model is useful in determining the association between share prices and accounting information in an attempt to establish the explanatory power of accounting figures to share prices. Net income and book value as reflected in the income statement and statement of financial position respectively have always been considered the prominent factors in explaining the change in the market share price of an entity (Barth, Li & McClure, 2018; Karğın, 2013; Ali & Hwang, 2000). A variety of prior studies have employed the Ohlson's model to examine the value relevance of accounting information while focusing on earnings and book value. See for example, Badu and Appiah (2018), Akeem Adetunji (2016), Enofe, Asiriwuwa and Ashafoke (2014) and Karğın, 2013, just to mention a few.

In its extended version Ohlson's model has been used to examine the statistical association between market share prices and various accounting numbers beyond earnings and book value. For example Elshandidy (2014) added ownership structure on earnings and book value; Ernest and Oscar (2014) added leverage, Jabar (2012) added cash flows and Busari and Bagudo (2018) and Olugbenga and Atanda (2014) added dividends and cash flows.

From the review of value relevance literature Holthausen and Watts (2001) identified 3 categories of studies that adopt association approach in analysing value relevance of accounting numbers namely, relative association, incremental association and marginal information content. Relative association refers to studies that compare the effect of accounting amounts on market share value under different accounting standards regimes. Incremental association refers to studies that examine whether the accounting number of interest explains better the share value or returns than others. They focus on analysing the explanatory power of an accounting number. The marginal information content studies concentrate on analysing whether a disclosure of particular accounting information would add to the information that the investor already has (Olugbenga & Atanda, 2014).

This study takes an incremental approach in examining the linear relationship between market share price on one side and earnings, book value, operating cash flows and dividends per share on the other side.

2.2 Empirical Literature Review

The empirical literature review below is organized according to the two main focal points of this study. First, the study seeks to establish which of the four sets of accounting information that have been relatively extensively investigated in prior studies has the highest predictive power of the market share value. Therefore, the studies that use earnings, dividends, book value and operating cash flows per share as independent variables, in various combinations, with a focus on the emerging economies were reviewed. Second, the current study aims to establish the share price that mostly reflects investors' usage of the released accounting information in making investment decisions. Hence, the studies that use market share price at different dates in a year as dependent variable were referred to.

2.2.1 Value Relevance of Accounting Information

Accounting research investigating the value relevance of accounting amounts has embraced a variety of approaches. While the focal point, being the market share value, has remained the same, the independent and control variables have been expanded from traditional internal accounting information namely earnings and book value to external factors such as rise in technology, improvement of accounting standards and country specific factors such as economic, social, political and legal components (Barth, Li & McClure, 2018; Karğın, 2013; Ali & Hwang, 2000). Che (2007) investigated the value relevance of accounting information and the relationship between market share prices and different types of shareholding in the context of China and established a strong association between accounting information as reflected in the statement of comprehensive income and statement of financial position.

Kwon (2009) investigated the value relevance of accounting information in Korean companies with a view of answering five questions. Among them were the questions about the most value relevant variable among book value, earnings and cash flows in normal situations, in instances of earning management and/or situations of negative earnings. Other questions related to whether value relevance of the 3 variables has been increasing or declining; and whether cash flow can replace earnings. The author used the share price at the end of 3 months after the year end as dependent variable and book value, earnings and cash flows were the independent variables. The study established that book value is the most value relevant variable and cash flows have more value relevance than earnings. Furthermore, the results suggested that combined value relevance of book value and cash flows is more value relevant than that of book value and earnings, implying that cash flows can be a substitute for earnings in equity valuation model.

Busari and Bagudo (2018) investigated the comparative value relevance of financial information for consolidated and separated financial statements of financial institutions. They used earnings per share, book value per share, dividends per share and cash flows per share as independent variables. They observed that on the overall, accounting information on both consolidated and separated financial information were value relevant although the consolidated information was more value relevant than the separated financial information.

Ernest and Oscar (2014) conducted a study to compare value relevance of earnings, book value and leverage per share in banking and petroleum sectors in Nigeria. They established that earnings per share were the most considered by investors in share price decisions and information in the petroleum sector was more relevant than that of the banking sector.

The study by Olugbenga and Atanda (2014) examined the value relevance of accounting information focusing on earnings, book value, cash flows and dividends as independent variables. They reported that overall the accounting information of listed companies in Nigeria was value relevant but did not follow a discernable pattern over the period from 1990 to 1999. The authors noted that the value relevance was weak in the periods of the country's political crisis and global economic turmoil.

The study by Agostino, Drago and Silipo (2011) in the European banking industry revealed that the adoption of IFRS enhanced the value relevance of earnings and book value of transparent banks but not of less transparent banks. Karğın (2013) also examined the effect of adoption of IFRS on value relevance of earnings and book value in Turkey. The study reported the improvement of value relevance of book value after the introduction of IFRS but not of earnings.

Sami and Zhou (2004) compared the value relevance of accounting information from Chinese GAAP compliant market with that of International Accounting Standards compliant market. They reported value relevance in both markets and a higher value relevance of accounting information produced by IAS compliant companies. Elshandidy (2014) using the data from 3 stock markets in China also examined the value relevance of the accounting information prepared using different sources of accounting standards applicable in China namely, Chinese Accounting Standards for domestic firms; International Financial Reporting Standards (IFRS) for both domestic and overseas firms; and Hong Kong GAAP for Hong Kong and overseas firms. Elshandidy used two dependent variables namely, closing share price and market value measured as share price multiplied by number of shares in issue. The independent variables were the earnings per share and book value per share with a control variable of ownership structure. The study revealed that accounting information was value relevant in the companies using Chinese standards and those using IFRS, while the information produced by companies following Hong Kong GAAP was partially relevant. The study also revealed that the convergence of Chinese Accounting Standards with IFRS produced more value relevant information.

Ali and Hwang, (2000) carried out a study in 16 non-US countries to examine the country-specific factors influencing value relevance of accounting information. They observed that value relevance was lower for countries with bank oriented financial systems; value relevance was lower in countries where the private sector bodies do not participate in standard setting process; value relevance was lower in continental model countries as compared to British –American model countries; and value relevance was lower where taxation rules play a key role in financial accounting measurements. Ali and Hwang further noted that value relevance was higher in companies committing more resources for external auditing services. These results imply that different systems adopted by a country will have a bearing on the value relevance of the information produced by reporting entities in that country.

Akeem Adetunji (2016) investigated the association between accounting numbers and market values of listed Deposit Money Banks in Nigeria and found out that the accounting information of sampled banks was value relevant for share valuation although the earnings information appeared to be irrelevant.

Enofe, Asiriwa and Ashafoke (2014) examined the value relevance of earnings per share and book value per share on the average share prices of listed banks in Nigeria and observed that accounting information has the ability to capture information that affects equity value and there is a relationship between accounting numbers and share prices. These results were supported by Olowolaju and Ogunsan (2016) who investigated the value relevance of accounting information in the Deposit Money banks utilizing earnings per share, book value per share and dividend per share. The study found out that book value per share and dividends per share had a significant relationship with the share price at 5% significant level. Also the study revealed that earnings per share have ability to predict the share price. On the contrary, the work by Umoren, Akpan and Ekeria (2018) that investigated the value relevance of accounting information published by financial institutions in Nigeria focusing on earnings per share and book value per share, revealed no significant relationship between both independent

variables and share price. Earlier on, the work by Okafor and Odia (2011) had also indicated that earnings per share in the Nigerian Banking Sector did not have significant impact on the share price despite the strong association among the two variables.

Mixed results about the value relevance of specific accounting figures are evidenced in the above literature confirming the need to investigate the phenomenon further. The above literature seems to suggest that value relevance of accounting information is affected by a variety of factors such as industry in which the company operates and accounting standards applied.

2.2.2 Value Relevance and Share Price Date

While most prior studies have used the year end market share value as a dependent variable few studies have attempted to focus on different dates. Uwuigbe et al. (2016) examined the effects of value relevance of financial statements on firms' share price in Nigeria and reported that a significant positive relationship existed between earnings per share (EPS) and year end share price.

Jabar (2012) examined the influence of institutional factors on the value relevance of accounting information in the context of Jordan with a view of establishing which share price proxy is more reliable in indicating value relevance. Jabar used average annual share price, annual closing share price and share price after a 3 months period following the financial year-end as the dependent variables. The author divided the independent variables into two groups: accounting information comprising earnings, book value and cash flows and internal factors consisting of foreign ownership, trading volume, and financial disclosure time, and financial disclosure level, number of shareholders, listing status, company's age and type of industry. The study identified book value to possess the greatest value relevance and to be the best predictor of firm value. The work of Jabar also revealed that the value relevance of earnings and book value is higher for companies having foreign ownership, larger trading volume and larger shareholder numbers. In addition, companies that conform to financial disclosure time, that are listed on the main board and that are older in age reflect greater value relevance of earnings and book values. Value relevance of book value was found to be greater for companies complying with disclosure requirements and for services companies. Jabar also established that annual closing share price proxy was more reliable in detecting the value relevance of accounting information.

Agostino, Drago and Silipo (2011) examined the value relevance of IFRS using the share price after 6 months as dependent variable and book value, earnings per share and date of IFRS becoming mandatory as independent variables. They established that the introduction of IFRS enhanced the information content of both earnings and book value for more transparent banks but for less transparent entities only value relevance of earnings per share was improved.

Most value relevant studies have focused on the year end share price as the dependent variable ignoring the fact that the time of releasing the accounting information can also have an impact on the share price. The current study attempts to examine the effect of accounting information on different 3 prices that have been used in value relevant literature.

2.3 Hypotheses Development

The above literature provides mixed evidence regarding the value relevance of earnings, book value, dividends and cash flows to market share prices at different points in a year. Depending on when the investors have access to the reported information and therefore are able to consider it in deciding on the share prices, value relevance may change during the year. We therefore hypothesize as follows:

Hypothesis 1: Earnings are value relevant to market share prices at the end of the year.

Hypothesis 2: Earnings are value relevant to market share prices at the end of 3rd month after year end.

Hypothesis 3: Earnings are value relevant to market share prices at the end of 6th month after year end.

Hypothesis 4: Book value is value relevant to market share prices at the end of the year.

Hypothesis 5: Book value is value relevant to market share prices at the end of 3rd month after year end.

Hypothesis 6: Book value is value relevant to market share prices at the end of 6th month after year end.

Hypothesis 7: Dividends are value relevant to market share prices at the end of the year.

Hypothesis 8: Dividends are value relevant to market share prices at the end of 3rd month after year end.

Hypothesis 9: Dividends are value relevant to market share prices at the end of 6th month after year end.

Hypothesis 10: Cash flows are value relevant to market share prices at the end of the year.

Hypothesis 11: Cash flows are value relevant to market share prices at the end of 3rd month after year end.

Hypothesis 12: Cash flows are value relevant to market share prices at the end of 6th month after year end.

3. Method

The target population for this study was the 26 companies listed on the domestic board of the Botswana Stock Exchange. Earnings, dividends, book value and operating cash flows per share were computed from data obtained from the annual reports of 14 companies whose financial statements for the period from 2012 to 2018 could be accessed. Market share prices of the 14 companies were obtained from Botswana Stock Exchange – Equity Statistics for period from January 2012 to September 2019. The generated observations totaled 98.

3.1 Dependent Variables

The dependent variable for this study is the market share price for each company under study. Prior studies that have employed Ordinary Least Square Regression model to investigate the statistical relationship between accounting amounts and market share value have used different periods' share prices as dependent variable. For example, Uwuigbe et al. (2016) used last day share price and Badu and Appiah (2018) used market price 3 months after the year end. Agostino, Drago and Silipo (2011) used share price 6 months after the end of the year. Enofe, Asiriwuwa and Ashafoke (2014) made use of average annual share price. Jabar (2012) used average annual share price, annual closing share price and share price after a 3 month period following the financial year-end and reported that the closing share price was more reliable in reflecting the value relevant information. These studies demonstrated the existence of value relevance of accounting information for market share prices at the end of different periods. The question *when do investors exactly incorporate the released accounting information in the share prices* is yet to be conclusively answered. Therefore this study aims to contribute to this debate by using the market prices at the end of the year (MSP_{jt}), at end of 3 months after the year end ($MSP_{jt+\frac{1}{4}}$) and at end of 6 months after year end ($MSP_{jt+\frac{1}{2}}$) in an attempt to establish the market price which reflects the accounting information more than the others.

3.2 Independent Variables

Consistent to previous studies, for example Hodgson and Stevenson-Clarke (2000), Kwon (2009), Jabari (2012), Busari and Bagudo (2018) and Olugbenga and Atanda(2014) this study used earnings per share, book value per share, cash flows per share and dividends per share as independent variables. Table 1 shows how each independent variable was measured.

Table 1. Measurement of independent variables

Independent Variables	Abbreviation	Measurements
Book value per share	BVS	Ordinary shareholder's equity divided by weighted average shares in issue during the year.
Dividends per share (DPS)	DPS	Paid and proposed dividends in a year divided by number of shares ranking for dividends.
Earnings per share (EPS)	EPS	Profit for the year attributable to equity holders divided by weighted average shares in issue during the year.
Cash flows per share	CFS	Net cash generated by or (utilised in) operating activities divided by weighted average shares in issue during the year.

3.3 The Model

Using the model from previous studies (see for example, Olugbenga and Atanda, 2014) this study constructed the following 3 main models.

$$MSP_{jt} = \beta_0 + \beta_1 EPS_{jt} + \beta_2 BVS_{jt} + \beta_3 DPS_{jt} + \beta_4 CFS_{jt} + \epsilon_{jt} \quad (I)$$

$$MSP_{jt+\frac{1}{4}} = \beta_0 + \beta_1 EPS_{jt} + \beta_2 BVS_{jt} + \beta_3 DPS_{jt} + \beta_4 CFS_{jt} + \epsilon_{jt} \quad (II)$$

$$MSP_{jt+\frac{1}{2}} = \beta_0 + \beta_1 EPS_{jt} + \beta_2 BVS_{jt} + \beta_3 DPS_{jt} + \beta_4 CFS_{jt} + \epsilon_{jt} \quad (III)$$

Where

MSP_{jt} represents the market share price of firm j at the end of year t ,

$MSP_{jt+\frac{1}{4}}$ represents the market share price of firm j at end of 3 months after the end of year t

$MSP_{jt+\frac{1}{2}}$ represents the market share price of firm j at end of 6 months after the end of year t

β_0 represents the market share price when all independent variables are equal to zero.

$\beta_1, \beta_2, \beta_3, \beta_4$, represent the quantified effect that the independent variables have on the market share value.

EPS_{jt} represents earnings per share of firm j at the end of year t

BVS_{jt} represents book value per share of firm j at the end of year t

DPS_{jt} represents dividends per share of firm j at the end of year t

CFS_{jt} represents cash flows per share of firm j at the end of year t

In order to determine the explanatory power of each independent variable individually, twelve bivariate models were constructed.

For the market share price at year end the following models were constructed:

$$\text{MSP}_{jt} = \beta_0 + \beta_1 \text{EPS}_{jt} + \epsilon_{jt}$$

$$\text{MSP}_{jt} = \beta_0 + \beta_2 \text{BVS}_{jt} + \epsilon_{jt}$$

$$\text{MSP}_{jt} = \beta_0 + \beta_3 \text{DPS}_{jt} + \epsilon_{jt}$$

$$\text{MSP}_{jt} = \beta_0 + \beta_4 \text{CFS}_{jt} + \epsilon_{jt}$$

For the market price at the end of 3 months after the year end, the following models were framed:

$$\text{MSP}_{jt+\frac{3}{4}} = \beta_0 + \beta_1 \text{EPS}_{jt} + \epsilon_{jt}$$

$$\text{MSP}_{jt+\frac{3}{4}} = \beta_0 + \beta_2 \text{BVS}_{jt} + \epsilon_{jt}$$

$$\text{MSP}_{jt+\frac{3}{4}} = \beta_0 + \beta_3 \text{DPS}_{jt} + \epsilon_{jt}$$

$$\text{MSP}_{jt+\frac{3}{4}} = \beta_0 + \beta_4 \text{CFS}_{jt} + \epsilon_{jt}$$

For the market price at end of 6 months after the year end, the following models were formulated:

$$\text{MSP}_{jt+\frac{1}{2}} = \beta_0 + \beta_1 \text{EPS}_{jt} + \epsilon_{jt}$$

$$\text{MSP}_{jt+\frac{1}{2}} = \beta_0 + \beta_2 \text{BVS}_{jt} + \epsilon_{jt}$$

$$\text{MSP}_{jt+\frac{1}{2}} = \beta_0 + \beta_3 \text{DPS}_{jt} + \epsilon_{jt}$$

$$\text{MSP}_{jt+\frac{1}{2}} = \beta_0 + \beta_4 \text{CFS}_{jt} + \epsilon_{jt}$$

4. Results

In our analysis we computed the descriptive statistics, performed correlations of all the variables and conducted regressions on market price on one hand and accounting amounts on the other.

4.1 Descriptive Statistics

Table 2 displays the descriptive statistics which indicate that the market share prices of sampled companies were between 82 thebe and 2870 thebe at the end of the year, between 94 thebe and 2900 at the end of 3 months after the year end and between 82 thebe and 2950 thebe 6 months after year end. The average market price at the end of year was around 651 thebe, and that at the end of 3 months after year end stood at about 669 thebe while that one at the end of 6 months after year end stood at 683 thebe. Overall, there were no major fluctuations among the 3 market share prices. The minimum EPS at the end of the year was negative 63.5 thebe while the maximum stood at 218 thebe with an average of 54 thebe. The minimum DPS was 0 thebe while the maximum was 170 thebe with an average of 38 thebe. At the end of the year the minimum of BVS was 60 thebe and the maximum was 1061 thebe with an average of 278 thebe. The minimum of CFS was a whopping negative 1472 thebe while the maximum was 719 thebe with an average of 28 thebe.

Table 2. Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
MSP _{jt}	98	83	2870	650.94	586.496
MSP _{jt+$\frac{3}{4}$}	98	94	2900	668.69	595.475
MSP _{jt+$\frac{1}{2}$}	98	82	2950	682.87	619.793
EPS	98	-63.50	218.00	54.1127	46.60006
DVS	98	.00	170.00	37.5167	37.64720
BVS	98	60.26	1061.34	278.2266	230.57695
CFS	98	-1472.18	718.80	28.1408	191.27183

Operating cash flows in the sampled companies reflected huge fluctuations implying that a good number of them had subdued cash flows during the period under study. About 28% of observations examined contained negative operating cash flows.

4.2 Correlations

Table 3 presents the correlation matrix of market share price at year end, market share price 3 months after year end, market share price 6 months after year end, earnings per share, dividends per share, book value per share and cash flows per share. There were significant positive and very strong correlations between the three market share prices at end of the year, 3 months after the end of year and 6 months after the end of the year ($r = .993$; $r = .983$; $r = .994$ respectively). This implies that share prices at three different points were moving in the same direction. Table 3 also exhibits a significant positive and strong association between earnings and the 3 market share prices ($r = .743$; $r = .760$; $r = .780$ respectively).

Table 3. Correlations matrix

		MSPjt	MSPjt _{+¼}	MSPjt _{+½}	EPS	DVS	BVS	CFS
MSPjt	Pearson Correlation	1						
	Sig. (2-tailed)							
MSPjt _{+¼}	Pearson Correlation	.993**	1					
	Sig. (2-tailed)	.000						
MSPjt _{+½}	Pearson Correlation	.983**	.994**	1				
	Sig. (2-tailed)	.000	.000					
EPS	Pearson Correlation	.743**	.760**	.780**	1			
	Sig. (2-tailed)	.000	.000	.000				
DVS	Pearson Correlation	.662**	.661**	.660**	.673**	1		
	Sig. (2-tailed)	.000	.000	.000	.000			
BVS	Pearson Correlation	.621**	.622**	.607**	.761**	.643**	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.000		
CFS	Pearson Correlation	-.010	-.024	-.016	-.159	-.011	-.072	1
	Sig. (2-tailed)	.920	.815	.873	.118	.915	.480	

** . Correlation is significant at the 0.01 level (2-tailed).

There was also significant positive and strong association between dividends and share values at 3 points ($r = .662$; $r = .661$; $r = .660$ respectively). Table 3 also reflects a significant positive and strong association between book value and 3 share prices ($r = .621$; $r = .622$; $r = .607$ respectively). All the significant relationships above reflected $p < .0001$. The results signify that the rise in earnings, dividends or book value would result in an increase in each of the 3 share prices. However, Table 3 depicts an insignificant negative and weak association between cash flows and each of the 3 prices ($r = -.010$; $r = -.024$ and $r = -.016$ respectively) implying that operating cash flows and share prices were moving on opposite directions.

While still on Table 3, significant positive and strong relationships were observed between earnings and dividend and between earnings and book value per share ($r = .673$; $r = .761$ respectively). The cash flows per share displayed an insignificant negative and very weak association with earnings per share ($r = -.159$). The association between dividends per share and book value per share was significant positive and strong ($r = .643$) while that one between dividends and operating cash flows was insignificant negative and very weak ($r = -.011$). The association between cash flows and book value per share was also insignificant negative and very weak ($r = -.072$).

4.3 Regression

Table 4 displays the results of the bivariate regression analysis of 12 models. Table 4 shows that the earnings per share was value relevant in respect of all 3 market prices with R^2 of 55.3% at the end of the year, 57.7% at the end of 3 months after the year end and 60.9% at the end of 6 months after the year end with a significant F-statistic .

Table 4. Bivariate regression analysis of market share price model and EPS, DVS, BVS, and CFS

Model	Variables	Beta	t	Sig.	R ²	F	Sig
MSPjt	EPS	.743	10.893	.000	.553	118.654	.000 ^b
MSPjt	DVS	.662	8.666	.000	.439	75.093	.000
MSPjt	BVS	.621	7.754	.000	.385	60.129	.000
MSPjt	CFS	-.010	-0.101	.920	.000	.010	.920
MSPjt _{t+¼}	EPS	.760	11.448	.000	.577	131.066	.000
MSPjt _{t+¼}	DVS	.661	8.620	.000	.436	74.310	.000
MSPjt _{t+¼}	BVS	.622	7.785	.000	.387	60.612	.000
MSPjt _{t+¼}	CFS	-.024	-.235	.815	.001	.055	.815
MSPjt _{t+½}	EPS	.780	12.219	.000	.609	149.310	.000
MSPjt _{t+½}	DVS	.660	8.614	.000	.436	74.203	.000
MSPjt _{t+½}	BVS	.607	7.478	.000	.368	55.927	.000
MSPjt _{t+½}	CFS	-.016	-.160	.873	.000	.026	.873

These results tell us that the earnings in the Botswana market are most value relevant to the market share prices at the end of 6 months after the year end. Table 4 also reflects that the further we move from the year end, the more value relevant the earnings become to market share values as indicated by the rising R² of earnings.

Table 4 also reports that dividends were relevant in predicting share prices at year end, at the end of 3 months after year end and at the end of 6 months after year end, with R² of 43.9%, 43.6% and 43.6% respectively and all of them reflecting significant F-statistic. The value relevance of dividends displayed minimal fluctuations within period of 6 months as compared to earnings. Dividends' value relevance was lower than that of earnings. Book value also exhibited weak but significant value relevance to the share values at year end, at the end of 3 months after year end and at the end of 6 months after year end, with R² of 38.5%, 38.7% and 36.8% respectively and significant F-statistic but with unstable trend.

Furthermore, the information in Table 4 demonstrates that operating cash flows were apparently not value relevant to share prices. Operating cash flows were associated with insignificant negative and very weak R². In relation to share price at the end of the year R² is .000, in relation to share price 3 months after the year end R² is .001 and at the end of 6 months after the year end R² is .000. Table 4 also depicts earnings being more value relevant to share prices than book value and dividends.

It should be noted that dividends displayed a higher explanatory power of market share prices than book values. Therefore in ranking, earnings were the most value relevant, followed by dividends and book value being the last.

In summary, Table 4 shows that earnings, dividends and book value were all value relevant to market share prices at the end of the year, 3 months after the end of the year and 6 months after the end of the year. Therefore on the basis of individual analysis alternative hypotheses 1 to 9 about earnings, book value and dividends were all accepted but hypotheses 10 to 12 regarding cash flows were negated.

Table 5 reflects the results of multivariate regression analysis of market share prices at the end of the year, at the end of 3 months after the year end and at the end of 6 months after year end against the earnings, dividends, book value and operating cash flows per share. Market share value model at the end of the accounting period yielded R² of 60.8% with a statistically significant F-test ($F=36.06, P<.001$)

Table 5. Multivariate regression analysis of MSPjt, MSPjt+¼ and MSPjt+½ Models

Model	Variables	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
MSPjt	(Constant)	87.457	62.468		1.400	.168		
	EPS	6.870	1.382	.546	4.972	.000	.350	2.859
	DVS	4.267	1.430	.274	2.983	.004	.500	2.000
	BVS	.088	.265	.035	.333	.740	.388	2.576
	CFS	.252	.204	.082	1.236	.220	.956	1.046
	R ² = .608; Adjusted R ² = .591; F = 36.060, Sig. = 0.000 ^b							
MSPjt+¼	(Constant)	93.017	62.171		1.496	.138		
	EPS	7.504	1.375	.587	5.457	.000	.350	2.859
	DVS	4.057	1.424	.257	2.850	.005	.500	2.000
	BVS	.039	.264	.015	.150	.881	.388	2.576
	CFS	.228	.203	.073	1.127	.263	.956	1.046
	R ² = .623; Adjusted R ² = .607; F = 38.4760, Sig. = 0.000 ^b							
MSPjt+½	(Constant)	81.597	62.306		1.310	.194		
	EPS	8.944	1.378	.672	6.490	.000	.350	2.859
	DVS	4.040	1.427	.245	2.831	.006	.500	2.000
	BVS	-.152	.264	-.057	-.576	.566	.388	2.576
	CFS	.289	.203	.089	1.423	.158	.956	1.046
	R ² = .651; Adjusted R ² = .636; F = 43.330, Sig. = 0.000 ^b							

This tells us that almost 61% of variations in the market share price are influenced by a combination of earnings, dividends, book value and cash flows. However, only the combination of earnings and dividends made a positive and significant contribution to changes in share prices. Book value and cash flows displayed insignificant beta statistic.

The market share price model at the end of 3 months after the year end also produced a high R² of 62.3% ($F = 38.48$, $P < .001$) providing the evidence of value relevance of a combination of earnings, dividends, book value and cash flows. Like in the end of year model, only earnings and dividends appeared to be relevant with statistically significant beta coefficients of 58.7% and 25.7% respectively in the 3 months after year end model. Book value and cash flows were irrelevant to market share price at end of 3 months as evidenced by statistically insignificant beta statistic. The 3 months after year end model produced higher value relevance (R² = 62.3%) than the end of year model (R² = 60.8%).

Table 5 further displays the share price at the end of 6 months after the year end model having the highest R² of 65.1% ($F = 43.33$, $P < .001$) implying superior value relevance of a combination of earnings, dividends, book value and cash flows. In this model earnings per share appear to be the highest contributor to the fluctuations in the share price with the highest statistically significant beta coefficient of 67.2% followed by dividend per share with beta coefficient of 24.5%. Book value and cash flows are again irrelevant to share prices in this model with insignificant beta coefficient of -5.7% and 8.9% respectively.

5. Discussion

The results of this study provide support of the strong associations between earnings and share prices; between dividends and share prices and between book value and share prices but give evidence of weak relationship between operating cash flows and share prices. Moreover, the association between accounting information and share prices was the strongest at the end of 6th month after the year end. In addition, the results indicate that earnings had the strongest association with prices while book value had the least relationship among the 3 accounting amounts which happened to have significant association with prices. Operating cash flows had a very weak association with share prices. These findings, to a greater extent, support findings of Busari and Bagudo (2018) who reported earnings having the strongest association with prices, followed by book value and then dividends and cash flows. In this study dividends were the second strongest in the association with prices. Badu and Appiah (2018) also reported a higher association between earnings and share prices than between book value and share prices. On the contrary, in the work by Enofe, Asiriwuwa and Ashafoke (2014) book value's association with share price was superior to that of earnings. Kwon (2009) also did not find an association between earnings per share and share price.

The analysis of the explanatory power of earnings, dividends and book value individually indicated that each

accounting amount is value relevant to all 3 share prices examined by this study. This is consistent with prior studies which established value relevance of these amounts. See for example, Barth, Li and McClure (2018), Elshandidy (2014), Ali and Hwang (2000) and Che (2007). The results of this study suggest that the value relevance of earnings, dividend and book value was strongest to market share price at the end of 6th month after year end compared to the end of year or end of 3 months after year end prices. These results are however contrary to the findings of Jabar (2012) who reported that annual closing share price was more reliable in detecting the value relevance of accounting information in Turkish market as compared to prices at end of 3 months after year end.

Contrary to prior studies, such as Kwon (2009) and Olugbenga and Atanda (2014) who reported a significant explanatory power of operating cash flows, this study found cash flows to be irrelevant information for the market share prices in Botswana. However, the results support the findings of Busari and Bagudo (2018) who also found insignificant effect of cash flows on market share prices in Nigerian financial institutions.

The supremacy of value relevance of earnings over dividends, book value and cash flows was also demonstrated by this study. These results are consistent with the findings of Badu and Appiah (2018) who also established that the earnings explained higher fluctuations in share prices than book value in Ghana market. Results of this study also are consistent with those of Ernest and Oscar (2014) who established that earnings per share had the highest value relevance compared to that of book value and leverage per share. However, the findings do not concur with results of Akeem Adetunji (2016) and Okafor and Odia (2011) who found earnings to be irrelevant in predicting share prices of companies in banking sector in Nigeria.

Furthermore, this study established the superiority of value relevance of combined earnings and dividends over that one of combined earnings and book values which has been prominent in the prior studies (Kwon, 2009; Elshandidy, 2014). In the Botswana equity market the reporting of earnings and dividends appeared to attract the investors more. This could be due to the fact that the two sets of information are easily understood by market players as they are normally reported in a form that does not require further manipulation of figures.

Contrary to the results of Jabar (2012) which documented price at the end of the year being more reflective of shareholders consideration of accounting information, this study's results showed the price at the end of 6 months from the year end capturing investors' share valuation more than prices at end of year and at end of 3 months after year end. This suggests that investors in Botswana stock market incorporate the reported information into share prices much later in the year, implying that they trust more information released than information anticipated.

This study has answered its two key questions it intended to provide responses to. The findings of this study provide evidence that earnings per share are the most predictive information of the share prices in the Botswana stock exchange. Moreover, the market share price at the end of 6 months after year end is the most reflective price of the investors' consideration of the accounting information produced by companies listed on the Botswana capital markets.

The results of this study have implications on research as they open up more research avenues in developing countries with less sophisticated capital markets. The value relevance of book value and operating cash flows to market share prices in developing countries still need to be examined further before a general position can be established. A negative and weak association between earnings and operating cash flow depicted by this study could be suggesting the existence of excessive accruals in the accounts which may imply earnings management (Velte, 2017). This is an area which requires further investigation.

The findings of this research also have implications on investors as they suggest that participants in the BSE consider information disseminated through the income statement and statement on changes in equity more than the information released through statements of cash flows and statement of financial position in determining the share prices. Implications to Accounting standards-setters can also be deduced from this study. Accounting standards-setters, for example BAOA in Botswana, need to maintain continuous review of standards to ensure that listed firms produce financial statements which contain more useful information to investors. The BSE should also continue pursuing sterner compliance to reporting regulations.

6. Conclusion and Recommendations

This paper set out to examine the statistical association between earnings, book value, dividends and operating cash flows per share with market share prices at 3 different dates. Another objective was to determine which market share price mostly reflects investors' consideration of accounting information. In agreement with prior studies the current study results suggest that earnings per share have the highest value relevance to all the 3

prices, at the end of the year, at 3 months after the year end and at 6 months after the year end. Dividends follow in the second place of relevance and book value becomes the last in triggering fluctuations in market share prices in the BSE.

Although earnings and book value had the strongest positive association among the independent variables, it is only the combination of dividends and earnings which significantly contributed to the variations in share prices. Book value and cash flows were irrelevant in predicting the share prices in Botswana capital market. The results of this study also show that the most affected market share value by the earnings and dividend per share is the one at the end of 6 months after the year end. Since companies quoted in BSE are required to release the abridged audit financial statements within 3 months of their production, the results of this study signify that shareholders in Botswana market are more likely to wait for the actual publication of the information about earnings and dividends before they can incorporate it in the share valuation.

The value relevance of cash flows has been suggested by a good number of prior studies with some proposing that value relevance of cash flows could be replacing that of earnings. However, the findings of this study could not support this view. Therefore, further studies may be conducted to compare the value relevance of earnings and cash flows in companies with negative operating cash flows and those with positive cash flows. In the current study that distinction was not made. Other studies may attempt to investigate the value relevance of accounting amounts by using the net cash flows generated from all sources to establish whether shareholders consider such information in determining market share prices. Subsequent studies may also be conducted in Botswana to assess whether value relevance of accounting information is growing or declining given technological developments which have the potential of improving financial information quality.

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Factors Influencing the Seaside Resort Areas' Service Quality Management: A Case of Chinese Tourists in Southern Region of Thailand

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Abstract

The objectives of this study were to test the influence of factors that influence on the service quality management of seaside resort areas in southern of Thailand. The researcher used the survey questionnaire to collect data from 400 Chinese tourists who visited seaside resort areas in southern region of Thailand. The research employed One-way ANOVA and multiple regression to test variables and to test hypothesis.

The findings revealed that from 3 factors being analyzed using mean value. Service quality factor was the most important to the service quality management of seaside resort areas in southern of Thailand, followed by marketing mix factor, followed by external business factor.

The findings also revealed that from 3 factors being tested including service quality factor, marketing mix factor and external business factor influence on the service quality management of seaside resort areas in southern of Thailand at statistically significant level .05.

Keywords: Chinese tourist, seaside resort area, service quality management

1. Introduction

Tourism is one of the pillars of the Thai economy and contributes more than 18 percent to its GDP. In 2018, Thailand's total tourism revenue was approximately THB 2.02 trillion. In 2017, southern region of Thailand received 14.14 million international tourists. Among them, the number of Chinese tourists was 3.66 million, ranking first among international tourists (Jones and Salle, 2019). In 2018, the 10 most popular seaside resort areas of Chinese tourists were concentrated in southern Thailand, with Phuket ranking first and most popular among Chinese tourists. Koh Samui and Krabi ranked third and fourth. It means Phuket is the first choice for Chinese tourists to come to Thailand for vacation. In addition, the popularity of the Koh Samui and Krabi in Chinese tourists are also very high. Thailand's seaside resort areas attract a large number of Chinese tourists to come for vacation, sightseeing, leisure, and recuperation.

1.1 Statement of the Problem

Nowadays, many Thai seaside resort areas face problems of environmental degradation and declining quality of the seaside resort areas. Moreover, the disaster response capacity is inadequate, and there is a safety risk in the resort area, such as the ship overturning accident occurred in 2018. The official data showed that the number of Chinese tourists going to Phuket fell by 15% - 20% in the fourth quarter. In addition, the tourism market is highly competitive, and Thailand faces increasing market competition among Southeast Asian countries.

1.2 Research Objective

To study whether there is a significant relationship between service quality factors and service quality management of seaside resort areas in southern of Thailand for Chinese Tourists.

To study whether there is a significant relationship between marketing mix factors and service quality management of seaside resort areas in southern of Thailand for Chinese Tourists.

To survey whether there is a significant relationship between external business factors and service quality management of seaside resort areas in southern of Thailand for Chinese Tourists.

1.3 Research Significance

This study contributes for managers to enhance the competitiveness of southern Thai seaside resort area, in order to attract more Chinese tourists to Thailand. Improve the service quality of the southern Thai seaside resort, and promote the rapid and stable development of the Thai tourism market.

1.4 Research Hypothesis

H₁: Service quality factors have a significant relationship with the service quality management of seaside resort areas in southern Thailand for Chinese Tourists.

H₂: Marketing mix factors have a significant relationship with the service quality management of seaside resort areas in southern Thailand for Chinese Tourists.

H₃: External business factors have a significant relationship with the service quality management of seaside resort areas in southern Thailand for Chinese Tourists.

2. Literature Review

Service quality factors come from SERVQUAL. SERVQUAL is a multi-dimensional research instrument, designed to capture consumer expectations and perceptions of a service along the five dimensions that are believed to represent service quality (Parasuraman, 1994). Zeithaml et al. (1990) tested the variables into five dimensions, including tangibility, reliability, responsiveness, assurance, and empathy.

The marketing mix is a different component or tool that can be used to influence consumers. Li et al. (2011) demonstrated that "the marketing mix represents the organization's marketing activities and consists of controllable variables that are grouped to meet the needs of the target market. The tourism product marketing mix is roughly the same as the other mixes. The way it meets current and potential customer needs depends on the marketing mix of the organization's products and services. Traditionally, four factors are considered: product, price, promotion, and place, which is the well-known 4P principle. In addition to the traditional 4P, the modern travel industry usually considers three other elements, namely process, people and physical evidence. These three elements are particularly important for tourism marketing.

External business factors are important factors influencing the strategic management of resorts, including both natural factors and human factors. The traditional activities are mainly to enjoy the 3S (sunshine, sea, seaside) waterfront (Li, 2001) to meet the travel needs of tourists for food, accommodation, traffic, shopping, and entertainment. In the second half of the 20th century, resort tourism expanded from the seashore to mountains, forests, lakes, grasslands and villages, and there were resorts with large-scale, mufti-type, rich projects, well-equipped and high-cost franchise holiday tourism.

Chen (2008) mentioned in his research that Pattaya is one of Thailand's famous seaside resorts, and there are a large number of tourists visiting for vacation and entertainment every year. Through an interview with the managers of the national tourism administration of Thailand, the government managers of the Pattaya, the residents and tourists, he learned that Pattaya faces many problems. These problems can be grouped into two parts: the environmental problem and the social problem. In the past, the sewage treatment work in Pattaya was not perfect. Some enterprises and residents even drained sewage directly into the sea. For a while, the seawater was not clear, and the garbage floating on the sea made people feel that it was not in line with a famous seaside resort. Besides, the garbage problem can be said to be the most headache for the local government. On the beach, you can see small vendors everywhere. They sell various Thai snacks, fruits, and drinks. At the same time, garbage is everywhere on the beach. Someone even says that the growth of garbage on the beach is faster than the growth of tourists. Social problems mainly include fighting and theft. Pattaya during the day is sleepy. It became active at night and peaked at midnight. The colorful nightlife makes frequent conflicts among tourists. Bars and streets often fight, and tourists often report to the police for theft. Chen also mentioned that the local government has proposed many ways to try to solve these problems. For example, to solve the sewage problem, the local government set up a department to manage sewage and developed a series of plans and measures to ensure the cleanliness of the sea. In response to social problems, the local government has compiled hundreds of thousands of exquisite albums and millions of posters, which are placed in public areas such as airports and landscapes. At the same time, hundreds of CDs promoting Thai customs have been distributed in public areas. It is hoped that tourists can travel in a civilized way and care for the Thai environment. Besides, the local government of Pattaya also stipulates that bars and nightclubs must be closed after two o'clock in the evening to prevent criminal incidents. To strengthen tourism security, the Thai tourist police patrol the streets without interruption, providing security services for tourists visiting Thailand.

The island of Koh Samet has suffered a certain degree of damage in recent years due to the increase in the

number of tourists. The amount of garbage on the beach is increasing, especially the cigarettes that are randomly discarded, which are too small to be cleaned. Some environmental organizations have repeatedly urged the local government to take practical measures to protect the environment, including stopping over development and stopping littering. The Thai beach smoking ban took effect in February 2018. "Starting February 1, 2018, smoking and cigarette-butt littering are prohibited on beach areas," said Bannarak Sermthong, a director from the country's department of marine and coastal resources (DMCR). "Anyone who wants to smoke must do so in designated smoking areas, not on the beaches," he added. This ban across 24 beaches in 15 provinces, including several in major tourist destinations such as Phuket, Koh Samui, and Krabi, to protect its coastal environment. Those who fail to comply will be subject to a fine of 100,000 baht (£2,241) and a maximum jail sentence of one year, or both (Soo, 2018).

The seaside resort areas of Southeast Asia are world-famous and have always been loved by tourists from all over the world. Tourism development in Singapore, Malaysia, and Thailand is relatively mature; tourism in Indonesia and the Philippines is developing rapidly; development in Brunei is relatively stable; Vietnam is still in its infancy. Southeast Asian seaside tourism attracts many tourists. Convenient transportation has led to more and more tourists from all over the world to choose Southeast Asian destinations (Wang, 2012). The price advantage makes Southeast Asia as the preferred destination. For example, Indonesia is the second-largest destination for Chinese tourists. Compared with high-end islands such as Tahiti and Maldives, Indonesia's biggest advantage is the price. The ASEAN countries are simplifying the entry procedures for Chinese tourists and opening up a "green channel" for Chinese tourists. Thailand has launched visa-free programs for Chinese tourists; Malaysia has launched e-visa and visa-free programs for Chinese tourists; the Cambodian government has also announced three-year multiple-entry visas for Chinese tourists; Laos, Myanmar, Brunei, and other countries have also simplified Chinese tourists visa application process (Fan, 2018). In addition to this, cultural identity is also an advantage of coastal tourism development in Southeast Asia. To better serve Chinese tourists, some travel agencies train Chinese local guides to avoid the embarrassment of travel caused by language problems. The Singapore government has systematically developed tourism resources and laid the foundation for the development of international tourism. Besides, Singapore is also actively creating conditions to develop tourism products such as shopping tours, conference tours, study tours, medical care tours, cruise tourism, and business travel. Singapore's tourism economy has flourished, and its popularity in the international market has benefited from its excellent tourism facilities, high-quality personnel and the support of the National Tourism Administration. More important is the innovative spirit of tourism managers, as one expert said, "Innovation is the life of Singapore's tourism economy." Moreover, Singapore has taken many measures such as organizing various large-scale international exhibitions and continued cooperation with neighboring countries (Gang, 2006). Southeast Asia's seaside resort area is Increasing competitiveness.

3. Methodology

This study is a quantitative research using questionnaire. The research target sample is 400 Chinese tourists who have been to or are traveling in the seaside resorts in southern Thailand in the past two years. The content of the questionnaire covers the survey of the expectation and perceived service quality of Chinese tourists of the following three aspects: service quality factors, marketing mix factors and external business factors. Through the data analysis of expectation and perceived service quality of Chinese tourists, we can understand the current service quality management in seaside resort areas in southern Thailand, find out what factors impact service quality management in southern of Thailand and provide some advice to southern seaside resort areas managers.

Table 1. Reliability of all Scale Factors

Cronbach's Alpha	N of Items
.937	67

Table 1 shows the questionnaire was tested for reliability using Cronbach's Alpha which the result was 0.937 presenting highly reliable.

The validity analysis of this research is based on factor analysis. KMO and Bartlett's sphere test is adopted to examine whether samples are suitable for factor analysis, to estimate whether the different measurement items under the same variable can reflect the characteristics of the measured variable more accurately. If the value of KMO is closer to 1, the more common factors between variables there are, and it is more suitable for the factor analysis. If the value of Bartlett's Sphericity Test is less than 0.5, it means the samples are not suitable for the factor analysis. In employed KMO and Bartlett's sphere test to examine the validity of the samples.

Table 2. Validity of All Scales Factors

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.897
Bartlett's Test of Sphericity	Approx. Chi-Square	11181.917
	df	2211
	Sig.	.000

Table 2 shows the value of KMO is 0.897 that is bigger than 0.6. It means the cumulative variance proportion reached the statistical requirements. Bartlett's sphere test has reached a significant level (Sig.<0.05), consequently, the null hypothesis of Bartlett's sphere test should be rejected, the samples can be considered as suitable for factor analysis.

The questionnaire was examined by five experts, including four Thai experts and one Chinese expert in a field of tourism. The Item-Objective Congruence (IOC) was used to evaluate the items of the questionnaire based on the score range from -1 to +1. The items that had scores lower than 0.5 were revised. The items that had scores higher than or equal to 0.5 were reserved. The result of the IOC is that the items had scores over 0.6, so it has high validity.

4. Research Findings

4.1 Demographic Analysis of the Respondents

Majority of the Chinese tourists coming to southern seaside resort areas are female, ages are between 18-24 years old, unmarried, hold bachelor degrees, students, monthly salary between 3,000-5,999 Yuan. Most of the tourists who visit southern seaside resort areas come from East China and North China; they choose to stay in southern seaside resort areas for 2 - 4 days. Before coming to southern seaside resort areas, the Chinese tourists got information about southern seaside resort areas tourism from the websites and other social medias, followed by introduction by friends. Finally, the tourists choose to come to southern seaside resort areas with friends, and they never been to southern seaside resort areas before.

4.2 Summary Descriptive Statistic of Three Factors

Table 3. Descriptive Statistic of Service Quality Factors

	<i>Mean</i>	<i>Std. Deviation</i>	<i>Level</i>	<i>Ranking</i>
Tangibility	3.79	.695	High	5
Reliability	3.85	.676	High	3
Responsiveness	3.89	.714	High	2
Assurance	3.80	.744	High	4
Empathy	4.07	.670	High	1
Average	3.88	.6998	High	--

The results from Table 3 illustrated that from the service quality factors, empathy at high level (mean=4.065, SD=.66975), followed by responsiveness at high level (mean=3.89, SD=.714), followed by reliability at high level (mean=3.8525, SD=.676), followed by assurance at high level (mean=3.7975, SD=.74375), followed by tangibility at high level (mean=3.7875, SD=.69475) respectively.

Table 4. Descriptive Statistic of Marketing Mix Factors

	<i>Mean</i>	<i>Std. Deviation</i>	<i>Level</i>	<i>Ranking</i>
Product	4.06	.709	High	1
Price	3.47	.771	High	7
Place	3.86	.681	High	5
Promotion	3.92	.765	High	3
People	3.89	.658	High	4
Process	3.67	.746	High	6
Physical Evident	3.96	.736	High	2
Average	3.83	.724	High	--

The results from Table 4 illustrated that from the marketing mix factors, product at high level (mean=4.06, SD=.709), followed by physical evident at high level (mean=3.96, SD=.736), followed by promotion at high level (mean=3.92, SD=.765), followed by people at high level (mean=3.89, SD=.658), followed by place at high level (mean=3.86, SD=.681), followed by process at high level (mean=3.67, SD=.746), followed by price at high

level (mean=3.47, SD=.771) respectively.

Table 5. Descriptive Statistic of External Business Factors

	<i>Mean</i>	<i>Std. Deviation</i>	<i>Level</i>	<i>Ranking</i>
Landscape	4.20	.700	High	1
Traffic	3.52	.732	High	4
Shopping	3.67	.752	High	2
Entertainment	3.65	.750	High	3
Average	3.76	.733	High	--

The results from Table 5 illustrated that from the external business factors, landscape at high level (mean=4.20, SD=.700), followed by shopping at high level (mean=3.67, SD=.752), followed by entertainment at high level (mean=3.65, SD=.750), followed by traffic at high level (mean=3.52, SD=.732) respectively.

Table 6. Descriptive Statistic of Willingness

	<i>Mean</i>	<i>Std. Deviation</i>	<i>Level</i>
Willingness	3.803	.500	High

The results from Table 6 illustrated that the willingness of Chinese tourists to introduce others to come to this seaside resort area and the willingness of Chinese tourists to re-visit this seaside resort area again at high level (mean=3.803, SD=.500).

In a short, service quality factor was the most important one to the service quality management of seaside resort areas in southern of Thailand, the satisfaction of service quality factors of Chinese tourists from high to low were empathy, followed by responsiveness, followed by reliability, followed by assurance, followed by tangibility. Marketing mix factor was the second important one to the service quality management of seaside resort areas in southern of Thailand, the satisfaction of marketing mix factors of Chinese tourists from high to low were product, followed by physical evidence, followed by promotion, followed by people, followed by place, followed by process, followed by price. External business factor was the last important one to service quality management of seaside resort areas in southern of Thailand, the satisfaction of external business factors of Chinese tourists from high to low were landscape, followed by shopping, followed by entertainment, followed by traffic.

4.3 Hypothesis Test

To facilitate recording, service quality management is represented by W. The author reduced the of service quality factors with 5 items into 1 new factor and named as SQF; reduced the marketing mix factors with 7 item into 1 new factor that named as MMF; reduced the external business factors with 4 items each into 1 new factor named as EBF.

Table 7. Correlation Analysis among Service Quality Factor, Marketing Mix Factor, External Business Factor and Service Quality Management

		Correlations			
		SQF	MMF	EBF	W
SQF	Pearson Correlation	1			
MMF	Pearson Correlation	.810**	1		
EBF	Pearson Correlation	.702**	.760**	1	
W	Pearson Correlation	.832**	.887**	.807**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Table 7 shows the results of the two-tailed test between service quality factor, marketing mix factor, external business factor and service quality management are all less than 0.01, which means they correlate each other at the significance level of one percent. Among them, there is significant between service quality factor and service quality management; there is significant between marketing mix factor and service quality management; there is significant between external business factor and service quality management. Therefore, H₁, H₂ and H₃ can be accepted.

4.4 Regression Analysis

Table 8. Regression Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.832 ^a	.692	.692	.19048
2	.887 ^b	.787	.786	.15851
3	.807 ^c	.650	.650	.20301

a. Predictors: (Constant), SQF
 b. Predictors: (Constant), MMF
 c. Predictors: (Constant), EBF

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Between Groups	34.186	41	.834	23.419	.000
	Within Groups	12.746	358	.036		
	Total	46.932	399			
2	Between Groups	38.980	51	.764	33.446	.000
	Within Groups	7.953	348	.023		
	Total	46.932	399			
3	Between Groups	32.223	36	.895	22.089	.000
	Within Groups	14.709	363	.041		
	Total	46.932	399			

Sig<0.05

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.416	.114		3.668	.000
	SQF	.873	.029	.832	29.926	.000
2	(Constant)	.280	.092		3.039	.003
	MMF	.919	.024	.887	38.339	.000
3	(Constant)	1.034	.102		10.119	.000
	EBF	.737	.027	.807	27.216	.000

a. Dependent Variable: Service Quality Management

Table 8 shows that the relationship between service quality factors and service quality management at the level of significance is .000. The relationship between marketing mix factors and service quality management at the level of significance is .000. The relationship between external business factors and service quality management at the level of significance is .000. It supports that H₁ can be accepted with positive correlation, H₂ can be accepted with positive correlation, and H₃ can be accepted with positive correlation.

5. Discussion

This study achieved objectives that there was a significant relationship between service quality factors and the service quality management of seaside resort areas in southern Thailand for Chinese Tourists, there was a significant relationship between marketing mix factors and service quality management of seaside resort areas in southern Thailand for Chinese Tourists, and there was a significant relationship between external business factors and service quality management of seaside resort areas in southern Thailand for Chinese Tourists. The environmental problem and social problem in the seaside resort areas mentioned in the literature review are included in these three factors. The Thai beach smoking ban and other regulations mentioned by the literature review are referred to in service quality factors. Convenient transportation, Thailand's visa-free programs for Chinese tourists, Malaysia's e-visa and visa-free programs for Chinese tourists, etc. are all reflected in service quality factors. Therefore, the service quality management of the seaside resort areas involves these three factors and the relationship between three factors and the service quality all the time in many seaside resort areas. At present, no researcher has systematically studied this topic. This study clearly demonstrates the relationship between these three factors and service quality management.

6. Conclusion and Research Implication

6.1 Conclusion

This study found out that three factors influenced the seaside resort areas' service quality management, there are service quality factors, marketing mix factor, and external business factors. According to the service quality factors, the satisfaction of Chinese tourists from high to low was empathy, followed by responsiveness, followed by reliability, followed by assurance, followed by tangibility. According to the marketing mix factors, the satisfaction of Chinese tourists from high to low was product, followed by physical evidence, followed by promotion, followed by people, followed by place, followed by process, followed by price. According to the external business factors, the satisfaction of Chinese tourists from high to low was landscape, followed by shopping, followed by entertainment, followed by traffic.

6.2 Research Limitations

Some limitations can be identified. The findings from this study apply to Chinese tourists and are not applied to tourists from other countries because they have different expectations and perceptions. And this study only uses quantitative methods and lacks qualitative data, which may cause data limitations.

6.3 Research Implication

The findings from this research contribute to the knowledge to find out the new knowledge that for different groups of tourists from different parts of the world, they have different perceptions. For the Chinese tourists, the service quality they needed is different from the tourists from the western countries, so that the services that the seaside resort areas used to provide to the western tourists may not be satisfied by the Chinese tourists. Thus, the following research findings from this study present the service quality management of Chinese tourists who visited seaside resort areas in the southern region of Thailand in the year 2019.

The findings from this research could be beneficial for many parties who are related to seaside resort areas particularly the resort areas located in the southern region of Thailand. First, the contribution for practice, it found that the management of seaside resort areas should improve the staffs' ability to handle emergencies and provide fast services. They must set up a perfect legal framework to protect Chinese tourists. It found that the management of seaside resort areas should strategy plan for the control of the cost of accommodation, food items, transportation, commodities to be more rationalized.

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MSE Competitive Business Strategies Typology: A Theory for Superior Performance

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Abstract

Micro and small enterprises (MSEs) are the engine that drives most of the economies in the developing world where they are often the largest employers. The MSE Typology presented in Ogot (2012), based on orthogonal constructs of collaboration and competency, combined to create a unique set of ideal types defining competitive business strategies MSEs can employ for superior performance. This paper establishes that the typology can be viewed as a theory for better performance tailored to MSEs. It goes further to present the research gaps that need to be addressed.

Keywords: business strategies, micro-enterprises, business performance, typology, theory-building

1. Introduction

Micro and small enterprises are significant contributors to economies around the world, and especially in developing countries. For example, in Ethiopia, MSEs are the second-largest employer next to agriculture (Abay et al., 2014). In Kenya, jobs in the informal sector, nearly all of whom are MSEs, constituted 83.6 per cent of total formal employment (KNBS, 2019), underscoring the key role they play. MSEs, however, face numerous challenges to success including competition, high cost of production, lack of adequate capital, and lack of ready markets (Ogot, 2014).

Ogot (2012) presented a typology of competitive business strategies for micro and small enterprises. The typology defined a set of generic strategy groups (ideal types) propositioned to lead to better performance. A typology is "a conceptually derived interrelated set of ideal types ... each which represents a unique combination of organisational attributes that are believed to determine the relevant outcomes" (Doty and Glick, 1994, p. 232). Generic strategies are applicable across industry, firm type, and firm size. Typologies provide a framework that classifies explicitly defined, quantifiable constructs, with articulated relationships between them and testable related predictions that are subject to disconfirmation (Snow and Kretchen, 2014).

A theory may be defined as a supposition or a system of ideals intended to explain something based on general principles independent of the thing to be explained. From the literature, there is a consensus view that a complete theory must have four key elements that answer the following questions: (a) What? (b) How? (c) Why? and (d) Who, where and when? (Whetten, 1989). The questions constitute a "statement of relations within a set of boundary assumptions and constraints" (Bacharach, 1989, p. 496).

The *What* question seeks to identify the factors that form part of the theory. Factors include variables, constructs, and concepts, with each individually adding value to the understanding derived from the theory (Whetten, 1989). Constructs and concepts, for example, culture and satisfaction, cannot be observed directly. Variables, for example, age and gender can (Bacharach, 1989). The relationship between the factors answers the *How* question and addresses any causality between them. Specifically, propositions define the relationship between constructs, while the hypotheses (derived from the propositions) define the relationships between variables.

The *Why* and *How* questions combined define or describe the domain of the theory. The rationale for the selection of the factors and their proposed causal relationships form the theory's underlying assumptions. They explain the theory and address the *Why* question. Finally, the *Who, where and when* questions place limitations on the theoretical model. As temporal and contextual elements, they fix the boundaries of generalisation, thereby constituting the range of the theory. These elements are often established through empirical testing of the initial theoretical elements defined by *What, How* and *Why* questions (Whetten, 1989). Not all typologies form a

theory. This paper, therefore, sets out to show that the MSE typology in Ogot (2012) forms a theory for superior performance of MSEs by establishing to what extent the typology addresses the four key elements that define a theory.

2. Literature Review

2.1 The MSE Competitive Business Strategies Typology

The MSE typology is based on the concepts of competency, collaboration and business performance (see Figure 1). MSEs may apply strategies that exploit combinations of competency and collaboration elements to become more competitive in the market, leading to better business performance. These combinations are formed around four constructs (ideal types) namely peer differentiation, peer low cost, mentor differentiation, and mentor low cost. Peer refers to collaborative activities carried out between MSEs within their networks and linkages. Collaborative activities through relationships with larger enterprises and organisations are mentor (Ogot, 2012).

Differentiation strategies aim to set an enterprise's products and services apart from their competitors within a localised market. On the other hand, low-cost strategies strive to reduce production and operating costs enabling the business to become more competitive by passing the savings to their customers. Business performance is a subset of organisational effectiveness. In its narrowest conception, business performance centres on the use of outcome-based financial indicators assumed to reflect the economic goals of the firm. A broader conceptualization of business performance may also include an emphasis on indicators of operational performance in addition to the indicators of financial performance (Venkatramen and Ramanjam, 1986).

2.2 Typological Approach to Theory Building

Typologies have been criticised in the literature for being more of classification schemes than theories (Rich, 1992). These critiques find credence from numerous descriptive typology presentations that do not develop any underlying theory. Doty and Glick (1994), however, disagree with this view arguing that,

“typologies are complex theories that are frequently misinterpreted ... the problems with many existing typologies are the result of a misunderstanding about what typologies are (or should be), improper development of the typology, and a failure to take full advantage of the unique form of theory building represented by the typology approach.”

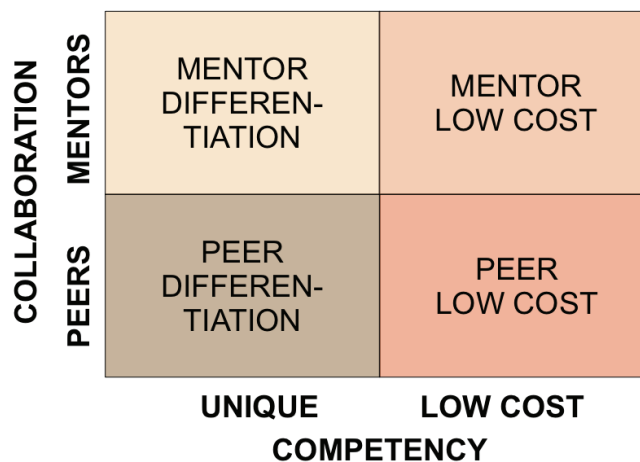


Figure 1. MSE Competitive Business Strategies Typology

Source: Ogot (2012)

Biggart and Delbridge (2004) posit that typologies provide a key tool to theorists making distinctions between complex phenomena. O'Raghallaigh, Sammon and Murphy (2010) conclude that typologies meet all four properties of 'good' theory namely having constructs, predict relationships among the constructs, predictions are falsifiable, and domain limitation. Fiss (2011) posits that typologies lend themselves to development of configurational arguments by incorporating notions of equifinality and asymmetric causal relations, as opposed to simple correlations. Also, Delbridge and Fiss (2013) state that typologies are complex systems of theoretical statements, presenting a challenging and attractive form of theorising. The ideal type construct in typologies can

be used to represent holistic configurations of unidimensional constructs and are theoretical abstractions posited to yield a specified level of a dependent variable. They are often described in terms of multiple dimensions representing different concepts¹ (though not necessarily existing) in organisations and integrate multiple organisational attributes into a holistic definition of fit (Doty & Glick, 1994).

What constitutes a theory? What criteria must a theory meet to be considered a theory? Although there is no universal agreement, there is consensus on three criteria: (a) identified and articulated constructs, (b) relationships between the constructs must be specified, and (c) the relationships must be subject to empirical validation (Whetten, 1989). The two main criteria on which any theory can be evaluated are falsifiability and utility. Falsifiability establishes whether a theory is set up so that it can be empirically refuted, supporting the consensus view that theories can never be proven but only disproven. Utility addresses the usefulness of the theory, that is, its ability to both explain and predict. "An explanation establishes the substantive meaning of constructs, variables, and their linkages, while prediction tests the substantive meaning by comparing it to empirical evidence." (p. 501)

3. Is the MSE Typology a Complete Theoretical Framework

This paper sets out to establish to what extent the MSE typology answers the What? How? Why? and Who, where and when? questions to be considered a theory.

3.1 Does the MSE Typology Address the What Question?

The *what* question establishes the variables, constructs, and concepts that collectively form the theory. For the MSE typology, the variables that provide measurability associated with the *peer differentiation*, *peer low cost*, *mentor differentiation* and *mentor low-cost* constructs were presented in Ogot (2012) and Ogot et al. (2018a). The lists, which are not exhaustive, were based on a review and synthesis of the MSE literature. In typology development and from the initial ideal types, combinations (referred to as hybrids) can be derived creating new ideal types that are conceptually and analytically equivalent to the initial types (Doty and Glick, 1994). One approach to establishing the hybrid types is to determine all the combinations based on the extent (using a low, high and medium rating) that an enterprise may apply in combination, any of the pure ideal types (Pertusa-Ortega, Molina-Azorin, and Claver-Cortes, 2009). Using this approach and with reference to Table 1, an analysis of the MSE typology yielded eleven hybrid types, that in conjunction with the four pure types brings the total number of ideal types to fifteen (Ogot et al. 2018b).

Table 1. Pure and Hybrid Ideal Types in the MSE Model

No.	PLC	PD	MLC	MD	Strategy Ideal Type
1	H	L	L	L	Pure Peer Low Cost
2	L	H	L	L	Pure Peer Differentiation
3	L	L	H	L	Pure Mentor Low Cost
4	L	L	L	H	Pure Mentor Differentiation
5	H	L	H	L	Hybrid Low Cost
6	L	H	L	H	Hybrid Differentiation
7	H	H	L	L	Hybrid Peer
8	L	L	H	H	Hybrid Mentor
9	L	H	H	L	2-Dimension Mixed
10	H	L	L	H	2-Dimension Mixed
11	H	H	H	L	Broad Hybrid
12	H	L	L	H	Broad Hybrid
13	H	H	H	H	Broad Hybrid
14	L	H	H	H	Broad Hybrid
15	H	H	H	H	Broad Hybrid
16-27	M/L	M/L	M/L	M/L	Stuck-in-the-middle

Key: PLC-Peer Low Cost, PD- Peer Differentiation, MLC-Mentor Low Cost, MD-Mentor Differentiation, L-Low, M-Medium, H-High

To test the content validity of the variables in the MSE typology, Ogot et al. (2018a) carried out a study among manufacturing micro-enterprises in Nairobi. Using Pearson's correlations between pairs of variables defining

¹ Dimensions are also referred to in the literature as "first-order" constructs.

each of the four pure ideal types, they found coefficients ranging between 0.19 to 0.84, all significant with p-values < 0.0001. Also, the underlying variables for all four ideal types yielded Cronbach α 's ranging between 0.8519 to 0.9592, suggesting high internal consistency and thus high reliability of the data collected based on the chosen variables (Nunnally, 1978). A good choice of variables (strategies in our context) should be generally applicable across industry, organisation type or size (Herbert & Deresky, 1989). Although limited in scope, Ogot et al. (2018a) carried out an investigation into the generality of the typology variables across two sub-sectors (furniture manufacturing and agro-food processing) and between genders (taken as male and female). Using binary logistic regression, they found that none of the variables served as statistically significant discriminants between male or female owners.

Across sub-sectors, only two of the twenty-eight variables were statistically significant, albeit mild, discriminants. Specifically, the odds of an agro-food processing business adopting the strategy "*I work with larger business to get new technologies to help me develop new products*" was significant and 1.742 times higher than for a manufacturing business. Although not precluding the generalisability of the strategy, the result did show a preference by agro-food processing MSEs. This may be due to the ease of obtaining small-scale food processing equipment along with the requisite training from the vendors (larger enterprises) who are often promoting the new equipment and the introduction of new approaches to food processing. In addition, at the MSE level, new technologies for agro-food processing often cost less and are easier to access through relationships with vendors, than equipment for manufacturing. The odds of manufacturing businesses adopting the strategy defined "*Through my membership, I have been able to exchange ideas with other business owners that have helped me develop new products,*" was significant and 1.740 times higher than for agro-food processing businesses. Although business associations are found across both sub-sectors, membership in them was found to be more prevalent among those in manufacturing than agro-food processing, explaining the higher odds.

The above discussion, therefore, presents initial support for the MSE typology meeting the 'What' criteria of a theory. A summary of the concepts, constructs, and variables is presented in Table 2.

3.2 Does the MSE Typology Address the Why and the How Questions?

Theorists must have a clear understanding of how a proposed theory fits within other preexisting theories. One aspect of fit is connectivity: the ability of the proposed theory to connect two or more existing theories, providing insights into the domains of the previous theories, thereby creating new knowledge (Bacharach, 1989). The MSE typology connects competitive business strategies theory developed by Porter (1980) and strategic alliance theories (Yoshino & Rangan, 1995; Todeva & Knoke, 2005) to achieve superior business performance (answer to the Why question).

The two main concepts of competency and collaboration upon which the MSE typology is built have strong theoretical underpinnings in the literature. Competency, based on the differentiation and low-cost leadership constructs, was first popularised by Porter (1980, 1985). Low-cost leadership is achieved by operating at lower costs than competitors and passing on the savings to the customer. Low-cost strategies success comes from achieving high volumes and operating with low margins. Differentiation targets above-average returns through unique products and services that are harder to copy and for which customers are willing to pay more. They achieve success from higher margins and lower volumes. Approaches to the implementation of both constructs, however, seem better suited to medium and larger companies who have more control of and access to resources (Porter, 1980, 1985; Kim, Nam & Stimpert, 2004; Alpkhan et al., 2005; Spanos, Zaralis & Lioukas, 2004; Pertusa-Ortega et al. 2009) than MSEs. The Why question addressed by the MSE typology, therefore, is to make the constructs better suited for implementation by MSEs.

Table 2. Summary of Concepts, Constructs and Variables in the MSE Model

Construct (Concept(s)/Variables)
<p>Construct: Peer Differentiation (Concepts: Collaboration and Competency)</p> <ul style="list-style-type: none"> • Group development of new products • Quality compliance through producer groups • Group labour specialization • Joint problem solving • Group lending/borrowing
<p>Construct: Mentor Differentiation (Concepts: Collaboration and Competency)</p> <ul style="list-style-type: none"> • Branding through mentor organisations • Technology transfer from forward/backward linkages generating new product development • Access finance and/or credit through forward/backward linkages • Sub-contracting • Backward/forward linkages for training • Backward linkages for specialized inputs • Access to lower cost finance and/or credit through membership in umbrella organisations (associations) or cooperatives • Technology transfer through umbrella organisations (associations) generating new product development • Publicity, quality control, training and/or exchange of ideas through umbrella organisations (associations)
<p>Construct: Peer Low Cost (Concepts: Collaboration and Competency)</p> <ul style="list-style-type: none"> • Group bulk procurement of raw materials • Group Lending/Borrowing • Joint problem solving • Reciprocal business relationships (for example, provision of material support, buying merchandise from each other) • Sharing of workspaces and specialized equipment • Participation in group bidding
<p>Construct: Mentor Low Cost (Concepts: Collaboration and Competency)</p> <ul style="list-style-type: none"> • Technology transfer to improve production efficiencies from forward/backward linkages • Backward/forward linkages for training • Access to lower cost finance and/or credit through forward/backward linkages • Backward linkages for low-cost inputs • Access to lower cost finance and/or credit membership in umbrella organisations (associations) or cooperatives • Technology transfer to improve production efficiencies from umbrella organisations (associations) • Access to lower cost raw materials through organisations (associations) who buy in bulk • Training and/or exchange of ideas through umbrella organisations (associations)
<p>Construct: Business Performance (Concepts: Competitive Advantage)</p> <ul style="list-style-type: none"> • Revenue Growth • Business Age • Growth Number of Employees

Source: Ogot (2014)

A review of MSE literature suggests that inter-firm cooperation is key to success (Lange, Ottens & Taylor, 2000; Propis, 2002; Wattanapruttipaisan, 2002; Kula et al, 2005; Makombe, 2006; Kabukuru, 2011). Firms may choose to collaborate to accrue tangible benefits, for example, higher profits, increased market share, and strengthened competitive advantage; or intangible benefits including the development of specific competencies or learning new skills (Simonin, 1997). Inter-firm cooperation is formed by at least two businesses who remain legally independent, share benefits and managerial oversight on agreed and assigned tasks, and make contributions in agreed-upon strategic areas (Yoshino & Rangan, 1995). Businesses form strategic alliances for a diversity of reasons, where decisions “to cooperate [is] not a responsive action, but is fundamentally a strategic intent, which aims at improving the future circumstances for each firm and their partnership as a whole” (Todeva & Knoke, 2005, p. 129).

From a resource-based view, strategic alliances are formed when both firms require resources and/or possess valuable resources to share (Eisenhardt & Schoonhoven, 1996). Alliances serve as a vehicle for obtaining otherwise unattainable competitive advantages and value to the firm (Das & Teng, 2000). This is especially important for small businesses who often lack resources to adequately respond to threats or take advantage of available opportunities (Palakshappa & Gordon, 2007). Further, firms may join umbrella trade organisations to seek additional resources and capabilities, especially MSEs, who lack significant internal resources and capabilities. This leads to the first proposition addressing the Why question:

P₁: MSEs can achieve better business performance through collaborative strategies with their peers and with larger organisations (mentors).

The MSE typology provides 28 possible strategies (Ogot, 2012) for superior business performance. From questionnaires administered to manufacturing MSEs in Nairobi, Ogot et al. (2018a) found that membership in umbrella trade organisations (categorised under mentor collaborations) emerged as the most significant form of collaboration. Also, strategies seeking to accrue resources and capabilities from membership in umbrella organisations formed eight of the top ten strategies. There is significant importance attached by MSEs to improved competitive advantage and performance through membership. This view is supported by Hardy et al. (2003) who contend that inter-firm collaboration leads to increased collective learning, providing opportunities for development and exchange of ideas, aspects central to umbrella organisations. A similar outcome was found by Makombe (2005) among Tanzanian women MEs. This leads to the next set of propositions addressing the How question:

P_{2a}: The MSE typology can serve as determinants of strategic group membership among MSEs.

P_{2a} focuses on determining the extent MSEs employ strategies similar to the MSE typology ideal types, enabling falsifiability, a key requirement of a theory. MSEs who employ strategies defined within any of the fifteen ideal types are said to be members of that strategic group. If they do not employ any, they are categorised as "stuck-in-the-middle" (Porter, 1985). Ogot et al. (2018b) carried out an exploratory survey among manufacturing and agro-food processing MSEs in Nairobi. They found significant differences (all with $p < 0.0000$) between MSEs that were members of the different strategic groups, confirming the validity of the proposed ideal types. Based on the variables presented in Table 2, Ogot et al. (2018b) found that a majority, 109 businesses, were members of the strategic group defined by the *Broad Hybrid* ideal type with twenty-eight business not belonging to any group, or "stuck-in-the-middle."

That membership in a strategic group can lead to better performance forms the basis of the following two propositions:

P_{2b}: MSEs employing strategies to be similar to a pure ideal type in the MSE typology, leads to superior business performance

P_{2c}: MSEs employing strategies to be similar to a hybrid ideal type in the MSE typology, leads to superior business performance.

Using Binary logistic regression on the same population of manufacturing and agro-food processing MSEs, Ogot et al. (2018b) found that only members of the strategic group defined by the *peer differentiation* pure ideal type had superior business performance than those *stuck-in-the-middle*. Though the lack of significant performance differences between businesses in strategic groups defined by the other pure ideal types did not support *P_{2b}*, it did not falsify it either, leaving room for further investigation. For the hybrid ideal types (*P_{2c}*), MSEs who were members of the strategic groups defined by the *broad hybrid*, *hybrid differentiation* and *hybrid mentor* ideal types had better business performance than those *stuck-in-the-middle*, providing support to *P_{2c}*. Businesses who were members of strategic groups defined by the *hybrid low cost* and the *hybrid peer* did not exhibit a significant performance difference with those *stuck-in-the-middle*. The lack of significant performance differences although not in support of *P_{2c}*, does not falsify it, leaving room for further investigation.

3.3 Does the MSE Typology Address the Who, Where, When Questions?

Answers to the *who*, *where* and *when* questions provide temporal and contextual elements that fix boundaries and establish the range of the theory. These are established through empirical testing on different populations, regions and contexts. Studies by Ogot et al. (2018a, 2018b), for example, begun to establish these boundaries. They used the Government of Kenya definition for 'micro' and 'small' in the Micro and Small Enterprises Act (2012) where a microenterprise is defined as a firm, trade, service industry or business activity whose annual turnover does not exceed Kshs. 500,000 (~US\$5,000) and employs less than ten people. For those in the manufacturing sector, their investment in plant and machinery or its registered capital should not exceed Kshs 10

million (~US\$100,000). For the service sector and farming enterprises, the investment in equipment or its registered capital should not exceed Kshs. 5 million (~US\$50,000). A small enterprise is a firm, trade, service industry or business activity whose annual turnover ranges between Kshs. 500,000 (US\$5,000) and Kshs 5 million (US\$50,000), and employs between ten and fifty people. For those in the manufacturing sector, their investment in plant and machinery or its registered capital should range between Kshs. 10-50 million (US\$100,000 – US\$500,000). For the service sector and farming enterprises, the investment in equipment or its registered capital should range between Kshs 5-20 million (US\$50,000 – US\$200,000).

These definitions and the location of the study begins to establish the boundaries and provide answers to the *who and where* elements of the theory. Of course, other empirical studies will seek to further extend the boundaries of validity for the typology. Further, elements of the MSE typology were also identified in Prasad and Tata (2010). They found that inter-firm collaboration between silk sari micro-enterprises (MEs) led to a better understanding of their customer needs resulting in improved performance. Similarly, Ntseane (2004) found inter-firm collaboration between women MEs in Botswana significantly improved business performance. Their studies demonstrate that strategies that incorporate collaboration may result in better ME business performance. The *when* element for the MSE Typology remains to be explicitly investigated. *When* elements include product life-cycle, businesses life cycle and seasonality of products. These need to be addressed in future studies.

4. Discussion

The typology approach to theory building is a multidimensional view of a management or organisational subject (Cornelissen, 2017) and represent coherent accounts of complex cause and effect relationships (Fiss, 2011). Although there are sceptics to this approach to theory building, proponents have argued that "the value of a typology lies in its ability to clearly delineate constructs, and make falsifiable predictions concerning an outcome variable of interest" (Bilgili et al., 2020). The MSE Typology presents a framework for new insights into MSE research. These are summarised in Table 3, based upon O'Raghallaigh et al.'s (2010) framework for properties of theories. The typology provides a structured theoretical framework for the investigation of the performance of MSEs under different conditions and contexts, and may be better suited than those currently used in the literature that may not be well suited for analysis of or implementation by MSEs.

Going forward we encourage researchers to further define additional strategies that would fit within the pure ideal types to complement or replace the current twenty-eight. For example, little work has been done on dynamic capabilities-based approaches (Teece, 2007; Eisenhardt & Martin, 2000; Pavlou & Sawy, 2011) to superior performance in MSEs. Strategies defined through these approaches could be added to the existing set. Also, more empirical studies should be done to better understand and answer the *Who, where and when* questions. These studies would improve the typology and make its application more effective in improving the financial performance of MSEs.

Table 3. Summary of MSE Typology meeting the criteria of a theory

Property of Theory	Description of Property	Mapping to Typology	MSE Typology
Limitations of domain	Establishes the domain limits for that the theory holds (<i>when</i> and <i>where</i>)	Clarity of the intended purpose of the typology theory and the situations the predictions hold true.	MSE typology seeks to provide fit among the defined constructs leading to improve competitive advantage and business performance.
Conceptual definitions	What gets included in the definition (<i>who</i> and <i>what</i>)	Two distinct types of constructs are found within typologies: <ul style="list-style-type: none"> Ideal types – multi-dimensional abstractions posited to yield a specified dependent variable level. Description of ideal types is in the form of uni-dimensional constructs, with each ideal type representing a unique combination of the constructs 	The MSE typology describes ideal types for MSEs for improved performance as peer low cost, mentor low cost, peer differentiation and mentor differentiation.
Building relationships	Provides a logical relationship between the <i>why</i> and <i>how</i> constructs	Typologies explain how and why the construct patterns within an ideal type result in the specified level of the dependent variable(s).	The MSE typology explains why higher the similarity to the ideal types is hypothesised to result in greater performance.

Property of Theory	Description of Property	Mapping to Typology	MSE Typology
Making predictions	Provides, specific testable predictions	Hypothesised relationships on the degree of similarity of an organisation to the ideal types and the dependant variables(s) can be derived from typologies. These predicted relationships can be falsified.	Through testable predictions, not all the ideal types defined in the MSE typology were found in the studies by Ogot et al (2018a, 2018b) to result in superior performance for the selected population.

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The Impact of Workplace Spirituality on Employee Performance: Evidence from Abu Dhabi University

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Abstract

The aim of this paper is to argue that workplace spirituality may have an impact on enhancing the performance of employees. Hence, it focuses on the ways through which workplace spirituality can boost performance.

The paper proposes a theoretical model regarding the links between five elements of workplace spirituality (team's sense of community, alignment between organizational and individual values, sense of contribution to the community, sense of enjoyment at work and opportunities for the inner life) and employee performance. The theoretic model is then tested empirically using a spiritual modelling partial least squares analysis of a survey data set of 145 observations, collected from members of the Abu Dhabi University community.

The presence of workplace spirituality in an organisational environment is considerably connected to employee performance. An interesting observation made from this study is that there is a significant variance in employee performance as a function of an employee position.

Keywords: organisational climate, performance management, workplace spirituality

1. Introduction

Managing employees in institutions of higher education can be a challenge (Decramer et al., 2012). Scholars like Harley et al. (2004) note that employees in such environments are usually have freedom to determine the priority tasks. Also, in modern times, employees spend most of their lives in the workplace (Mirvis, 1997). Hence, they seek out purpose, meaning, and self-realization from their workplaces (Mitroff & Denton, 1999a). This is because to a degree, they link their social identity to the experiences they have at work and interactions with others (Cartwright & Cooper, 1997). It is this change that is driving the focus on workplace spirituality (Pardasani et al., 2014).

The spiritual connection in the workplace is a concept recognised by Neck and Milliman (1994) who note that in contemporary times, people are not just getting more spiritually oriented in their normal everyday lives, but also in their workplace. Sheep (2006) also connects workplace spirituality to individual wellbeing in both society and the workplace. He adds that workplace spirituality can assist organisations when dealing with matters linked to the welfare of their employees. French and Bell (2001) also argue that spirituality has a crucial effect on efforts linked to organisational development.

This paper explores if and how employee performance can be promoted through workplace spirituality. It suggests that workplace spirituality can facilitate employee performance, and boost organisational performance.

An important element for modern corporations is the importance of building self-motivation characteristics. Diamantidis and Chatzoglou (2019) agrees and adds that self-motivation boosts competitive advantage which allows for sustainability in an agile environment. Hence some organisations have started to focus on the importance of creating an environment where their human resources use employee performance as a foundation for tactical improvement and professional development approach (Wright & Snell, 2009). Unquestionably, the better the work-life balance of employees the better their performance (Soomro et al., 2018).

Even though there a proliferation in studies around the management of employee performance, there is still little known about the particular variables that impact the performance of employees, particularly in higher education

settings (Decramer et al., 2012).

For employees, religious beliefs can have a significant meaning. For example, Osman-Gani et al. (2013) note that religious beliefs can change the behaviour of employees and the way they perform, delivering a structure through which decisions can be made, especially in societies that are multi-religious and multi-cultural. It is on this basis that the dearth of empirical evidence in this area, especially in the UAE is concerning (Thanh Do, 2018).

This paper begins with presenting a theoretical model of the links between workplace spirituality and employee performance. It explores five elements of workplace spirituality: the sense of community within teams; how individual and organisational values align; sense of contribution to the community; inner life opportunities; and sense of work enjoyment. All these elements affect employee performance. This is then followed by testing several hypotheses regarding the effect of workplace spirituality on employee performance. This is achieved through the analysis of a survey data set containing 145 observations, obtained from workers at the Abu Dhabi University. The analysis of the data is accomplished through structural equation modelling, which is done using partial least squares package. This examines connections between the variables of the study. The last part involves the presentation of the results, together with their practical and theoretical implications.

2. Theoretical Background

In this section, the character of workplace spirituality practices and employee performance is discussed. The research model is then presented before hypotheses regarding how employee performance is impacted by workplace spirituality is proposed.

2.1 Employee Performance

The idea of employee performance denotes the accomplishments of an individual in a work situation. Performance is linked to involvement in meaningful activity, working with understanding colleagues and employers, and a feeling of being engaged (Karakas, 2010). For Bishop (1987), employee performance denotes the results of the work done by a particular worker. Soomro et al., (2018) add that employee performance is the result of what an employee develops, with the anticipation of compensation. It is the success or general result of the outcome of the efforts of an individual during a defined time of responsibility in comparison to the work's criteria or targets which are defined in advance (Rivai, 2004).

Work performance can be divided into three dimensions (Figure 1). The first dimension is task performance. This kind of performance comprises of work explicit behaviours which could incorporate important job responsibilities which the employee and employer agree to in the job description (Pradhan & Jena, 2017). For task performance, mental ability is required, and the responsibility is mainly facilitated via task awareness, task talent, and task practice (Conway, 1999). The second kind is known as adaptive performance. This consists of eight dimensions as listed below:

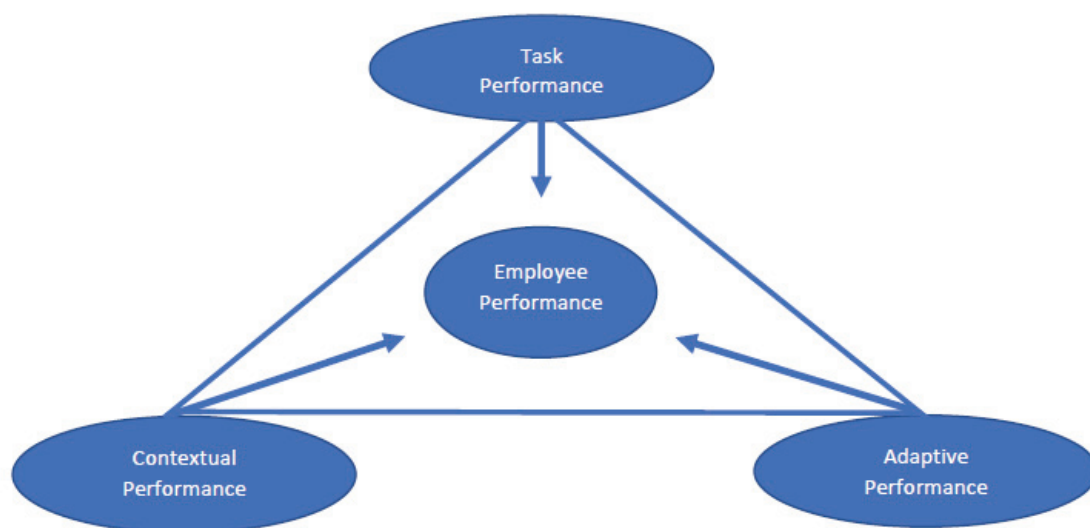


Figure 1. The Triarchy Model of Employee Performance

Source: (Pradhan & Jena, 2017)

- Creatively finding solutions to problems.
- Learning novel tasks.
- Procedures and technologies.
- Demonstration of interactive flexibility.
- Showing cultural adaptability.
- Ability to show physical-oriented adaptability.
- Effectively dealing with stress at work.
- Ability to deal with crisis situations and emergencies.

Contextual performance can be viewed from two dimensions (Jawahar & Carr, 2007). The first dimension is linked to job commitment (Van Scotter & Motowildo, 1996; Motowildo & Van Scotter, 1994), or normative conducts linked to the institutional and work setting (Organ, 1998; Bateman & Organ, 1983; Williams & Anderson, 1991). Elements included in this category are ethics and ethos, taking the lead, working hard, and acting in a manner that puts the organisation in good standing (Jawahar & Carr, 2007).

The level of success that can be achieved by an institution with regards to its strategic objectives is entirely dependent on the way those who work for it perform (Sugianingrat et al., 2019). Empirical proof with regards to the tri-lateral link between Human Resources Management, the well-being of employees, and their performance reflects the fact that HRM plays a positive role on the various dimensions of employee performance. This results from the development of positive employee satisfaction effects (Van De Voorde et al., 2012).

It is the view of Locander et al. (2002) and Bass et al. (2003) that the main element determining employee performance and organisational adjustment capability is leadership. Through leadership, the affiliation between the leaders and subordinates, is portrayed (Locander et al., 2002). Studies (Soomro et al., 2018) have concluded that workers who are involved in the making of decisions and feel that they belong to the whole team tend to be more productive when they are compared to those who do not have a feeling of belonging and engagement. Those workers who take part in the process of decision-making feel that they are valued and tend to like the organisations they work for. Consequently, employee performance is boosted (Lam et al., 2002).

2.2 Workplace Spirituality

Spiritual individuals connect religion and the workplace. This is a view acknowledged by Neck and Millan (1994) who note that the perspective is embedded in the historical connection of spirituality and religion. However, in contemporary times, workplace spirituality is not connected to any specific religion. Rather, it is founded on the individual attitude and ethics (Mitroff & Denton, 1999b).

There is no broadly accepted meaning of the concept of spirituality (Markow & Klenke, 2005). Thanh Do (2018) agrees and says that the term spirituality is complex and miscellaneous. Ashforth and Pratt (2003) identify the primary components of workplace spirituality: purpose and meaning in life; a feeling of belonging and being interconnected, and individual fulfilments and satisfaction (Ashmos & Duchon, 2000; Sheep, 2006; DeKlerk, 2006). Valasek (2009) summarised the concept of workplace spirituality:

- The search for purpose and meaning.
- Existing in harmony with others.
- A feeling of being personally adequate, healthy, and holistic.
- Attaining individual growth.
- Integrity, ethics, or values-based.
- Sense of fairness and justice.
- Believing in the divine.

Rego and Cunha (2008) place workplace spirituality into five dimensions. The first is the sense of community among a team. An important element of workplace spirituality includes a feeling of being deeply connected, to association with others. This is expressed by Ashmos and Duchon (2000) as a sense of community. This workplace spirituality takes places at the group level of human resources and is concerned with communications that employees have between each other (Milliman et al., 2003). The idea of community at work is founded on the appreciation that individuals perceive themselves to have connections with others and that there exists a level of compassion between an individual's inner feelings and those of others (Miller, 1992; Maynard, 1992).

Secondly, Rego and Cunha (2008) identify the alignment between organisational and individual values. Such a spirituality dimension within the workplace is present when the employee's personal principles are in alignment with the standards of the organisation (Pardasani et al., 2014). Employees will feel that there is an association between themselves and the organisation when they believe that the employees and managers in their

organisation have appropriate values, possess a robust conscience, and have a concern about the welfare of employees and the communities where they come from (Ashmos & Duchon, 2000).

Thirdly, Rego and Cunha (2008) introduce the dimension of sense of contribution to the community. In workplace spirituality, this element is similar to the ideas of mutual responsibility, sharing, and commitment that link one individual to the other (Duchon & Plowman, 2005). The dimension is characterised by having a common purpose and having a sense of being connected to others (Kinjerski & Skrypneck, 2006a). A number of scholars have been noted to embrace the idea of the link between job performance and the sense of collegiality (Thanh Do, 2018). For instance, Milliman et al. (1999) argue that greater commitment and job performance are results of robust, purposeful targets and sense of community. In more recent times, Vanover (2014) was involved in a study exploring how work performance is impacted on by a sense of community and conclude that employees with higher community engagement rank also show higher levels of performance.

The fourth element is the sense of enjoyment at work. This concept involves items linked to a sense of pleasure and happiness in the workplace. This dimension forms a sub-division of a bigger demission of *meaningful work* which is identified by Ashmos and Duchon (2000) and Millan et al. (2003). It denotes several kinds of workplace achievements (Rego & Cunha, 2008).

Element number five is called opportunities for the inner life. Belwalkar et al. (2018) say this element involves the idea that the place of work is turning into an area where employees find a sense of meaning and exhibit their personality. This is a view also supported by Duchon and Plowman (2005) who say that the place of work can be a crucial setting for employees, provided they are able to find fitting circumstances that will allow them to show their inner emotions and feelings. This constitutes a self-recognition of power and spiritual identity, which is bigger than the physical approach (Liu & Robertson, 2011); inner life in transcendence over self-image (Giacalone & Jurkiewicz, 2010).

The last 20 years have seen a growing focus in workplace spirituality (Poole, 2009; Ashmos & Duchon, 2000; Gotsis & Kortezi, 2008; Mitroff & Denton, 1999b). Scholars who have focused on this area like Westerman and Whitaker (2014) and Benefiel et al. (2014) have indicated that past studies have come to the conclusion that workplace spirituality is linked with a number of outcomes such as boosting the commitment of employees, productivity, job satisfaction among employees, employee organisational-based confidence, the well-being of workers, lower turnaround of employees, and lower employee frustration (Pawar, 2017).

Workplace spirituality has the potential to deal with undesirable issues that can have an effect on the mental wellbeing of employees (Mitroff, 2003). It has been suggested that spirituality in the workplace has turned into a requirement for any institutions that want to create a good balance between work and life (Cavanaugh, 1999; Mitroff & Denton, 1999a). This is a point of view characteristic of the place of work which could boost productivity and performance if the leadership has the capacity to address it appropriately (Milliman et al., 2003).

Karakas (2009) reviewed around 140 pieces dealing with how organisational performance benefits from spirituality. The review distinguishes three standpoints regarding how spirituality can be a benefit to workers and boost the performance of an organisation using extant literature as a foundation. The review came up with the conclusions listed below:

- Spirituality leads to improvements in the quality of life and wellbeing of employees.
- Spirituality gives employees a sense of meaning and reasons why their work is important.
- Spirituality makes employees feel as if they are interconnected and belong to a community.

2.3 Model of the Research: Workplace Spirituality as a Way of Employee Performance Improvement

For modern organisations, productivity is an essential issue (Pradhan & Jena, 2017). Analysing literature on human resources (HR) development and organisational behaviour (OB) shows that the employment of job performance as a way of productivity is an area that is widely studied (Shiemann, 2009). Several researchers who focusing on HRM and OB have, in the past few years, tried to explain how well or bad an impact employee relation or the work environment have on the behaviour and performance of employees (Devonish, 2013).

Workplace spirituality has attained central meaning but studies around the area of workplace spirituality remain controversial as an emerging topic (Van de Klerk, 2014). Nonetheless, it can be noted that there is a substantial interface between workplace spirituality, desirable outputs, and job satisfaction (Van der Walt & de Klerk, 2014). Hence, Giacalone and Jurkiewicz (2010) advance the view that the idea of workplace spirituality is increasingly being identified as an important part of the workplace and a means of increasing productivity.

There seems to be an agreement that the consciousness of workplace spirituality is vital because it can assist in

explaining the elements that trigger employee performance in organisations. This view is acknowledged by Neck and Milliman (1994) who argue that spiritual ethics impact individual job performance through boosting their well-being. Those institutions that embolden spiritual workplaces tend to have employees who are more righteous, committed, work with efficiency, and are more innovative (Eisler & Montouri, 2003; Mat & Naser, 2012).

An analysis of some research literature and theorists will reveal suggestions that workers within institutions that nurture spirituality tend to be rewarded with improved productivity (Garcia-Zamor, 2003), better job satisfaction, (Miles et al., 2005), and enhanced performance (Marques, 2005). It is taken into consideration that positivity in the workplace has the capacity to play the role of a harbinger to the boosting of employee performance (Ayanci, 2011), a situation that would improve the success of an institution (Milliman et al., 2003). This is the reason why several leading organisations like have started to introduce spirituality into the workplace (Casey, 2002).

Hassan et al. (2016) note that workplace spirituality does not only deliver religious doctrine; it can also be relevant to the success of employees, organisations, and societies. It links the spirit of the employee to the tasks and activities they are employed to perform, leading to more commitment to the institution they work for and job satisfaction (Mirvis, 1997; Milliman et al., 2003). For Jurkiewicz and Giacalone (2004) this is a setting that boosts productivity for both the cooperation and individuals.

On the basis of the views expressed by the scholars above, this paper suggests that the extent to which employees experience workplace spirituality will determine their performance. This view can be expressed using five hypotheses.

H1- There would be a positive relationship between team’s sense of community and employee performance.

H2- There would be a positive relationship between alignment between organizational & individual values and employee performance.

H3- There would be a positive relationship between sense of contribution to the community and employee performance.

H4- There would be a positive relationship between sense of enjoyment at work and employee performance.

H5- There would be a positive relationship between opportunities for the inner life and employee performance.

Figure 2 represents the research model. The argument advanced by this paper is that the five elements of workplace spirituality introduced in this paper improve the likelihood of employee performance. This paper’s findings focus on the link between employee performance and workplace spirituality.

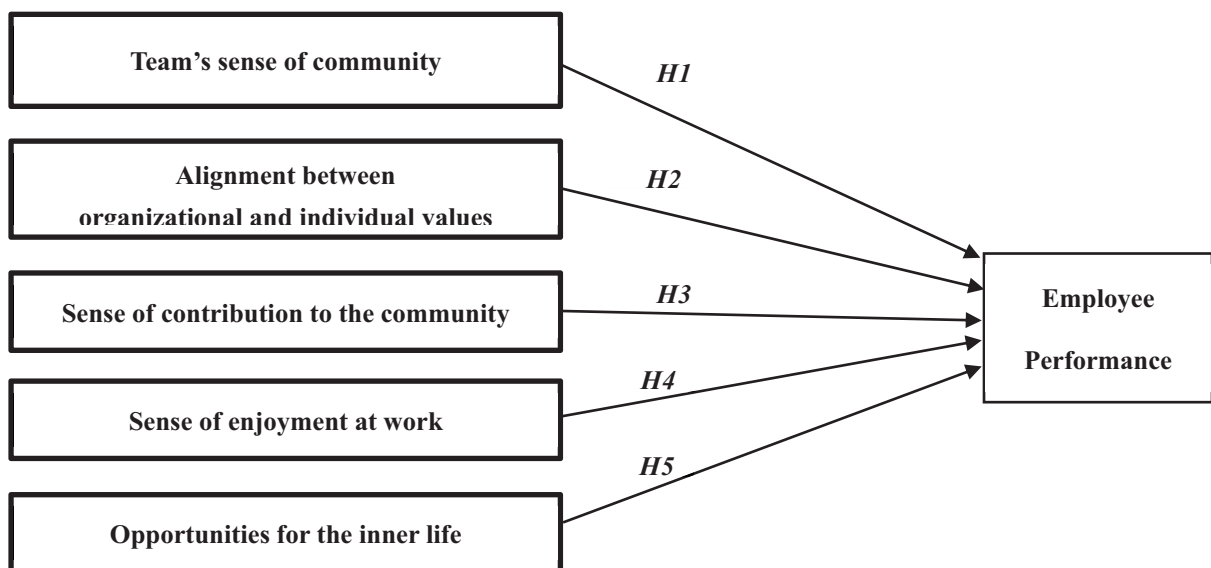


Figure 2. The research model

3. Methods

3.1 Sample and Data Collection

The data for this study were gathered from the employees in Abu Dhabi University (ADU) using a web-based questionnaire. Abu Dhabi University (ADU) is considered one of the largest educational institutions in the UAE. ADU has four campuses: Abu Dhabi, Al Ain, AlDhafra, and Dubai. It conducts various programs: Bachelor Degrees, Master Degrees, and PhDs in compliance with the American model of higher education. Around 7650 students from 70 countries are enrolled in ADU's different programs and faculties (college of business, college of arts and sciences, college of law, academic programs for military colleges, college of engineering and college of health sciences). The university has 198 faculty members and 259 other staff. ADU has got local and global accreditations.

In ADU, responses were acquired from 145 respondents, representing faculty and staff. The respondents were grouped as described below.

- 63 (43.4%) came from faculty.
- 82 (56.6%) are general members of staff.

From the gender perspective, 66 (45%) are female, and 79 (54.5%) are males.

With regards to age:

- 23 (15.9%) were less than 30 years.
- 56 (38.6%) were from 30 to less than 40.
- 36 (24.8%) were from 40 to less than 50.
- 19 (13.1%) were from 50 to less than 60.
- 10 (6.9%) were from 60 to less than 70.
- 1 (0.7%) were 70 and more.

With regards to experience:

- 50 (34.5%) were less than ten years.
- 64 (44.1%) were from 10 to less than 20 years.
- 19 (13.1%) were from 20 to less than 30 years.
- 12 (8.3%) were 30 and more.

It can be noted that 145 participants constitute an appropriate sample for two types of statistical analysis employed in this study: regression analysis and factor analysis. For the newly designed three-item employee performance scale, the study employs a factor analysis. "Hinkin (1995, p. 973) notes that for a scale to be factor analysed, recommendations for item-to-response ratios range from 1:4 (Rummel, 1970) to at least 1:10 (Schwab, 1980) [...]" (Pawar, 2016, p. 983). For factor analysis, even when one follows guidelines that are conservative, a sample size of 30 (10×3) will be needed to conduct factor analysis on a set of three items in the employee performance scale. With regards to regression analysis, "Hair et al. (2014, p. 171) suggest a requirement of 15-20 data points (respondents or observations) per independent variable in the regression equation" (Pawar, 2016, p. 983).

This study has five independent variables. These are the team's sense of community, alignment between organizational and individual values, sense of contribution to the community, sense of enjoyment at work and opportunities for the inner life. It is for this reason that the size of the sample is 145, which is a lot above the sample size that the guidelines recommend.

3.2 Measures

3.2.1 Workplace Spirituality

To measure workplace spirituality, respondents were asked to answer items on a scale of 1 to 5 (with 1 representing totally disagree and 5 denoting totally agree). The items were based on the Rego and Cunha (2008) survey. The team's sense of community-scale includes items linked to mutual care between members, team spirit, sense of common purpose, and sense of community. On the other hand, the alignment between organizational and individual values incorporates items that embody the congruence between the individual's inner life and the values of the organisation. In the same scale, there is an item dealing with the leaders' involvement with the wider community. The descriptor implies that individuals feel that they are more

comfortable/aligned when they work in institutions where leaders care about the community. Aggregates items for a sense of contribution to the community, implying that an individual's work is in agreement with their personal life values, and makes a desirable contribution to the community. Items for the sense of enjoyment at work are linked to the feeling of pleasure and joy at work. The opportunities for the inner life scales incorporate descriptors dealing how the institution respects the spiritual values and spirituality of the individuals.

3.2.2 Employee Performance

The measuring of employee performance was done using a three-item composite. Items were drawn from "Employee Performance at Workplace: Conceptual Model and Empirical Validation" survey (Pradhan & Jena, 2017). The scale for task performance examined the effectiveness with which job occupants execute their assigned tasks. The scale for adaptive performance refers to adjusting to and understanding change in the workplace. The items for contextual performance include aspects of the performance of an individual which sustains and boosts the psychological climate and social network climate which facilitates tasks of a technical nature. All the items about employee performance are evaluated with five points Likert scale as in the workplace spirituality scale.

3.2.3 Control Variables

With regards to the control variables, variables include position, gender, age, and experience. This is done to remove the impact they may have had on employee performance.

For the data, self-reported measures are the mainstay. Hence, one should note that the findings may be biased by common method variance. In situations where respondents are requested to complete items which cover dependent and independent variables, the common method bias becomes a real concern. For this research, Harman's one-factor test (Podsakoff et al., 2003) was employed for the purpose of assessing the hazard of this kind of bias. The author of this paper did a principal component analysis which involved all of the construct's items. The aim of the study was to explore a way out for determining the number of factors needed to take variance into account in all the items. The biggest factor is responsible for 3.4%, implying that the common method bias did not affect the results of this study.

4. Results

Version 2.0 M3 of Smart PLS was used for analysing this study. The initial step involved evaluating the validity and reliability of the measurement model. The testing of the hypothesis was then achieved using the structural model.

4.1 Correlation Analysis

The initial phase involved an examination of the correlation between performance and workplace spirituality. To achieve this, a correlation analysis was employed. Table 1 indicates the standard and mean deviations and delivers the correlation matrix. From the results, it can be seen that every one of the workplace spirituality variables had a significant relationship with each other and with employee performance. This lends credence to the expectation of the study that there is likely to be interconnectedness between workplace spirituality and employee performance.

Table 1. correlation matrix

Variable	Mean	SD	1	2	3	4	5
1. Team's sense of community	3.92	1.21					
2. Alignment between organizational and individual values	4.62	1.19	0.443**				
3. Sense of contribution to the community	4.08	1.49	0.468**	0.356**			
4. Sense of enjoyment at work	4.09	1.33	0.387**	0.453**	0.407**		
5. Opportunities for the inner life	4.14	1.27	0.516**	0.549**	0.413**	0.491**	
6. Employee performance	4.73	1.32	0.587**	0.491**	0.218**	0.375**	0.399**

Note. **Correlation is significant at the 0.01 level

4.2 Measurement model

Testing the measurement model involved assessing the discriminant validity and internal consistency.

4.1.1 Internal Consistency

Internal consistency is represented by convergent validity and contrast reliability (CR). Based on the CR test, it can be noted that all the constructs have a result which is higher than the threshold of 0.7, which was used by Bagozzi and Yi (1991) (Appendix). The testing of the convergent validity was an accomplished analysis of the average variance extracted (AVE) and factor loading. Results show higher loadings for each item and that they were statistically significant (Appendix), implying that they are all linked to their precise constructs, which validates the proposed connection between the constructs and indicators. For all the constructs, the AVE measure is above the threshold of 0.50 (Fornell & Larcker, 1981).

4.1.2 Discriminant Validity

The discriminant validity indicates the degree to which any of the individual constructs varies when compared to the others. The AVE must be higher than the variance shared between that construct and the model's other constructs (referring to the squared correlation between the two constructs) (Fornell & Larcker, 1981). As is illustrated in Table 2, this condition is met by this study's constructs. Analysing the model shows that the diagonal elements (AVEs) are higher when compared to the off-diagonal elements of the matching columns and rows. It can be noted that the assessments of the models produce evidence that can be relied on with regards to reliability and validity for the concept's operationalization.

Table 2. Discriminant validity of the research model

Variable	1	2	3	4	5	6
1. Team's sense of community	0.61					
2. Alignment between organizational and individual values	0.28	0.59				
3. Sense of contribution to the community	0.12	0.09	0.79			
4. Sense of enjoyment at work	0.22	0.31	0.18	0.71		
5. Opportunities for the inner life	0.25	0.39	0.22	0.25	0.58	
6. Employee Performance	0.38	0.27	0.06	0.16	0.13	0.67

Note. AVE associated with the construct is presented diagonally; the squared correlations between the constructs are presented in the lower left triangle

4.2 Research Model Testing

As is illustrated in Table 3, the research model has been able to clarify the 49.1% of the difference in employee performance. The path model was predicted to replicate the suggested relationship between employee performance and workplace spirituality for hypothesis testing. From the results, it can be noted that the majority of the hypothesis is supported by the path estimates. The paths from the alignment between organizational and individual values (H2), sense of contribution to the community (H3), sense of enjoyment at work (H4), and opportunities for the inner life (H5) to employee performance were as hypothesised. Alignment between organizational and individual values ($B = 0.487$, $p < 0.005$), sense of contribution to the community ($B = 0.237$, $p < 0.01$), sense of enjoyment at work ($B = 0.186$, $p < 0.005$), and opportunities for the inner life ($B = 0.197$, $p < 0.005$) each had a significant positive impact on employee performance. The research model also predicted a direct path from the team's sense of community (H1) to employee performance. However, this hypothesis was not supported. It is also noted that the direct path from the team's sense of community (H1) to employee performance was predicted by the research model. However, the hypothesis was not validated.

Table 3. Testing the research model

Path	Path coefficient	t-value
<u>Control variables:</u>		
Gender → Employee performance	.038 n.s.	0.192
Age → Employee performance	0.059*	1.874
Experience → Employee performance	0.309***	1.505
<u>Dependent variables:</u>		
Team’s sense of community → Employee performance	0.042 n.s.	1.494
Alignment between organizational and individual values → Employee performance	0.487***	3.551
Sense of contribution to the community → Employee performance	0.237**	1.918
Sense of enjoyment at work → Employee performance	0.186***	3.391
Opportunities for the inner life → Employee performance	0.197***	3.798
R ²		.491

Note. ***Significance < 0.005, **Significance < 0.01, *Significance < 0.05

4.3 Testing Models for Employee Groups

The author also wanted to analyse the link between workplace spirituality and employee performance. Hence, supplementary models were tested for distinct categories of workers: faculty (N = 65) and staff (N = 80).

As Table 4 indicates, the models for various groups of employees account for between 35 and 57% of employee performance. Precisely, workplace spirituality clarified the huge volume of the variance of employee performance for faculty and the small quantity for staff. Path estimates from workplace spirituality to employee performance show a significant positive relationship between alignment between individual and organisational values (B = 0.599, p < 0.005), sense of contribution to the community (B = 0.576, p < 0.005), sense of enjoyment at work (B = 0.529, p < 0.005), opportunities for the inner life (B = 0.566, p < 0.005), and employee performance in faculty group. For staff group, path estimates from workplace spirituality to employee performance show a significant positive relationship between alignment between organizational and individual values (B = 0.471, p < 0.01), sense of contribution to the community (B = 0.437, p < 0.01), sense of enjoyment at work (B = 0.493, p < 0.005), opportunities for the inner life (B = 0.551, p < 0.005), and employee performance.

Table 4. Testing the research model for employee groups

Path	Faculty	Staff
<u>Control variables:</u>		
Gender → Employee performance	- 0.045 n.s.	- 0.029 n.s.
Age → Employee performance	0.174*	0.161*
Experience → Employee performance	0.547***	0.518***
<u>Dependent variables:</u>		
Team’s sense of community → Employee performance	0.071 n.s.	0.062 n.s.
Alignment between organizational and individual values → Employee performance	0.599***	0.471**
Sense of contribution to the community → Employee performance	0.576***	0.437**
Sense of enjoyment at work → Employee performance	0.529***	0.493***
Opportunities for the inner life → Employee performance	0.566***	0.551***
R ²	.570	.351

Note. ***Significance < 0.005, **Significance < 0.01, *Significance < 0.05

5. Discussion

Of the five factors of workplace spirituality that this study is concerned with, the team's sense of community is the only factor that does not affect employee performance. A possible reason for this result could be the context of the study. There is a possibility that the character of the work done at ADU does not require a team's sense of community. Hence, that kind of activity is not stimulated by either reward or support at ADU. As a result, it does not affect the performance of employees.

Nonetheless, the other four factors of workplace spirituality (alignment between organizational and individual values, sense of contribution to the community, sense of enjoyment at work, and opportunities for the inner life) are linked to employee performance. Particularly, the study's results show that these four factors promote employee performance for all employee groups. Again, there is a possibility that the kind of work done at ADU calls for the availability of these four factors of workplace spirituality to motivate employees to achieve the targeted performance.

The results also demonstrate that the significant workplace spirituality on employee performance varies as a function of an employee position. Precisely, workplace spirituality accounts for 57% of the difference in employee performance for faculty, a big proportion of the study. With regards to this category, alignment between organizational and individual values was a key issue, followed by a sense of contribution to the community, followed by opportunities for the inner life, and finally a sense of enjoyment at work. Based on the size of the difference in employee performance which workplace spirituality accounts for, it seems that workplace spirituality is particularly imperative in making sure that there is high performance for faculty. This is understandable because their work is mostly about scientific research and teaching activities that are largely related to the compatibility between personal and organizational values and are related to others' challenges.

For staff, workplace spirituality accounts for 35.1% of the variance of employee performance. For this group, opportunities for the inner life was the key issue, followed by a sense of enjoyment at work, followed by the alignment between organizational and individual values, and finally a sense of contribution to the community. It is the view of this author that the reason for the low variance of staff compared with that of faculty is because of the nature of the work of staff which related to administrative and material matters more than the nature of the work of faculty.

6. Conclusion

Even though the influence of workplace spirituality has characteristically been researched in connection with its advantages to "soft" human issues "well-being of individuals, organizations, and societies" (for example: Sheep, 2006, p. 357), there is a limited amount of previous studies focusing on the impact of workplace spirituality on "hard" human issues from the viewpoint of different workers. This research provides workplace spirituality on a kind of result of workplace spirituality, which is ignored by previous research.

From this study it can be concluded that the presence of workplace spirituality is connected to high employee performance. Accordingly, this study presents a new value of workplace spirituality for institutions, consolidation the argument that embracing spiritual practices in the work environment can boost elements like employee determination and reduce work stress and exhaustion (Karakas, 2010). Thus, workplace spirituality can be useful for consultants, managers, and developers of organisations in their pursuit to boost employee performance.

6.1 Implications for Academics and Practitioners

From this study's results, it has been illustrated that workplace spirituality has a robust influence on employee performance. Such a result should encourage those in charge to apply the activities which reinforce workplace spirituality in their organisations to improve adaptive performance, task performance, and contextual performance of employees. The results also demonstrate that both academic employees and the general staff in the university profit from diverse types of workplace spirituality activities. Therefore, this paper delivers guiding principles for targeted application of workplace spirituality in different intra-organisational working settings.

The paper backs moving workplace spirituality studies to a phase where the impact of its practices can be explored not as a "one size fits all" concept but rather as a contextual and contingent matter, which considers the characteristics and requirements of numerous kinds of duties performed in an institution.

6.2 Limitations and Future Research

The design of this study was cross-sectional, making it possible to deal with the develop hypothesis on the direction of the influence between workplace spirituality and employee performance. On the basis of the results

of this study, it could be said that the employees who are proficient in performing their jobs are more influenced by the environment in which spirituality exists. Determining the direction of influence could be something that is better done through a longitudinal study.

Based on the knowledge of the author, no prior studies have dealt with the impact of employee performance on workplace spirituality. An examination of the connection workplace spirituality, employee performance, and organizational effectiveness could be an exciting subject for upcoming research.

Finally, this research ranks among the inaugural studies to examine the connection between workplace spirituality and employee performance. Hence, the study only delivers an initial perception of the subject, and there is still a need for more studies that will deliver in-depth comprehension. Possible productive paths for future study consist of considering the factors of workplace spirituality as contingency variables. Including issues that are closely linked to the research model like the quality of life and employees' general well-being, could also be considered as valuable aspects of research.

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Appendix

Appendix. Measurement items

Concept /Item	Mean	SD	Factor loading	AVE	CR	Alpha
Employee Performance:						
Task Performance:			0.801***		7.879	
1- I maintain high standards in work.	4.47	0.747		0.741		0.760
2- I am capable of handling my assignments without much supervision.	4.34	0.759	0.721***			
3- I am very passionate about my work.	4.31	0.912	0.757***			
4- I know I can handle multiple assignments to achieve organizational goals.	4.41	0.714	0.771***			
5- I complete my assignments on time.	4.37	0.774	0.755***			
6- My colleagues believe I am a high performer in my organization.	4.31	0.789	0.642***			
Adaptive Performance:						
7- I perform well to mobilize collective intelligence for effective team work.	4.13	0.718	0.68***	0.692	8.575	0.733
8- I can manage change in my job very well whenever the situation demands.	4.19	0.722	0.511***			
9- I can handle effectively my team work in the face of change.	4.16	0.745	0.536***			
10- I always believe that mutual understanding can lead to a viable solution in organization.	4.46	0.688	0.804***			
11- I am very comfortable with job flexibility.	4.01	0.853	0.83***			
12- I cope well with organizational change from time to time.	4.09	0.784	0.79***			
Contextual Performance:						
13- I extend help to my co-workers when asked or needed.	4.56	0.634	0.766***	0.756	10.371	0.798
14- I love to handle extra responsibilities.	3.98	0.904	0.636***			
15- I extend my sympathy and empathy to my co-workers when they are in trouble.	4.52	0.625	0.693***			
16- I actively participate in group discussion and work meetings.	4.17	0.672	0.616***			
17- I praise my co- workers for their good work.	4.43	0.665	0.835***			
18- I derive lot of satisfaction nurturing others in organization.	4.14	0.799	0.738***			
19- I share knowledge and ideas with my team members.	4.44	0.634	0.806***			
20- I maintain good coordination with fellow workers.	4.37	0.717	0.891***			
21- I guide new colleagues beyond my job purview.	4.29	0.765	0.772***			
22- I communicate effectively with my colleagues for problem solving and decision making.	4.38	0.657	0.805***			
Workplace Spirituality:						
Team's sense of community:			0.853***			
1- People in my team/ group feel that they are part of a family	3.84	0.944		0.884	14.506	0.892
2- My team/ group Promotes the creation of a spirit of community	3.85	0.900	0.922***			
3- I feel that the members of my team/ group support each other	3.94	0.959	0.902***			
4- I feel that the members of my team/ group care about each other	3.86	0.943	0.878***			
5- I feel that the members of my team/ group are linked by a common purpose	3.83	0.961	0.863***			
Alignment between organizational and individual values:						
6- I feel positive about the values prevailing in Abu Dhabi University	3.84	1.042	0.865***	0.893	15.378	0.877
7- People feel good about their future with Abu Dhabi University	3.33	1.246	0.882***			
8- Abu Dhabi University respects my "inner life"	3.7	1.078	0.886***			
9- Abu Dhabi University helps me to live in peace/harmony with myself	3.64	1.138	0.926***			
10- The leaders of Abu Dhabi University try to be helpful to the larger social good of the community	3.69	1.232	0.907***			
Sense of contribution to the community:						
11- My work is connected with what I think is important in life	4.15	0.844	0.854***	0.854	11.913	0.850
12- I see a connection between my work and the larger social good of my community	4.06	0.871	0.958***			
13- When working, I feel helpful for the whole society	4.14	0.807	0.806***			
Sense of enjoyment at work:						
14- I experience joy in my work	3.94	0.933	0.835***	0.843	13.725	0.840
15- Most days, I feel joy when coming to work	3.83	0.992	0.909***			
Opportunities for the inner life:						
16- My spiritual values are valued in my workplace	3.77	0.987	0.883***	0.833	11.855	0.870
17- In my workplace, there is a room for my spirituality (R)	3.61	1.038	0.836***			

Notes. ***Significance <0.005; reverse items are marked with (R)

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Capital Structure Determinants: A Cross-Country Analysis

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Abstract

This paper examines the capital structure across different countries from 2005 to 2015 in Egypt and other three selected countries namely: Turkey, Brazil and Argentina. The book leverage sensitivity to the explanatory variables (profitability, firm size, tangibility, volatility, GDP growth, inflation and stock market development) was examined. Specifically, this paper documents the determinants of capital structure in Egyptian listed non-financial firms and investigates how capital structure decisions in three other countries who are one-step ahead in terms of economic development entertain any unique features.

Profitability was the only variable consistently highly significant with negative coefficient obtained in our regressions for four countries using GMM estimation method. Inconsistency of results for other variables prevailed. Findings reveal that Egyptian firms on average are not highly leveraged due to supply constraints on bank lending and demand constraints on consumer borrowing. The empirical evidence seems reasonably consistent with some versions of capital structure theory and other studies.

Keywords: Argentina, Brazil, capital structure, country-specific factors, Egypt, firm-specific factors, Generalized Method of Moments (System GMM), Turkey

1. Introduction

In pursuit of maximizing firm value, financial managers are charged with two main responsibilities: investment decisions and capital structure choices (Watson and Head 2010). In finance one of the most debatable topics is capital structure (Mostarac 2013). Capital structure decisions are critical for the financial soundness of the firm. Financial distress, liquidation and bankruptcy are the ultimate drawbacks that could materialize if wrong judgment occurred during financing decision of the firm's activity. Operating in a highly uncertain world makes it extremely difficult for any firm to achieve optimal capital structure (Al-Shubiri 2011). "Despite the fact that many researchers have devoted tremendous effort in understanding firms' financing policies & hence realizing optimal capital structure; this is still a cloudy area and highly debatable with no specific guidelines in attaining best mixture of debt and equity" (Al-Shubiri 2011). Most of the academics and practitioners agree that firms work towards achieving a "target" capital structure, which could differ from one company to another and within an industry (Iqbal 2013).

Capital structure theory being the most controversial area of the financial management commenced more than 50 years with Modigliani and Miller's (M&M) theory (1958). Since Modigliani and Miller's theory, there have been number of theories attempting to explain the mix of debt and equity used by companies to finance their business activities, like the trade-off theory, agency theory, signaling theory, pecking order theory and market timing theory. "They all differ in their relative emphasis on the key factors affecting the capital structure choice" (Mostarac 2013). Hence, corporate capital structure remains a puzzle (Myers, 1984).

Studying capital structure decision in transition market like Egypt, along with conducting cross-country analysis with other countries that are one step ahead in terms of economic development; is of great importance to managers, owners, lenders and policy makers (Youssef 2018). Capital structure is dynamic and depends on condition of the economy. Debt financing pattern in a developing country like Egypt signifies that changes in long-term debt and short-term debt components are not independent. To clarify, Eldomiaty (2008) findings reflect that firms in developing countries might borrow long-term debt partially to offset maturing short-term debt. As such, to resolve any suspicious interpretation in conducted analysis, this paper experiments leverage as "all debt". Total debt divided by total assets is used as dependent variable.

The paper begins with proxies for determination of capital structure followed by a presentation for list of testable hypotheses for both internal factors (firm-specific) and external factors (macro-economic/ country-specific), in order to set framework for empirical results analysis. The core section of this paper starts with descriptive statistics for all sectors / aggregate results and secondarily by economic sector, followed by evaluations for results obtained from System GMM. During period under study Egypt faced revolution in 2011, as such its significance in affecting studied relationships between independent variables and leverage is accounted for as a dummy variable. Equal number of years prior and after Egypt revolution were covered in this study. In the conclusion the main results are discussed and suggestions for future research are presented.

2. Literature Review

Theories of Capital Structure

Modigliani and Miller (1958) classic theory was the drive for many other theories and debates on capital structure decisions. Irrelevance of capital structure in determining firm value and its future performance under the assumption of perfect and efficient capital market was proved in MM's first proposition. Given undebatable existence of corporate tax and market imperfection, MM's relaxed second proposition was introduced in 1963. Impact of taxation was accounted for in second proposition. In other words, inevitable presence of corporate tax signifies the fact that capital structure decision is relevant. Subsequently, trade-off theory by Modigliani and Miller was introduced in 1966 emphasizing on taxes. Firm's trade-off between the benefit of tax deductibility of interest referred to as debt tax shields and costs of financial distress. Since Modigliani and Miller, several other theories emerged to explain the mix between debt and equity used by corporations to finance their business activities. These theories as will be presented below are driven by three core economic problems / incentives namely, taxes, information and agency costs (Myers, 2001).

Jensen and Meckling (1976) presented "agency theory" which arose from the fact that realized benefit of tax shield from borrowing is not free of costs. This is specifically true for bankruptcy and agency costs resulting from debt financing. Focusing on agency costs, Jensen and Meckling associates this possible cost to primarily, conflict of relationships between managers and shareholders. It is secondarily resulting from conflicts between debt holders and shareholders. Primarily form of conflict arises from the fact that managers will act in their own economic self-interest. This is attributable to the fact that managers (agents) have first-hand access to information and strive to maximize their own gains using company resources. Meanwhile, minimizing effort directed to the best interests of their principals / shareholders. Secondarily, form of conflict between debt holders and shareholders arise when there is risk of default. This form of conflict would materialize when shareholders / owners utilize borrowed funds from debt holders in riskier projects. This is referred to by Jensen and Meckling (1976) as "risk-shifting"; whereby higher risk increases the "upside" for stockholders and "downside" is absorbed by debt holders.

Ross (1977) "signaling theory" was built on information asymmetry originally developed by Jensen and Meckling (1976). Managers striving to maximize their own gains is the key driver for signaling theory that affects firm's financing decision process. "Signal" is referred to as the piece of private information delivered by managers / insiders to the public / outsiders. Delivered information doesn't necessarily include full picture of information accessible to managers / insiders. Hence, resulting in having the public / outsiders accessing limited information (whether positive or negative), which would hinder their ability in grasping equal benefits / gains like managers / insiders.

Myers and Majluf (1984) and Myers (1984) "pecking order theory" was also built on costs of adverse selection that results from information asymmetry between better-informed managers and less-informed investors. Such costs occur only in case of equity financing / issuing securities and are lower in case of debt. Target debt ratio under this theory does not exist and emphasis in capital choices depend on their costs. Capital choices / sources of funds are retained earnings, debt and equity. Focusing on costs of adverse selection, equity has the highest and most serious adverse selection, followed by debt and finally retained earnings being the safest that avoids this problem (Frank and Goyal, 2009). As such, when the requirement of external financing arises, the firm will work down the pecking order, from the safest namely retained earnings. As such, firm would prefer debt to equity. Pecking order theory explains why debt presents bulk of external financing; along with illustrating why borrowing is less for more profitable firms. Given non-existence of optimal debt level under pecking order theory, key driver behind less borrowing for more profitable firms is attributed to higher accessibility for internal financing and not due to having a low target debt ratio. This implies rejection of pecking order theory advocates to the target capital structure proposed earlier by Modigliani and Miller (1958).

Baker and Wurgler (2002) "market timing theory" emphasizes significance to time the market, whereby equity

market timing affects capital structure. Main findings of this theory is that low leverage firms are those that issued equity when their market valuations were high, as measured by market-to-book ratio. Also, when market conditions are unfavorable with low market value, firms will refrain from issuing equity and instead will repurchase equity at low prices. Approach of market timing theory is more sophisticated than previously presented theories. It places no emphasis on neither optimal capital structure nor costs of adverse selection that results from information asymmetry. This is sequentially proposed by trade-off theory and the pecking order theory.

Background on capital structure decisions are mostly based on developed economies with homogeneous institutional structures (Booth et al., 2001). International studies comparing differences in the capital structure between countries reinforced that conventional theories work well in similar economies with developed legal environment and high level of economic development (Jong, 2008). A remarkable number of studies were conducted on developed economies, as well as a considerable number of studies though with less intensity were conducted on developing countries. Findings prevail two-sided argument, with similarities in effect of firm-specific factors on capital structure decision on one hand, irrespective of level of economic development. Variation, on the other hand, based on country-specific factors reflects difference in institutional factors.

Drawing lessons from more developed institutions and examining their applicability is particularly important given that Egypt witnessed different stages of economic development. The 2005-2011 period witnessed a growth period followed with stagnation during the Arab Spring period and its aftermath (2011-2015). Lately the country has witnessed an awakening which was an outcome for several reforms. This includes reduction of energy subsidies, tax reform, strengthened business environment, as well as greater political stability after years of turmoil.

3. Proxies for the Determination of Capital Structure

Theoretical and empirical studies have shown that profitability, firm size, tangibility, volatility, GDP growth, inflation and stock market development affect capital structure. On the relationship between these factors and companies' capital structure, Rajan and Zingales (1995) referred to Harris and Raviv (1991) in selection of factors correlated to leverage; stating that consensus is "leverage increases with fixed assets, nondebt tax shields, investment opportunities and firm size and decreases with volatility, advertising expenditure, the probability of bankruptcy, profitability and uniqueness of product." Four of mentioned variables were used in addition to other factors that proved to be highly correlated with leverage in previous studies (e.g Harris and Raviv (1991), Booth et al. (2001), Jong (2008)).

Profitability

Although much theoretical work has been done since Modigliani and Miller (1958), no consistent predictions have been reached with respect to relationship between profitability and leverage. There is an expected negative relationship between profitability and leverage in accordance to pecking order theory. A positive relationship is expected based on the static trade-off and agency theory. Predicted positive relation between leverage and profitability is further confirmed by Jensen and Meckling (1976) "agency theory" and later by Jensen's (1986) "free cash flow theory".

In contrast to theoretical studies, most empirical studies show that leverage is negatively related to profitability. This is evidenced by findings from studies on developed countries & specifically US & Japan by Kester (1986). Titman and Wessels (1988), and Friend and Lang (1988) studies focused on US firms. Other findings related to developed countries were conducted by Wald (1999), Rajan and Zingales (1995). In this paper, profitability will be defined as earnings before interest and tax (EBIT) scaled by total assets.

Firm Size

Two opposing arguments validated theoretically initially by Trade-off theory predicting a positive relationship between firm size and leverage. Larger firms are more diversified hence, have more stability and less volatility in cash flow, which lessens default risk. Whereas, pecking order theory, predicts a negative relationship due to less asymmetric information in large firms with more information provided to outside investors compared to smaller firms. As such, resulting in higher preference for equity issuance relative to debt.

Empirical studies following the same lead of Rajan and Zingales (1995): "size may be a proxy for (inverse) probability of default" include: Booth et al. (2001), Wald (1999) and Marsh (1982). This paper uses natural logarithm of assets as a measurement of firm size; following Jong (2008), Booth et al. (2001), Rajan and Zingales (1995) and Titman and Wessels (1988).

Tangibility

On the relationship between tangibility and capital structure, a positive relationship to leverage, except for agency theory. The positive relationship between tangibility and the level of debt is predicted by both the trade-off theory and the pecking order theory. This is consistent with the fact that firms with relatively safe, tangible assets that can be collateralized tend to borrow more than firms with risky, intangible assets. Predicting the relationship between tangibility and leverage from perspective of agency theory has two folds (both positive and negative relationship).

Empirical studies confirming positive relationship include Wald (1999), Rajan and Zingales (1995), Friend and Lang (1988), Long and Maltiz (1985). On the other hand, Booth et al. (2001), (Myers, 2001) Titman and Wessels (1988) confirmed negative relationship as reflected in argument: “growth opportunities are capital assets that add value to a firm but cannot be collateralized”. This paper uses fixed assets divided by total assets as a measure for tangibility, following Marsh (1982), Rajan and Zingales (1995) and Jong (2008).

Volatility

Volatility or business risk is a proxy for the probability of financial distress. Many previous studies reflected a negative relationship between leverage and volatility. Firms with more volatile cash flows face higher expected costs of financial distress & have less book leverage (Fama and French, 2002; Deesomsak et al., 2004). Frank and Goyal (2009) also added that probability of foregoing interest tax shields increases when earnings are below tax shields. This paper follows Wald (1999) and Jong (2008) measurement of business risk defined as the standard deviation of operating income over book value of total assets during the sample period.

GDP Growth

There is no consistent predictions with respect to relationship between GDP growth and leverage. There is an expected positive relationship between GDP growth and leverage in accordance to trade-off theory, whereas a negative relationship is expected based on agency theory and pecking order theory. Agency theory predicts leverage to be countercyclical / increasing despite of economic downturn, as debt supports in resolving agency costs of managerial discretion. As for Pecking order theory, a negative relationship reflecting a decline in leverage during expansions; due to increase in internal funds & hence, there is lower need for external finance.

Empirical studies confirming positive relationship includes Booth et al. (2001), Jong (2008) and Frank and Goyal (2009). A study on Nepalese firms was conducted by Gajurel (2005) validating that GDP growth was negatively related to leverage ratio consistent with findings by Korajczyk and Levy (2003). Following common practice, GDP growth is calculated by the percent change in the annual real GDP.

Inflation

Trade-off theory and Market timing theory predict a positive relationship between leverage and expected inflation. This is driven from the fact that inflation-induced increase in nominal interest rate increases tax advantage of debt financing. In addition, high expected inflation leads to higher debt issuance and more short-term debt in terms of debt composition. On the other hand, Booth et al. (2001) findings in study of capital structures in developing countries, showed negative relation between inflation and leverage.

Empirical studies supporting positive relationship include Frank and Goyal (2009), Graham and Harvey (2001), Marsh (1982) and Faulkender (2005). Following previous studies, percentage change in the annual consumer price index (CPI) is used as a rough proxy for expected inflation. Using data of realized inflation like previous studies is intended to resolve unavailability of expected inflation data for the whole sample period.

Stock Market Development

Theoretically and as denoted by Demircug-kunt and Maksimovic (1996) in their study on stock market development and financing choices of firms: “finance literature suggests that stock markets serve important functions even in those economies in which well-developed banking sector already exists, the reason being that equity and debt financing are in general not perfect substitutes”. Their findings on an aggregate level when taking all countries in sample under study, is consistent with majority of empirical studies evidencing significant negative correlation between stock market development and leverage. However, being more precise by breaking used sample into subsamples namely, developed and developing stock markets; led to mixed results.

Majority of empirical evidence find a significant negative relationship between leverage and stock market development (Booth et al., 2001; Deesomsak et al., 2004; Jong, 2008; Frank and Goyal, 2009). Mixed results on this variable was also found in previous studies (e.g. Rajan and Zingales, 1995; Demircug-kunt and Maksimovic, 1996). Following previous studies, stock market development is measured in this paper by the ratio of stock market capitalization to GDP.

Relationship between selected capital structure determinants and leverage both theoretically and empirically is presented in below table.

Table 1. Predicted signs and results

Proxy (Abbreviation)	Definitions	Theoretical predicted signs	Major empirical studies' results
Internal factors of capital structure			
Profitability (ROA)	Operating income divided by book value of total assets	+/-	-
Firm Size	Natural logarithm of Sales	+/-	+
Tangibility	Fixed assets divided by total assets	+/-	+
Volatility	Standard deviation of operating income over book value of total assets	-	-
External factors of capital structure			
GDP Growth	Percent change in the annual real GDP	+/-	+
Inflation	Percentage change in annual consumer price index (CPI)	+/-	+
Stock market development	Ratio of stock market capitalization to GDP	+/-	-

“+” means that leverage increases with the factor, “-” means that leverage decreases with the factor, “+/-” means that both positive and negative relationships between leverage and the factor are possible theoretically in “theoretical predicted signs” column.

Above table sums up outcome of theoretical predicted signs and the results of previous empirical studies.

4. Development of Hypotheses and Determination of Capital Structure

The hypothesis development is based primarily on similar expectations of outcomes as those obtained from studies conducted on developing countries and secondarily on significance of drawing lessons from countries that are one-step head in economic development relative to Egypt. This is an attempt to ensure sustainability of advancement in Egyptian economy.

List of testable hypotheses for both internal factors (firm-specific) and external factors (macro-economic / country specific) are presented below, which sets framework for empirical results analysis.

Internal factors / Firm-specific factors

Hypothesis H₁ Firm size has a positive effect on leverage

Hypothesis H₂ Profitability has a negative effect on leverage

Hypothesis H₃ Tangibility has a positive effect on leverage

Hypothesis H₄ Business risk has a negative effect on leverage

External factors / Macroeconomic – country specific factors

Hypothesis H₅ GDP growth rate has a positive effect on leverage

Hypothesis H₆ Inflation has a positive effect on leverage

Hypothesis H₇ Stock market development has a negative effect on leverage

Equal effects between countries during period under study

Hypothesis H₈ All variables' coefficients (both internal & external variables) are the same between countries

5. Data Description and Methodology

5.1 Data

The study uses annual data of non-financial listed companies from 2005 until 2015. Financial companies and banking sector are excluded due to uniqueness of their financing / capital structure choices (Gaud et al., 2005). Bank capital role as a form of self-insurance provides both a buffer against unforeseen losses and an incentive to manage risk-taking. As such regulated banks voluntarily choose to maintain capital in excess to the minimum required. Capital structure in banking sector is a special topic which has been addressed for the Egyptian banks by Alber (2018).

Table 2 summarizes classification of firms based on industry classification. The main source of data used in Thomson Reuters DataStream.

Table 2. Classification of used sample & number of firms in each sector

Sector	Egypt	Turkey	Brazil	Argentina
Industrials	26	72	91	39
Consumer Non-Cyclicals	18	59	42	24
Basic Materials	13	46	22	11
Others	18	101	73	29
All sectors	75	278	228	103

Turkey has the highest number of firms and Egypt has the lowest among selected countries.

5.2 Selected Countries

Selection of countries to conduct cross-country comparison, along with drawing lessons from slightly better institutions and examining applicability to Egypt; was based on stages of development set by Global Competitiveness report 2014-2015. Countries are classified in addressed report into three categories namely; Factor-driven economies, Efficiency-driven economies and Innovation driven economies. Between first and second stage, there is “Transition Stage 1-2” and between second and third stage, there is “Transition Stage 2-3”. Hence, in total if we account for transition stages, we have 5 stages of economic development using Global Competitiveness Index (GCI). In this paper we will stick to specified classifications by GCI when referring to countries under study. Egypt is classified under second stage of development – “Efficiency-driven”. Turkey, Brazil and Argentina are classified in the “Transition Stage 2-3” which is right after Egypt’s current classification. GCI classifies countries based on three key indicators scoring namely; basic requirements, efficiency enhancers, innovation & sophistication. Within each of the three key indicators, there are detailed scoring for 12 pillars displayed in the report for each country on standalone basis; such as infrastructure pillar, macroeconomic environment pillar, health and primary education pillar, financial market development pillar,...etc. Key macro-economic indicators for selected countries is presented below.

Table 3. The Global Competitiveness Report 2014-2015

Key Indicators	Egypt	Turkey	Argentina	Brazil
Population (Millions)	84.2	76.5	42	198.3
GDP (US \$ billions)	271.4	827.2	488.2	2,243
GDP Per Capita (US \$)	3,226	10,815	11,766	11,311
Index Overall Score (1-7)	3.7	4.8	4.1	4.4
Basic Requirements				
Efficiency Enhancers	3.6	4.4	3.8	4.5
Innovation & Sophistication Factors	3.2	3.9	3.4	3.8

5.3 The Model

To examine the influence of capital structure determinants on capital structure in a panel dataset of 4 countries under study, the model used under GMM estimation is:

$$\gamma_{it} = \beta_1 \gamma_{i,t-1} + \beta_2 x_{it} + \varepsilon_{it}$$

$$i = 1, \dots, n; t = 1, 2, 3, \dots, 11$$

According to above equation, γ_{it} is the dependent variable represented by the debt ratio as a percentage of total debt to total assets. $\gamma_{i,t-1}$ is the dependent variable lagged value and it implies that current debt ratio is a function of previous value. As for i ($i = 1, \dots, n$) represents the individual firms of countries under study and t denotes the time period. x_{it} represents independent variables both internal & external, as will be specified in following section. β is constant for all i and t & it is the unknown parameter which is estimated from the effects of the regressor x_{it} in time t for individual i . ε_{it} is the unobserved error term from disturbances factors of the observed individual.

6. Results

This section will present descriptive statistics, VIF results; then results obtained from GMM are presented.

6.1 Descriptive Statistics

Table 4 presents descriptive statistics over sample period 2005 to 2015. What was deducted from presented results is stated below. Descriptive statistics by economic sector is presented in appendix.

Table 4. Descriptive Statistics

Country	Statistic	Book							
		Leverage	Size	Profitability	Tangibility	Volatility	GDP	Inflation	Market
Egypt	Obs.	776	782	759	779	779	825	825	750
	Mean	0.2301	11.415	0.0862	0.3789	0.0675	0.164	0.0994	0.4361
	Median	0.2034	11.273	0.0831	0.3809	0.0454	0.1635	0.1009	0.3072
	SD	0.1739	1.6985	0.0923	0.2222	0.074	0.0414	0.0321	0.2948
	Min.	0	5.9108	-0.3043	0.0001	0.0071	0.0876	0.0479	0.1659
	Max.	0.9276	15.4847	0.484	0.8962	0.5841	0.2103	0.1831	1.0674
Turkey	Obs.	2970	2966	2924	2972	2973	3058	3058	3058
	Mean	0.2626	12.0739	0.0709	0.3651	0.1106	0.0577	0.0829	0.2904
	Median	0.2053	12.0087	0.0626	0.3496	0.0664	0.063	0.0857	0.2912
	SD	0.3992	1.9369	0.2072	0.2293	0.1773	0.0435	0.012	0.0824
	Min.	0	2.9444	-3.4012	0	0.0082	-0.0597	0.0625	0.1538
	Max.	10.7343	17.6863	7.9242	1.4291	2.6703	0.105	0.1045	0.4211
Brazil	Obs.	2451	2435	2431	2431	2451	2508	2508	2508
	Mean	0.3326	13.2554	0.0794	0.3258	2.1852	0.1077	0.0581	0.5455
	Median	0.3046	13.3528	0.0862	0.3015	0.0699	0.1087	0.0568	0.4979
	SD	0.2781	1.9484	0.1411	0.2295	80.7963	0.0333	0.014	0.2063
	Min.	0	3.5553	-2.3876	0	0.0122	0.0383	0.0364	0.272
	Max.	4.0423	17.9406	0.6606	0.9466	3859.311	0.1659	0.0903	0.9804
Argentina	Obs.	1089	1085	1080	1089	1089	1133	1133	1133
	Mean	0.242	12.385	0.0941	0.4919	0.0908	0.2562	1.58	0.1371
	Median	0.2167	12.2329	0.0853	0.5272	0.0741	0.2693	1.78	0.1143
	SD	0.1748	1.6308	0.099	0.255	0.0695	0.0723	0.5906	0.056
	Min.	0	1.9459	-0.2895	0.0062	0.0133	0.0855	0.68	0.0627
	Max.	1.0211	15.4967	0.435	0.922	0.5137	0.3676	2.73	0.2395

Notes: This table represents the descriptive statistics of all variables (all sectors), i.e mean, median and standard deviation for both dependent and independent variables.

The mean of book leverage ratio of the firms from all countries varies from 23% to 33% over the sample period 2005 to 2015.

In descriptive statistics by economic sector/industry, mean of total debt ratio of the firms from all 4 countries varies from lowest level of 0.144 for Turkey under “Basic Materials” to highest level of 0.37 still for Turkey under “Consumer Non-cyclicals”. Egyptian companies have an average total debt ratio of 23% which is the lowest, as reflected by below graph. Hence, validating preference of equity financing in Egypt over debt.

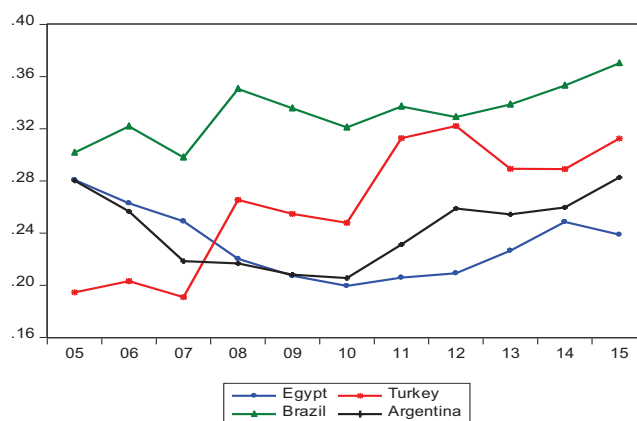


Figure 1. Debt ratio trends over 11 years

For firm-specific independent variables, no single country consistently pertains highest or lowest values for the mean, median, standard deviation, or range of a specific independent variable; across the four sectors. As such, countries alternate in lowest or highest measure for range of addressed independent variable and accordingly deviation. This is expected, as pooled / combined firms under each sector is different in size. To illustrate, Egypt has lowest standard deviation for “size” under “consumer non-cyclicals”, which is validated by having the lowest range compared to other countries. Argentina under “basic materials” sector reflects the lowest standard deviation for “size”, along with lowest range. Hence, confirming that most of size ratios are very close to the average. This applies to other independent variables under investigation; with almost all measures being close the average (mean).

For country-specific independent variables, any variable for a specific country (for example GDP growth) will have the same ranking (highest or lowest measure relative to other countries) for mean, median, standard deviation and range; across the four sectors. Only variation will be in number of observations. To illustrate, Argentina has lowest standard deviation of 0.05 for “stock market development”, along with lowest range under the four sectors. In addition, unity in measurements for any macro-economic variable across the four economic sectors apply.

Variance Inflation Factor (VIF) results presented in table 5 indicate the regression equation is free of multicollinearity over the sample period as VIF is less than 5.

Table 5. VIF Values

	Egypt	Turkey	Brazil	Argentina
Lagged Book Leverage	2.0245	1.1884	1.0659	1.8293
Size	1.7841	1.2369	1.1548	1.3253
Profitability	1.6561	1.3364	1.045	1.3083
Tangibility	1.0248	1.1015	1.0261	1.5512
Volatility	1.5148	1.252	1.0606	1.3607
GDP	1.3044	1.5191	1.5158	1.5914
Inflation	1.5008	1.3751	3.6908	3.3446
Market	3.6674	1.1682	2.9458	2.7155
Revolution	3.7651	---	---	---

6.2 Main Results from GMM

Table 6 presents GMM estimations obtained for each country for all sectors combined. Tables 7 till 10, represent results of economic sectors effect on capital structure.

Table 6. Determinants of capital structure using GMM Estimation (All Sectors)

Variable	Egypt	Turkey	Brazil	Argentina
Lagged Book Leverage	0.1640 (0.0072)***	0.8621 (0.0767)***	0.7092 (0.0172)***	0.6270 (0.0459)***
Size	0.0084 (0.0032)**	0.0583 (0.0176)***	0.0597 (0.0163)***	0.0427 (0.0207)**
Profitability	-0.3431 (0.0369)***	-0.4914 (0.0672)***	-0.5313 (0.0374)***	-0.4672 (0.0744)***
Tangibility	0.7080 (0.1085)***	0.9421 (0.1770)***	0.3581 (0.0597)***	-0.1387 (0.2466)
Volatility	0.7080 (0.1085)***	0.9421 (0.1770)***	0.3581 (0.0597)***	-0.1387 (0.2466)
GDP	-0.1691 (0.0274)***	13.4276 (6.3459)*	2.4327 (1.1259)*	0.4176 (1.3080)
Inflation	0.3020 (0.0300)***	58.8916 (25.1114)**	11.0435 (4.7658)*	0.4658 (0.2314)*
Market	0.1780 (0.0091)***	-3.1323 (1.5601)*	0.4888 (0.2597)†	8.0602 (2.7463)**
Revolution	0.0402 (0.0029)***	---	---	---
Observations	599	2586	2149	958
Sargan/Hansen Test	65.7931	36.5205	53.7570	60.4651
p-value	0.130	0.906	0.072	0.126
AR(1)	-3.2114	-3.3932	-8.5803	-2.5866
p-value	0.0013	0.0007	0.0000	0.0097
AR(2)	0.5473	-0.6131	-0.7047	1.9488
p-value	0.5842	0.5398	0.4810	0.0513
Wald Test (χ^2)	1304.14	213.47	2606.32	407.33
p-value	0.0000	0.0000	0.0000	0.0000

Notes: Standard errors are shown below the coefficients. ***p<0.001, **p<0.01, *p<0.05, † p<0.1

Overall model statistical significance both on aggregate level (all sectors) and on economic sector level is confirmed by “Wald Test” at the 0.001 highest significance level (p<0.001). Validity of instrumental variables is confirmed by Sargan / Hansen test, with p-value > 0.05 for the 4 countries under study. Diagnostic tests include: first, “Arellano-Bond Serial Correlation Test” which includes primarily “Serial Correlation Test (AR 1), with p-value < 0.05 for the 4 countries under study, hence confirming absence of serial correlation. Second, “Robustness of First Order Lag (AR 2), with p-value > 0.05 for the 4 countries under study, hence confirming 1st order lag is sufficient given absence of serial correlation. Diagnostic tests results & goodness of fit measures validates efficiency of estimate for the 4 countries under study both on aggregate level (all sectors) and on economic sectors level.

Table 7. Determinants of capital structure using GMM estimation (Industrials)

Variable	Egypt	Turkey	Brazil	Argentina
Lagged Book Leverage	0.3809 (0.0503)***	0.4180 (0.0912)***	0.0387 (0.0044)***	0.4899 (0.1369)***
Size	-0.0151 (0.0082) †	-0.1019 (0.0361)**	-0.0123 (0.0032)***	-0.0032 (0.0251)
Profitability	-0.5177 (0.0998)***	-0.6118 (0.1325)***	-0.7732 (0.0155)***	-0.2316 (0.0571)***
Tangibility	0.2148 (0.0673)***	-0.1652 (0.0487)***	0.1124 (0.0077)***	-0.1760 (0.0796)*
Volatility	-0.5846 (0.4192)	-1.1180 (0.3839)**	0.1959 (0.0124)***	0.3867 (0.3139)
GDP	-0.3439 (0.1136)**	-1.3049 (1.0033)	0.1632 (0.0137)***	0.0617 (0.0806)
Inflation	0.2028 (0.1897)	-12.6364 (4.8015)**	-0.4032 (0.0571)***	-0.0249 (0.0193) †
Market	0.2206 (0.0519)***	0.0688 (1.5677)	-0.0679 (0.0041)***	-0.2109 (0.1874)
Revolution	0.0456 (0.0131)***	---	---	---
Observations	192	662	843	366
Sargan/Hansen Test	62.2609	33.4589	74.9297	25.5984
p-value	0.206	0.1200	0.0558	0.5951
AR(1)	-5.0270	-7.0349	-6.2050	-1.9644
p-value	0.0000	0.0000	0.0000	0.0495
AR(2)	0.7648	0.2999	0.4845	0.4980
p-value	0.4444	0.7642	0.6281	0.6185
Wald Test (χ^2)	504.91	216.84	4474.69	44.90
p-value	0.0000	0.0000	0.0000	0.0000

Notes: Standard errors are shown below the coefficients. ***p<0.001, **p<0.01, *p<0.05, † p<0.1

Table 8. Determinants of capital structure using GMM Estimation (Consumer Non-Cyclicals)

Variable	Egypt	Turkey	Brazil	Argentina
Lagged Book Leverage	0.4786 (0.0529)***	1.1788 (0.0087)***	0.1058 (0.0060)***	0.5137 (0.0619)***
Size	0.0381 (0.0179)*	0.0673 (0.0055)***	-0.0063 (0.0059)	0.0971 (0.0197)***
Profitability	-0.1366 (0.0812) †	-0.7679 (0.0049)***	-0.1981 (0.0140)***	-0.7097 (0.0937)***
Tangibility	0.9442 (0.3038)**	0.1787 (0.0149)***	0.2254 (0.0186)***	-0.1119 (0.2820)
Volatility	0.9442 (0.3038)**	0.1787 (0.0149)***	0.2254 (0.0186)***	-0.1119 (0.2820)
GDP	-0.1736 (0.0841)*	-0.6349 (0.0366)***	-0.1165 (0.0288)***	0.0045 (0.0235)
Inflation	0.6332 (0.2089)**	-3.7855 (0.1806)***	-1.0422 (0.1774)***	-0.0330 (0.0126)**
Market	0.0746 (0.0307)**	-0.1901 (0.0186)***	-0.1110 (0.0061)***	0.2932 (0.0982)**
Revolution	0.0828 (0.0148)***	---	---	---
Observations	145	535	409	214
Sargan/Hansen Test	66.2679	52.2428	35.9912	11.6460
p-value	0.122	0.0618	0.1155	0.0703
AR(1)	-4.2589	-8.6801	-5.3662	-4.7927
p-value	0.0000	0.0000	0.0000	0.0000
AR(2)	0.2014	-0.8236	-1.9125	-1.3007
p-value	0.8404	0.4102	0.0558	0.1934
Wald Test (χ^2)	425.59	405596.50	9454.67	1454.27
p-value	0.0000	0.0000	0.0000	0.0000

Notes: Standard errors are shown below the coefficients. ***p<0.001, **p<0.01, *p<0.05, † p<0.1

Table 9. Determinants of capital structure using GMM Estimation (Basic Materials)

Variable	Egypt	Turkey	Brazil	Argentina
Lagged Book Leverage	0.3870 (0.0332)***	0.3360 (0.0263)***	0.4960 (0.0510)***	0.5363 (0.0302)***
Size	0.1888 (0.0167)***	-0.0109 (0.0190)	0.0920 (0.0189)***	0.0567 (0.0193)**
Profitability	-1.1723 (0.0676)***	-0.1513 (0.0356)***	-0.5352 (0.1313)***	-0.5210 (0.0455)***
Tangibility	0.1329 (0.2738)	-1.3287 (0.3395)***	0.5326 (0.1012)***	1.2961 (0.2775)***
Volatility	0.1329 (0.2738)	-1.3287 (0.3395)***	0.5326 (0.1012)***	1.2961 (0.2775)***
GDP	0.5296 (0.0612)***	0.2126 (0.0277)***	-0.2732 (0.0957)**	-0.0330 (0.0594)
Inflation	0.2127 (0.1435) †	1.0414 (0.0774)***	-0.9206 (0.5583) †	-0.0053 (0.0078)
Market	0.3164 (0.0658)***	-0.2762 (0.0083)***	-0.1023 (0.0145)***	-0.0335 (0.1127)
Revolution	0.0155 (0.0139)	---	---	---
Observations	112	453	207	108
Sargan/Hansen Test	47.8339	32.0371	17.8054	59.9375
p-value	0.675	0.1919	0.2158	0.2100
AR(1)	-3.0639	-3.5174	-1.9942	-3.1480
p-value	0.0022	0.0004	0.0461	0.0016
AR(2)	-0.2570	1.2324	-0.3711	-0.2610
p-value	0.7972	0.2178	0.7106	0.7941
Wald Test (χ^2)	1505.10	1582.47	4107.55	622.82
p-value	0.0000	0.0000	0.0000	0.0000

Notes: Standard errors are shown below the coefficients. ***p<0.001, **p<0.01, *p<0.05, † p<0.1

Table 10. Determinants of capital structure using GMM Estimation (Others)

Variable	Egypt	Turkey	Brazil	Argentina
Lagged Book Leverage	0.3433 (0.0321)***	0.6581 (0.0724)***	0.7646 (0.0047)***	0.8596 (0.0770)***
Size	0.0294 (0.0117)**	0.0202 (0.0177)	-0.0292 (0.0019)***	0.1115 (0.0432)**
Profitability	-0.4808 (0.0874)***	-0.3853 (0.0925)***	-0.3764 (0.0075)***	-0.5535 (0.1591)***
Tangibility	-0.0678 (0.3120)	-0.3423 (0.1989) †	0.2028 (0.0176)***	1.4781 (0.8866) †
Volatility	-0.0678 (0.3120)	-0.3423 (0.1989) †	0.2028 (0.0176)***	1.4781 (0.8866) †
GDP	0.0866 (0.0926)	17.7620 (11.5314) †	1.1479 (0.0385)***	0.0848 (0.0385)*
Inflation	-0.0728 (0.1426)	35.5022 (22.7644)	0.4964 (0.0688)***	-0.0224 (0.0155)**
Market	0.0331 (0.0354)	-5.7517 (3.3488) †	-0.1080 (0.0107)***	-0.2360 (0.1430) †
Revolution	0.0111 (0.0169)	---	---	---
Observations	150	936	690	270
Sargan/Hansen Test	57.2602	60.8281	61.5392	9.0073
p-value	0.355	0.0848	0.0756	0.1088
AR(1)	-3.9554	-6.6033	-2.6522	-6.3605
p-value	0.0001	0.0000	0.0080	0.0000
AR(2)	-1.1842	1.2352	-0.1921	1.5607
p-value	0.2363	0.2168	0.8476	0.1186
Wald Test (χ^2)	435.10	313.69	134645.20	1417.87
p-value	0.0000	0.0000	0.0000	0.0000

Notes: Standard errors are shown below the coefficients. ***p<0.001, **p<0.01, *p<0.05, † p<0.1

According to outcome in presented tables (6 to 10), first order lag is consistently positive and highly significant for the four countries under study both on aggregate / all sectors level and on economic sector level.

Firm size is significantly positively related to firm's capital structure in Egypt, Turkey, Brazil & Argentina (table 6). The result verifies trade-off theory. The positive coefficient evidences that larger firms are more diversified hence, have more stability and less volatility in cash flow, which lessens default risk (too-big-to-fail). The implication of results on firm size contradicts expected constant positive sign (firm size – hypothesis H₁).

Profitability is the only independent variable that is consistently negative and highly significant for all countries under study both on aggregate (as reflected in table 6) all sectors level and on economic sector level (tables 7-10). The only exception is for reduced level of significance in Egypt under consumer non-cyclicals.

Cross-country results on aggregate level (table 6) reflect that profitability is significantly negatively related to firm's capital structure in Egypt, Turkey, Brazil & Argentina. The result verifies pecking order theory. The negative coefficient evidences that profitable firms can use earnings to fund investment opportunities and hence have less need for external debt. Due to information asymmetry, external funds are more expensive than retained earnings. This validates why more profitable firms prefer internal financing as a cheaper form than external financing. Negative influence of profitability on leverage increases with increase in firm size. This result is consistent with empirical results of Rajan & Zingale (1995), Booth et al. (2001), Jong (2008). Size of the coefficient is highest for Brazil, followed by Turkey, Argentina and finally Egypt. The implication of results on profitability give supportive evidence to expected constant negative sign (profitability – hypothesis H₂).

Asset tangibility varies in sign and significance between the 4 countries under study both on aggregate level (all sectors- table 6) and on economic sectors level (tables 7-10). Tangibility variable is generally positive and significant for most of the countries both on aggregate (table 6) and economic sector level (tables 7-10). There are always 3 out of 4 countries under study having positive & significant coefficient on tangibility. Cross-country results on aggregate level (table 6) reflect that tangibility is significantly positively related to firm's capital structure in Egypt, Turkey & Brazil. Argentina being the only exception with negative and insignificant coefficient. The positive sign result implies that tangibility tends to be associated with increases in debt ratio which is validated by both trade-off theory and pecking order theory. The positive coefficient evidences that firms with relatively safe, tangible assets have lower asymmetric information risk; along with being privileged that tangible assets can be collateralized. This would allow more borrowing than firms with risky, intangible assets. Agency theory addresses relationship between tangibility and leverage in both directions; positive and negative. Focusing primarily on positive relationship which represents majority of results, as debt helps control agency cost of managerial discretion by preventing managers from spending excess cash flow in unprofitable investments. Hence, our results support trade off theory, pecking order theory and one- fold of agency theory linked to controlling agency cost of managerial discretion. This result is consistent with empirical results of Rajan & Zingale (1995), Jong (2008), Frank & Goyal (2009). Worth noting that size of the positive coefficient is highest for Turkey, followed by Egypt and finally Brazil. Argentina size of coefficient is the lowest, negative and insignificant. The implication of results on tangibility contradicts expected constant positive sign (tangibility – hypothesis H₃).

Mixed results on volatility variable regression coefficient was found in 4 countries under study, not only in terms of the sign (positive or negative), but also in terms of significance. Differences across 4 countries occurred both on aggregate (all sectors – table 6) and on economic sectors level (tables 7-10). Cross-country results on aggregate level reflect that volatility is significantly positively related to firm's capital structure in Egypt, Turkey and Brazil. Argentina being the only exception with negative and insignificant coefficient. A negative significant effect of volatility / business risk is generally expected (hypothesis H₄), but results revealed a positive one. This contradicts many previous studies reflecting negative relationship between leverage and volatility. Explanation for such results can be linked to the financial system orientation of countries under study. Market-based countries follow common negative relationship between volatility and leverage, whereas bank-oriented countries are the complete opposite (Antoniou et al., 2006). Hence, results reveal that countries under study are bank-oriented countries, whereby firms have stronger ties with lenders, this gives bank system better ability to select and approve borrowers compared to market-based countries. Hence, this would make equity more expensive and urge firms to increase borrowing particularly that stronger ties with lenders would reduce actual cost of failure to service debt. Worth noting that size of the positive coefficient is highest for Turkey, followed by Egypt and finally Brazil. Argentina size of coefficient is the lowest, negative and insignificant. The implication of results on volatility contradicts expected negative sign (volatility – hypothesis H₄).

Impact of GDP growth is not uniform across the 4 countries neither on aggregate / all sectors level (table 6) nor on economic sectors level (tables 7-10). Mixed results for GDP growth variable regression coefficient applies for the sign, size and significance. Cross-country results on aggregate level, sign for GDP growth is positive for all countries except Egypt. A positive significant effect of GDP growth is generally expected (hypothesis H₅) while results for Egypt is different. A positive relationship implies that the country has healthier economic conditions and hence, firms are more likely to take more debt. This complies to empirical results by Booth et al. (2001), Jong (2008) and Frank & Goyal (2009). The negative sign, on the other hand, aligns with pecking order theory, whereby increase in internal funds during expansion lowers need for external financing. In addition, increase in leverage during economic downturn (a negative relationship) supports in resolving agency costs of managerial discretion in compliance to agency theory. Worth noting that size of the positive coefficient 13.42 for Turkey is the highest, followed by Brazil 2.43, Argentina 0.41 & finally Egypt -0.16. The implication of results on GDP growth contradicts expected positive sign (GDP growth – hypothesis H₅).

Cross-country results on aggregate level (table 6) reflect that inflation is significantly positively related to firm's capital structure in 4 countries under study. This complies with many previous studies reflecting positive relationship between leverage and expected inflation. Debt issuance tend to increase when interest rate drops and expected inflation is high. Several empirical studies confirm significance of market timing in debt decision (Marsh (1982), Graham & Harvey (2001), Bancel & Mitto (2004), Frank & Goyal (2009)). The implication of results on aggregate level (all sectors) give supportive evidence to expected positive sign (inflation – hypothesis H₆).

A positive significant effect of stock market development contradicts expected negative sign (hypothesis H₇). However, results comply to what was referred to by Demircuc-kunt and Maksimovic (1996) as “visual evidence is striking”. Impact of stock market development on economies vary in accordance to degree of significance these markets play in addressed economies. For a market like Egypt for example where stock market is at early stages of development, enhancement in information quality and degree of monitoring transactions could be a driving force for lenders to increase debt financing. As such, a positive significant relationship materializes. This would be particularly valid for larger firms which are the ones that are mainly listed in Egyptian stock exchange. Turkey on the other hand, stock market is at a higher degree of significance, as such further stock market development would lead to reduction in debt financing. In addition to a boost in equity financing, as evidenced by significant negative relationship. Sophistication of realizing true driver behind attained results also materializes from the fact that knowing whether country under study is bank oriented or market oriented is important. Rajan and Zingales (1995) presents contradictory argument that bank oriented countries could be in favor of debt financing to allow more control by lenders. On the other hand, decision makers in companies operating in these countries might stop borrowing beyond a certain point. Majority of empirical evidence find a significant negative relationship between leverage and stock market development (Booth et al. (2001); Deesomsak et al. (2004); Frank and Goyal (2009)). The implication of results on stock market development contradicts expected consistent negative sign (stock market development – hypothesis H₇).

7. Conclusion and Recommendations

7.1 Conclusion

The findings reveal that Egyptian firms on average are not highly leveraged. While this reduce their vulnerability, it raises questions about adequacy of access to credit. A clear declining pattern for Egyptian firm's average of total debt level is not a recent phenomenon and was persistent for the last seven years during period under study, as depicted by graph presented earlier. Low financial leverage in Egypt could not be fully explained by the independent variables dealt with in this study. It appears other factors are relevant in explaining low leverage ratio of Egyptian firms. Some of these factors could be due to supply side of lending institutions and others due to demand side of credit from borrowers.

On the supply side, primary reason for constraints on bank lending is the common preference for banks to extend loans to large corporate clients as they are considered less risky. Small and medium-sized enterprises (SMEs) encounter significant constraints on credit availability / access to finance, despite of accounting for 90% of all private sector establishments (Krasniqi, 2007, Abdulsaleh and Worthington, 2013). Second reason was clearly Stated by Naceur and Kandil (2013): “factors that affect the willingness or capacity of banks to lend may include liquidity constraints, in response to monetary policy instruments that affect available lendable funds; or collateral requirements; or a shift in lending strategy to improve indicators in response to high nonperforming loans (NPLs); along with macroeconomic indicators”. Third reason is shift of Egyptian banks' portfolio towards financing high return & low risk government debt securities to fund government deficit (12.5% of GDP in year 2016 – Bloomberg Business Week Magazine August issue 2017) and shrinkage in loan issuance to private sector.

This was referred to as the “lazy bank model” (Kumhof and Tanner, 2005; Emran and Farazi, 2009); which had an adverse effect on both investment and economic growth.

In addition to local banking practices which influence bank lending behavior, international agreements reached in Basel (I, II & III) reflects the fourth factor under supply side constraints. Its significance stems from the fact that effect of capital adequacy requirements on credit growth can't be disregarded particularly that high cost of raising capital makes either shifting the composition of assets in bank's portfolio towards less risky assets or decreasing total assets; an unavoidable two options for banks. As such, not only is corporate capital structure a puzzle (Myers, 1984); but also this paper proposes that “credit growth drivers & constraints” remain a puzzle.

On the demand side, primary reason for constraints on consumer borrowing is that self-financing is prevalent in developing nations like Egypt and can substitute bank loans (Dackwan et al., 2004). SMEs constitute majority of businesses in Egypt. Preference of SMEs for informal financing is driven by internal behavioral factors as exemplified by Tolba, Seoudi and Fahmy (2014) whereby model they developed included, but not limited to the following factors: knowledge of financial products, perception for bank's service quality and previous experience for applying to a loan. National culture is another non-financial factor mentioned by Nomani (2003), whereby conservative cultures place more emphasis on mastery and maintenance of status quo, hence use less debt financing. Religion is another non-financial factor, where many Muslims prefer banking to be online with Shari'a. Finally, in a study conducted by Kotler and Keller (2006), reference groups, family and social status are social factors influencing consumer / client borrowing behavior.

7.2 Recommendations

The findings allow corporate managers to take profitability into consideration when making financing decisions. The information that the findings convey regarding profitability as the only variable for the four countries being highly significant with negative coefficient can aid them in reducing their preference of debt financing. This will result in not fully exploiting the tax credits from debt. Policy makers, on the other hand, can encourage profitable firms in investing retained profits along with providing tax incentives resulting in a lower tax burden.

The researchers suggest further studies on capital structure could include: comparison between lending behavior in both large and small firms, decision making process in both types and across countries, role of banks enticing SMEs into credit financing needs and obstacles from both the supply side and the demand side need to be looked at. Also, proposed dilemma “credit growth drivers & constraints” from bank's perspective in conjunction with Basel risk-based capital adequacy requirements is an interesting unresolved area for future research particularly in the form of comparative analysis between countries at different development levels.

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Appendices

Appendix A. Comparison of descriptive statistics of all variables (Industrials)

Country	Statistic	Book Leverage	Size	Profitability	Tangibility	Volatility	GDP	Inflation	Market
Egypt	Obs.	259	262	251	262	262	286	286	260
	Mean	0.2436	11.3367	0.0624	0.3024	0.0714	0.164	0.0994	0.4361
	Median	0.2213	11.2651	0.0673	0.2659	0.048	0.1635	0.1009	0.3072
	SD	0.1754	1.8696	0.0923	0.2444	0.0806	0.0415	0.0321	0.2952
	Min.	0	5.9108	-0.3041	0.0001	0.0071	0.0876	0.0479	0.1659
	Max.	0.6817	15.2003	0.3856	0.769	0.5223	0.2103	0.1831	1.0674
Turkey	Obs.	763	763	753	764	764	792	792	792
	Mean	0.2735	11.9652	0.0644	0.3774	0.0808	0.0577	0.0829	0.2904
	Median	0.238	11.9692	0.0559	0.3725	0.0618	0.063	0.0857	0.2912
	SD	0.1997	1.6384	0.0912	0.2194	0.0802	0.0435	0.012	0.0824
	Min.	0	2.9444	-0.2108	0	0.0163	-0.0597	0.0625	0.1538
	Max.	0.7911	15.5474	0.3888	1.4291	1.4211	0.105	0.1045	0.4211
Brazil	Obs.	977	966	967	959	977	1001	1001	1001
	Mean	0.3416	13.8127	0.0895	0.3807	0.1754	0.1077	0.0581	0.5455
	Median	0.3265	13.9925	0.0939	0.3776	0.0617	0.1087	0.0568	0.4979
	SD	0.1759	1.9457	0.1201	0.2445	1.29	0.0333	0.014	0.2064
	Min.	0	4.7274	-1.4929	0	0.0127	0.0383	0.0364	0.272
	Max.	1.3474	17.9406	0.6606	0.9466	29.3995	0.1659	0.0903	0.9804
Argentina	Obs.	415	415	410	415	415	429	429	429
	Mean	0.2411	12.6036	0.0678	0.6229	0.0857	0.2562	1.58	0.1371
	Median	0.2264	12.5666	0.0589	0.7149	0.0796	0.2693	1.78	0.1143
	SD	0.1663	1.0504	0.1032	0.2337	0.0448	0.0724	0.591	0.0561
	Min.	0	10.103	-0.1439	0.0062	0.0227	0.0855	0.68	0.0627
	Max.	0.7668	14.9579	0.3635	0.922	0.3953	0.3676	2.73	0.2395

Appendix B. Comparison of descriptive statistics of all variables (Consumer Non-Cyclicals)

Country	Statistic	Book Leverage	Size	Profitability	Tangibility	Volatility	GDP	Inflation	Market
Egypt	Obs.	185	185	182	185	185	198	198	180
	Mean	0.1956	11.1753	0.0745	0.4148	0.0655	0.164	0.0994	0.4361
	Median	0.1614	11.0292	0.0744	0.4143	0.0452	0.1635	0.1009	0.3072
	SD	0.1597	1.1612	0.0953	0.181	0.0696	0.0415	0.0322	0.2954
	Min.	0	8.2868	-0.3043	0.0279	0.0194	0.0876	0.0479	0.1659
	Max.	0.9276	13.7438	0.484	0.809	0.5006	0.2103	0.1831	1.0674
Turkey	Obs.	627	623	611	627	627	649	649	649
	Mean	0.3755	11.6435	0.041	0.3811	0.1458	0.0577	0.0829	0.2904
	Median	0.2724	11.8238	0.0446	0.3636	0.0737	0.063	0.0857	0.2912
	SD	0.7665	1.7498	0.3753	0.2083	0.2647	0.0435	0.012	0.0824
	Min.	0	3.2189	-3.4012	0.0003	0.0121	-0.0597	0.0625	0.1538
	Max.	10.7343	15.4427	7.9242	0.9821	2.6703	0.105	0.1045	0.4211
Brazil	Obs.	457	455	456	457	457	462	462	462
	Mean	0.2847	13.3973	0.0957	0.3093	0.2068	0.1077	0.0581	0.5455
	Median	0.2644	13.4233	0.085	0.3056	0.0695	0.1087	0.0568	0.4979
	SD	0.1994	1.7502	0.1286	0.1677	1.6629	0.0333	0.014	0.2065
	Min.	0	5.7526	-0.9763	0	0.0137	0.0383	0.0364	0.272
	Max.	1.3535	17.7484	0.5516	0.8467	35.4208	0.1659	0.0903	0.9804
Argentina	Obs.	251	247	248	251	251	264	264	264
	Mean	0.2477	11.7436	0.1123	0.3591	0.127	0.2562	1.58	0.1371
	Median	0.2113	11.7005	0.1141	0.3367	0.0778	0.2693	1.78	0.1143
	SD	0.1925	2.1772	0.0959	0.1897	0.113	0.0724	0.5915	0.0561
	Min.	0	1.9459	-0.1577	0.0568	0.0228	0.0855	0.68	0.0627
	Max.	1.0211	15.205	0.435	0.8348	0.5137	0.3676	2.73	0.2395

Appendix C. Comparison of descriptive statistics of all variables (Basic Materials)

Country	Statistic	Book Leverage	Size	Profitability	Tangibility	Volatility	GDP	Inflation	Market
Egypt	Obs.	141	143	139	141	141	143	143	130
	Mean	0.2278	11.2297	0.1274	0.3572	0.0852	0.164	0.0994	0.4361
	Median	0.1808	11.1965	0.12	0.3908	0.0507	0.1635	0.1009	0.3072
	SD	0.194	1.0297	0.0838	0.2035	0.0948	0.0415	0.0322	0.2958
	Min.	0	8.1948	-0.1711	0.0008	0.0146	0.0876	0.0479	0.1659
	Max.	0.787	13.9308	0.407	0.8022	0.5841	0.2103	0.1831	1.0674
Turkey	Obs.	506	506	500	506	506	506	506	506
	Mean	0.1441	12.1531	0.1099	0.4262	0.0818	0.0577	0.0829	0.2904
	Median	0.1083	12.0661	0.0947	0.4263	0.0667	0.063	0.0857	0.2912
	SD	0.1335	1.0922	0.1032	0.1337	0.0736	0.0435	0.012	0.0824
	Min.	0	9.7561	-0.2293	0.1109	0.0134	-0.0597	0.0625	0.1538
	Max.	0.7954	15.8041	0.3999	0.7703	1.0765	0.105	0.1045	0.4211
Brazil	Obs.	234	235	233	234	234	242	242	242
	Mean	0.2849	12.0868	0.0675	0.3888	0.1279	0.1077	0.0581	0.5455
	Median	0.283	12.3735	0.081	0.3923	0.0819	0.1087	0.0568	0.4979
	SD	0.1954	2.1961	0.1063	0.2698	0.134	0.0333	0.014	0.2067
	Min.	0	6.6333	-0.3798	0.0001	0.0122	0.0383	0.0364	0.272
	Max.	1.1626	16.8475	0.5046	0.9036	0.9642	0.1659	0.0903	0.9804
Argentina	Obs.	119	119	119	119	119	121	121	121
	Mean	0.1844	11.6443	0.0716	0.412	0.0728	0.2562	1.58	0.1371
	Median	0.1244	11.5974	0.0679	0.4961	0.0535	0.2693	1.78	0.1143
	SD	0.1591	0.9917	0.0848	0.2733	0.0424	0.0726	0.5928	0.0563
	Min.	0	9.6873	-0.2895	0.0101	0.0262	0.0855	0.68	0.0627
	Max.	0.5945	13.6836	0.2749	0.8855	0.2109	0.3676	2.73	0.2395

Appendix D. Comparison of descriptive statistics of all variables (Others)

Country	Statistic	Book Leverage	Size	Profitability	Tangibility	Volatility	GDP	Inflation	Market
Egypt	Obs.	191	192	187	191	191	198	198	180
	Mean	0.2468	11.8908	0.099	0.4651	0.0512	0.164	0.0994	0.4361
	Median	0.2274	12.5124	0.0907	0.4402	0.0389	0.1635	0.1009	0.3072
	SD	0.1657	2.1483	0.0833	0.2018	0.0408	0.0415	0.0322	0.2954
	Min.	0	7.2306	-0.1958	0.0928	0.0107	0.0876	0.0479	0.1659
	Max.	0.7918	15.4847	0.381	0.8962	0.2893	0.2103	0.1831	1.0674
Turkey	Obs.	1074	1074	1060	1075	1076	1111	1111	1111
	Mean	0.2449	12.3634	0.0743	0.3183	0.1248	0.0577	0.0829	0.2904
	Median	0.2039	12.1451	0.061	0.2608	0.0655	0.063	0.0857	0.2912
	SD	0.217	2.4334	0.1585	0.2709	0.1926	0.0435	0.012	0.0824
	Min.	0	4.4188	-1.1829	0	0.0082	-0.0597	0.0625	0.1538
	Max.	1.5941	17.6863	0.5947	1.3316	1.6269	0.105	0.1045	0.4211
Brazil	Obs.	783	779	775	781	783	803	803	803
	Mean	0.3637	12.8342	0.0607	0.249	6.4625	0.1077	0.0581	0.5455
	Median	0.296	12.7888	0.0785	0.2029	0.0843	0.1087	0.0568	0.4979
	SD	0.4074	1.719	0.1754	0.2038	142.9044	0.0333	0.014	0.2064
	Min.	0	3.5553	-2.3876	0	0.0127	0.0383	0.0364	0.272
	Max.	4.0423	16.7492	0.6432	0.9233	3859.311	0.1659	0.0903	0.9804
Argentina	Obs.	304	304	303	304	304	319	319	319
	Mean	0.261	12.8977	0.1236	0.454	0.075	0.2562	1.58	0.1371
	Median	0.2588	12.9143	0.1194	0.4872	0.067	0.2693	1.78	0.1143
	SD	0.1728	1.7017	0.0894	0.2406	0.0433	0.0724	0.5913	0.0561
	Min.	0	8.9076	-0.1739	0.0474	0.0133	0.0855	0.68	0.0627
	Max.	0.7703	15.4967	0.3531	0.8817	0.3234	0.3676	2.73	0.2395

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Evaluation on Implementation of Whistleblowing System in State Development Audit Agency

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Abstract

The purpose of this study is to measure the effectiveness of institutional whistleblowing systems. The method used is quantitative descriptive. In this study, the sample used was the user of the whistleblowing system of the Financial and Development Supervisory Agency (BPKP), especially internal users. The data used in this study is the results of questionnaire data that has been distributed and filled out by BPKP employees. The questionnaire was designed based on Theory of Planned Behavior. The results of this study are in the form of a questionnaire design and the level of effectiveness of the whistleblowing system at BPKP. By using the Theory of Planned Behavior, there are three important aspects underlying the effectiveness of the whistleblowing system, namely the training and communication aspects, aspects of transformational leadership, and aspects of top management support. The level of effectiveness of the whistleblowing system at BPKP, especially internal whistleblowing, is 62.8%. The effectiveness level of 62.8% reflects that the whistleblowing system at BPKP is quite effective.

Keywords: whistleblowing system, effectiveness, quantitative descriptive, Theory of Planned Behavior

JEL CODE: G30

1. Introduction

In 2016, Association of Certified Fraud Examiners (ACFE) reported 2,410 corruption cases that occurred in 114 countries around the world. The most common method used in this ACFE survey is using tips, i.e. 39.1% of the total cases. Organizations that have hotline reporting are more likely to detect fraud through tips than those with no hotline reporting (47.3% versus 28.2%, respectively). This proves that hotlines provided by organizations or agencies can improve corruption reporting, indications of corruption, or irregularities in an organization. (Association of Certified Fraud Examiners, 2017)

Anti-fraud controls, one of which is whistleblowing system, can reduce the losses caused by fraud and accelerate the detection of irregularities or fraud. In comparing organizations that have anti-fraud control with organizations that do not have anti-fraud control, it is found that the fraud losses of the organizations that have anti-fraud control are 14.3% -54% lower than those of the organizations that do not have anti-fraud control, and the fraud detected is 33.3% -50% faster (Association of Certified Fraud Examiners, 2017). Since the GCG General Guidelines were published in 1999, the spirit of applying GCG among businesses has been improving. However, the increase has not been effective considering the three pillars: the country, business, and society have not run the good governance as expected. Meanwhile, internationally, the implementation of good public governance (GPG) is one of the prerequisites to improve the competitiveness of Indonesia globally. Therefore, improving the implementation of good public governance is very important. To be able to carry out good governance as expected, it is necessary to complement the guidelines that can be used as a reference in the implementation of good governance in the public sector (Tony et al., 2009). Each state body must ensure that the principles of GPG are applied in every aspect of its functioning. The principle of GPG is a democracy, transparency, accountability, legal culture as well as fairness and equality. There are various methods or ways of implementing transparency to support the effectiveness of good governance implementation, and one of which is the whistleblowing system (WBS). WBS has been applied by many private corporations and proven effective to reduce fraud and could capture indications of fraud. Meanwhile, in public governance, it's the new system which is required by the government and has not been proven by effectiveness.

Financial and Development Supervisory Board (BPKP) is a non-departmental government agency (LPND) under and directly responsible to the President. In order to achieve good governance and decent public service delivery in accordance with the general principles of good governance, one of which required the conditions in the implementation of BPKP basic tasks free from any violation of the applicable regulations. Whistleblowing system at BPKP is formed from the roadmap of bureaucratic reform in 2012-2014. In the program of strengthening supervision, there is one goal to be achieved: the decreasing level of abuse of authority. The objective is set forth in the work plan of preparing the whistleblower system SOP and the application of whistleblower system in order to increase the efforts of APIP (Government Internal Supervisory Apparatus) in reducing the level of abuse of authority (Badan Pengawasan Keuangan dan Pembangunan, 2017b).

Fraud within an organization may be corruption, asset use or fraud over the reporting of financial statements. (Trompeter et al., n.d.) describe a model of anti-cheating mechanism can be measured from both internal and external to detect fraud. WBS is one of mechanism that providing services for internal and external whistleblowers. In the whistleblower book published by the Witness and Victim Protection Agency (Komite Nasional Kebijakan Governance, 2017), it is mentioned that in order to create an effective whistleblowing system within an organization, there are several conditions that must be fulfilled the reporting system should be socialized to all employees, the authority receiving the report must be clear, such as the Board of Commissioners or the independent audit team established by the Board of Commissioners, employees should be assured that the report submitted is confidential and actionable, and then a worker who acts as a whistleblower should be protected so that he/she is not afraid or intimidated by threats, such as the threat of dismissal from his place of work.

In his research, (Waluyo, 2010), states that the effectiveness of the internal Whistleblowing system is influenced by training and communication variables, transformational leadership (agents of change, role models, and motivators) and top management support (resource provision, informant protection, and ethical working climate). An effective internal whistleblowing system will further strengthen hierarchical organizational control and reduce fraud within the organization.

From the above two sources, it can be concluded that the factors that influence the effectiveness of the organization's internal whistleblowing system are socialized systems such as training or communication, clear authority, transformational leadership (change agents, role models and motivators), and top management support in providing protection for whistleblowers Utilization of WBS system can be maximized on the internal side first, or better known as internal WBS. In a study conducted by (Waluyo, 2010), it is found that the effectiveness of internal whistleblowing is influenced by three aspects, namely training and communications training, transformational leadership aspects, and aspects of top management support. This study implied the three aspects for measure the effectiveness of whistleblowing system in BPKP.

2. Method

This research was conducted at the Financial and Development Supervisory Agency (BPKP) by selecting the object of research: all employees in the Riau Province Representative Office. This research was conducted by distributing questionnaires to every BPKP employee. The questioner based on Theory of Planed Behaviour (TPB). Theory of Planned Behavior (TPB). TPB is by far the most widely applied theory on the links between attitudes, intention, and behavior, which makes it all the more surprising that whistleblowing researchers have thus far largely failed to draw upon it (Park & Blenkinsopp, 2009). The result of questionnaires that have been fulfilled and collected from the respondents could be represent the effectiveness of WBS. The effectiveness level of whistleblowing can be measured by the following measurement standards:

Table 1. Standard of Effectiveness

Effectiveness Rate (%)	Achievement Level
< 40	Very ineffective
40-59.99	Ineffective
60-79.99	Quite effective
>80	Very effective

Source: R & D Department of Home Affairs (1991) in (Budiani, 2007)

The population of this study is all BPKP employees working at the Riau Province Representative Office. The population in this study was 127 people. All populations in this study were sampled. The type of data used in this study is primary data. Primary data used is in the form of questionnaires that have been filled by the respondents. Questionnaires were distributed to all employees working at the BPKP Representative Office of Riau Province. Data collection techniques used in this study are literature and field studies.

The variables used in this study are training and communication, transformational leadership, and top management support. Indicators of each variable can be seen in the following table:

Table 2. Operationalization of Research Variables

No	Variable	Sub Variable	Measurement Instrument	Measurement Scale	Measurement
1	Training and Communication	- Whistleblowing training - Whistleblowing communication	Questionnaire	Likert	Nominal
2	Transformational Leadership	- Leaders as agents of change - Leaders as role models - Leaders as motivators	Questionnaire	Likert	Nominal
3.	Top Management Support	- Resource provision - Informant protection - Ethical working climate	Questionnaire	Likert	Nominal

Source: (Waluyo, 2010)

Each variable has several sub-variables; each sub-variable will, later on, be represented by some statements prepared in a questionnaire. The results of the questionnaires can be tested first before the analysis.

The data quality is tested in two ways: the validity test and reliability test. Validity test is the test used to measure whether the questionnaire is valid or not. Instruments are said to be valid if it is able to measure what is desired and reveals the data being studied appropriately. Validity testing can be done by using correlation person; the accepted correlation person is the one with which the significance is $<0,05$ (2-tailed). Thus, we can see the correlation between construct variables that show significance. If the total construct score shows the significance of <0.05 then it can be concluded that each indicator question is valid (Ghozali, 2016).

On the other hand, the reliability test is used as a tool to measure a questionnaire which is an indicator of the variable or construct (Ghozali, 2016). The method used for this test is calculating the Cronbach alpha to test the feasibility of consistency across the scale used. The instrument is said to be reliable if it has Cronbach alpha greater than 0.70 (Nunnally, 1994 in (Ghozali, 2016)).

The data analysis technique used in this research is quantitative descriptive, that is studying the problems that exist in a population and the prevailing procedure. The purpose of the quantitative descriptive is to provide an overview of the data being analyzed. The analysis shows the effectiveness of each variable/ sub-variable/ parameter.

3. Result

3.1 The Effective Whistleblowing System

There is a great deal of evidence to suggest that whistleblowing is one of the most important sources of information for detecting and reducing illegal and unethical corporate behaviors (Kohn, 2011). The neo-liberal de-regulation trend may be reversing in the direction of more regulation as a result of both the world-wide financial crisis of 2008 and the massive amount of whistle-blowing about the financial practices of both government and business that contributed to the crisis (Davis, 2009; Financial Crisis Inquiry Commission, 2011; Nielsen, 2010; Posner, 2010)

Using the Theory of Planned Behavior, we conducted the questioner which consist of three aspects to significantly affect the effectiveness of a whistleblowing system. These three aspects are very important in running an effective whistleblowing system. The first aspect is training and communication. Training and communication aspect is the most important aspect of running an effective whistleblowing system. This includes all types of training facilities provided by the management to all employees who are given facilities/ authority to utilize whistleblowing systems that exist within an organization/ agency. The facility consists of the availability of training materials, the guidebooks of code of ethics/ code of conduct for employees, the availability of sufficient funds to do the training, the availability of scheduling to implement the training within a specific period, the availability of competent facilitators, and the refresh program or repeated trainings for employees who have participated in previous trainings. This is in line with the increasingly prevalent managerial view leads to the establishment of guidelines that present elements of effective whistleblowing procedures (BSI British Standards, 2008). The 5th Global Crime Survey was carried out by Price water house Coopers in 2009 stated that the ineffectiveness or the absence of such procedures, which could be due to lack of support within organizations, insufficient publicity, and/ or leadership not been seen to take whistle blowing seriously (Tony et al., 2009).

After the training on the use of the whistleblowing system is done, an organization/ agency still has a duty to communicate or socialize the existing whistleblowing system. This kind of communication can be done by holding formal training or discussing it in business meetings or other gatherings. Attempt to communicate the whistleblowing system can also be done by the management by using internal publication media such as newsletters or websites. The management also has an obligation to publish the results of investigations obtained from whistleblowing that has been run on the existing internal media. In addition to publication, the management is also expected to discuss the ethical issues that exist within the organization in each training held. One can cautiously conclude that statutory regulation such as whistleblower protection hardly leads to effective whistleblowing systems as long as organizations are not convinced of the benefits. Statutory approaches that focus on incentives for implementation therefore in principle seem to be a better solution.

The second aspect of the whistleblowing system is transformational leadership. Transformational leadership is an aspect that must be played by the leader of an organization/ body that runs whistleblowing system. The leader is a reflection of an organization. The role of a leader is very strong in an organization, especially an organization that has run a whistleblowing system. The transformational leadership aspect consists of the role of a leader as an agent of change, the role of leader as role model, and the role of leader as a motivator for his employees.

As a unit leader in an organization that has been running a whistleblowing system, the unit leader is expected to be the agent of change with a vision for the future of the organization he leads. In setting the vision, the leader must have high expectations and standards in order to motivate his employees to achieve that vision. Unit leaders are expected to have the open-mindedness to new things that can advance their organizations in various fields. Leaders in the operational unit are also challenged to take risks to make their organization better than ever. With the courage of the head of the unit, he is expected to infect employees and encourage employees to be able to uphold the truth.

In the aspect of transformational leadership, leaders are also expected to be role models for their employees. For example, unit leaders should have a good understanding of a good whistleblowing system, so if employees ask about whistleblowing systems to their leaders, the leaders can explain them properly. Unit leaders are also required to behave in accordance with the code of conduct in their organization. This can be an example for other employees to behave within an organization. The unit leaders must also uphold the core values of their organization and do not commit any fraud, financial fraud or cheating in compliance. If a leader has been a good role model for his employees, he will gain trust from all his employees/ subordinates. Thus, he can easily encourage the employees to run the whistleblowing system correctly. That is a culture of the organization, the culture in the organization is one that allows employees to speak up without fear. (Rachagan & Kuppusamy, 2013).

Being a motivator is also the task of a leader within an organization. A leader is expected to be a good motivator for the employees/ subordinates. Among the roles of the leader as a motivator is to invite the employees to be engaged in organizational development, motivate them to always behave in accordance with the ethics of the organization, transform the employees to have the vision to achieve the best achievement, transform employees' behaviour in harmony with organizational goals, and motivate employees to increase their sense of ownership of the organization. In addition, a leader should also have a high trust in their employees, so that there is a high synergy between leaders and subordinates in running an organization.

The last aspect of running a whistleblowing system is top management support. High-level management support

is crucial in running a whistleblowing system. Retaliation against whistle-blowers can also be much more severe than loss of money and career opportunities. It can also include retaliation in the form of jailing, torturing, and killing whistleblowers (Nielsen, 2013). Unfortunately, a massive amount of evidence that whistle-blowers are both retaliated against and suffer very negative consequences from whistle-blowing in a wide variety of circumstances and countries (Kohn, 2011). Without top-level management support or if upper management does not pay attention to the whistleblowing system, the system will not work effectively. (Guthrie & Taylor, 2017) stating that confidence in the holder of power and protection for complainant disclosure reporters further increases the reporting intent of disclosure. (Seifert et al., 2014) describes the findings of his experiments that the disclosure of fraud is caused not only by the conditions of justice created within the organization but also of trust in the organization's leadership. The same is stated by (Gao et al., 2011) that the belief underlies the courage of individuals taking risks revealing illegal conditions in the workplace. Employees become brave when leaders provide security guarantees for themselves as well as their families. It is this belief that causes the individual to know the existence of cheating gets protection from the potential threat of fraud perpetrator. The essence of protection in disclosure is a sense of security from the threat of fraud perpetrated in the form of physical protection or career sustainability (Utami et al., 2017).

Top-level management support consists of three elements: resources provision, informant protection, and ethical working climate. The most important management support in running the whistleblowing system is the support of resources in the form of budgeted funds. Upper-level management should be committed to allocating budgets to support all forms of activities from the start of the establishment of the system to the system evaluation process, as well as the investigation process in the event of fraud cheating reporting. Top-level management should also prepare budgets to conduct training that can support the whistleblowing system such as code of ethics/ code of conduct training, and socialize the implementation of the system.

The second top management support is in the form of protection against the informant. Informants who report fraud or indications of fraud occurring within their organizations through a whistleblowing system should be protected by top management. The form of protection afforded by top management may be the protection of the informant against any possible threats or retaliation and the protection of any sanction that may be imposed by the employer on the reports he provides.

The last management support is ethical working climate. In this aspect, top management plays a role in creating an ethical working atmosphere so that all employees can be carried away in a good ethical working climate. Good ethical working climate can be one of the triggers of employees to obey rules and uphold the truth.

Furthermore, the role of management is to follow up any reporting coming or submitted by each employee. If the management does not follow up or is indifferent to the reporting submitted by the employee through whistleblowing system, it means the whistleblowing system is not running perfectly and effectively. A whistleblowing system is created to obtain reporting of non-compliance or indication of fraud committed by employees. Therefore, if the reporting is ignored or not followed up on a regular basis, the informants will be reluctant to report back irregularities committed by their counterparts on this whistleblowing system.

Top-level management is also required to be consistent with the whistleblowing system policies that have been made. Top-level management in an organization could build the culture of organization. An ethical organizational guidance about what is culture will provide legitimate, encouraged behavior in the perceived to organization. If organizations are encourage ethical behaviors and discipline unethical behaviors, observers will have more will be considered as legitimate confidence that their reporting management and appropriate, and accepted by management and coworker. (Zhang et al., 2009)

Every employee reported and there is a strong evidence has to be followed up or processed in accordance with established standards. All employees have the same position in this whistleblowing system. Once processed in established standards, management must also be firm in sanctioning all proven fraud after undergoing the evaluation process and found guilty.

The three aspects described earlier are 3 aspects that ideally exist in running an effective whistleblowing system. These three aspects must be considered by policy makers or those who undergo policies within an organization for the purpose of the establishment of whistleblowing system can be achieved in accordance with the expected by the management.

Whistleblowing system (WBS) at BPKP is formed from the bureaucratic reform roadmap of 2012-2014. In this program there is one goal to be achieved is the decreasing level of export authority. The objectives required in the SOP whistleblower system preparation work plan and the application of the whistleblower system in order to enhance APIP (Government Intermediate Supervisory Apparatus) in reducing the degree of authority. (Badan

Pengawasan Keuangan dan Pembangunan, 2017a)

In the management of WBS, BPKP has five (5) basic principles, first, confidentiality, personnel involved either directly or indirectly with the confidentiality of the reporting identity, complaint information, complaint, review report, audit investigative report, and complaint handling report. The second, protection, reporter of protection and security, personal or free from threats and retaliation with respect to reporting which he or she will be, or has provided. The third, convenience, the WBS management mechanism shall be designed to provide and serve BPKP in the context of complaints, as well as good service to the complainant. The fourth, independent, in the handling of complaints, Officials involved in the matter of complaints are active and free of any party sensations. And the last, focus and substance, handling the true substance of and not used to seek informer information. (Badan Pengawasan Keuangan dan Pembangunan, 2017a)

WBS BPKP protects some rights whistleblower, that are: Reporting/filing any type of irregularities/violations committed by BPKP employees and obtaining information on follow-up complaints; Obtain guarantees of confidentiality of the reporting identity; Obtain protection as a reporting witness according to law. That should already be in the whistleblower rights. Research result (Kaplan et al., 2009) who found that identity confidentiality the reporter will reduce the threat (retaliation) to be received by the complainant.

3.2 The Effectiveness of Whistleblowing System

In this study, researchers used questionnaires as a tool to measure the effectiveness of the whistleblowing system at BPKP with Riau Province Representative Office as the sample. The number of questionnaires distributed is as many as 127 questionnaires distributed to all employees in the Riau Province Representative Office. Of the 127 questionnaires distributed, the questionnaires returned are as many as 32 questionnaires or 25.2% of the total. The respondents are scattered across various gender, age levels, job levels, and working period. The following details of the distribution of respondents:

Table 3. Respondent Demography

Description	Percentage
gender :	
a. Male	58.06%
b. Female	41.94%
age levels:	
a. 20-30 Years	54.83%
b. 31-40 Years	0.09%
c. 41-50 Years	35.48%
d. 51-60 Years	0%
job levels :	
a. senior high school	-
b. diploma	6.45%
c. bachelor	83.87%
d. master	9.68%
e. doctor	-
working period:	
a. <5 Years	51.62%
b. 6-10 Years	12.90%
c. 11-15 Years	6.45%
d. 16-20 Years	6.45%
e. >20 Years	22.58%

In the demographics by age, it can be seen that the respondents are mostly men with a percentage of 58.06%. While in demographics by age, most respondents exist in the age range between 20-30 years. Thus the working life of most respondents also existed during the working period > 20 years. Meanwhile, if viewed demography based on education level, the majority of respondents have education level bachelor degree with percentage 83.87%.

After the data questionnaires are collected, the quality of data is tested to measure whether the data obtained from the questionnaire is valid data and is reliable as the basis of research results. The data quality test consists of 2, the validity test and the reliability test. The testing of this research validity uses correlation person. The result of the validity test with correlation person indicates that all question items are valid. This can be seen from the total correlation of the construct score with all the question items indicating the significance of 0.00 (<0.05). Below are the details of the number of valid question items:

Table 4. Validity Test Results

Question Variable	Number of Questions	Valid	Invalid
Training and Communication	11	11	0
Transformational Leadership	17	17	0
Top-level Management Support	15	15	0
Total	43	43	0

From three variables that used and 43 questions in total, the researchers obtained the average data as follows:

Table 5. Statistic Descriptive

Question Variable	Number of Questions	Mean
Training and Communication	11	4.68
Transformational Leadership	17	14.08
Top-level Management Support	15	9.44

From data in table 5, we could see that training and communication have the lowest average when compared with two other variables, with an average of 4, 68 out of the 11 questions asked. this proves that the variable training and communication is very minimal applied in BPKP. Furthermore, top management level variables can also be classified into low averages. Top-level management has an average of 9.44 out of 15 questions. Meanwhile, transformational leadership has an average of 14.08 out of a total of 17 questions. this is the highest variable compared to the other two variables.

Testing the reliability of this study uses one-shot measurement or once measurement, which is using Cronbach alpha with the estimate of a minimum limit of 0.70. Research variables will be said reliable if Cronbach Alpha has a value greater than 0.70. Conversely, if the alpha coefficient of the instrument is lower than 0.70, the instrument is not reliable for use in research. The results of the reliability test indicate that all question variables are reliable with the value of Cronbach alpha > 0.70. Here are the details of Cronbach alpha test results:

Table 6. Reliable Test Results

Question Variable	<i>Cronbach Alpha</i>
Training and Communication	0.900
Transformational Leadership	0.971
Top-level Management Support	0.866

The effectiveness of the whistleblowing system was measured by using the average questionnaire value of each respondent. Before determining the level of total whistleblowing system effectiveness, we first look for the mean

of each variable. Following are the average calculation results for each variable:

Table 7. Training and Communication Variable

Questions	<i>Mean</i>	<i>Std. Deviation</i>
TC1	0.44	0.507
TC2	0.64	0.490
TC3	0.28	0.458
TC4	0.32	0.476
TC5	0.44	0.507
TC6	0.16	0.374
TC7	0.32	0.476
TC8	0.44	0.507
TC9	0.68	0.476
TC10	0.40	0.500
TC11	0.56	0.507
Total	0.43	0.479

Table 8. Transformational Teadership Variable

Questions	<i>Mean</i>	<i>Std. Deviation</i>
TL1	0.84	0.374
TL2	0.84	0.374
TL3	0.84	0.374
TL4	0.64	0.490
TL5	0.80	0.408
TL6	0.84	0.374
TL7	0.92	0.277
TL8	0.84	0.374
TL9	0.88	0.408
TL10	0.92	0.332
TL11	0.84	0.374
TL12	0.80	0.408
TL13	0.88	0.332
TL14	0.84	0.374
TL15	0.80	0.408
TL16	0.80	0.408
TL17	0.76	0.436
Total	0.83	0.376

Table 9. Top-level Management Support Variable

Questions	Mean	Std. Deviation
TMS1	0.40	0.500
TMS2	0.40	0.500
TMS3	0.44	0.507
TMS4	0.44	0.507
TMS5	0.28	0.458
TMS6	0.36	0.490
TMS7	0.40	0.500
TMS8	0.80	0.408
TMS9	0.80	0.408
TMS10	0.80	0.408
TMS11	0.80	0.408
TMS12	0.92	0.277
TMS13	0.88	0.332
TMS14	0.80	0.408
TMS15	0.92	0.277
Total	0.63	0.430

The effectiveness of whistleblowing system at BPKP, especially internal whistleblowing, shows a 62,8% effectiveness level. The 62,8% effectiveness rate reflects that the effectiveness of the whistleblowing system at BPKP is at a sufficiently effective level. With this level of effectiveness achieved during the 2 years since the whistleblowing system was built, it shows the seriousness of BPKP in running the whistleblowing system in order to achieve the initial goal of establishing the system.

The ethicality of top management an ethical model of normative behavior that determines what is sets up organization; that is, what is acceptable in the good and appropriate behaviour. If elaborated per question variable, it can be seen that the highest level of effectiveness is in transformational leadership variable with effectiveness level at 89% (> 80%). Transformational leadership is at the very effective level, while the other 2 variables, namely top management support and training and communication are at the sufficiently effective and less effective. Here's a breakdown of effectiveness levels per variable:

Table 10. Level of Effectiveness

Question Variable	level of effectiveness
Training and communication	42.5%
Transformational leadership	82.8%
Top-level management Support	63%
Average	62.8%

From the table above, it can be seen that the low level of effectiveness (<50%) is in training and communication. This is in line with the research conducted by (Lastika & Purwatiningsih, 2013), the research conducted at the Directorate General of Taxation (DJP), the results of the study stated that one of the obstacles faced by the DJP in the implementation of WBS system is the lack of understanding of DJP employees on WBS system. This indicates that training and socialization on whistleblowing system are still lacking and needs to be improved. It is also in line with the suggestions filled out by the respondents. The respondents expect the training and socialization of the whistleblowing system so that BPKP employees in the Riau Province representative office

can also use it effectively. Although the transformational leadership has reached a very effective level of effectiveness, we still have to improve the effectiveness to root out corruption. With the institutional transformation and government's campaign to root out corruption, we would expect more establishing an effective ethics improvement in management system. (Zhang et al., 2009).

4. Conclusion

Using the Theory of Planned Behavior, there are three important aspects that underlie the effectiveness of the whistleblowing system, namely training and communication aspects, transformational leadership aspects, and aspects of top management support. From 3 aspects, the researchers conducted a survey through the media questionnaire to the respondents who are internal whistleblowing system users in BPKP.

From the effectiveness of the whistleblowing system in the focus of internal whistleblowing research, it can be concluded that internal whistleblowing at BPKP can be categorized quite effectively. This can be seen from the calculation level of the effectiveness whistleblowing system, which is at the number 62,8%. With this level of effectiveness, it shows the seriousness of BPKP in running the whistleblowing system in order to achieve the initial goals of the whistleblowing system. On the other hand, it also shows that there is still many that can be improved and developed so that it can become a system that gives impact to Good Public Governance.

BPKP can improve the effectiveness of the whistleblowing system by paying more attention to training and sharing to its employees on the use of complaints through whistleblowing system and an explanation of guideline and protections that are given to whistleblowers. Training about the system, and sharing about the regulation and protection of whistleblowers. So that the whistleblowing system that has been run can provide the output as expected. In addition, top management should also be able to support whistleblowing systems in order to run more effectively. Support provided by top management can be a sufficient budget allocation to support the whistleblowing system as well as by providing moral support to employees. BPKP have to handle the deficiencies of the system to achieve objectives of whistleblowing system. Research of implementation of whistleblowing system in BPKP could provide valuable information about effectiveness whistleblowing system on an organization and help them to employ, predict, and manage internal whistleblowing more effectively.

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