INTRODUCTION

The journal Sustainable Business and Society in Emerging Economies (ISSN: 2708-2504 and ISSN-E: 2708-2172) is an open access peer-reviewed research journal published bi-annually by CSRC Publishing, Center for Sustainability Research and Consultancy Pakistan. The journal seeks to bridge and strengthen the link between business activities and society development around myriad of sustainability issues with focus on emerging and developing economies. The content coverage highlights how business organizations can be responsible towards society in pursuing their value added activities. The journal also bring forward issues in social and behavioral sciences for their implications for business organization and their activities in emerging and developing economies. The journal is a platform for business people, academics, and others involved in the contemporary debate about the responsible role of business organizations and society towards each other. Coverage includes various areas of social and behavioral sciences including management sciences. The journal welcomes papers from all those working in this important area, including researchers and business professionals, members of the legal profession, government administrators and many others.

SCOPE AND MISSION

The journal strives to highlight theoretical and policy issues related to sustainable business practices and social issues faced by society in emerging and developing economies. The SBSEE seeks to integrate the actors and institutions in business and society given that sustainability issues are though found in market yet their solution requires deep and coordinated understanding of these issues from perspectives of various disciplines of social sciences, arts and humanities. With this background SBSEE aims to be a premier forum for policy and theoretical discussion of high impact research related to sustainable business and social development in emerging and developing economies.

The journal aims to cover sustainability topics and issues in various sub-areas of business, social and behavioral sciences in context of emerging and developing economies. Purpose is to highlight the theoretical and practical issues faced by businesses and society in these economies. The journal also welcomes submissions which focus the broader areas of business, management sciences and various areas of social sciences, arts and humanities.
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Firm Specific Capability Organizational Structure and New Product Performance of Fast Moving Consumer Goods Manufacturers in Emerging Economy

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**ABSTRACT**

**Purpose:** This study was centered on understanding the linkages between internal organizational competencies and performance of new products and the role of organizational structure focusing on Fast Moving Consumer Goods (FMCGs) manufacturers in the South-Western States in Nigeria.

**Methodology:** A survey approach was adopted, and 529 employees of fifteen FMCGs took part in data gathering. A moderated regression analysis was used to test the hypotheses formulated.

**Findings:** The results of the moderated regression analysis established that firm-specific capability significantly enhanced new product performance, and the introduction of a definitive organizational structure increased the established effect firm-specific capability had on new product performance to suggest a significant moderator.

**Implications:** Management of the FMCGs investigated need to strengthen their commitment to developing critical and dynamic firm-specific capability and understand the relevance of organizational structure appropriateness. The firms should possess the knowledge to deploy ambidextrous firm-specific capability; it would enable the firms to expand and explore market opportunities that facilitate achieving significant new product performance.

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**Introduction**

Intense competition is an attribute of the external business environment in which firms operate. Hence, it is critical that firms consistently offer new (incremental and or radical) products that satisfy the needs of varying customer demands, strengthen their competitiveness, and meet their expected financial return's objective especially in an emerging economy. Academic discussions in the area of Firm-Specific
Capability (FSC) have investigated how to continually improve the performance of new product through research and development (R&D) efforts, innovation and inter-departmental collaboration for New Product Performance (NPP), marketing capabilities, knowledge acquisition, and sharing for successful NPD, in different economic settings; developed, emerging market and developing economies (Bendig, Enke, Thieme, & Brettel, 2018; Chang, Bai, & Li, 2015; Feng, Huang, & Avgerinos, 2018; Gumusluoglu & Acur, 2016; McCann & Bahl, 2016; Mu, 2015). Nevertheless, a few scholars examined the FSC-NPP linkage (Chang et al., 2015; Feng, Huang, & Avgerinos, 2018; McCann & Bahl, 2016; Shinkle & McCann, 2014; Sok & O'Cass, 2015; Song & Chen, 2014; Tsai & Hsu, 2014; Wei, Yi, & Guo, 2014). Although, scholars share common thought that NPP is vital for organizations (Shinkle & Macann, 2014) because it can boost organizational capability to adapt to market dynamics, sustain market share and influence firm competitiveness. Nevertheless, their findings provided a mixed result, which could result from the contextual, methodological differences, and the issues addressed.

In manufacturing organizations, the processes leading to attractive NPP are not entirely an inter-firm activity but one that incorporates the external stakeholder. These include suppliers (Vanhoucke, Vereecke, & Wetzels, 2014), who offer complementary assets to the firm, Market (Mu, Bao, Sekhon, Qi, & Love, 2018), and customers (Fidel, Schlesinger, & Cervera, 2015). The inability to effectively engage these stakeholders, the enormous cost associated with sourcing raw materials, and the harsh operating environment in Nigeria (Sylva, Ofoegbu, & Akpan, 2016) may have contributed to the poor performance recorded for new product (Pampers’s baby dry, Huggies baby essential, Nuric) introduced to the market by Procter & Gamble, PZ Cusson, and Friesland Campina. As a result, these products have neither gained nor sustained market share. This poor product performance has grave financial consequences, considering the resources invested in developing a new product from ideation to commercialization. To buttress this point, Procter & Gamble shut down one of their production plants in Lagos State’s Agbara industrial estate in 2018, while Pz Cusson announced a cutback on operations in Nigeria in 2019. Furthermore, Kimberly Clark's Huggies' baby essential showed that a low-cost strategy is not for every business because even after adopting the low-cost strategy for its local brand, the company's NPP is below expectations (Nairametrics, 2018; Procter & Gamble press release July 2018; PZ Cusson press release January 2019). It is imperative to stress that the attendant consequences of the covid-19 pandemic hold severe adverse effects for firms in this category.

Organizations are composed of different functional units; hence, it is vital to have a well-designed Organizational Structure (OS) to align these functional units and set them up to achieve organizational goals (Chen, Li, & Liu, 2015). Literature has provided evidence of scholarly studies on the FSC-organizational performance linkage (Arasa & Gideon, 2015; Feng et al., 2018; McCann & Bahl, 2016; Najafi-Tavani et al., 2018; Ngo, Bucic, Sinha, & Lu, 2019; Sok & O'Cass, 2015). However, not much is done to establish the moderating effect of OS in the light of the listed studies. A few scholars related OS with firm adaptability and performance (Adler & Borys, 1996; Zahra & Covin, 1995), and Wilden, Gudergan, Nielsen, and Lings (2013) examined the effect of OS in conjunction with the internal organizational process. However, studies that have combined both its ability to adapt to environmental turbulence and enhance internal organizational processes are scarce, presenting a gap worthy of study. Thus, not much is known about how OS moderates the interactions between FSC and NPP of manufacturers of FMCGs in South-Western States, Nigeria. Also, Nwonu, Agbaeze, and Obi-Anike (2017) emphasized that the failure to manage a firm's OS and achieve fit among contingent factors like strategy, structure, and environment produce poor overall organizational performance, and the manufacturers of FMCGs are not excluded. The identified gap limits the broader relevance of specific firm-level competencies link with the performance of a new product and how a definitive system of shared authority and responsibility can enhance the association between FSC and NPP. Based on this discussion, this study addressed the effect of FSC on NPP and whether OS acts as a contingent factor that will enhance the association between FSC and NPP focusing on FMCG industry in South-Western States, Nigeria.
Literature Review

Theory and Basis for the Hypotheses

This study draws on Resource Base-View (RBV), Dynamic Capability Theory (DCT), and the Structural Contingency Theory (SCT) to address the interaction between FSC, NPP, and OS. RBV opines that firms desirous of achieving competitive advantage must possess internal organizational resources to do so (Onamusi, 2020). More so, such internal organizational resources need to be unique, complex to copy, and the firm can use them (Chukwuemeka & Onuoha, 2018; Fidel, Schlesinger, & Cervera, 2015; Zhang & Hartley, 2018). In addition, the DCT perspective suggests only dynamic capabilities; one that enhances a firm’s adaptability to environmental changes, absorb information within and externally and innovate its operation to take advantage of market dynamics within changing macro-environment to achieve competitive advantage (Teece, 2014a; Kaur & Mehta, 2017; Wang, Senaratne, & Rafiq, 2015). This implies a direct and indirect interaction exist between the ownership of dynamic internal-external capabilities and superior firm performance (Schilke, Hu, and Helfat, 2018; Kaur & Mehta, 2017; Lee, Wu, Kuo, & Li, 2016).

Moreover, FSC such as engaging customers, developing new products, conducting creative marketing survey, and been innovative are not static competencies which mean as environmental factors changes and market demands become less predictable, firms can count on its dynamic FSC to cope with the changes and achieve better performance than firms with static capability. Overall, the central supposition of the RBV and DCT provides the theoretical underpinnings for the first hypothesis in this study. Hence, the study hypothesized that: (H1) the ownership of FSC will significantly enhance NPP. Also, the Structural Contingency Theory (SCT) advocates that OS appropriateness remains a contingent factor that can enhance firm competencies to deliver efficient value. Hence this study proposes that (H2) the association between FSC and NPP will significantly be enhanced by OS.

Firm-Specific Capability and New Product Performance

In an attempt to establish which firm capabilities, influence NPP, the preliminary result in Mu (2015) showed that both Marketing Capability (MC) and NPP are strongly and positively correlated. However, further analysis revealed that the ability of a firm's MC to contribute significantly to NPP is contingent on firms that have ambidextrous competence. That is a firm competent in combining two extreme product innovation activities: exploitation and exploration. Unlike Mu (2015), who examined the US and Chinese tech firms, Azubuike (2013) focused on manufacturing companies in Nigeria, and the findings posit that technological innovation competencies significantly correlates with NPP and profitability. Although the research context in Azubuike (2013) and Mu (2015) differ, underscoring their findings show support for the argument put forward by the proponents of RBV; organization capabilities (FSC) drive performance.

The findings in Talaja’s (2013) study aligned with Azubuike's (2013) with few additions. The author investigated the performance-effect of foreign firms' innovation capability, and it confirmed that firms that possess innovative proficiency achieve better performance, irrespective of the company's size. Further analysis showed that foreign firms had more capability to develop new products and consequently reap better NPP. In an attempt to substantiate how specific internal organization's contingencies, influence NPP, Wei, Yi, and Guo’s (2014) result suggested that NPP is attributed to organization learning flexibility and innovation exploration capacity in NPD. However, unlike Wei et al. (2014) that focused on learning and innovation, Kim et al. (2016) sort to establish a link between two firm-specific capabilities; marketing proficiency and technological asset that drives NPP of Korean firms. The study suggested that technological resources (proxy to innovation capability) enhance marketing capability to influence NPP. Specifically, the positive association between MC and NPP was explained by possessing technological resources such as dynamic and embedded technology assets.

Also, Lee, Lee, and Garrett (2017) decided to prove the collaboration effect of innovation on the organizational performance of firms in Korea. The result confirmed that through exploitation and
exploration behavior, innovation capability dimensions such as product and process influenced firm performance. These findings echo the submission of scholars such as Azubuike (2013) and Foroudi, Jin, Gupta, Melewar, and Foroudi (2016) and Ukpabio, Oyebisi, and Siyanbola (2017) on the significant performance-effect of innovation capability. By implication, Lee et al. (2017) encourages firms in their commitment to innovate to embrace exploiting their present market in a bid to penetrate the market and improve on products initially offered, and to explore the possibilities of offering an entirely new product to the market. According to the study, the innovation activities will guarantee superior market and financial performance if this is done.

Focusing on another FSC variable different from Lee et al. (2017) and Ukpabio et al. (2017), Dirisu et al. (2013), was interested in determining what NPD feature drive NPP. The findings revealed that NPD features, such as uniqueness and quality, drive NPP. Contrasting to Dirisu et al. (2013), Ateke and Iruka (2015) were more interested in NPD activities that can influence NPP but not the NPD features. The scholar found that involving the customers in the NPD activities (co-creation activities) is significant for NPP. The study revealed that customer involvement management and NPP are strongly and positively related. This stressed that when customers are involved in the co-creation activities to produce a new product, their expectations as per product features and quality are captured, reducing the potential for NPD failures. To buttress the submission of Ateke and Iruka (2015) and Dirisu, Iyiola, and Ibidunni (2013), through co-creation activities, customers enjoy a positive brand experience, which drives customer satisfaction and subsequently improves NPP. Several scholars have substantiated this point of view with studies in a different research context, for example, in the aviation industry, hotel and banking industry, among retailer and automobile industry respectively (Chahal & Dutta, 2014; Ha & Perks, 2005; Khan, Garg, & Rahman, 2015; Kim, Chua, Lee, Boo, & Han, 2016; Lin, 2015; Şahin, Turhan & Zehir, 2013).

From an outside-in marketing capability, Ateke and Iruka (2015) focused on one dimension of marketing capability: customer involvement; however, Mu et al. (2018) considered all the dimensions of marketing capability to position its relevance to organizational performance. The study revealed that proficiency in market sensing, partner-linking, customer engagement, selling, communication, and market implementation (dimensions of outside-in marketing capability) guarantees superior performance measured as profitability, market share, and customer satisfaction. Moreover, since all the performance measures used by Mu et al. (2018) are the standard measure for NPP, it would not be out of place to say that Outside-in marketing capability significantly explains the performance of a new product.

This finding draws strength from the customer-focus-driven perspective, highlighting the need to incorporate customer/market realities into productive activities needed for the market, hence avoiding the potential failure of NPD activities and the massive waste of resources. As such, it becomes imperative for firms to acquire information from external sources. Scholars suggest that such information is obtainable from different sources, which include informal business discussions, rival competitiveness, collaborative business efforts, market survey, customer interactions, and capabilities to influence government (Acur, Kandemir, & Boer, 2013; Chen, Tribbitt, Yang, & Li, 2017; Feng et al., 2018; Fidel et al., 2015; McCann & Bahl, 2016; Mu et al., 2018; Najafi-Tavani et al., 2018). In all, firms must prioritize developing proficiency from outside-in such that their inside-out capabilities can accomplish superior performance.

On the contrary, it is difficult to fault the usefulness of firm-specific capabilities like customer engagement and innovation capability, particularly regarding their contribution towards NPP. This is because several authors, as discussed earlier, had found that these capabilities improve NPP significantly; however, some scholars have expressed a contrasting submission. For example, Fang (2008) posited that involving customers in a co-creation function may reduce production efficiency and increase product timeliness to the market. In the same vein, Cheng and Krumwiede (2012) and Gustafsson, Kristensson, and Witell (2012) argued that customer involvement does not benefit all NPD.
Implying that customer participation benefits mostly incremental new product and its performance; however, it is ineffective in time of a radically new product.

Furthermore, Beckers, Van-Doorn, and Verhoef (2017) found a company's shareholders reacting negatively when it initiated customer involvement activities for the fear that it backfires. Besides, Ngo and O'Cass (2012) queried the direct performance effect of customer engagement capability, suggesting that this capability is a contingent factor through which innovation capability can bring business success. Focusing on innovation capability, Idowu (2013) found no relationship between firm innovativeness and financial performance. Similar to Idowu's (2013) finding was Namusonge, Muturi, and Olaniran's (2016) study. Namusonge et al. (2016) found that innovation-financial performance linkage firms trading with the Nigeria stock exchange were negatively correlated.

**Moderating Role of Organisational Structure**

The moderating effect of OS on the relationship between FSC and NPP suggests that not much has been done in this direction. The few scholars (Zahra & Covin, 1995) that did relate OS with firm adaptability and performance, while Wilden et al. (2013) examined the effect of OS in conjunction with the internal organizational process, however, studies that combined both its ability to adapt to environmental turbulence and enhance internal organizational process are sparse. Thus, the need for a theory that can substantiate a possible interaction.

Many scholars in management research have supported and generally applied the notion that no tactic is comprehensively superior; that is, the performance effect of a strategy is context-specific. They arrived at this submission primarily by adopting the contingency perspective (Nwonu et al., 2017; Oliveira et al., 2018; Titus & Anderson, 2018; Sayilar, 2016), established within the interaction perspective. As noted by Schoonhoven (1981, p. 351), "When contingency theorists assert that there is a relationship between two variables ... which predicts a third variable... they are stating that an interaction exists between the first two variables", hence accentuating the attractiveness of the interaction perception in organizational studies.

The moderation perspective suggests that the independent variable (FSC) effect on the dependent variable (NPP) is a condition on a third variable (OS), defined as the moderator. In line with this position advanced by the structural contingency theory, which addresses fit as a moderator, this study posits that the fit between OSs as a contingent factor is a prerequisite for high organizational performance. OS generates precise effect relationships that produce improved efficiency and overall performance (Sayilar, 2016). By implication organization, structural fit produces better performance, but organizational performance becomes poor when it fails to achieve a structural fit (Sayilar, 2016).

This study assumes (given the argument of SCT) that the decision for firms to harness inter-firm resources (FSs) for success (NPP) is a herculean task one in which OS can help to facilitate. This line of thought was corroborated by Feng-Jyh and Ching-Wei (2019); according to the Scholars, OS appropriateness is critical to how firms efficiently run their operations (Feng-Jyh & Ching-Wei, 2019). Hence, stressing the relevance of OS in helping the organization achieve set goals by aligning the internal organization's activities with external contingencies.

**Methodology**

The cross-sectional approach to survey design offers this study the ability to collect data from a sampling unit once. From a population of 12,712 employees engaged with fifteen FMCG manufacturers in categories such as food & Beverage, Sweet & Biscuit, Baby-care products, and household detergents, 378 using research advisor was computed. We added 151 (40% of 378), making 521 to ensure that responses obtained from questionnaire administration would not be lower than the optimum sample size of 378. The employees who form the unit of analysis were management-level employees. Data were collected by administering an adapted questionnaire (Bendig et al., 2019; Kadic-Maglajlic et al., 2018).
with response options ranging from strongly agree to disagree strongly. After eight weeks of questionnaire administration, 452 questionnaires were considered adequately filled, representing a response rate of 85.4%.

In this study, FSC, NPP, and OS are the independent, dependent, and moderating variables, respectively. FSC reflects the extent to which an organization possesses core and unique capabilities and assets (tangible and intangible) which are developed over time, across functional areas whose efficient utilization enables a firm to achieve competitive advantage; more so, its continued improvement ensures the sustenance of the firm's competitive advantage. Hence, the firm-specific capabilities in this study are measured by customer engagement as defined by Anning-Dorson et al. (2018), new product development as defined by Mu et al. (2017), marketing capability as defined by Mu et al. (2018), and innovation capability according to Foroudi et al. (2016) definition.

NPP reflects the extent to which a firm's new product developed increases the market presence and success rate, acquire new and maintains existing customers, and can be produced quickly. They were measured using a Likert-type scale by scholars (Bendig et al., 2019; Kadic-Maglajlic et al., 2018). According to Cummings and Worley (2015), the OS reflects the extent to which authority and responsibility are defined within a formal system. This study follows a similar approach established by these scholars to measure these variables and use a Likert-type scale to collect the data. In addition, the study adopted the Moderated Regression Analysis (MRA) to determine the moderating effect of OS on the association between FSC and NPP of FMCG manufacturers in the South-Western States in Nigeria.

**Analysis and Result**

This study must establish that the data collection instrument is valid and reliable. Hence, we conducted a validity and reliability test to ascertain that. Through principal component factor analysis and using the varimax extraction method, only factor loading of 0.7 and above was considered and used to compute each variable's AVE and CR results. Also, the internal consistency for using Cronbach's alpha coefficient was conducted for all the variables, respectively. The result in Table 4.1 shows that the AVE, CR, and CA had values above the acceptable benchmark of 0.5, 0.7, and 0.7, respectively.

### Table 4.1: Validity and Reliability Result

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measures</th>
<th>CA</th>
<th>CR</th>
<th>AVE</th>
</tr>
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<tbody>
<tr>
<td>Independent</td>
<td>FSC:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marketing capability</td>
<td>0.78</td>
<td>0.86</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>New product development</td>
<td>0.82</td>
<td>0.84</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Customer engagement</td>
<td>0.77</td>
<td>0.82</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td>Innovation capability</td>
<td>0.82</td>
<td>0.86</td>
<td>0.62</td>
</tr>
<tr>
<td>Dependent</td>
<td>NPP</td>
<td>0.89</td>
<td>0.83</td>
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<td>Moderator</td>
<td>Organisational structure</td>
<td>0.81</td>
<td>0.88</td>
<td>0.57</td>
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Source: Authors’ compilation using SPSS V24 (2021)

### Table 4.2: Result of the Moderated Regression analysis

<table>
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<tr>
<th>Model</th>
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<th>t</th>
<th>Sig.</th>
<th>R</th>
<th>R²</th>
<th>Adj. R²</th>
<th>ΔR²</th>
<th>ΔF</th>
<th>Sig. F Change</th>
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<tbody>
<tr>
<td>(Constant)</td>
<td>.231</td>
<td>1.286</td>
<td>.199</td>
<td>.754*</td>
<td>.569</td>
<td>.568</td>
<td>.569</td>
<td>593.330</td>
<td>.000</td>
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<td>FSC</td>
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<td>.000</td>
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<td></td>
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<tr>
<td>F/Anova Sig: 593.330 (1,450), p&lt; .001</td>
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<tr>
<td>(Constant)²</td>
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<td>-2.840</td>
<td>.005</td>
<td>.793b</td>
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<td>.000</td>
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<tr>
<td>Organisational structure</td>
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<td></td>
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</tbody>
</table>
Table 4.2 above depicts the MRA for the moderating effect of OS on the relationship between FSC and NPP. The result in model one shows that FSC is a significant contributor to NPP given a 56.9% variability in NPP attributed to FSC (R² = 0.569, F(1,450) = 593.330, p < .001). Model two established that FSC and OS jointly influence 62.7% of the changes NPP (Adj. R² = 0.627, F(2,449) = 380.013, p = .000). In the last model, therefore, the interaction term of FSC*OS was obtained and considered in the model. The result shows that the introduction of OS improves the relationship between FSC and NPP, given the 2.3% increase in R² (ΔR² = 0.023, p = 0.000) experienced in NPP. This finding reinforces the contingent perspective that OS significantly moderates the link between FSC and NPP.

**Discussion Conclusion and Recommendation**

The possession of internal organizational capabilities conceptualized as FSCs are considered sustainable elements that drive firm performance (Abiodun, 2017; Lee *et al.*, 2017; Mu, 2015; Tuan, Nhan, Giang, & Ngoc, 2016; Ukpabio *et al.*, 2017). This finding aligns with the submission of Onamusi (2020), who considered FSC to be the core and unique organizational capabilities and assets (tangible and intangible) developed over time, across functional areas whose efficient utilization enables a firm to achieve superior performance; more so it continued improvement ensure the sustenance of the firm's competitive advantage.

In addition, the findings of this study have support in the empirical literature. For instance, Mu (2015) posited that both NPD and NPP are strongly and positively correlated. Although the research context in Azubuike (2013) and Mu (2015) differ, underscoring their findings supports the argument put forward by the proponents of RBV; organization capabilities drive performance. The findings in Talaja's (2013) study aligned with Azubuike's (2013). The author indicated that foreign firms had the superior capability to develop new products and consequently reap better NPP.

Similarly, Wei, Yi, and Guo (2014) corroborated Azubuike's (2013) submission that NPP is attributed to NPD organization learning flexibility and innovation exploration capacity. Lee *et al.* (2017), Ukpabio *et al.* (2017), and Dirisu *et al.* (2013), all revealed that the development of a new product with unique features and quality improves the success recorded with regards to such new product. Thus, from the theoretical standpoint, the RBV is strengthened. The RBV, an inside-out perspective, emphasizes that for a firm to achieve superior performance, such firms must own internal organizational knowledge, skill, and ability that are incredibly unique.

The results of hierarchical regression analysis (also MRA) for the moderating effect of OS on the association between FSC and NPP show a significant moderation effect on the association. Scholars have posited that OS is a precondition for attaining an organizational goal. According to Feng-Jyh and Ching-Wei (2019), a suitable OS is necessary for companies to effectively and efficiently manage its activities. Feng-Jyh and Ching-Wei (2019) corroborate Gurianova and Mechtcheriakova (2015), who suggested that OS is a construct that assists with effective decision-making.
The significant contribution to knowledge that this study offers is evident in the gap is addressed and that it offers relevance for FMCG manufacturers in terms of critical firm-level competencies that can be developed and deployed to aid NPP. More so, providing relevance for having a definitive OS that spells out responsibilities, defines authority, and aligns the organization with its strategy to stay competitive in an environment characterized by erratic customer demand, intense competitive rivalry, and inconsistent government policy in emerging economies. Also, the empirical results add to current literature in FSC and boost the significance of OS. Finally, in terms of theoretical contribution, this study aligns with underlining narratives of the RBV, DCT, and the CT, providing further support for the assumptions of these theories.

The study concludes that FSC affects NPP; OS moderates the interaction between FSC and NPP. Based on these findings, this study recommends that firms strengthen their commitment to developing critical and dynamic FSC. These capabilities have been documented in the literature and supported by the finding of this study to influence firm performance. Also, management must possess the knowledge to deploy the ambidextrous FSC to enable the firms to expand and explore market opportunities that facilitate achieving superior performance in a new product. Lastly, OS appropriateness is key to facilitating operational efficiency in NPP.

References


Brand experience, satisfaction, trust, direct mail communication and attitudes toward advertising. *Business Management Dynamics* 3(4), 45-61.


Organizational Learning and Innovation and its Impact on Professional Accountants Organizational Citizenship Behavior: Evidence from Pakistan

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ARTICLE DETAILS

ABSTRACT

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Purpose: This study develops a theoretical model that explores the effect of organizational learning on the organizational citizenship behavior of professional accountants in Pakistan. Additionally, the model also explores the mediating role of organizational innovation between this relationship.

Design/Methodology/Approach: Data were gathered from professional accountants at small accounting firms in Pakistan.

Findings: The findings prove that organizational learning positively influences the citizenship behavior of accountants. Additionally, the findings also report the mediating role of organizational innovation between organizational learning and accountants’ organizational citizenship behavior.

Implications/Originality/Value: The findings of this paper may have both practical and theoretical implications for researchers, domestic and international companies.

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Introduction

This paper develops a theoretical model that explores the effect of organizational learning (OL) on organizational citizenship behavior (OCB) of professional accountants in Pakistan. Additionally, the current study also explores the mediating role of organizational innovation (OI) between OL and accountants’ OCB. More recently, OL has gained global recognition among firms and academicians as well (Benson, 1997; Leslie, Aring, & Brand, 1998; Sloman & Webster, 2005; Wahab, Saad, & Selamat, 2014; Park, & Kim, 2018; Hutomo, & Pudjiarti, 2021). This move reflects the significance of OL as an
antecedent to gain a competitive advantage over competitors in complex economic settings (Senge, 1990; Illeris, 2003; Sambrook, 2005; Wahab, Saad, & Selamat, 2014). To achieve this objective, organizations are more likely to depend on individuals who are enthusiastic to participate in the growth of the organization, irrespective of formal job responsibilities (Somech & Drach-Zahavy, 2004). Specifically, individuals’ behaviors that excel formal job description are important for an organizations’ success and survival and referred to as OCB (Katz & Kahn, 1978; Brief & Motowidlo, 1986; George & Bettenhausen, 1990). Prior literature has clearly shown that OCBs are influenced by crucial contextual factors including organizational culture and more specifically, learning and innovation at the workplace (Eisenberg & Fabes, 1990; Schein, 1990). Organizational culture serves as a prescriptive constellation of collective beliefs and values, and defines the way how employees think, feel and behave at the workplace (Schein, 1990). Specific elements of an organization’s culture such as organizational learning and innovation may affect the potential of the organization to learn, which may influence the behaviors of employees. Importantly, OL starts after the apprehension of potential benefits of achieving desired outcomes by acquiring, sharing, and utilizing new knowledge and skills at the workplace (Huber, 1991; DiBella, Nevis, & Gould, 1996; Alanoğlu & Demirtaş, 2016). Additionally, prior literature proposed that OL allows businesses to build capacities that may enhance innovation, and only possible by acquiring new knowledge (Han, Kim, & Srivastava, 1998; Hurley & Hult, 1998; Baker & Sinkula, 2002). Prior literature has long recognized the value of examining the importance of OL at the workplace (Benson, 1997; Leslie, Aring, & Brand, 1998; Sloman & Webster, 2005; Wahab, Saad, & Selamat, 2014; Park, & Kim, 2018). However, very limited research has been conducted to examine whether OL may improve the OCB of accountants, and how this relationship is mediated with OI. By drawing relevant psychology, sociology, and accounting literature, this study examines this relationship by using structural equation modeling and taking professional accountants as subjects.

Accountants at accounting firms located in major cities of Pakistan are selected for examination. Accounting firms are selected because accountants work in an environment in these organizations that continually alternates between heavy and light workloads (Whitmore & Albers, 2006). These accountants are experienced corporate resources having the expertise to perform reporting duties and may help organizations in decision making (Wei, Choy, & Chew, 2011; Salleh, Ahmad, SyedIkhsan, & Lin, 2011). Additionally, accountants are skilled employees who rely on authentic information to provide reliable reporting of financial outcomes to various stakeholders by following the International Financial Reporting Standards (Awad & Ghaziri, 2004; Whitmore & Albers, 2006). Furthermore, accountants are required to provide accurate financial information which requires stable and continuous learning within organizations. While working in an organization, accountants learn unique and sharper insights from new information and revised accounting models and standards, which is beneficial for developing their skills and expertise (Wright, 2005). Importantly, OL may help in creating a work environment for accountants that broadens the focus of their performance from immediate outcomes to continuous improvement (Somech & Drach-Zahavy, 2004). Therefore, this study examines the impact of OL on the OCB of accountants in Pakistan.

The remaining paper is planned in the following sections. The second section provides the literature review of the study, constituting the reasons for selecting organizational learning and organizational citizenship behavior, with particular reference to organizational innovation. Section three provides details for hypotheses development and section four explains the research method. Section five shows the results of the study, tracked by data analysis and discussion of results. The final section provides details about the conclusion, limitations, and implications.

**Literature Review**

In this modern era, OL helps in the growth and development of domestic and international firms. Additionally, organizations have to focus on their continuous learning to maintain a competitive edge over their competitors (Dealtry & Rademakers, 2005). Prior literature defined OL as a rigorous process through which an enterprise formulates new ideas and insights from the prior experience of employees.
working in the organization and can affect behaviors and enhance the firms’ competencies (Fiol & Lyles, 1985; Senge, 1990; Huber, 1991; Slater & Narver, 1995). Prior literature clearly shows that OL takes place when most employees identify the possible advantage of new ideas, knowledge, and skills (Huber, 1991). Furthermore, prior literature provides evidence that OL is a continuous process where employees learn the knowledge, share ideas and information with other colleagues, jointly interpret and ultimately retain the organizational memory to be used by all workers (Sinkula, 1994; Slater & Narver, 1995; De Weerd-Nederhof, Pacitti, Gomes, & Pearson, 2002; Alanoğlu & Demirtaş, 2016).

OL depends on the aptitude of a firm to adapt to its environment, identify its mistakes and develop the means for its correction (Argyris, 1977). Prior literature provides evidence that OL develops a culture of creating harmonization of goals and strategic thinking among employees, which consequently improves the organizational system approach (Senge, 1993). According to organizational learning theory, OL stresses embracing new cultural values which may ultimately influence the mindset of accountants working in firms (Ellis, Caridi, Lipshitz, & Popper, 1999; Somech & Drach-Zahavy, 2004). Prior literature provides evidence that OL is a time-honored approach that may influence individuals’ and organizational behavior of employees (Murray & Donegan, 2003). Additionally, organizational OL improvement both at the individual and organizational level (Somech & Drach-Zahavy, 2004). This may also lead accountants inputting additional efforts for the success of the organization by volunteering for tasks that are not officially essential to be performed (Somech & Drach-Zahavy, 2004). With a mutual goal to promote OL, accountants work, support, and collaborate closely with colleagues which enhances their organizational citizenship behavior. Thus, OL values are more likely to foster OCB because accountants develop an organizational system that may broaden their exposure to performing beyond their formal responsibilities (Somech & Drach-Zahavy, 2004).

OCB represents an “individual’s behavior that is discretionary, not directly or explicitly recognized by the formal reward system and in the aggregate promotes the efficient and effective functioning of the organization” (Organ, 1989, p. 4). The employees, demonstrating OCB, are dedicated to their organization and focus on its growth and development, irrespective of their formal obligations and predefined duties (Wong, Mui, & Hui, 2006). Prior literature provides evidence that subjects’ OCB has the potential to improve firms’ effectiveness and efficiency by contributing to resource innovativeness, adaptability, and transformation (Organ, 1997, 1989). Importantly, OCB is necessary for the organizations to accomplish all tasks and challenges (Turnley, Bolino, Lester, & Bloodgood, 2003; Cho & Johanson, 2008). Prior literature suggests two categories of OCB such as OCBO (organizational), behaviors that are beneficial for a firm in general, and OCBI (individual), behaviors that are advantageous for individuals, specifically (William and Anderson, 1991). Prior literature labels the OCBO dimension as compliance and OCBI as altruism (Organ & Konovsky, 1989; Smith, Organ, & Near, 1983). The term, compliance, or ‘consciousness’ includes factors that are general and contribute to the overall objectives of a team, department, or a firm such as punctuality at work and low absenteeism (William and Anderson, 1991; Sharma & Jain, 2014). Additionally, the term, altruism, includes factors such as supporting an overloaded colleague, helping and guiding a new colleague, and solving a problem for other colleagues (William and Anderson, 1991; Sharma & Jain, 2014). Hence, it is suggested that professional accountants OCBs are not stereotypically comprised of official job descriptions but helps to create a social-psychological work environment in medium-tier accounting firms in Pakistan.

In today’s’ globalized world, besides OL, OI may also enable an organization to identify, apply, create, and renew working methodologies to improve the extra-role performance of employees, specifically, their OCB (Nonaka & Takeuchi, 1995). Additionally, the forces of globalization have stressed the organizations around the globe to modify the techniques they used for making their workplace innovative (Naqshbandi & Kaur, 2013). According to prior literature “Innovation is a means of changing an organization, whether as a response to changes in its internal or external environment or as a pre-
emptive action taken to influence an environment” (Damanpour, 1991, p. 556). OI is a significant factor for a firms’ strategy and creates a competitive edge over other firms in global markets (Damanpour, 2014; Kilic, Ulusoy, Gunday, & Alpkan, 2015). Importantly, OI is the combination of development and execution of innovative ideas within the corporation, it may be administrative, technical and might be related to organizational innovative culture, as well (Garcia & Calantone, 2002; Yuan & Woodman, 2010; Azar & Ciabuschi, 2017; Yu, 2017). Damanpour & Evan (1984, p. 560) suggest that “administrative innovations involve organizational structure and administrative processes, they are directly related to the basic work activities of an organization and are more directly related to its management”. Importantly, within the scope of this study, OI in accounting firms may require improving the processes and being innovative in the way these firms are being operated in Pakistan. Moreover, administrative innovation may serve as a new way in accounting firms to recruit accountants, allocate all resources and formulate structures, and reward management systems. Furthermore, prior literature defined technical innovation as “innovations that occur in the technical system of an organization and are directly related to the primary work activity of the organization” (Damanpour and Evan, 1984, p. 394). Prior literature clearly shows that for the development of OI within the firm, it is necessary to create an innovative culture where all its employees may work and collaborate to develop a new idea, process, or administrative system (Škerlavaj, Song, & Lee, 2010). Given the importance of OI, this study provides sharper insights into the mediating effect of OI including three dimensions (administrative innovation, technical innovation, and innovative culture).

**Hypotheses Development**

This study takes its routes from organizational learning theory which focuses on the creation of knowledge, and its utilization within the organization for facing complex challenges and increasing performance of employees (Fauske & Raybould, 2005). Additionally, this theory further suggests that organizations should develop a culture that appreciates employees’ learning, and stress on organizational innovation, which may consequently improve their organization's overall performance. Furthermore, organizations invest their resources and time in developing innovative processes, and this may help them in getting a competitive advantage in the market by enhancing their employees’ and enterprises’ innovativeness, and their overall performance. Prior literature also shows that OL promotes different ideas and strategic thinking and consequently leads to employees’ overall performance (Senge, 1993; Alanoğlu & Demirtaş, 2016). Based on this reasoning following hypothesis is formulated:

**H1:** OL has a significant impact on accountants’ OCBI and OCBO.

Prior literature shows that OI includes the development of new ideas and behaviors within a social system (Damanpour, 1996). Importantly, organizations that are likely to develop a culture of learning and innovation, may lead to enhancing employees’ both OCBI and OCBO (GarcíaMorales, Llorens-Montes, & Verdú-Jover, 2006). Additionally, Macey and Schneider (2008) suggest that a higher level of employee engagement in organizational innovation may lead to the flexible effort of employees that, in turn, enhance their both in-role performance (OCBI) and extrarole (OCBO) performance. Given the increase globalization and complex business environment, organization need innovation for enhancing the performance of employees (Nouri, Ghorbani, & Soltani, 2017). Additionally, studies show that OL also serve as an antecedent to enhancing OI within the businesses (Nouri et al., 2017). Based on the above reasoning, the following hypothesis is proposed:

**H2:** OI mediates the relationship between OL and accountants’ OCBI and OCBO.

**Theoretical Model**

Figure 1.0 provides details about the theoretical model developed in this study. In this model, OL serves as the independent variable, OCBI and OCBO as a dependent variable, and OI including three dimensions such as administrative, technical innovation, and innovative culture as mediating variables.
Methodology
To test the hypotheses, data were collected using a research instrument from accountants at accounting firms in Pakistan. Professional accountants for this study were randomly selected by partners of participating auditing and accounting firms, keeping in view, the provided selection criteria. Importantly, those professional accountants were selected who had relevant experience and qualifications. The subjects were informed that the provided response will be treated as unidentified. Subjects provided their demographic information required in the research instrument such as gender, qualification, age, and relevant work experience. Extensive pilot tests were conducted to ensure the appropriateness of the research instrument, using management, psychology, and accounting academicians. They were requested to examine the research instrument with a sharper focus to improve its understandability. Some minor modifications were incorporated into the research instrument, based on their valuable feedback.

The research instrument consists of two parts. Part one constitutes demographic information of respondents and part two contains a scale to capture subjects’ responses for organizational learning, organizational innovation, and organizational citizenship behavior. A 4-item scale developed by Aragón-Correa, García-Morales, & Cordón-Pozo (2007) was used to capture subjects’ responses for organizational learning. Furthermore, an 18-item scale developed by (Pavitt, 2005) was adapted to suit our situation, constituting dimensions such as administrative innovation, service innovation, and innovativeness or innovative culture. Moreover, a 16-item scale, developed by Lee & Allen, (2002) was adopted to capture subjects’ responses for their OCB both at individual and organizational levels.

Data Analysis
Demographic Statistics
Completed responses were received from 280 out of 310 professional accountants to whom, questionnaires were circulated, producing an overall response rate of 91%. The demographic details of professional accountants are shown in table 1.0. Approximately, 91% and 9% of accountants were male and female, respectively. Of the total 280 accountants, 44.6%, 20.4%, 17.85%, and 10.7%, and 6.4% were of age, within the ranges of 20-29, 30-39, 40-49, and 50-59, and more than 60 years, respectively. Moreover, 64.2%, 20.71%, 8.9%, 2.85%, 1.7% and 1.07% accountants were junior/assistants, seniors, managers, senior managers, partners, and directors, respectively. Additionally, 21.42%, 35.71%, 25.0%, 15.0%, 1.7%, and 1.07% accountants had experience within the ranges of less than 0, 1-5, 6-10, 11-15, 16-20, and 21-25 years, respectively.
Table 1.0. Demographic Statistics

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male 255 (91%)</th>
<th>Female 25 (9%)</th>
</tr>
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<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
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<tr>
<td>Less than 20</td>
<td>0 (0%)</td>
<td></td>
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<tr>
<td>20-29</td>
<td>125 (44.6%)</td>
<td></td>
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<tr>
<td>30-39</td>
<td>57 (20.4%)</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>50 (17.85%)</td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>30 (10.7%)</td>
<td></td>
</tr>
<tr>
<td>More than 60</td>
<td>18 (6.4%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Position</th>
<th>Junior/Assistant 182 (64.2%)</th>
<th>Senior 58 (20.71%)</th>
<th>Manager 25 (8.9%)</th>
<th>Senior Manager 8 (2.85%)</th>
<th>Partner 5 (1.7%)</th>
<th>Director 3 (1.07%)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Professional Experience</th>
<th>Less than 1 year 60 (21.42%)</th>
<th>1-5 years 100 (35.71%)</th>
<th>6-10 years 70 (25.0%)</th>
<th>11-15 years 42 (15.0%)</th>
<th>16-20 years 5 (1.7%)</th>
<th>21-25 years 3 (1.07%)</th>
</tr>
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</table>

Table 2.0. Descriptive Statistics and Correlation Analysis

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Table 2.0. Descriptive Statistics and Correlation Analysis</th>
<th>Mean</th>
<th>SD</th>
<th>OL</th>
<th>OCBI</th>
<th>OCBO</th>
<th>IC</th>
<th>TI</th>
<th>AI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>Mean: 0.768, SD: 3.75643, 0.69</td>
<td>OL: 3.75643</td>
<td>0.69</td>
<td>1</td>
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<td></td>
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</tr>
<tr>
<td>Reliability</td>
<td>Mean: 0.812, SD: 4.09999, 0.68</td>
<td>OCBI: 4.09999</td>
<td>0.68</td>
<td>0.544**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>Mean: 0.695, SD: 3.10001, 0.59</td>
<td>OCBO: 3.10001</td>
<td>0.59</td>
<td>0.321</td>
<td>0.443**</td>
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<td>Reliability</td>
<td>Mean: 0.711, SD: 3.79000, 0.70</td>
<td>IC: 3.79000</td>
<td>0.70</td>
<td>0.654**</td>
<td>0.691**</td>
<td>0.344*</td>
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<td>Reliability</td>
<td>Mean: 0.756, SD: 3.81000, 0.64</td>
<td>TI: 3.81000</td>
<td>0.64</td>
<td>0.692**</td>
<td>0.531**</td>
<td>0.456*</td>
<td>0.487**</td>
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<tr>
<td>Reliability</td>
<td>Mean: 0.763, SD: 3.95621, 0.71</td>
<td>AI: 3.95621</td>
<td>0.71</td>
<td>0.564**</td>
<td>0.623**</td>
<td>0.399*</td>
<td>0.587**</td>
<td>0.592**</td>
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</tr>
</tbody>
</table>

*, ** Significant at the p<0.05 and p<0.01 levels, respectively.

Structural Equation Modelling

Structural equation modeling (SEM), used for data analysis, is of specific significance to this study for two reasons. First, SEM provides sharper insights into the linkage among OL, OI (administrative innovation, technical innovation, and innovative culture), and OCB, which is consistent to examine the impact of OL on OCB, with the mediating role of OI (Byrne, 2016). Second, most of the constructs in this study are latent variables, which can only be measured by “observable items”. Furthermore, the adoption of SEM is generally acceptable in social sciences because of its ability to examine the relationship “latent variables” from “observable items” (McDonald, & Ho, 2002). By following the requirements of modeling, this paper evaluates the structural equation model in two steps (Kilne, 2015). In the first step, Confirmatory Factor Analysis (CFA) was conducted to estimate the measurement model (Kilne, 2015; Byrne, 2016). The basic purpose of CFA is to test whether the data fit a proposed measurement model, by evaluating its model fitness by key model indices including Minimum Discrepancy divided by “Degree of Freedom CMIN/DF, Comparative Fit Index (CFI), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Root Mean Square Error of Estimation (RMSEA) and the P-value for a test of close fit (PCLOSE)” (Kilne, 2015; Byrne, 2016). In the second step, this paper evaluates path analysis to explain the coefficients among all variables in this study, as shown in figure 3.0.

Measurement Model (Confirmatory Factor Analysis)

Table 3.0 shows the standardized regression weights of confirmatory factor analysis. For this study, a measurement model was developed and empirically tested for conformance, regarding discriminant validity and structure of factors. Factor loading is given in table 3.0 which demonstrates that each load is statistically significant at p<0.001, as shown in figure 2.0.
Table 3.0. Standardized Regression Weights

<table>
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<tr>
<th>Latent Variable</th>
<th>Item Label</th>
<th>Standardized Factor Loading</th>
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<tr>
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<tr>
<td></td>
<td>OL2</td>
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</tr>
<tr>
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<td>OCBI 5</td>
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<td>OCBI 8</td>
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<tr>
<td></td>
<td>OCBO 8</td>
<td>0.659</td>
</tr>
</tbody>
</table>

Figure 2.0. Measurement Model

Table 4.0. shows the goodness of fit measures, as such all the values are well above the threshold indices of GFI, CFI, AGFI, PCOLSE and below the threshold indices, for RMR, CMIN/DF, and RMSEA, according to the standardized requirements (Hu, & Bentler, 1995; Hair, Ringle, & Sarstedt, 2011).

<table>
<thead>
<tr>
<th>“CMIN/DF”</th>
<th>“RMR”</th>
<th>“GFI”</th>
<th>“AGFI”</th>
<th>“CFI”</th>
<th>“RMSEA”</th>
<th>“PCLOSE”</th>
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<tbody>
<tr>
<td>3.079</td>
<td>0.043</td>
<td>0.963</td>
<td>0.950</td>
<td>0.905</td>
<td>0.041</td>
<td>0.995</td>
</tr>
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</table>

Structural Model (Path Analysis)
The structural model demonstrates the relationship among OL, dimensions of OI including (administrative innovation, technical innovation, and innovative culture), and OCBO and OCBI. After evaluating the measurement model, a structural model was developed to explain the coefficients.

Figure 3.0. Structural Model

Consistent with the measurement model, its model fitness was also tested by using the same indices such as GFI, CFI, AGFI, PCOLSE, RMR, CMIN/DF, and RMSEA. The model shows that path coefficients are significant for all the proposed relationships among the aforementioned variables, as shown in table 5.0.

<table>
<thead>
<tr>
<th>Model Fitness Summary</th>
</tr>
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<tr>
<td>“CMIN/DF” “RMR” “GFI” “AGFI” “CFI” “RMSEA” “PCLOSE”</td>
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<tr>
<td>2.63 0.05 0.94 0.88 0.97 0.06 0.005</td>
</tr>
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</table>

Mediation Analysis

Table 5.0 explains the results of this study, constituting all six mediation models, as shown in table 5.0. Mediation analysis was performed through bootstrapping by using AMOS. By using Bollen & Stine (1992, p. 212) “bootstraps with 95% bias confidence interval method”, total direct and indirect effects of the proposed models were evaluated by bootstrapping for testing mediation using structural equation modeling in AMOS. In first, second and third model, administrative innovation, technical innovation, and innovative culture fully mediates between OL and OCBI. Additionally, in the fourth and fifth models, administrative innovation and technical innovation mediates the aforementioned relationship. Moreover, innovative culture also fully mediates the aforesaid relationship.

Table 5.0. Mediation Analysis

<table>
<thead>
<tr>
<th>Models</th>
<th>Direct Effect</th>
<th>Indirect Effect</th>
<th>Mediation Result</th>
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</thead>
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<tr>
<td>Model 1</td>
<td>OL-AI-OCBI</td>
<td>Not significant</td>
<td>Significant</td>
</tr>
<tr>
<td>Model 2</td>
<td>OL-TI-OCBI</td>
<td>Not significant</td>
<td>Significant</td>
</tr>
<tr>
<td>Model 3</td>
<td>OL-IC-OCBI</td>
<td>Not significant</td>
<td>Significant</td>
</tr>
<tr>
<td>Model 4</td>
<td>OL-AI-OCBO</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>Model 5</td>
<td>OL-TI-OCBO</td>
<td>Significant</td>
<td>Significant</td>
</tr>
</tbody>
</table>
Conclusion
This study examines the influence of OL on professional accountants’ OCB, with the mediating role of OI. OL is an important and relevant factor for an accounting firm for its successes but with the contribution of accountants. This study provides empirical evidence that OL has a significant impact on OCBI and OCBO. Accountants working in accounting may learn new methods, administrative expertise, and technical skills, which may influence their organizational behavior to work for their benefits and overall organizational wellbeing, as well. Additionally, OI mediates this relationship between OL and OCBI and OCBO.

The findings may have several implications for accounting firms and professional accountants working there. Accounting firms should develop a culture of learning new approaches, methods, behaviors, and expertise at the workplace to tackle unforeseen circumstances and should also learn from their past experiences. Although accountants are key factors for accounting firms’ growth and development, however, the question of how to improve their extra-role behaviors has not gained attention in Pakistan. Importantly, our findings provide better insights for a better understating of OL and OI for accounting firms in Pakistan and their impact on accountants’ behavior. Specifically, accounting firms should promote learning, for example, by conducting seminars, conferences, and workshops regularly, for their accountants, which may consequently fuse their research and development plans and the development of unique ideas, strategic thinking, and experimentation within the firm. Furthermore, accounting firms should also conduct regular meetings to share the knowledge, skills, expertise of one accountant with others, and develop a behavior of citizenship both at the individual and organizational level. Moreover, this study also implications for managers of accounting firms, as such they should be prepared for experimentation with various strategies, given the dynamic and complex nature of today's’ workplace.

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Relationship Quality and Innovation Capacity of Micro Enterprises: A Single Case Study in the Traditional Food Sector

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**ARTICLE DETAILS**

**ABSTRACT**

**Purpose:** This study aims to analyze the innovation capacity and relationship quality of micro-enterprises with its stakeholders.

**Design/Methodology/Approach:** This is an exploratory and single-case study that uses an in-depth interview with the owner of one traditional food micro-enterprise (TFME) in Yogyakarta City (Daerah Istimewa Yogyakarta Province, Indonesia).

**Findings:** The results determined that there are four types of relationships between a TFME and its stakeholders: supplier, internal, customer, and lateral partnerships. We further identify antecedents of relationship quality: opportunistic behavior, reputation, customer orientation, relationship orientation, conflicts, product quality, and knowledge and skills. The research further found that conflicts, relationship quality, product quality, knowledge and skills, and owner’s age can affect the innovation capacity of a TFME.

**Implications/Originality/Value:** Theoretically, the findings provide support for the development of relationship marketing theory. Practically, this study is valuable for TFMEs to build relationship quality with stakeholders and innovation capacity.

**Keywords**

Innovation Capacity, Relationship Quality, Case Study, Traditional Food, Marketing

**JEL Classification**

M31, O31

**Introduction**

According to the World Economic Forum (WEF), Indonesia has a more efficiency-driven economy, which ranks the country 50th out of 141 countries worldwide in the Global Competitiveness Index 2019 Rankings. The weakness of the pillars of innovation in Indonesia, including the capacity for innovation, is thought to be one of the primary causes of Indonesia’s low rankings in the Global Competitiveness Index (WEF, 2019). In Indonesia, micro-, small-, and medium-sized enterprises (MSMEs) are relatively vulnerable to competition (Wibowo, 2019a). According to Tambunan (2011), Indonesian MSMEs,
which includes energy, information, infrastructure, market environment, inflation, and taxation, face four main obstacles: capital, technology, skills, marketing, and raw materials. Indeed, Iriyanti and Aziz (2012) found 10 factors that can inhibit the development of Indonesian MSMEs: competition restrictions, financial access, fuel tariffs, technology, inefficient production costs, economic factors, management abilities, processes, limited sales, and raw materials. Indonesian MSMEs should increase their innovation capacity to overcome these obstacles. They also need to improve the quality of the relationships with their business partners to encourage greater innovation capacity. In terms of this capacity, Novani, Putro, and Hermawan (2014) noted the importance of maintaining a sustainable relationship with all stakeholders during the actual value co-creation process.

Therefore, Indonesia must encourage more innovation to increase competitiveness. One way is to increase the competitiveness of micro-businesses is through sustainable innovation. In 2018, the number of micro-enterprises in Indonesia reached 63 million by a workforce of around 107 million people (http://www.depkop.go.id, accessed September 1, 2020). Micro-enterprises in the traditional food sector thus require serious attention. Based on the above explanations, it is urgent to conduct a study examining the relationship quality, innovation capacity, and linkage between relationship quality and innovation capacity in the context of Indonesia’s microsized traditional food enterprises (TFMEs). Theoretically, we hope this research can enrich the theory of relationship marketing and innovation in the local food sector.

Literature Review

Relationship quality is a concept discussed extensively in relationship marketing theory. This concept emphasizes the importance of building long-term and mutually beneficial relationships with customers. Companies need to use relationship quality to reduce transaction costs or the uncertainty about future transactions, thereby ensuring the sustainability of their system operations (Yu & Tung, 2013). Some literature, however, does not offer a consistent enough definition of the concept of relationship quality (Yu et al., 2013; Akbar & Wibowo, 2018). Nonetheless, many researchers have linked satisfaction and trust as prominent indicators of relationship quality (Shamdasani & Balakrishnan, 2000; Henning-Thurau, Langer, & Hansen, 2001; Wibowo, 2009). Further, Smith (1998) and Kumar, Scheer, and Steenkamp (1995) stated that relationship quality contains at least three dimensions: satisfaction, trust, and commitment. On the other hand, Wu, Weng, and Huang (2012), in a study on the context of supply chain partnerships, found that the higher the level of trust between partners, the better the partners were able to direct the interaction between those partners. In this case, trust was the main factor and played a significant role in influencing supply chain partnerships effectively (Wibowo, 2013). Besides, the trust supports positive collaboration (Wu et al., 2012; Pesamoa & Hair Jr, 2007; Terawatanavong & Quazi, 2006; Fynes, Voss, & Burca, 2005; Leonidou, Palihowadana, & Theodosiou, 2006).

Innovation refers to a company’s capacity to engage in the creation of new ideas, experimentation, and research and development activities that produce novel outputs and activities at a competing cost (Hadjimanolis, 2000; Hult, Hurley, & Knight, 2004; Chadee & Roxas, 2013). If a company utilizes the right mode of communication, then it produces positive innovation capacity or innovativeness (Lee & Tsai, 2005). Particular strategies, such as eco-design, reverse logistics, recuperation of waste, or the use of cleaner raw materials or recycled products, can direct a company to recognize its innovation capacity (Fraj-Andrés, Martinez-Salinas, & Matute-Vallej, 2009). Besides, corporate innovation and competence can contribute to improved operational performance (Venkatraman & Ramanujam, 1986; Zhang, 2000; Fraj-Andrés et al., 2009). Rampant corruption in companies can have a significant impact on both innovation ability and achievement (Chadee et al., 2013). Strictly speaking, Lee and Tsai (2005) proved the impacts of innovativeness on business performance for 700 service and manufacturing companies in Taiwan.

Gellynck, Kühne, and Weaver (2011) surveyed 90 traditional food chains that involved 270 companies from three countries in Europe (Belgium, Hungary, and Italy). The authors found the quality of chain
relationships to be a notable factor in motivating innovation. Policies that encourage companies to build those strong relationships can accelerate innovation. Further, Murat Ar and Baki’s (2011) study on 270 managers of small and medium enterprises in Turkey revealed the influence of supplier relationships on product innovation. Similarly, organizational collaboration can have an impact on process innovation. Innovativeness in a collaborative interaction depends on knowledge sharing (Calantone, Cavusgil, & Zhao, 2002; Panayides & So, 2005; Wibowo, 2019b); further, due to fears of opportunistic behavior, companies may be reluctant to share their knowledge with partners, which can damage innovation (Steinicke, Wallenburg, & Schmoltzi, 2012). This aspect suggests that opportunistic behaviors can have an impact on the ability of partners to innovate. In other words, opportunism can reduce a company’s innovation capacity.

**Methodology**

A qualitative research design was utilized for this study, which seeks to capture meaning in the relationship phenomenon between TFME and its stakeholders as well as the nature of that relationship to the TFME’s innovation capacity. In this exploratory study, we wanted to understand how a TFME’s owner translates his/her experiences and how he/she builds her world (Merriam, 2009). This study also seeks to describe, understand, and interpret the relationship phenomenon based on the different realities that exist in the microscale traditional food industry in Indonesia. The research also seeks to obtain empirical data to build the concept of relationship quality and the innovation capacity of a TFME.

The study was conducted on a TFME, namely, “Arem-arem Bu Nyoto (AABN),” which is located in Yogyakarta City (Daerah Istimewa Yogyakarta Province, Indonesia). The research participant was the owner of AABN, Mrs. Nyoto. Data collection was undertaken using unstructured in-depth interviews. This particular interview structure requires open questions, is flexible, and extracts a range of information from the participant. The questions address the participant’s experience and behaviors as well as opinions and values, feelings, and knowledge. The probing technique is widely applied to follow up on the participant’s answers. AABN sells Indonesian traditional foods called “arem-arem,” which is a rice roll that contains vegetables or fried sambal wrapped in banana leaves.

This study also used inductive analysis strategies and a conversation approach, both of which are suitable for analyzing data in interpretative qualitative studies. Specifically, the two strategies or techniques for analyzing qualitative data are narrative analysis and case study. The essence of narrative analysis is to examine the way humans experience the world (Connelly & Clandinin, 1990), i.e., how the participant (owner) experiences and interprets his/her relationship and its quality with stakeholders and innovation capacity of the TFME. This particular narrative analysis emphasized the AABN’s owner stories. Further, the collected data were analyzed using relationship marketing theory and its perspectives.

**Results**

Based on the in-depth interview with the TFME’s owner, four types of relationships are determined to exist between TFME and its stakeholders: supplier, internal, buyer, and lateral partnership. Supplier partnership is a type of relationship established among TFME and its suppliers of raw materials. The internal partnership is a relationship between each component in the TFME’s organization, such as the relationship between leaders and employees, inter-departmental functional relationships, and the relationships between business units. Customer partnership includes the relationship between TFME and its current customers, new customers, and potential customers. The lateral partnership shows the relationship between TFME and its competitors, profit organizations, nonprofit organizations, neighbors, and the government.

Generally, the participant has one supplier for each subscribed raw material. The participant usually does not change suppliers. Every year, she (the participant) receives gifts from several suppliers. She further believes that the suppliers do not cheat her because she has subscribed for a long time and has
never been deceived by them. Even so, suppliers often send goods first, which are paid for later. Therefore, she is willing to agree to price fluctuations incurred by her suppliers. The following is her reply:

I have one permanent supplier. I have purchased from the same supplier, and every year I receive gifts from the supplier. I never move to other places. I never protest the pricing policy and always comply with it. If the rice quality is a little ad, I immediately ask for an exchange. I do not mind paying extra money as long as the rice quality is good. The supplier has known me for years and knows my traits regarding rice quality. So, I never change suppliers because they have supplied rice to me for decades.

The relationship between the family of the TFME’s owner determines the degree of business sustainability. This study found that family members can play an essential role in creating business opportunities. Good relationships among the owner’s family members are useful to develop promotion. For example, the owner of AABN, Mrs. Nyoto, can get a purchase order through her son (orders done by the company where her son works). However, the owner’s divorce had an impact on the business. Her husband used to play a decisive role because he was able to motivate and provide support when business pressure and challenges appeared.

The study also found that the relationship quality between AABN’s owner and the employees determined both business activities and performance. Good relationship quality is usually able to maintain a great owner–employee relationship in the long run, even if an employee leaves. According to the participant, however, she had unpleasant experiences with her former employees:

When hiring helpers, they may resign and start their own arem-arem business. They would sell the products to some bakul (traders) who have become my customers. It could cause me to become at odds with them. It made me unhappy because I could quarrel with them. Until now, they continued to sell arem-arem. They work for me to steal the secret recipe for my arem-arem…Currently, I only employ neighbors as my helpers.

The relationship quality between the TFME and its customers was demonstrated by how much customers trusted the TFME, which can be indicated by large and repeat orders. The relationship quality can be realized by the willingness of TFME to help its customers financially. For example, TFME is willing to help customers by processing their raw materials into finished goods. The quality of the relationship between customers and TFME can also be seen in customer behaviors when taking the initiative or showing an intention to establish other relationships in the future. For example, the customer takes the initiative to request the TFME’s contact number as the means of communication for the next order or purchase. Even so, the TFME does not always fulfill customer orders. The participant usually will refuse orders from customers who failed to pay off their previous purchases.

Besides, the TFME was also willing to accept down-payments from customers and cover the production costs for ordering goods for them. Although there is occasionally no written agreement, the participants felt confident that the customer would pay off the remaining payment and not cheat the owner because the participant trusted the customer. In dealing with customers, the business owner does not merely take into account the profit aspect. The owner is willing to make less profit because she also considers the conditions or difficulties of her customers. That is, the owner examines affections as central importance. Moreover, the owner is willing to bear losses over the short-term to establish lasting relationships with customers and create repeat purchases in the future and thus achieve long-term benefits.

However, the business owner can and does show opportunistic behavior under certain conditions. This is visible when the owner’s actions harm customers for her benefit. To support this action, the owner hides opportunistic acts from the customers. Generally, the owner carried out this kind of behavior when she
feels it is urgent. In this circumstance, she feels anxious that customers may become aware of the action:

I once received an order of 2000 arem-arems. As planned, I hired two people to handle this order. However, in the morning, when the order was due, we could not produce the requested number of arem-arems. To cover the shortage, I bought arem-arems made by other sellers. I was worried and hoped that the customers would never have known. Usually, I can produce the number of arem-arems requested in the orders. The middle of the year during the student orientation period (in new student admission) is the time for the high demand of arem-arems. Sometimes I add arem-arems produced from other sellers to cover the shortage. I am worried that customers will know because my arem-arems may taste differently from the arem-arems made by other sellers.

The TFME is a small business located in a residential area. Therefore, there is a relatively close relationship between TFME and its residents or neighbors. This close relationship is visible in the ongoing willingness of the enterprise and the community to help each other. For example, when receiving orders that total thousands of arem-arems, the owner usually hires neighbors as temporary employees, especially unemployed neighbors.

The participant mentioned the lack of government roles in the traditional food industry, e.g., government has not provided any training assistance for a long time to the TFME. The quality of the relationship between the government and TFME is considered unfavorable, probably because of the weak personal relationships between the TFME’s owner and current village officials. One measure of the strength of these ties is the involvement of the TFME owner in different government-organized activities. Successful relationships between the government and TFME can encourage TFME to support various government activities, especially in empowering other TFMEs. The participant further conveyed that she has not been engaged in training programs for small businesses with the local government for a long time.

This study also found that the participant had not established any intensive relationship with the banking sector. She does not rely on banks to obtain business capital, so she does not have loans with the bank. The owner has savings that can be utilized for business development, such as buying land and a house. On the other hand, TFME owners do establish mutually beneficial relationships with competitors. The TFME owners invited competitors to collaborate with and help solve business problems. For example, when the price of chicken is high (reaching IDR 40,000 per head), the arem-arems price will also become more expensive due to higher production costs. For this reason, the TFME’s owner will order arem-arems from other sellers. Figure 1 displays the types of relationships that exist between the TFME and its stakeholders. The participant understood the importance of differentiation. As such, she attempted various innovations by creating differences between her products and the competitors’. She realized that unique and superior products will attract consumers. This view supports the decision to make products widely known. She also innovated prices to create a distinction to reach different and broader consumer segments. The idea of price differentiation was her own. She received no government assistance. Likewise, various ideas for product innovation thus far come from business experience. The participant experiments directly by using her own business to produce and deliver high-quality products that consumers like. The following quote explains:

In general, buyers are looking for arem-arems because of the savory taste. I use Cisadane rice, while other sellers use Raskin (rice for poor people), C4, and others (bad quality rice). This rice is quite expensive, but it is easier to deal with it. When I let it cool, it does not become stiff. The Cisadane rice looks limp, making the wrapping process easier. During the rainy season, kluthuk banana leaves (“kluthuk” is a type of banana) are difficult to obtain and expensive. If you do not use these types of leaves, then the rice in arem-arems becomes red and ugly. I am using ripe coconut. The coconut milk is thick and very tasteful. So as not to taste fishy, I boiled the chicken, then I throw away the water. Next, my chicken is fried and cut into small pieces, and
then the chicken is cooked until the meat is kalis (smooth) and clean.

Figure 1: Different types of relationships existing between TFME and its stakeholders

However, the innovations of this business owner not only include product innovation but also process innovation. She said that, in the past, she cooked on an earthen stove over firewood. Then, she used timber sawdust and gas; now she cooks using a gas stove. Besides, she holds firm to her business ethics whenever innovating. In general, she understands the importance of maintaining customer trust and customer welfare by always providing high-quality products to keep customers interested and not harm them. Even so, during any hectic conditions, she also demonstrated opportunistic behavior:

Some buyers asked me the reason why my arem-arems are not durable, even though they are made on the same day, while other arem-arems remain good, even though produced the day before. Other arem-arems have been mixed with borax (artificial preservative). Some complain why arem-arem is rotten in the morning. After checking, these arem-arems were not made by me. If a buyer is ordering arem-arem containing fish, then I will fill it with fish entirely and not mix it with other ingredients. Other producers may put in a little fish and mix it with other materials, such as tempeh (tempeh made from soybeans processed with yeast).

Based on these in-depth interviews with the participant who owns the TFME, we found a strong linkage between relationship quality and innovation capacity. Good relationship quality that exists between the business owner and her suppliers have a direct impact on the quality and sustainability of the raw material supply used for the production process. Therefore, if the supplier is not willing to replace (exchange) raw materials where the quality is not as expected, it will hamper the innovation process during production. Good relationships with suppliers help a business obtain the right raw materials that will support product innovation processes. As explained earlier, the business owner needs specific raw materials to support creativity and innovation and create products that are different, unique, and superior to attract more consumers.

A good relationship among the owner’s family members is crucial for business continuity. Family members play a significant role as a source of information when identifying business opportunities and
product innovation. For example, the business owner’s son working in a company can provide useful information for new business opportunities from his colleagues. Family members can also play a role as motivators when running the business. Family member support has a definite impact on the innovation process and business sustainability. Conversely, any strained relationship between family members can hinder business continuity and the process of innovation, as with this owner’s divorce case.

**Discussion**

As described in the previous section, the opportunistic behavior of the TFME’s owner is visible in the actions that may harm stakeholders to obtain a unilateral profit of the owner in the short term. If customers learned that the owner deceived them, they would have felt disappointed. They would have felt dissatisfied with the relationship, which they very likely would break. The owner’s actions could damage the relationship quality with customers in the long term. Therefore, the business owner’s innovation capability cannot be integrated with customer resources. Customers will not be willing to share information and knowledge with the business owner for any co-innovation. The low relationship quality with primary stakeholders can evoke conflict with other stakeholders. Likewise, conflict with stakeholders can result in a poor relationship with them. Further, this conflict directly affects innovation capacity. That capacity to innovate will not be optimal without involving both “good” competitors and the surrounding community.

Relationship quality can also have an impact on product quality. Trusted suppliers typically establish relationships by selling qualified raw materials to their buyers. Furthermore, high-quality raw materials will produce valuable finished products. That product is preferred by customers so that they can increase sales. The implication is that this issue can also affect the relationship quality between the business owner and suppliers. Quality of raw materials determines the innovation process. Besides, the ability to innovate can specify the quality of the finished products. An owner with a lot of experience and knowledge should have greater innovation capacities than those who lack that experience and knowledge. Therefore, innovation capacity determines product quality. Further still, product quality can encourage business sustainability because consumers will have great demand for these quality products.

The business owner’s knowledge and skills play a significant role in encouraging innovation capabilities. The owner cannot innovate optimally without adequate knowledge and skills. These resources can be drawn from experiences and relationships with stakeholders and can play a mediating role. First, stakeholders can influence the connection between relationship quality and innovation capacity, as in a business’s understanding of the importance of business ethics, which can further strengthen the influence of relationship quality on innovation capacity. Conversely, weak business ethics can weaken the impact of a relationship quality on innovation capacity. Second, such knowledge and skills can also influence the relationship between innovation capacity and business strategy. For example, the owner’s understanding of the importance of technology can further strengthen the influence of innovation capacity on business strategy. Conversely, the owner’s lack of comprehension of the significance of technology can weaken the impact of innovation capacity on the business strategy.

The owner’s age and business risk can also act as moderating variables. Age can influence the relationship between innovation capacity and business strategy and sustainability. Business people who are too old or too young, for example, can further weaken the influence of innovation capacity on the implementation of business strategies and overall business sustainability. Age can also determine the ability to innovate as a business. Generally, business people who are too old or too young also will have physical and mental limitations, so the ability to innovate then further decreases. These business risks can affect the relationship between innovation capacity and business strategy and business continuity. High-risk businesses, for example, should strengthen the influence of innovation capacity on both business strategy implementation and business sustainability.
Conclusion
This study seeks to identify the relationship quality between the TFME and its stakeholders and
examined the TFME’s innovation capacity. Specifically, the various antecedents and consequences of its
relationship quality and innovation capacity were examined. In summary, the relationship between the
TFME owner and the stakeholders can be divided into four types: supplier relationships, internal
relationships, customer relationships, and lateral relationships.

We further identified several factors that determine the relationship quality: opportunistic behavior,
reputation, customer orientation, relationship orientation, conflict, product quality, and knowledge and
skills. We also determined that the quality of relationships can influence key factors for TFME, i.e.,
innovation capacity, business strategy, business sustainability, conflict, product quality, knowledge and
skills, experience, and relationship orientation.

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The Effect of Leverage and Debt Maturity on the Corporate Financial Performance: Evidence from Non-Financial Firms Listed at Pakistan Stock Exchange

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**ARTICLE DETAILS**

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**ABSTRACT**

**Purpose:** This study examined the effect of leverage, debt maturity on corporate financial performance of non-financial firms listed at the Pakistan Stock Exchange. Targeted population of this study was 100 firm listed at PSX as KSE-100 index out of which 74 non-financial firms were selected from 28 different sectors for the period of 5 years 2013 to 2017.

**Design/Methodology/Approach:** Financial performance measured by ROA, ROE, while leverage, short term leverage, long term leverage taken as independent variables, four variables were taken as control which are size, current ratio, sale growth, tangibility. On the basis of Hausman test, results of random effect model were found appropriate.

**Findings:** ST and LT Leverage have a negative significant and insignificant effect on financial performance (ROA) respectively, moreover long term leverage has a positive and significant but short has a negative and insignificant effect on ROE. The results of the control variables showed that size has a negative and significant effect on ROA and ROE, whereas current ratio has insignificant and negative effect on ROA, ROE. Sale growth has a positive and insignificant effect on firms ROA and ROE. Tangibility has insignificant and negative effect on financial performance.

**Implications/Originality/Value:** This study is consistent with traditional trade-off theory and recommended that management of the non-financial firms listed at the PSX should employ minimal debt level or use an optimal level of capital structure and also to attract good management thus to improve their financial performance.


**Introduction**

In today competitive business environment, there is a race is an every aspect of firm activities, the specters is even in liquidity term or in performance term both cling a wings towards survival of firms in
the market, as concern leverage also plays an important roles in today competitive worlds, there is a wide context writing on corporate finance, which broadly accepted, leverage and maturity formation are essential aspects especially in term of addressing manager and shareholder conflict which we called an agency problem in today septic corporations.

However, Miller and Modigliani, (1958) suggests that in a pretentious Market, the value of firms is not only relevant to capital structure. Moreover, there is a reality of market imperfections (usually when there is asymmetric information, taxes, and conflict of interest) and these subtle formulate CS preference pertinent to the company worth. (Modigliani & Miller, 1963; Jensen & Meckling, 1976; Myers, 1977; Myers & Majluf, 1984). Surprisingly, Modigliani and Miller, (1963), argued that the value of firms and COC is widely effect by the corporation taxes. However, when there is an absence of taxes regulation, the governance mechanism of debt capital can affect financial performance of corporation. (Jensen & Meckling, 1976).

When there is a clash between company representative and company owner and debt holders we usually term it an agency problem, ultimately effects and raise an intention of agency cost for a firm and for the corporation financial system (Alchian & Demsetz, 1972; Jensen & Meckling, 1976). On the argument of Jensen and Meckling (1976), the agency problem (cost of equity) is arises when there is a conflict or even mismanagement of daily activities between manager and shareholders, usually when the company ownership control is separated.

As stated the above situation, the manager make himself as self-dependent and tires to indulge himself in overstated activities which are not come under the arena of his core responsibility (salaries, perks). And sometimes tries to manipulate the basic compensation and reputation of firms at sake of shareholder wealth, rather than maximizing firm and shareholders’ value. However, leverage mechanism is most prominent financial instrument which can mitigate agency COE. (Jensen & Meckling, 1976; Fama & Jensen, 1983; Jensen, 1986; Stulz, 1990; Jensen, 1993).

For insistence, Jensen (1986), Concluded, the most persistent and valuable den amour for firm valuation is the expected larger cash flow and intrinsic opportunistic opportunity which in term commits prime intense of premium payment to debt holders, as compared to equity ratio, a higher debt ratio meanwhile decrease the agency problem and thus increase a firm financial performance by insisting manager to align the core interest with shareholder’s interest. Uncovered loops holes of capital structure studies imbedded the association of maturity of debt and financial, investment decision, and as on firm performance indicators. Most studies argued that short term maturity in detail situation accelerates and efficient CG mechanism to alleviate and agency cost and cost of COE. Although Myers (1977), culminate that the post prominent components of financial instrument is short-term debt with curtail the conflict between shareholders and bondholders and decline the risk of underinvestment strategy problem.

On the other hand, Schiantarelli and Jaramillo (1996) based his argument which is for efficient and improvement of firm productivity is long-term debts which helps the company representative and access better and improvable technology, which in term provide reluctances to firm through which they can finance their operation due to high level of liquidity risk. Although Tian and Estrin (2007); Firth et al. (2008) and Vijayakumaran (2019), examined the upshot of debt and maturity financing and its reflection of agency cost which is faced by the Chinese listed firms, their study aimlessly finds that government’s ownership of bank and firms, and soft budget constraints make and an invaluable and inefficient mechanism of governance which is helping in reduction of agency cost for listed firms of china and particularly SOEs.

According to Nyamita (2014), financing decision for corporation is very vital. Instead of equity financing debt financing have pretentious influence on corporate financial system to its alleged
operation. Accord from that debt financing can also lead to superior performance albeit it is harmful as well in shape of failure for corporation. Financial manager need to be efficient and curious in making finical obligation. With the usage of leverage corporation can earn fixed payment on funds. Abubakar (2015), outlook the same context and state that financial leverage avails the opportunity to the debt holder to get the fixed amount of return, albeit it can be risky to if the project become worthless, then they are entitled to higher loss, on principal amount the premium or interest is required to paid. Nawaiseh (2015) argued the context and state that, for survival of firm and for its continuity usually liquidity and profitability are important determinant, albeit profitability can also be influenced by financial leverage, sometimes in under-investment policy which is making by financial manager which interim liquidity makes challenges.

Moreover, a series of study which had been conducted on this topic brings a notion with constant reforms which assigned that, debt financing as compered to equity financing and an effective governance mechanism which can reduce agency costs. Accord from above existing literature an extensive study had been done on this research area in context of Pakistan. However, this study will fill the gap of literature on leverage, debt maturity and its effect on FP of Non-financial firms listed at Pakistan Stock Exchange.

The prime motive of this revision is to critically underpin the effect and association between leverage, debt maturity and it upshot on CPL by taking the non-financial firms listed on PSX as KSE-100 index, while for the time of 2013-2017.

This revision will make many contributions to the existing literature. In the first attempt, it will provide supporting evidence from Pakistan’s listed non-financial companies, provide concluding comments on leverage and its impact on the company’s financial performance, as well as later debt maturity and its impact on the company’s financial performance. Cai et al., (2008) tested this research by studying Chinese listed companies. They stated that they found no supporting evidence between leverage, debt maturity and their impact on the company's financial performance. In the context of Pakistan, various studies have been conducted in this area, but this revision will add debt maturity and other control variables to check its results on the CFL.

Review of Related Literature
In the prior content, the supportive hypothesis and related literature review of debt maturity, leverage and its effect on corporate performance are discussed.

Leverage and Firm Performance
According to the concepts and details of an agency theory it augmented that control of firms and separation of ownership leads the clash between agent and potential principal of company (Berle & Means, 1932; Jensen & Meckling, 1976). For occasion, the company’s representative some time discord the potential interest, even desired and up lit the prior and perquisites consumption, and invent in un sound petty projects which is have no existing concerns with shareholder’s wealth maximization. Concurreingly, further the theories also suggest that the best tools to alleviate the agency cost of outside (equity) are leverage. In finance arena debt finance is a mechanism which controls the following flows of business: (1) the company representative (Manager) is closely monitored by the debt holders and financial markets (Jensen and Meckling, 1976; Fama and Jensen, 1983). (2) The debt holders always have the right of fixed payment in shape of interest which in turn reduces the exceeding and planning free cash flows which the company managements acquired for discretionary spending (Jensen, 1986). (3) Consistently zwiebel, (1996) suggests that for company executive’s debt is serving as fixed and commitment device.

For the sake of interest the legal obligation of companies executive is to make interests payment to debt holders, for instance when they fail to meets this obligation there is prior chance of risk and liquidation
of business which ultimate in turn may influence the reputation and growth opportunities (Fama, 1980; Grossman & Hart, 1982; Williams, 1987). This stunt limits company manager with an increment to work in their domain and consume fewer perks as compared to higher (Grossman & Hart, 1982; Zwiebel, 1996).

For instance, Aghion and Bolton (1992) and Gilson (1990) suggests that financial cuts up or turmoil or when there is decreasing low profit trend, it may lead to a control curve of firm to the debt holders, with in turn may create a marks for incumbent manager. In curtail, these remarks argue with pin that higher debt ratio decrease the organization cost rather than equity financing, by aligns the interests of company owner and company representative, and in turn it will have a constructive contact on CPL. However, the excess of using debt financing instead of equity financing, the agency COE is not mere costless. The up leading formation of capital debt in any firms leads to the conflict of interest between shareholder and debt holders which creates an agency cost of debt.

When there is higher usage of debt financing, company agent who work on behalf of company owner’s some times for go an excessive and fruitful projects which have a positive NPV, because of risky debts which absorbs a segmented parts of company owner benefits. Although Myers (1977), argue that the persistent usage of under-investment policy and its related problems of higher leverage level. Up sum and excessive use of FL also increase the agency costs. This is priory link with risk liquidity and bankruptcy cost of any company.

These moral peril harms indicate that excessive use FL may unconstructively influence corporate financial performance. Some previous observed result on the association between FL and corporate financial performances are mixed. Although Dessi and Robertson, (2003), in the literature light they argued that in observed and unobserved firm’s debt is endogenously determine which is consistent and prior with firms worth sum up. Others Majumdar and Chhibber (1999) concluded unconstructive association between FL and CFP. By distinguish, Berger and Di Patti (2006) culminates that after controlling endogeneity there is constructive connection between FL and CFP.

Although Weill (2008), argued that the connection and link flanked by FL and CFP is varying across countries, while the association involve in these two is constructive in five countries, Belgium, France, German, Norway and Spain, and in turn it is negatively Italy and not even significant in Portugal, it further suggests that some organizational aspect may affect this association. Moreover, Sarkar and Sarkar (2008), finds that usage of debt financing instead of equity financing is helpful authority system of listed Indian companies with consistent upgrading in organizational surroundings which has become promote leaning. With prior concern, in Chinese context, previous and latent revise suggests that FL and company are worked under the domain of concern Chinese government; FL is fruitless source to alleviate organization conflict especially of State Owned enterprises. (Tian & Estrin, 2007; Firth et al., 2008).

Conquerors (usually government-owned banks) are no longer the same as demonstrating the behavior of managers and shareholders, and the organization will not be retained. In addition, current research trends show that the chain transformation of the banking system and governance mechanism of listed companies in China, rather than equity financing, debt financing is an effective tool to reduce agency costs (Cull and Xu, 2005; Ayyagari et al., 2008; Firth et al. People, 2009; Vijayakumaran, 2017; 2019). Although Raza (2013) revised the impact of FL on FP, they used panel data of companies listed on PSX from 2004 to 2009 to prove their results. They believe that financial leverage has an unconstructive effect on cash flow, and he concluded that the use of high levels of debt will lead to a decline in company performance.

In addition, Syed et al. (2015) used panel data from 1999 to 2012 to study the impact of financial leverage on the company’s financial performance, and demonstrated their supporting evidence by
sampling the textile industry. Their research finally concluded that financial Leverage has no constructive effect on company performance as measured by ROA, Tobin Q. The main reason for this negative trend is to borrow large amounts of interest from banks to pay interest, rather than the inefficient capital market assumptions. Conqueringly Banafa, Muturi, and Ngugi (2015) investigated the impact of financial leverage on company performance by demonstrating their results on selected non-financial companies in Kenya between 2009 and 2013. They believe that FL has a non-constructive effect on CFP.

H1: Financial leverage has significant effect on the corporate financial performance.

Debt Maturity and Firm Performance

Literature on CF marked that enticement characteristic of short term debt maturity make it more interesting, valuable, controlling and efficient than LTD maturity in alleviating an agency clash between company agent and shareholders. Concuringly, Myers (1977) suggests that the best optimum tools which mitigates the clash between bond holders and equity owner is short term debt and its growth exercise option of investment policy. Companies who use greater growth option visage superior investment problems.

Furthermore, Myers (1997) finds that, firms whose growth option is at peaked are likely to employ short term debt maturity. Debt which becomes mature before its execution of an investment option, in turn it cannot lead to suboptimal investment decisions. Further it up sum that in underinvestment policy it deteriorates profit in long run, such amplification order and navigates unconstructive association between long term debts and financial performance. Moreover, Leland and Toft (1996) argued that short term debt is the prior tools which can reduce the agency costs in term which is associated with the shareholder’s risk shifting behavior. Consistently from long term maturity short term maturity is more effective in imposing a pressure on manager to refinance and reassign the rights from holder to creditors, (e.g., Diamond, 1991; Hart and Moore, 1994;1998; Rajan and Zingales, 1995; Stulz, 2000).

H2: There is a significant effect of debt maturity on corporate financial performance.

Theoretical Under Pinning

According to Trade-off theory the company must ensure level of leverage through optimum level of capital structure which maximize and enhanced their worth, ultimately in term it also benefit the company in point of tax shield benefits against financial distress cost by using debt financing. Surprisingly the paradigm of this theory also forecast that, there is an incentive for firm through which
they can move towards leverage ratio by latent sort of any other deviations. (Frank & Goyal, 2008). Fischer et al., (1989) postulate that using an optimum level of debt and equity financing by any company sometimes face considerable resistance towards prior adjustment of cost which is associated with debt financing.

**Conceptual Frame Work**
The following figure 1.2 shows the conceptual frame work of the study.

**Independent Variables**
- Leverage and Debt Maturity
  - Lev
  - STD
  - LTD

**Dependent Variables**
- Firm Performance
  - R0A
  - R0E

**Research Methodology**
Panel data type is used in this revision, and data is secondary in nature and sources of the data are taken from annual FSA reports published by State bank of Pakistan and company investor information report. While time frame of this study is from 2013-2017. Moreover, sample selection of this study were composed of listed companies at Pakistan Stock Exchange non-financial sectors, while financial sectors were excluded due to the influence of potential outliers, while 74 companies were selected from 28 different sectors, this study ended up with a panel observation of 370, and these companies has selected on the basis of data availability.

**Variables Measurements**
The following content explain the contextual definition and previous existing literature finding.

**Performance Measures**
The following Baum et al. (2007) and approaches were used to measure R0A and R0E. While R0A is define as earnings before interest and taxes divided by year-end TA.
Return on Equity (R0E) was measured by Earning’s after taxes divided by total Shareholder’s equity.

**Explanatory Variables**
The explanatory variable is the ratio of total Lev and STD in total debt, which is used to capture the impact of CS decision on CPF. Following Dessiand Robertson (2003) and Margaritis and Psillaki (2010), leverage is defined as the ratio of total debt to total assets. As described by Schiantarelli and Sembenelli (1997) and Baum et al. (2007), this study uses the ratio of short-term debt to total debt (short-term debt divided by total debt) as a proxy for debt maturity.

**Size of Firm**
Accord with the previous revision Size of firm essential determinant for any CPF and previous revision
suggest a constructive connection between Size and FP. With an increase in Firm Size it ultimate have sound effect on firm, like larger firms are always expected to have bigger share size, have equipped technology and to be more managerial transparency with associated risks than smaller firms. (Himmelberg et al., 1999; Greenaway et al., 2007; Dixon et al., 2017).

**Tangibility**
Himmelberg et al. (1999) Suggest that for debt collateral tangibility can be used as monitor, which can alleviate and organization clash between owner and company’s management. An inverse association observed between tangibility and financial performance when there is in efficiency utilization of tangible assets. If a firm used it efficiently, there is expected to be positive association between these two determinates.

**Sales Growth**
Majumdar and Chhibber (1999), SG has impression to show the business cycle effect which is aligned with environment volatility. Like Firm Size, SG also represents company growth. With this scenario’s the SG can indicates company able to assume expected earnings. Accord with preceding context there is expected constructive association between SG and financial performance. This study expects and observe a constructive alliance between SG and PF.

**Liquidity**
Like an SG, in this revision Liquidity used as moderator variable which is measured by Current Ratio, like it has characteristics to capture corporate manager ability in term efficient utilization of current assets and current liability. The efficient utilization of CR has direct effect on firm performance.

**Variables of the Study**
This study has used the following variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Anonyms</th>
<th>Measurements</th>
<th>Approach Used</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exploratory Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return on Assets</td>
<td>ROA</td>
<td>EBITD/year-end total assets.</td>
<td>Baum et al.(2007)</td>
</tr>
<tr>
<td>Return on Equity</td>
<td>ROE</td>
<td>Net profit/Total shareholder’s equity</td>
<td></td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leverage</td>
<td>LEV</td>
<td>Total leverage/total assets</td>
<td>Dessi and Roberston (2003)</td>
</tr>
<tr>
<td>ST- Debt</td>
<td>PROP_STLEV</td>
<td>Short-term liabilities/total liabilities</td>
<td>Margaritis and Psillaki (2010)</td>
</tr>
<tr>
<td>Long-term debt</td>
<td>PROP_LTLEV</td>
<td>Long-term liabilities/total liabilities</td>
<td>Schiantarelli and Sembenelli (1997)</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>Size</td>
<td>Natural logarithm of total real asset</td>
<td>Log of total assets Scott and Martin (1975)</td>
</tr>
<tr>
<td>SALGRTH</td>
<td>SG</td>
<td>Changes in sales/Total sales</td>
<td></td>
</tr>
<tr>
<td>Tangibility</td>
<td>TANG</td>
<td>Fixed assets/Total Assets</td>
<td></td>
</tr>
<tr>
<td>Liquidity(Current Ratio)</td>
<td>LIQ, CR</td>
<td>Current Assets/Current Liability</td>
<td></td>
</tr>
</tbody>
</table>

**Model Estimation**
Regression is used to predict the values of quantitative outcome of exploratory variable using several other predicative variables. Multiple regressions analysis shows the communal upshot of independent
variables on the dependent variable.

\[ \text{ROA}_it = \alpha + \beta_1 \text{LEV}_it + \beta_2 \text{Prop short Lev}_it + \beta_3 \text{Prop long Lev}_it + \beta_4 \text{Size}_it + \beta_5 \text{Tang}_it + \beta_6 \text{SGrowth}_it + \beta_7 \text{CR}_it + \epsilon_i \]

\[ \text{ROE}_it = \alpha + \beta_1 \text{LEV}_it + \beta_2 \text{Prop short Lev}_it + \beta_3 \text{Prop long Lev}_it + \beta_4 \text{Size}_it + \beta_5 \text{Tang}_it + \beta_6 \text{SGrowth}_it + \beta_7 \text{CR}_it + \epsilon_i \]

Whereas in the following equation1, 2 where \( i \) represent indexes firms and \( t \), years of all variables including dependent, independent, controls variables, finally \( \epsilon_i \). I represent firm specific error term with time \( t \) trend.

**Results and Discussion**

This section includes results and discussions on the results of the different tests applied such as descriptive statistics, correlation and regression.

### Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>370</td>
<td>.175</td>
<td>.168</td>
<td>-.437</td>
<td>1.302</td>
</tr>
<tr>
<td>ROE</td>
<td>370</td>
<td>.283</td>
<td>.434</td>
<td>-1.585</td>
<td>4.139</td>
</tr>
<tr>
<td>LEV</td>
<td>370</td>
<td>.536</td>
<td>.217</td>
<td>-.484</td>
<td>1.2</td>
</tr>
<tr>
<td>ST LEV</td>
<td>370</td>
<td>.128</td>
<td>.183</td>
<td>-.218</td>
<td>.945</td>
</tr>
<tr>
<td>LT LEV</td>
<td>370</td>
<td>.12</td>
<td>.181</td>
<td>-.349</td>
<td>1.82</td>
</tr>
<tr>
<td>SIZE</td>
<td>370</td>
<td>7.515</td>
<td>.466</td>
<td>6.139</td>
<td>8.797</td>
</tr>
<tr>
<td>SG</td>
<td>370</td>
<td>-.054</td>
<td>3.564</td>
<td>-68.204</td>
<td>1.303</td>
</tr>
<tr>
<td>CR</td>
<td>370</td>
<td>1.623</td>
<td>.961</td>
<td>.129</td>
<td>6.388</td>
</tr>
<tr>
<td>TANG</td>
<td>370</td>
<td>.556</td>
<td>.366</td>
<td>.001</td>
<td>1.94</td>
</tr>
</tbody>
</table>

Table 4.1 illustrates the statistical summary of the data. The average ROA ratio of non-financial companies is 0.175, and the minimum and maximum ROA are -.437 and 1.302. In addition, the average value of ROE is 0.283, while 4.139 and -1.585 is maximum and minimum value. The results show that the average value of leverage is 0.536, the minimum and maximum values are -.484 and 1.2 respectively, while the average value of short-term leverage is 0.128, and its minimum and maximum values are -.218 and 0.945, respectively. Financial companies use low debt, while others use very high debt ratios to finance themselves. The results also show that the average size value expressed in natural logarithm is 7.515, the maximum value is 8.797, and the minimum value is 6.139. Current ratio has mean value of 1.62 which shows the average payment of current liability which is cover by current assets of sample firms, while CR has maximum value of 6.388 and its minimum value is 0.129 which shows the trend while the standard deviation shows the fluctuation of data, while sales growth of selected sample which is calculated by annual sales growth shows a negative trend and decline of -5%. While the average mean value of tangibility is .566 and it has utmost value of 1.94 and least values of .001 respectively.

### Matrix of Correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) ROA</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) ROE</td>
<td>0.468</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) LEV</td>
<td>-.352</td>
<td>.063</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) ST LEV</td>
<td>-.405</td>
<td>-.234</td>
<td>.220</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) LT LEV</td>
<td>-.251</td>
<td>-.072</td>
<td>.147</td>
<td>.180</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) SIZE</td>
<td>-.272</td>
<td>-.099</td>
<td>.214</td>
<td>.064</td>
<td>.114</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) SG</td>
<td>.065</td>
<td>.072</td>
<td>-.064</td>
<td>-.001</td>
<td>.027</td>
<td>-.025</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8) CR</td>
<td>.286</td>
<td>-.011</td>
<td>-.745</td>
<td>-.258</td>
<td>-.248</td>
<td>-.104</td>
<td>.036</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>(9) TANG</td>
<td>-.237</td>
<td>-.131</td>
<td>-.041</td>
<td>.019</td>
<td>.312</td>
<td>.025</td>
<td>.015</td>
<td>-.171</td>
<td>1.000</td>
</tr>
</tbody>
</table>
Table 4.2 reports the correlation matrix between the variables. Lev and ROA are negatively correlated. It is positively correlated with ROE. The LTD ratio was significantly negatively correlated with ROA, negatively correlated with ROE, and STD ratio was negatively correlated with ROA. Because it has a significant negative correlation with ROE. Turning to control variables, as expected, SG is significantly positively correlated with ROA and ROE, and the current ratio is positively correlated with ROA. CR and ROE are significantly negatively correlated. Although tangibility is not significantly negatively correlated with ROA, it is negatively correlated with ROE. Finally, it is interesting that company size is negatively correlated with ROA but not statistically significant, while size and company performance measured by ROE are statistically negatively correlated. Finally, the table below shows the Collinearity between the explanatory variables of the model that passed the VIF test.

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Result of Fixed Effect Model</th>
<th>Result of Random Effect Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Co-efficient</td>
<td>T-value</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.271</td>
<td>-5.05</td>
</tr>
<tr>
<td>ST LEV</td>
<td>-0.065</td>
<td>-1.22</td>
</tr>
<tr>
<td>LT LEV</td>
<td>-0.019</td>
<td>-0.50</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.135</td>
<td>-3.02</td>
</tr>
<tr>
<td>SG</td>
<td>0.001</td>
<td>0.80</td>
</tr>
<tr>
<td>CR</td>
<td>-0.007</td>
<td>-0.58</td>
</tr>
<tr>
<td>Tang</td>
<td>-0.052</td>
<td>-0.95</td>
</tr>
<tr>
<td>Constant</td>
<td>1.386</td>
<td>3.96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fitted Model</th>
<th>Random Effect Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hausman Test (P-value)</td>
<td>Hausman (1978) specification test</td>
</tr>
<tr>
<td></td>
<td>Coef.</td>
</tr>
<tr>
<td></td>
<td>Chi-square test value</td>
</tr>
<tr>
<td></td>
<td>P-value</td>
</tr>
<tr>
<td>Observation</td>
<td>370</td>
</tr>
<tr>
<td>R-square</td>
<td>17.3%</td>
</tr>
<tr>
<td>F-test value (P-value)</td>
<td>8.570 (0.000)</td>
</tr>
</tbody>
</table>

Table Variance inflation Factor

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>2.582</td>
<td>.387</td>
</tr>
<tr>
<td>LEV</td>
<td>2.526</td>
<td>.396</td>
</tr>
<tr>
<td>TANG</td>
<td>1.199</td>
<td>.834</td>
</tr>
<tr>
<td>LT LEV</td>
<td>1.191</td>
<td>.839</td>
</tr>
<tr>
<td>ST LE</td>
<td>1.095</td>
<td>.914</td>
</tr>
<tr>
<td>SIZE</td>
<td>1.07</td>
<td>.935</td>
</tr>
<tr>
<td>SG</td>
<td>1.006</td>
<td>.994</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>1.524</td>
<td></td>
</tr>
</tbody>
</table>

Table Relationship of Independent Variables with ROA.
Table 4.4 indicates that that Lev has significant negative relationship with FL measured by ROA, as indicated by the beta vale of (-0.262) significance value of (0.000<0.05). This means that a unit increase
in financial leverage reduces FP by 0.26 units’ financial leverage has an adverse effect on FP of non-financial firms listed at the PSX. Short term leverage has co-efficient of -0.153 and individual t statistics has a value of -3.38 which means that short term leverage has negative and significant effect on firm FP measured by ROA, meanwhile long term leverage has coefficient of 0.048 and individual t statistics value is -1.35 which means that LT leverage negative and insignificantly effect FP, as turning to control variables Size has a coefficient of -0.094 and individual t statistics value is -3.75 which means that Size has negative but significant effect on firm FP on selected sample, which portrays that a unit change in firm Size 0.09% decrease will occur in selected non-financial firms. Sales growth has positive but insignificant effect on firm financial performance, meanwhile if we look at the Current ratio it has co-efficient of 0.199 and individual t statistics has value of -1.22 which means that CR has negative and significant effect on performance on selected sample, which means that a unit increase in CR will bring 0.07% decrease in ROA. Tangibility has coefficient of -0.077 and individual t statistics has value of -2.52 which means that tangibility has negative and significant effect on firm FP, one unit change in fixed assets to total assets will cause 0.07% change in ROA. Moreover, this revision has explanatory power of 30.5% which means that ROA is that much explained by independent and control variables in selected non-financial firm, moreover overall model is statistically significant on the basis of F-test value and on the recommendation of Hausman test P-value (.126>0.05) REM is fitted for this study.

Table 4.5 indicates that Lev has significant positive relationship with FP measured by ROE, indicated by the beta value of 0.445 significance value of (0.013<0.05). This means that a unit decreases in financial leverage will increase FP, ROE by 0.44% financial leverage has direct effect on FP measured by ROE of non-financial firms listed at the PSX. Short term leverage has co-efficient of -0.574 and individual t statistics has a value of -3.67 which means that short term leverage has negative and significant effect on firm FP measured by ROE, meanwhile long term leverage has coefficient of 0.033 and individual t statistics value is 0.23 which means that long term leverage has positive and insignificant effect on FP measured by ROE, as turning to control variables Size has a coefficient of 0.119 and individual t statistics value is -1.71 which means that Size has negative but insignificant effect on firm FP on selected sample, which portrays that a unit change in firm Size 11.9% decrease will occur
in selected non-financial firms. Sales growth has positive but insignificant effect on firm financial performance, meanwhile if we look at the Current ratio it has coefficient of 0.019 and individual t statistics has value of 0.47 which means that CR has positive and insignificant effect on performance on selected sample, which means that a unit decrease in CR will bring 0.019% increase in ROE. Tangibility has coefficient of -0.077 and individual t statistics has value of -0.85 which means that tangibility has negative and insignificant effect on firm FP, one unit change in FA to TA will cause 0.077% change in ROE.

Moreover, this revision has explanatory power of 13% which means that ROE is that much explained by independent and control variables in selected non-financial firm, moreover overall model is statistically significant on the basis of F-test value and on the recommendation of Hausman test P-value (.095>0.05) Random Effect Model is fitted for this revision.

**Conclusion**

This study use the panel data observations of Pakistan’s listed companies from 2013 to 2017. This study examines the impact of FL debt maturity structure on CF. The performance measurement standards are (ROA), (R0E). The standard for Firms Leverage are total leverage, short-term leverage, and long-term leverage. In addition, the control variables are size, current ratio, sales growth, and tangibility.

Studies have shown that FL has significantly and negatively persuaded the FPs of non-financial companies listed on PSX. This study concluded that financial leverage has an adverse effect on PF, so non-financial companies listed on PSX should use the best debt level to ensure that their PF is maximized. In addition, it has a positive and significant impact on financial performance as measured by ROE, while Size has a negative and insignificant impact on FP. Sales growth has a positive but insignificant impact on financial performance. CR has insignificant but constructive and unconstructive effect on FP; tangibility has significant unconstructive but insignificant and unconstructive effect on corporate financial performance. Based on concluding remarks this study suggests that the company needs to use an optimal capital structure or pro rata to maximized their firm performance. Higher debt ratio can result catalytic increase in R0E by regulating capital structure to lower the debt ratio, enlighten with this revision it also supports the theoretical model which is developed by Scott (1976), he argued that when there is imperfect market, there exist an optimal level of capital structure for firm. The above results are consistent with the previous finding Olayinka and Taiwo (2012), Akbarian (2013), Barakat (2014), Raza (2013), Muturi and Ngugi (2015), they argued that FL had unconstructive and significant effect on CFP.

**Limitation and Direction for Future Research**

This study only obtained complete data of 74 non-financial companies from the target population of KSE -100 listed companies. Therefore, the survey results are based on sampled companies and may not be applicable to companies that have not obtained data. In addition, the survey results are based on listed companies. Therefore, we can also take PSX listed financial companies as an example to examine the impact of FL on FP. Therefore, we can further study the impact of operating leverage on the PF of non-financial companies listed on the Pakistan Stock Exchange. This study only uses data tables from 2013 to 2017. In addition, although company age and liquidity (a measure of cash and cash equivalents) can also be used as control variables, the study can also be completed by using a larger sample size to check the effect.

**References**


Impact of Demographic Variables on Economic Growth in South Asian Countries: A Panel Data Analysis

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ARTICLE DETAILS

Purpose: The present study estimates the impact of important demographic variables upon the economic growth in the selected four South Asian countries. These countries are Bangladesh, India, Pakistan and Sri-Lanka.

Design/Methodology/Approach: The fully modified ordinary least square method is used to estimate the relationship among demographic variables and economic growth. Fertility rate and life expectancy are used as demographic variables whereas GDP is used to indicate the economic growth.

Findings: Results explain that life expectancy and total fertility rate have significant impact upon the economic growth in case of these four selected South Asian countries. For example, one unit increase in total fertility rate depresses the economic growth by 0.106 units. However, economic growth is accelerated by 0.196 units due to one year increase in life expectancy.

Implications/Originality/Value: It is recommended to policy makers to concentrate on the health issues of the people as life expectancy has positive impact on the economic growth. Further, it is inevitable to lower down the fertility rate to achieve economic growth in these countries.

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Introduction

Economic growth is based on multiple factors and their interconnections with each other. Land, labor, capital and organization are prime mover of economic growth in traditional economic theories. However, technological innovations and demographic transition has changed the production functions over time (Abdullah et al, 2015). Exchange rate, financial crises and investment are important determinants of economic growth (Manuk et al, 2015). Pravakr et al. (2008) emphasize that infrastructure is another important factor to affect the economic growth. Eggleston and Fuchs (2012) describe that life expectancy outcome into extended working and enhance economic growth. The age-
structure has positive impact on economic growth (Choudhry & Elhorst, 2010 and Uddin et al., 2016). The significance of population demography in determining the economic growth is consequential (Gideon et al. 2013). Economic and population growth nexus has three views. These views consider with special reference to negative population growth impact, positive population growth impact and indifferent population growth impact (Musa, 2015). However, analyzing the population economic growth nexus the two demographic natural variables i-e fertility rate and mortality are the decisive factors (Labran Hamza, 2015).

Total fertility and mortality rates are the intrinsic demographic variables. The declining trends in fertility and mortality are observed in USA. The decline in mortality rate is observed initially and then the fertility transition was occurred (Warran Thompson, 1929). Demographic transition is a process in which a country progress from backward agricultural economy to a modern state when a transition occur from high fertility to low fertility and low mortality (Dudley Kirk, 1996). Continual variation in the total fertility and mortality is characterized as demographic dynamics. Due to this continuous change in fertility and mortality rates, the dissemination in population growth across different age group is observed (Misbah Tanveer Choudhry, 2010).

The transition in birth and death rates are observed by Warran Thompson (1929) and this transition is described as demographic transition. The demographic transition process is a multi-step process and completes in four stages characterizing with different demographic features with eminent social, economic and educational impacts. Different countries are passing from different stages of demographic transition (Khalid et al, 2015). High mortality & fertility rates in Afghanistan and Angola, high fertility and low mortality rates in African regions; low mortality & fertility in South and East Asian regions and fertility below replacement level in Japan are observed. These rates are associated with four stages of demographic transition respectively. Further, the highly developed nations are in the fourth stage whereas developing world is in stage 2 and 3 of demographic transition (Khalid et al, 2015).

South Asian countries are passing through the demographic transition with population changing structure with productive population (15-64) as a prominent age group. India contributes 76 per cent in South Asian population. Pakistan’s share in total South Asian population is 11 percent and Bangladesh share is nine percent (United Nations, 2009). Nepal and Sri-Lanka’s population share in total South Asia’s population is very low and it is two per cent and one per cent respectively during 2000-2012.

Due to fertility transition, population changing structure among different age groups is an indispensible determinative factor for economic and productivity growth. The bulging productive population relative to the dependent population is the demographic transition consequence. This expanded working age population share resulting in prospective opportunity of rapid economic growth and such type of opportunity is known as demographic dividend. Demographic transition affects the economic growth through increasing labor supply, physical capital, human resource investment, labor productivity and savings (Misbah Tanveer Choudhry, 2010). Due to systematic diversity and institutional differences, demographic dividend and benefits differs across the countries. Best policy environment in the economy is required to avoid the failure of demographic dividend prospect.

Population changing structure is observed as fertility decline due to fertility transition. During demographic dynamic, young dependency ratio (0-14), productive population ratio (15-64) and the old dependency ratio (65+) become the important determinants of economic growth. During the demographic dynamic, the labor supply increases due to the high ratio of productive population (15-64) which required the essential educational policy structure and labor market reforms to increase the absorbing capacity of the labor market (Misbah Tanveer Choudhry, 2010). The demographic transition process and its out turn on the population changing distribution of a country is a significant and comprehensive for the economy. The demography of an economy provides best perception in the policy formulation to cash projects for future planning. Demographic transition process can support the
creation of best policy structure for achieving the supreme gains from demographic dividend. The accelerated economic growth is associated with demographic dividend while the depressed economic growth is related with demographic debt during demographic transition. Similarly, population changing structure is a factor of economic growth; however, it needs proper investment in education and job creation which will minify the economic challenges. We have examined the impact of demographic variables on economic growth in four South Asian countries in this study.

**Review of Literature**

Sher et al (2013) estimate the impact of population upon economic growth in Pakistan for the period 1975-2014 using ARDL approach. They included human resource development and term of trade as control variables in the econometric model and found that their impact is positive upon economic growth in Pakistan. In case of India, Musa (2015) concludes that population growth has a positive impact on economic growth during the time period 1980-2013. He explains that urbanization, population growth and employment are the major determinants of GDP in Indian.

Shahjahan et al (2015) and Abdullah et al (2015) test the Malthusian pessimistic population theory in Bangladesh and supported Malthusian view empirically. Shahjahan et al (2015) estimate a negative impact of population upon economic growth in Bangladesh. It proves Malthusian pessimistic population theory in most developing countries like Bangladesh. It is due to insufficient dynamic labor market, decreasing ratio of productive population, vicious circle of poverty and absence of sustainable development in Bangladesh. Abdullah et al (2015) observe the increasing population growth trend in Bangladesh during 1980-2005 and estimate the impact of increasing trend of population on economic growth. It is concluded that 1.87 per cent decline in economic growth occurs due to one per cent increase in population in Bangladesh. This again supports Malthusian school of thought in Bangladesh.

Menik et al (2014) exercise the effect of demographic transition process on economic development in Sri-Lanka for the time period from 1963 to 2007. Infant mortality rate and population growth rate are taken as demographic variables to estimate their impact on economic growth. They conclude that a unit increase in population growth leads to two units increase in GDP and GDP rate is depressed by 0.074 per cent due to one unit increase in infant mortality rate. However, one per cent increase in labor force assists the economic growth by 0.138 per cent.

Quamrul et al (2013) explain the fertility reduction effect on economic growth in Nigeria during 2010. They observe 0.5 per cent declining trend in fertility rate in Nigeria and this reduction in fertility rate accelerates the GDP per capita by 11.9 per cent. They conclude that fertility reduction accelerates economic growth and reduce the poverty in Nigeria. Further, it reduces the child dependency ratio which stimulated the domestic savings and investment. The reduction in fertility is also associated with human development by approving the better education and health facilities.

Jacob et al. (2016) explore the association between population growth and economic growth in 30 populated countries in the world for time period (1960-2013) in the long run period. They find that population growth and economic growth are co-integrated. Kremer’s idea that population growth positively act as an agitator to economic growth in long run is confirmed in his study. Temitope et al (2013) find the population dynamic impact on economic growth in 35 African regions during 1970-2005. Mortality and fertility rates are used as demographic variables. The results explain that fertility rate has a negative impact on economic growth while mortality put positive impact on economic growth. High fertility and the associated negative impact of population growth put pressure on infrastructure, better education facilities became scarce, health and housing facilities provide limited access for major population portion with low per capita income enhanced the social and economic problems in Africans regions. To gain quick progress in 35 African countries, an instant reduction in fertility is pre-requisite.

Labran Hamza (2015) confirms the interdependence between population and economic growth by taking
the panel data in 30 developing regions of Asia, Africa and Latin America using panel co-integration technique. Sandip et al (2016) explore the interrelationship between urban population and economic growth in South Asian countries by incorporating the GDP as dependent variable while urban population as independent variable during 1980-2014 with panel co integration. The included South Asian countries are India, Pakistan, Bhutan, Nepal, Sri-Lanka and Bangladesh. Results find the long run relationship between economic growth and urban population growth. Further, the long run causality is found from urban population growth to GDP. Sijia Song (2013) explains the impact of demographic changes on economic growth in 13 Asian countries (East, South and Southeast Asian regions) during 1961 to 2009. It is concluded that one per cent increase in total population depress the economic growth by 1.707 per cent and one per cent increase in working age population lead to economic growth by 1.264 per cent. Furthermore, one percent increase in young dependency ratio depresses the economic growth by 0.53 per cent and one percent increase in old dependency ratio lead to 0.217 per cent increase in economic growth in these countries. Finally, one per cent increase in productive population accelerates the economic growth by 1.457 per cent.

**Data and Methodology**

To study the impact of demographic variables upon the economic growth of South Asian Countries, balanced panel data of GDP growth, total fertility rate, life expectancy and gross capital formation for the period 1976-2017 from World Bank database is used. The description of variables is given below:

**Gross Domestic Product Growth**

The gross domestic product growth is used as the dependent variable. The manufacturing of final goods and services in specific time period with the utilization of different factors of production with in a country is called gross domestic product (GDP). Within country its calculation is based on local currency and market prices while at aggregate level its calculation is based on US dollar. Its growth is based on annual percentage.

**Total Fertility Rate**

It is an important, core and natural demographic variable. This natural demographic variable change the entire population structure in an economy and it is inserted as an independent variable in this study. Total fertility rate is the total number of children birth by a woman during childbearing years but with the condition if she lives until the end of her childbearing life. The decline in fertility rate is responsible factor behind the first demographic dividend.

**Life Expectancy**

The second demographic variable included in this study is life expectancy at birth. Life expectancy at birth signifies the total number of years in which a new baby born will survive. Life expectancy is the existence of human capital in an economy in form of health. So this explanatory variable not only treated as natural demographic variable but also the representative factor of second demographic dividend.

**Gross Capital Formation**

Gross capital formation is included as a control variable in the panel model. It is also called as gross domestic investment. It is the disbursement on fixed assets and also incorporating the expenditures on changing level of inventories including stock of goods produced by the firms to meet the short term and unpredicted variations in the production and sale.

**Methodology**

The objective of this study is to determine the impact of demographic variables upon economic growth in case of panel co-integration and long run relationship. Co-integration analysis in panel context is conducted using three steps. In first step, the order of integration in the fertility rate, life expectancy, GDP growth and gross capital formation is identified using the panel unit root tests. In the second step,
Panel co-integration is applied to find the long relationship among fertility rate, life expectancy, gross capital formation and gross domestic product. Thirdly, the long run parameters are estimated by applying the panel FMOLS estimators. The logical investigation behind applying the modern panel approaches is that these non-stationary panels have intense significance in empirical research over several years. Panel unit root test are briefly described in the following lines.

**Panel Unit Root Tests**

In LLC test, we run ADF for cross-sections, run two auxiliary regressions and the standardization of residuals. Finally we run the pooled OLS regression of this form \( \hat{\beta}_t = \rho \hat{\beta}_{1,t} + \epsilon_t \) and null hypothesis is \( \rho = 0 \). Further the LLC test will valid in case when \( T \) lies between 5 and 250 and \( N \) lies between 10 and 250 for small \( T \) the LLC test will lose the test power. The LLC test is restrictive in the sense that all cross-sections have unit root.

Im, Pesaran and Shin test is flexible than LLC as heterogeneous coefficients are allowed in this test. The null hypothesis is that all individual follow a unit root process rather than a cross-section and the alternative hypothesis allow that not all but some of the individual have unit-root. Unlike Levin, Lin and Chu test IPS test is not restrictive with respect to time period \( T \) and cross-section \( N \).

Fisher-PP test is based on \( P \) value which derived from unit-root-tests for each cross-section. The Fisher-PP test approaches to chi-square distribution with \( 2N \) degree of freedom with \( T \to \infty \) with finit \( N \). The beneficial aspect of Fisher-PP test over other tests it can be applicable for unbalanced panel data. So Fisher-PP test is more superior to LLC and IPS due to its application in unbalanced panel.

In 1932, Fisher developed the ADF Fisher \( \chi^2 \) test and in 1999 Maddala and Wua preferred this test statistics. The test statistics is non-parametric and having the properties of chi-square distribution. The following form of test statistic is used. \( \lambda = -2 \sum^{N}_{i=1} \log e_i \). Here \( \prod i \) represents the \( p \)-value of test statistic in terms of unit \( i \).

**Panel Co-integration**

The panel co-integration is introduced by Pedroni (1999). Consider given equation to explain panel co-integration. \( y_{it} = a_i + \beta_{i1} x_{1i,t} + \beta_{i2} x_{2i,t} + \ldots + \beta_{Im} x_{Mi,t} + e_{i,t} \). Where \( t = 1 \ldots T; \ i = 1 \ldots N; \ m = 1 \ldots M \). Here \( T \) is number of observations and \( N \) is number of cross-sectional units. Here \( T \) is 42 years from 1976-2017 and \( N \) is four cross-sectional units in the panel and these are four countries. While \( M \) represents the number of explanatory variables and \( y_i \) is the dependent variable. \( a_i \) is the fixed effect parameters which vary across each cross sectional units while \( \beta_{i1} \) to \( \beta_{Mi} \) are the slope co-efficient’s for Pakistan, India, Bangladesh and Sri-Lanka. Pedroni (1999 & 2004) proposes two sets of statistics for panel co-integration. The first test statistic is based on the within-dimension approach and second is based upon the between dimension approach which include three statistics.

In 1998, kao used the average of ADF test statistics to test the hypothesis of no co-integration. McCoskey and kao suggest the ADF test with flexible approach in this sense that it allow to varying slopes and intercepts across cross-sections.

**Panel Co-Integration Estimation**

For estimating the panel co-integration parameters a number of methods have been developed but the most prominent and modern panel approach is Fully-Modified-Ordinary-Least-Squares (FMOLS). In the presence of stationary time series by applying the traditional panel approaches panel OLS, random effect and fixed effect may produce spurious results. To eradicate this problem of spurious results FMOLS incorporated to verify the long run relationship between variables. FMOLS is non-parametric and it overcomes the problem of endogeneity of the explanatory variables and auto-correlation of the residuals. The condition of running the FMOLS is that the data series should non-stationary and it must be stationary after taking the first difference and data series should be co-integrated after applying the panel
co-integration tests. Then the long run relationship between variables must be identified by applying the \( FMOLS \) to avoid spurious results.

In analyzing the impact of demographic variables on economic growth in selected South Asian countries the following panel model is designed by incorporating the \( i \) and \( t \) as sub-script for each cross-sectional units and time period.

\[
GDP_{it} = \beta_1 + \beta_2 FRT_{it} + \beta_3 LFE_{it} + \beta_4 GCF_{it} + \mu_{it}
\]

Where: GDP is Gross-Domestic-Product and is dependent variable. The independent variables are; FRT is Total Fertility Rate, LFE is Life Expectancy at Birth and GCF is Gross-Capital-Formation and used as a control variable.

Results and Discussion

Table 1 explains that GDP is stationary at first difference; however, it is found non-stationary at level. It is described that these results are significant at five per cent level of significance.

<table>
<thead>
<tr>
<th>Method</th>
<th>At Level</th>
<th>At First Difference</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T-Statistic</td>
<td>P-Value</td>
<td>T-Statistic</td>
</tr>
<tr>
<td>LLC</td>
<td>92.116</td>
<td>1.000</td>
<td>-107.972</td>
</tr>
<tr>
<td>IPS</td>
<td>1.9576</td>
<td>0.974</td>
<td>-92.247</td>
</tr>
<tr>
<td>ADF-Fisher ( \chi^2 )</td>
<td>1.5673</td>
<td>0.991</td>
<td>533.256</td>
</tr>
<tr>
<td>PP-Fisher ( \chi^2 )</td>
<td>890.07</td>
<td>0.000</td>
<td>1053.56</td>
</tr>
</tbody>
</table>

Source: Author’s Own Calculations

Table 2 explains that FRT is non-stationary at level but stationary at first difference. The null hypothesis that FRT having unit root is rejected at 5% level of significance against the alternative hypothesis that FRT have no unit root because probability value is less than 5% for all panel unit-root tests. The results based on Automatic-Lag-Selection named SIC Schwarz-Info-Criterion. By comparing the probability value with the level of significance and concluded that the variable FRT is stationary on first difference I(1) not on level.

<table>
<thead>
<tr>
<th>Method</th>
<th>At Level</th>
<th>At First Difference</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T-Statistic</td>
<td>P-Value</td>
<td>T-Statistic</td>
</tr>
<tr>
<td>LLC</td>
<td>12.406</td>
<td>1.000</td>
<td>-35.556</td>
</tr>
<tr>
<td>IPS</td>
<td>-0.8404</td>
<td>0.200</td>
<td>-43.963</td>
</tr>
<tr>
<td>ADF-Fisher ( \chi^2 )</td>
<td>10.402</td>
<td>0.237</td>
<td>79.435</td>
</tr>
<tr>
<td>PP-Fisher ( \chi^2 )</td>
<td>115.38</td>
<td>0.000</td>
<td>73.682</td>
</tr>
</tbody>
</table>

Source: Author’s Own Calculations

Table 3 explains that the variable LFE is likewise stationary at first difference. The results are based on five per cent level of significance.

<table>
<thead>
<tr>
<th>Method</th>
<th>At Level</th>
<th>At First Difference</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T-Statistic</td>
<td>P-Value</td>
<td>T-Statistic</td>
</tr>
<tr>
<td>LLC</td>
<td>198.612</td>
<td>1.000</td>
<td>-97.063</td>
</tr>
<tr>
<td>IPS</td>
<td>-0.4531</td>
<td>0.325</td>
<td>-79.241</td>
</tr>
<tr>
<td>ADF-Fisher ( \chi^2 )</td>
<td>6.461</td>
<td>0.595</td>
<td>269.224</td>
</tr>
<tr>
<td>PP-Fisher ( \chi^2 )</td>
<td>724.441</td>
<td>0.000</td>
<td>899.081</td>
</tr>
</tbody>
</table>

Source: Author’s Own Calculations
Similarly, the results in table 4 explain that GCF is not found stationary at level. However, GCF is stationary at first difference. The level of significance is five per cent.

### Table 4: Panel Unit-Root Test for GCF

<table>
<thead>
<tr>
<th>Method</th>
<th>At Level</th>
<th></th>
<th>At First Difference</th>
<th></th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T-Statistic</td>
<td>P-Value</td>
<td>T-Statistic</td>
<td>P-Value</td>
<td>Integration</td>
</tr>
<tr>
<td>LLC</td>
<td>320.034</td>
<td>1.000</td>
<td>-599.064</td>
<td>0.000</td>
<td>I(1)</td>
</tr>
<tr>
<td>IPS</td>
<td>0.1294</td>
<td>0.551</td>
<td>-298.306</td>
<td>0.000</td>
<td>I(1)</td>
</tr>
<tr>
<td>ADF-Fisher $\chi^2$</td>
<td>3.8198</td>
<td>0.873</td>
<td>266.408</td>
<td>0.000</td>
<td>I(1)</td>
</tr>
<tr>
<td>PP-Fisher $\chi^2$</td>
<td>260.924</td>
<td>0.000</td>
<td>390.618</td>
<td>0.000</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: Author’s Own Calculations

All the panel unit root tests (named Levin Lin & Chu, Im, Pesaran & Shin, ADF-Fisher $\chi^2$, PP-Fisher $\chi^2$) results showing that the variables GDP, FRT, LFE and GCF are stationary at first difference. The dataset is appropriate for further panel co-integration analysis. Table 5 explains the results of Pedroni Panel Co-integration Test.

### Table 5a: Pedroni Panel Co-integration Test (Within Dimension)

<table>
<thead>
<tr>
<th></th>
<th>T-Statistic</th>
<th>P-Value</th>
<th>Weighted T-Statistic</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-Statistic</td>
<td>-1.655</td>
<td>0.951</td>
<td>-1.484</td>
<td>0.931</td>
</tr>
<tr>
<td>Rho-Statistic</td>
<td>-8.4042</td>
<td>0.000</td>
<td>-4.675</td>
<td>0.000</td>
</tr>
<tr>
<td>PP-Statistic</td>
<td>-15.495</td>
<td>0.000</td>
<td>-14.567</td>
<td>0.000</td>
</tr>
<tr>
<td>ADF-Statistic</td>
<td>1.3618</td>
<td>0.9134</td>
<td>0.2849</td>
<td>0.6122</td>
</tr>
</tbody>
</table>

Source: Author’s Own Calculations

### Table 5b: Pedroni Panel Co-integration Test (Between Dimensions)

<table>
<thead>
<tr>
<th></th>
<th>T-Statistic</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rho-Statistic</td>
<td>-4.2130</td>
<td>.0000</td>
</tr>
<tr>
<td>PP-Statistic</td>
<td>-17.4976</td>
<td>.0000</td>
</tr>
<tr>
<td>ADF-Statistic</td>
<td>1.0737</td>
<td>.8585</td>
</tr>
</tbody>
</table>

Source: Author’s Own Calculations

Table 6 exhibits that null hypothesis of no co-integration against the alternative hypothesis of existing co-integration at 5% level of significance is rejected. The probability value is 0.041 which is less than 5%. We concluded that Kao panel co-integration test exhibits that there exist co-integration among the variable GDP, FRT, LFE and GCF. The pedroni and kao panel co-integration test results in table 5 and table 6 based on Automatic-Lag-Selection based on AIC.

### Table 6: Kao Panel Co-integration Test

<table>
<thead>
<tr>
<th></th>
<th>T-Statistic</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF</td>
<td>1.73</td>
<td>0.041</td>
</tr>
<tr>
<td>Residual variance</td>
<td>5.48</td>
<td></td>
</tr>
<tr>
<td>HAC variance</td>
<td>0.50</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author’s Own Calculations

**Panel Fully-Modified-Ordinary-Least-Squares (FMOLS)**

The data analysis in panel unit-root and panel co-integration exhibited that all variables are of integrated order I(1) and panel co-integration approach indicated that GDP, FRT, LFE and GCF are co-integrated in long run. This panel unit-root and panel co-integration analysis exhibited that the dataset is appropriate for further FMOLS analysis in order to obtain the long-run and efficient estimates. So we precede the analysis by applying the FMOLS because the pre-requisite conditions for applying the FMOLS have fulfilled. These pre-requisite conditions are reproduced.
• The variables must stationary at first difference I(1). The panel unit-root tests empirically indicate that GDP, FRT, LFE and GCF are I (1).
• The variables must be co-integrated in long run. The pedroni and kao panel co-integration approach empirically exhibited that dependent variable GDP and independent variables FRT, LFE and GCF are co-integrated in the long-run.
• For applying the FMOLS two important conditions have empirically proved so the long-run estimates have obtained in this panel study by applying the panel FMOLS approach.
• The FMOLS become efficient estimates for panel data. This study consists of panel study by incorporating the four cross-sections Pakistan, India, Bangladesh and Sri Lanka.

FMOLS identifies the long run relationship among the dependent and independent variables. So by applying the FMOLS the long-run relationship among GDP, FRT, LFE and GCF is identified.

The results of FMOLS estimators are given in table 7.

<table>
<thead>
<tr>
<th>Variables</th>
<th>FMOLS Estimators</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRT</td>
<td>-0.106</td>
<td>0.000</td>
</tr>
<tr>
<td>LFE</td>
<td>0.196</td>
<td>0.010</td>
</tr>
<tr>
<td>GCF</td>
<td>0.023</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Author’s Own Calculations
5% level of Significance

Results explain that the life expectancy and gross capital-formation have positive impact on GDP growth and this impact is significant. However, it is found that fertility rate negative related with economic growth of these countries. It means that fertility rate and life expectancy are significant demographic variables and have impact on the economic growth. It is concluded that fertility rate, life expectancy and gross capital formation are the long run determinants of economic growth in South Asian countries.

**Conclusion and Policy Recommendations**

The study estimates the long run impact of demographic variables upon economic growth in four south Asian countries Bangladesh, India, Pakistan and Sri Lanka with panel data for the period 1976-2017. Panel unit root tests of LLC, IPS, ADF-Fisher \( \chi^2 \) test and Fisher-PP \( \chi^2 \) test are used to find the order of integration of each variable. Pedroni and kao panel co-integration is applied to test the long relationship among the variables and long run parameters are estimated by applying the panel FMOLS estimators. Total fertility rate, life expectancy and gross-capital-formation have significant impact on economic growth in these selected south Asian countries. Total fertility rate has negative and significant impact on economic growth. Life expectancy has positive and significant impact on economic growth. Further, positive impact of gross-capital-formation on economic growth is empirically verified in these selected south Asian countries.

The empirical evidences show that the fertility rate has negative impact on economic growth in these four south Asian countries. For achieving the economic development in south Asian countries, it is inevitable to lower the fertility rate in these four countries. Due to high fertility rate, there is huge economic burden on the productive population (15-64) although this productive population is in bulge in these south Asian countries. But this working age population (15-64) is facing the serious economic challenges (unemployment and underemployment). Government is also suggested to concentrate on the health issues of the people as life expectancy is found to have positive impact on the economic growth. Healthy people are able to contribute in economic growth of country.
References


Wesleyan University Economics Department. 1-35.