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EDITOR’S INTRODUCTION

John Walsh, Editor, SIU Journal of Management.

Welcome to the SIU Journal of Management, which is an academic journal aiming to uphold rigorous standards of academic inquiry in the field of management, broadly defined. In this issue of the SIU Journal of Management, I am pleased to be able to include four double-blind peer-reviewed research papers, in addition to the regular book reviews and conference report. Once again, this journal’s commitment to publishing papers from across the developing world is reinforced with papers here coming from Bangladesh, Nigeria and Pakistan.

In the first paper, “Impact of Corporate Governance Attributes on Intellectual Capital Disclosure: Evidence from Listed Banking Companies in Bangladesh,” authors Swadip Bhattacharjee, Shimul Chakraborty and Sumon Bhattacharjee consider the issue of intellectual capital disclosure (ICD) among listed companies in Bangladesh. They find that board size and size of audit committee are important attributes in explaining ICD issues in Bangladesh. However, the study finds no significant association between ICD and other variables like number of independent directors on the board, frequency of board meetings and ownership concentration.

In the second paper, Aaron Olalekan Akinloye, Olufemi Adegbesan and Mary Sam-Odutola being a two-part empirical investigation into the possibilities of encouraging tobacco smoking cessation (TSC) among university students in Nigeria. The first paper is entitled “Effects of Socio-Cognitive Techniques on Tobacco Smoking Cessation Among Undergraduates in Selected Public Universities in South-West Nigeria.” The study concluded that TS is still prevalent among undergraduates despite all efforts made thus far. It is, therefore, recommended that agencies in TSC should employ the use of the socio-cognitive technique as adjunct and the strategy should be
adopted in the university to identify undergraduate smokers early and help them quit the habit since it is easier to stop when one is a beginner; laws should be promulgated on the ban of TS in public places; agencies involved in anti-tobacco smoking should intensify efforts towards TSC education in Nigeria and TSC education should be included as a topic in the general studies.

In the second part of the exploration, Aaron Olalekan Akinloye, Mary Sam-Odutola and Adetoun Akinwusi investigate “Physical Activity Intervention Effects on Tobacco Smoking Cessation among University Students.” It is found that physical activity intervention was empirically effective in quitting tobacco smoking among university students. Health care providers involved in anti-tobacco smoking cessation education should expose university undergraduate smokers to this intervention.

Finally, Suleman Anwar, Ayesha Ramzan Butt, Eliane Bragança de Matos and Muhammad Kashif report on empirical research into “The Adoption Intentions of Smartphones among Young Consumers: Diffusion of Innovation Theory Perspective.” Based on this research, the authors ambitiously challenge the well-known diffusion of innovation theory and, through structural equation modelling, propose their own framework.

In addition to these research papers, three book reviews and a brief report on a conference held here at our graduate campus in Bangkok complete this issue of the journal. This journal now enters its eighth consecutive, uninterrupted year of publication. This internal consistency is not matched by the situation in the country in which we live, where inconsistency of events has not been positive. Currently, there is very little hope of any improvement in conditions.

Opinions expressed in this introduction belong to the editor alone and should not be ascribed to Shinawatra University as a whole or any individual member of it.
PEER REVIEWED RESEARCH PAPERS
Impact of Corporate Governance Attributes on Intellectual Capital Disclosure: Evidence from Listed Banking Companies in Bangladesh

Swadip Bhattacharjee, Shimul Chakraborty and Sumon Bhattacharjee

Abstract

Intellectual capital (IC) can be a source of competitive advantage for business and stimulate innovation that leads to wealth generation. This study investigates the association between the extent of IC disclosure (ICD) and the corporate governance attributes of listed banking companies in Bangladesh. Contrary to the notion of a knowledge based sector like banking, this study adds to previous findings that demonstrate that Bangladeshi companies provide little in the way of ICD. The study confirms that board size and size of audit committee are important attributes to explain ICD issues in Bangladesh. However, the study finds no significant association between ICD and other variables like number of independent directors on the board, frequency of board meetings and ownership concentration.

Keywords: Bangladesh, banks, corporate governance, disclosure, intellectual capital

1 The paper is the modified version of the presentation presented at the 5th India Finance Conference (IFC) 2015, organized by the Indian Institute of Management (IIM) on 17-19th December, 2015, in Kolkata, India.
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1. Introduction

An adequate disclosure regime is a common goal of all corporate governance systems. A sizeable body of literature argues that the wave of accounting scandals can be attributed to the poor quality of corporate governance in overseeing the practice of financial reporting (Agrawal & Chadha, 2005). The empirical research shows that good corporate governance reduces the information asymmetry between managers and owners (Kanagaretnam, Lobo & Whalen, 2007) and improves the levels of corporate disclosure (Lang & Lundholm, 1993). Focusing on the importance of disclosures in corporate governance, the Cadbury Committee stipulates that an open approach to the disclosure of information contributes to the efficient working of the market economy, prompts boards to take effective action and allows shareholders and others to scrutinize companies more thoroughly (Cadbury, 1992, Principle 3.2).

However, traditional financial reporting, based mostly on regulatory requirements, often proved inadequate for disclosing information about critical success factors, related performance indicators (Mouritsen, Larsen & Bukh, 2001) and those value creation drivers not represented in financial statements (Lev & Zarowin, 1999). More specifically, traditional accounting reports do not have enough
potential to show the true value established by intangibles in firms that do not cover the gap between market and book value in many of today’s companies (Canibano, Garcia-Auyso & Sanchez, 2000; Maditinos et al., 2011). Undoubtedly, the emergence of knowledge based society and economy has shifted organizational value driver from tangible assets to intangibles, which is termed as intellectual capital (IC). A discourse then emerges that expresses an urgency to measure and manage these intangible and knowledge assets (Mouritsen & Roslender, 2009). As a consequence, companies are urged to improve their disclosure on intangible assets (Sriram, 2008; Vandemaele, Vergauwen & Smits, 2005) and also explain the roles these assets play in their value-creation strategies (Bismuth & Tojo, 2008).

Generally, the term “IC” is used to refer to the intangible assets or intangible business factors of the company, which have a significant impact on its performance and overall business success, although they are not explicitly listed in the balance sheet (if so, then it is under the term goodwill) (Mondol & Ghosh, 2012:516). IC has been used interchangeably with intangibles, knowledge or knowledge resources. Various researchers have identified three components of IC, namely, human capital (HC), structural capital, and relational capital (Bontis, 1999, 2001; Sveiby 1997). It is apparent from the voluminous number of edited publications (Bontis, 2002) that there is an influential body of opinion which advocates increased IC disclosure (Bontis, 2003) and, lately, IC elements and related disclosures have been in the ascendant and this is commensurate with the rise of the modern knowledge-based economy (Guthrie et al., 2004; Oliveras et al., 2008).

This research aims to answer the important questions of whether corporate governance affects firms’ decisions voluntarily to disclose IC information in the narratives of their annual reports. The study tests the association between corporate governance attributes and ICD. Specifically, the study examines the impact of board size, board
independence, audit committee, directors’ ownership and number of board meetings on IC disclosure.

2. Statement of the Problem

The study stems from an interest in observing the impact of corporate governance attributes on ICD in the banking industry of Bangladesh. In recent years, financial institutions, especially those in the banking industry, have experienced a dynamic and competitive environment. With escalating global competition and its attendant rapid changes, banks have been increasingly providing superior product differentiation and value added services in order to remain competitive. Being aware of the inevitability of establishing sustainable competitive growth, the Bangladeshi banking sector has embraced a range of initiatives in a move towards obtaining knowledge-based resources. Raihan (2007) identified banks’ upgrading of business processes into automated systems, the constant striving for efficient manpower creation, enhanced employee knowledge and competence, improved networks and offering value added services as examples of the necessary changes within the Bangladeshi banking industry. The banking industry not only appeared as one of the most knowledge-intensive industries in Bangladesh but also as a prime mover of economic growth on which functions of other business organizations are dependent. In that aspect, the value of ICD in the banking industry in Bangladesh bears high significance.

During the last decade, the focus on disclosure and corporate governance has increased gradually in the South Asian countries and, most importantly, some local and regional professional bodies have taken initiatives to set benchmarks on disclosure practices and to motivate companies to disclose company information fairly and accurately. For example, the South Asian Federation of Accountants (SAFA) awards SAFA Best Presented Accounts Awards and Corporate Governance Disclosure Awards to the companies within the
South Asian region for presentation of accounts and corporate disclosures. Most importantly, in 2009, Prime Bank Limited, a Bangladeshi Commercial Bank, achieved the winner’s award in the banking sector. In Bangladesh, the prime regulator of the stock market, that is, Bangladesh Securities and Exchange Commission (SEC), also felt it urgent to ensure the integrity of financial control systems existing in listed companies through BSEC Notification 2012. The Bangladesh Bank’s prudential regulations for banks in its ‘Corporate Governance in Bank Management’ states that, “The board shall have its analytical review incorporated in the Annual Report as regards the success/failure in achieving the business and other targets as set out in its annual work-plan and shall apprise the shareholders of its opinions/recommendations on future plans and strategies. It shall set the Key Performance Indicators (KPIs) for the CEO and other senior executives and have it evaluated at times.”

However, non-compliance and non-disclosure are common findings of many studies in lesser developed countries (LDCs) including Bangladesh (Perera, 1975; Ahmed & Nicholls, 1994; Larson & Kenny, 1995; Mir & Rahaman, 2005; Belal & Owen, 2007). Previous research studies have also shown that the ownership structure of the large stock exchange listed companies is dominated by a small number of families (BEI, 2004), not unlike other LDCs (Dyball & Valcarcel, 1999). Family and kinship ties are deeply rooted in Bangladesh’s political and economic history. A family business is more like a household, where disclosure is seen as revealing the family’s secrets. Uddin and Chowdhury (2008) argue that it is not surprising that family-controlled companies inhibit accountability and transparency, because this is about revealing family secrets. That is why, while the financial disclosure requirements and auditing standards set out by the BSEC for listed companies are quite comprehensive, actual compliance is highly questionable. Undoubtedly, ICD, which is voluntary in nature, in the listed companies in Bangladesh largely, depends on corporate governance
attributes or the characteristics of the family controlled board of directors.

3. Literature Review

ICD is a voluntary disclosure. There is no universally accepted regulation or guideline on ICD (Rahim, Atan & Kamaluddin, 2001). Voluntary disclosure in the annual report has always been seen to reflect good corporate governance because it represents a company’s effort to promote transparency by provision of relevant information as much as possible to users (Campbell & Abdul Rahman, 2010). The corporate governance literature provides some evidence that low disclosure of intellectual capital information is an indication of weak governance practices in the governing reporting process (Haniffa & Cooke, 2005).

Apart from the corporate governance literature, a number of empirical studies were also conducted to investigate ICD practices worldwide (e.g., Guthrie & Petty, 2000 in Australia; Brennan, 2001 in Ireland; April, Bosma & Deglon, 2003 in South Africa; Bozzolan, O’Regan & Ricceri, 2003 in Italy; Goh & Lim, 2004 in Malaysia; Abeysekera and Guthrie, 2005 in Sri Lanka; Guthrie, Petty & Recceri, 2006 in Hong Kong and Australia; Kamath, 2008 in India; Yi & Davey, 2010 in China; Nurunnabi, Hossain & Hossain, 2011 in Bangladesh). Features of prior research studies on ICD are that these studies have mainly focused on the developed countries, with a minority of studies of developing economies and the majority of ICD studies have employed a content analysis methodology (ibid.).

Another development in the ICD literature is the incorporation of theoretical reasoning and investigation of firm-specific factors to explain why companies do voluntarily disclose IC (Bozzolan, Favotto & Ricceri, 2006; Li, Pike & Haniffa, 2008). Some studies (e.g., Bozzolan et al., 2006; Bruggen, Vergauwen & Dao, 2009) find that firm size and industry are significant explanatory variables of ICD.
Tayib and Salman (2011) demonstrated that as a company discloses its intellectual resources, it becomes more competitive and earns the trust of investors and creditors. Al-Musalli and Ismail (2012) conducted a study to analyze the relationship between IC performance and corporate governance attributes on 147 banks in Gulf Cooperation Council (GCC) for the period 2008 to 2010. They found that except for independent directors (negative relationship with IC disclosure), other variables are not associated with IC performance. Falikhatun, Aryani and Prabow (2010) investigated the effects of corporate governance on the ICD of a sample of 36 banks in Indonesia from the period of 2004 to 2008. They found that some corporate governance attributes (e.g. board size, independent directors and ownership structure) do not affect ICD, while management ownership negatively affects ICD. Nurunnabi et al. (2011) confirm that size and industry are important attributes in explaining ICD issues in Bangladesh.

The above literature review reveals that ICD is affected by various corporate attributes. Explanatory factors that are tested for influence on ICD include industry, firm size, leverage, profitability or financial performance, auditor type, listing age or firm age and corporate governance variables such as board composition or independence, ownership structure or concentration, audit committee size, frequency of audit committee meetings and chief executive officer’s (CEO) role duality, among others. Given the emphases of the extant literature, the research questions for the present study are:

**RQ1:** To what extent are listed banking companies in Bangladesh pursuing ICD in their annual reports during the period 2012-2014?

**RQ2:** What are the corporate governance attributes that significantly influence ICD in Bangladesh?
4. Theoretical Background

Organizations undertake voluntary disclosures for the following key reasons. Technology-based or knowledge-intensive industry like bank will engage in more ICD than industries that rely mainly on physical assets to be profitable. This relationship can be explained by the following theories:

4.1. Agency Theory

This theory explains that managers are the agents of shareholders and adequate disclosure will provide a means of achieving the optimal contract (Aljifri, 2008). The theory assumes that the agency cost will vary with corporate attributes and by disclosing more; the managers will reduce the agency cost of ensuring trustworthiness to the shareholders. Some support for the agency theory exists based on prior studies linking corporate governance features to voluntary disclosure (Gul & Leung, 2004).

4.2. Stakeholder Theory

Stakeholder theory claims that stakeholders have a right to be provided with information about how the company’s activities affect them (Guthrie et al., 2004). In knowledge-intensive industries, IC assets appear to be the organization’s value driver. Since IC assets are invisible in mandated disclosure, in order to satisfy the stakeholders’ need for information and to balance the conflicting demands of stakeholders, firms in technology-based or knowledge-intensive industries will engage in voluntary disclosures about their IC (Yau, Chun & Balaraman, 2009).

4.3. Legitimacy Theory

Under legitimacy theory, “a company would voluntarily report on activities if management perceived that the particular activities were
expected by the communities in which it operates (Guthrie et al., 2004).” Legitimating is concerned with building, maintaining and repairing the social contract between an organization and society (Campbell, Craven & Shrives, 2003). Legitimacy theory overlaps with stakeholder theory (Deegan, 2009). Both view organizations as embedded in a wider societal system, interacting with, affecting and being affected by others within that system.

4.4. Signaling Theory

Signaling theory, by contrast, suggests that to minimize the information gap between a company and its stakeholders, it will need to supply the most credible or widely accepted information of its operations that it possibly can (Spence, 1973). The theory assumes that the disclosure of information is a reaction to informational asymmetry in markets and the signal of the company would be critical in terms of attracting potential and prospective investors and creditors (Morris, 1987).

4.5 Media Agenda-Setting Theory

According to this theory, management can respond to media-focused community concerns by way of voluntary disclosure in the corporate annual accounts. Alternatively, Sujan and Abeysekera (2007) argue that corporate annual reports are an important form of media and through them firms can bring attention to what they believe stakeholders should view as important.

5. Development of Research Hypotheses

5.1. Board Size and ICD

According to resource dependency theory, larger boards are more likely to include increased pools of expertise that will enhance boards’ information processing capabilities. Furthermore, larger boards are
more likely to increase a firm’s ability to obtain and secure critical resources from their environment such as IC resources (Abeysekera, 2010). However, studies which investigate the relationship between board size and IC performance produce inconclusive results (Abidin, Kamal & Jusoff, 2009; Ho & Williams, 2003). So, based on the resource dependency theory, we can develop the following hypothesis:

H1: There is a significant relationship between board size and ICD.

5.2. Independent Directors and ICD

Several studies suggest that independent directors provide positive support for managerial long-term oriented decisions that enhance long term performance (Ibrahim, Howard & Angelidis, 2003). So, it is reasonable to expect that by giving advice and counsel independent directors are more likely to support IC related activities such as investing in human resources, R&D activities and information technology (Al-Musalli & Ismail, 2012). From the above references, we can develop the following hypothesis:

H2: There is a significant relationship between number of independent directors and IC disclosure.

5.3. Audit Committee Size and ICD

A number of studies have examined the link between audit committee size and intellectual disclosure (Li et al., 2008; Li, Mangena & Pike 2012). Li et al. (2012) found that the size of an audit committee has significant and positive relationship with ICD among UK listed companies. Hence, the authors have suggested the third hypothesis as follows:

H3: There is a significant relationship between audit committee size and ICD.
5.4. Ownership Structure and ICD

More closely held firms display less information asymmetry as the dominant shareholders typically have access to the information they require through private meetings. Li et al. (2008) argue that this is particularly applicable to ICD “… because fund managers have access to such information via private communication channels.” Consequently, it follows that ICD would increase in association with the level of outside owners of the firm (Chau & Gray, 2002). From the above references, we can develop the following hypothesis:

H4: There is a significant association between levels of ownership concentration and extent of voluntary ICD.

5.5. Frequency of Board Meetings and ICD

Vafeas (1999) and Brick and Chidambaram (2007) showed that the higher the frequency of board meetings held, the more it would increase the company’s performance. It is expected that board meeting frequency assists directors in monitoring IC performance and consolidating synergies for strategic directions. Based on the above references, the following hypothesis can be developed:

H5: There is a significant relationship between the frequency of board meetings and ICD.

6. Research Design

6.1. Research Model

The research model used in this study is represented by the following:
Figure 1: The Conceptual Model; source: Authors

Note: CG = Corporate Governance; BS = Board Size; ID = Independent Directors; MAC = Audit Committee Size; BSH = Ownership Structure; NBM = Frequency of Board Meeting.

6.2. The Sample Size

The study is carried out on the ICD practices of listed banks in Bangladesh. The sample frame of the study consists of all listed banks (30 banks) in Bangladesh. Specifically, the sample covers the annual reports of companies listed on the stock exchange for the years 2012-4.

At present, banks in Bangladesh are primarily of two types, namely, Scheduled Banks (get license to operate under Banking Companies Act, 1991 (Amended in 2013)) and Non-Scheduled Banks (established for special and definite objective and operate under the acts that are
enacted for regulating those objectives). The banking industry can be classified as follows:

<table>
<thead>
<tr>
<th>Types of Scheduled banks</th>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Owned Commercial Banks (SOCBs)</td>
<td>6</td>
<td>Fully or majorly owned by the Government of Bangladesh.</td>
</tr>
<tr>
<td>Specialized Banks (SDBs)</td>
<td>2</td>
<td>Established for specific objectives like agricultural or industrial development. These banks are also fully or majorly owned by the Government of Bangladesh.</td>
</tr>
<tr>
<td>Conventional Private Commercial Banks (PCBs)</td>
<td>31</td>
<td>Majorly owned by the private entities and perform the banking functions in conventional fashion i.e. interest based operations.</td>
</tr>
<tr>
<td>Islamic Shariah based PCBs</td>
<td>8</td>
<td>Majorly owned by the private entities and execute banking activities according to Islamic Shariah based principles i.e. Profit-Loss Sharing (PLS) mode.</td>
</tr>
<tr>
<td>Foreign Commercial Banks (FCBs)</td>
<td>9</td>
<td>Operating in Bangladesh as the branches of the banks which are incorporated in abroad</td>
</tr>
</tbody>
</table>

**Table 1: Types of Banks in Bangladesh; source: Compiled from Bangladesh Bank website: [https://www.bb.org.bd/fnansys/bankfi.php](https://www.bb.org.bd/fnansys/bankfi.php), retrieved on 23rd August, 2015.**

Apart from these banks, there are four non-scheduled banks in Bangladesh, namely Ansar VDP Unnayan Bank, Karmashangosthan Bank, Probashi Kollyan Bank and Jubilee Bank.
6.3. Regression Model

ICD = α + β₁ BS + β₂ ID + β₃ MAC + β₄ BSH + β₅ NBM + €

Where,

<table>
<thead>
<tr>
<th>Independent Variables: Corporate Governance Attributes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BS = Board Size</td>
<td>Total number of directors on the board</td>
</tr>
<tr>
<td>ID = Independent Directors (Board Independence)</td>
<td>Number of Independent Directors in the Board. This satisfies the definition of an independent director as provided in the BSEC Notification 2012.</td>
</tr>
<tr>
<td>MAC = Members of Audit Committee</td>
<td>Total number of audit committee members.</td>
</tr>
<tr>
<td>NBM = Number of Board Meeting during the year</td>
<td>The number of regular meetings held by the board of directors during each year. The meetings refer to those held in person, excluding the telephonic meetings.</td>
</tr>
<tr>
<td>BSH = Board Shareholdings</td>
<td>Percentage of share capital held by the directors</td>
</tr>
</tbody>
</table>

6.4. IC Framework

A content analysis method is used to measure the extent of ICD in annual reports. While each company’s entire annual report was analyzed, the Chairman’s Report and Managing Directors’ Report were the predominant areas where IC was disclosed. To measure ICD,
the study uses a disclosure index comprising items of IC developed by Nurunnabi et al. (2011) (see Appendix 1). The main reason for choosing the disclosure index is that it covers 63 IC items proposed by previous researchers. Moreover, the index has previously been used to measure ICD in the context of Bangladesh. The disclosure index contains 11 internal (structural) capital (IC) items, 19 external (relational) capital (EC) items and 33 human (employee) capital (HC) items. To assess the extent of voluntary disclosure, a scoring sheet was developed where if the company disclosed the information on IC it will receive a score of 1 to 3 or 0 in the event of an absence of disclosure. The disclosure model for the weighted disclosure thus measures the total disclosure score (TDS) for a company as follows:

$$ICD = \frac{\sum di}{m} \quad i = 1,2,...,63;$$

Where,

$$di = 1 \text{ or } 2 \text{ or } 3 \text{ if the item } di \text{ is disclosed}$$

$$di = 1 \text{ for disclosures in qualitative terms or}$$

$$di = 2 \text{ for disclosures in quantitative terms or}$$

$$di = 3 \text{ for disclosures in both qualitative and quantitative terms}$$

$$0 \text{ if the item } di \text{ is not disclosed.}$$

$$m = \text{Total weighted number of items a company may disclose} = 189$$

7. Findings and Analysis

7.1. Descriptive Analysis

Table 2 presents the descriptive statistics for the dependent and independent variables. The average level of voluntary ICD in the
sample companies is 16.3%, with a maximum of 28.0% and a minimum of 7.0%. This level of disclosure reveals a relatively poor disclosure regime in Bangladesh, which is similar to the findings of Nurunnabi et al. (2011). Regarding the independent variables, the average board size is approximately 14 directors, ranging from a minimum of 5 directors to a maximum of 24 directors. As per BSEC Notification No. SEC/CMRRCD/2006-158/134/Admin/44, dated August, 2012, listed companies in Bangladesh should have a board size of between 5-20; by contrast, the Banking Companies Act 1991 (amended in 2013) requires the board size to be a maximum of 20 directors, including three independent directors. At present, all the banks comply with the legal and regulatory requirements. Table 3 reveals that the average number of independent directors on the board is 1.73, with a maximum of four members and a minimum of zero. Further scrutiny reveals that four sample banks failed to comply with the legal requirements and regulatory requirements regarding IDs. As regards the size of the audit committee, the study finds that, on average, there are 4.26 members in the Audit Committee to the board with a maximum of six members and a minimum of three members. However, the focal point is that some companies do not comply with the minimum ID requirement. The average frequency of board meeting is 17.76 times per fiscal year, with a minimum of seven times and a maximum of 31 times, while the average attendance of board of directors is 72.9% of board meetings. It appears that the banking and financial sector entails much more regular board meetings due to the nature of the business. The percentage of inside ownership has a mean value of 36.9% with SD of 19.33. There is a high difference between the minimum, which is 4.6% and the maximum of 90.2%. This implies that board directors in some companies may own more than 50% of shares in the firm, making them the majority shareholders.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS</td>
<td>90</td>
<td>19</td>
<td>5</td>
<td>24</td>
<td>13.99</td>
<td>4.20</td>
</tr>
<tr>
<td>ID</td>
<td>90</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>1.73</td>
<td>0.88</td>
</tr>
</tbody>
</table>
Table 2: Descriptive Statistics; source: Original Research

<table>
<thead>
<tr>
<th>MAC</th>
<th>90</th>
<th>3</th>
<th>3</th>
<th>6</th>
<th>4.26</th>
<th>0.92</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBM</td>
<td>90</td>
<td>24</td>
<td>7</td>
<td>31</td>
<td>17.76</td>
<td>6.42</td>
</tr>
<tr>
<td>BSH</td>
<td>90</td>
<td>85.6</td>
<td>4.6</td>
<td>90.2</td>
<td>36.94</td>
<td>19.33</td>
</tr>
<tr>
<td>ICD</td>
<td>90</td>
<td>0.21</td>
<td>0.07</td>
<td>0.28</td>
<td>0.1632</td>
<td>.04403</td>
</tr>
</tbody>
</table>

7.2. Correlation Analysis

Table 3 summarizes the correlations between the dependent variable (ICD) and the independent variables (board size, independent directors, members of audit committee, frequency of board meetings, board shareholdings and board sub-committees). The table indicates that the dependent variable ICD is significantly correlated with independent variables – board size (BS) and number of audit committee members (MAC).

<table>
<thead>
<tr>
<th>BS</th>
<th>ID</th>
<th>MAC</th>
<th>NBM</th>
<th>BSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS</td>
<td>1</td>
<td>0.123</td>
<td>0.275**</td>
<td>0.107</td>
</tr>
<tr>
<td>ID</td>
<td>1</td>
<td>0.043</td>
<td>0.119</td>
<td>0.118</td>
</tr>
<tr>
<td>MAC</td>
<td>1</td>
<td>0.194</td>
<td>0.119</td>
<td>-0.418**</td>
</tr>
<tr>
<td>NBM</td>
<td>1</td>
<td>0.107</td>
<td>0.156</td>
<td>0.1632</td>
</tr>
<tr>
<td>BSH</td>
<td>1</td>
<td>-0.418**</td>
<td>0.119</td>
<td>0.156</td>
</tr>
</tbody>
</table>

Table 3: Correlation Analysis; source: Original Research (* significant at 5% level of significance, ** significant at 1% level of significance)

Furthermore, the table also represents the correlation between the independent variables. It shows that board size is positively correlated with audit committee size, which means that the size of the board of directors plays a significant role in determining the members of audit committee. A significantly negative correlation exists between audit committee size and the board shareholdings. The BSEC Notification No. SEC/CMMRCD/2006-158/134/Admin/44 dated August, 2012 emphasized that board independence should focus on having adequate number of independent directors to the board. The Notification
requires that at least one fifth of the total number of directors in the company’s board shall be independent directors (ID). The Notification also requires that the audit committee to the board shall be composed of at least three members including at least one ID. Moreover, the chair of the audit committee shall be an ID, who shall remain present at the Annual General Meeting (AGM). However, it is interesting that no relationship has been found between IDs and other corporate governance attributes.

7.3. Multiple Linear Regression Analysis

The models are regressed using linear regression analysis by SPSS and the results are presented in Table 4. In total, 36.3 per cent of the variation in ICD (adjusted $R^2$) was explained by the five independent variables. Examination of the five independent variables showed that board size (BS) and audit committee size (MAC) had statistically significant positive associations with overall ICD ($p = 0.000$ and $0.033$ respectively). However, for the other test variables, the number of IDs on the board and number of board meeting (NBM) are not positively significant at the 5% level. This implies that having a higher proportion of outside IDs on the board does not influence ICD, thus H2 is not supported. These results also confirmed the correlation analysis results. The boards of directors in most of the listed companies in Bangladesh comprise very close family members. The boards play a significant part in serving the interests of families rather than those of general shareholders (Uddin & Chowdhury 2008). It is not surprising that family-controlled companies inhibit accountability and transparency, because this is about revealing family secrets. That is why the research hypothesized that board shareholding (BSH) is significantly associated with ICD. However, the regression analysis did not show any significant impact of BSH on ICD, thus H4 is not supported.
7.4. Tests for Multi Collinearity and Autocorrelation

Multi collinearity is a phenomenon in which two or more variables are highly correlated. A high degree of multi collinearity indicates a biased relation between two variables and it may affect the accuracy of multi-regression test results. The problem exists if independent variables are highly correlated at each other with a correlation coefficient exceeding 0.90, according to Tabachnick and Fidel (2007). Multi collinearity can also be examined by tolerance and VIF test. Myers (1990) suggested that a VIF value of 10 and tolerance level greater than 1 are causes for concern. The multi collinearity statistics of the independent variables of this study are presented in Table 4.

It is seen that none of the independent variables has a tolerance value in excess of 1.0 and a VIF value in excess of 10. So, in this study, multi collinearity is not a problem in interpreting the regression results. Moreover, the Durbin-Watson test value in these models is 1.986 (see Table 4), which confirms the absence of autocorrelation.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>t</th>
<th>Sig.</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BS</td>
<td>5.764*</td>
<td>0.000</td>
<td>0.830</td>
<td>1.204</td>
</tr>
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<td>ID</td>
<td>0.069</td>
<td>0.945</td>
<td>0.960</td>
<td>1.042</td>
</tr>
<tr>
<td>MAC</td>
<td>2.165*</td>
<td>0.033</td>
<td>0.684</td>
<td>1.462</td>
</tr>
<tr>
<td>NBM</td>
<td>-0.902</td>
<td>0.370</td>
<td>0.947</td>
<td>1.056</td>
</tr>
<tr>
<td>BSH</td>
<td>0.920</td>
<td>0.360</td>
<td>0.734</td>
<td>1.362</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.363</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F stat</td>
<td>11.147</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance of F</td>
<td>0.000*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.986</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4:** Impact of Corporate Governance Attributes on ICD; **source:** Original Research (* significant at 5% level of significance)
8. Conclusion, Limitations and Future Research

IC can be a source of competitive advantage for business and stimulate innovation that leads to wealth generation. This study investigates the association between the extent of ICD and the corporate governance attributes of listed banking companies in Bangladesh. There are many driving forces, such as globalization, the increased use of information technology, the recent announcement of “Digital Bangladesh” and the consistent growth of the capital markets, which are pushing Bangladesh towards becoming a knowledge-based economy. The banking industry not only appeared as one of the most knowledge-intensive industries in Bangladesh but also as a prime mover of economic growth on which functions of other business organizations are dependent. However, contrary to the notion of a knowledge-based sector, this study adds to previous findings that demonstrate that Bangladeshi companies provide little in the way of ICD. The reasons for such poor disclosure may be due to the absence of any clear set of legislative guidelines, including the Companies Act 1994. Although there are some legal provisions on intellectual property, including the Patents, Design and Trade Marks Act1883 (later the Patents and Design Act 1911) and the Trade Marks Act 1940, there are no copyright guidelines and the Stock Exchange Listing Requirements also do not require companies to make ICD. It may be argued that most of the companies in Bangladesh are family owned, in which management does not have much motivation to disclose voluntary information on their stocks of IC in their annual reports. Consequently, regulation might be an option for the policy makers in Bangladesh.

The study confirms that board size and size of audit committee are important attributes in explaining ICD issues in Bangladesh. However, the study finds no significant association between ICD and other variables like number of IDs, frequency of board meeting, and ownership structure. The study is limited to only one sector of the knowledge economy and only for the years 2012-2014. This study
investigated the effect of five corporate governance attributes on ICD. Further research can be done using other firm specific features like industry type, leverage, firm size, listing age and auditor type, among others. The study is also limited to using content analysis as a research tool, tied to the varied nature of corporate cultures and the regulatory framework. There are various ways to measure IC performance, such as VAIC which gives more acceptable disclosure of intellectual resources. A comparative analysis could be performed between Bangladesh and other developing nation or with a developed nation in this respect.

9. References


## Appendix A: IC Framework

<table>
<thead>
<tr>
<th>Structural Capital</th>
<th>Relational Capital</th>
<th>Human Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Philosophy</td>
<td>Brands</td>
<td>Employee</td>
</tr>
<tr>
<td>Corporate Culture</td>
<td>Customers</td>
<td>Education</td>
</tr>
<tr>
<td>Management Process</td>
<td>Customer Satisfaction &amp; Loyalty</td>
<td>Training</td>
</tr>
<tr>
<td>Information Systems</td>
<td>Company reputation</td>
<td>Work-related knowledge</td>
</tr>
<tr>
<td>Networking</td>
<td>Distribution Channels</td>
<td>Innovativeness of employees/Teams of employees</td>
</tr>
<tr>
<td>Financial relations</td>
<td>Business Collaboration</td>
<td>Vocational qualification</td>
</tr>
<tr>
<td>Copyright</td>
<td>Favourable Contracts</td>
<td>Know-how</td>
</tr>
<tr>
<td>Patents</td>
<td>Licensing agreements</td>
<td>Work-related competencies</td>
</tr>
<tr>
<td>Trademark</td>
<td>Research and development</td>
<td>Entrepreneurial spirit</td>
</tr>
<tr>
<td>Innovative Product</td>
<td>Franchising agreement</td>
<td>An attractive place to work</td>
</tr>
<tr>
<td>Product Focused</td>
<td>Company names</td>
<td>Learning from others</td>
</tr>
<tr>
<td>Total =11 Items</td>
<td>Financial Contracts</td>
<td>The work is engaging</td>
</tr>
<tr>
<td></td>
<td>Market share</td>
<td>Long term career</td>
</tr>
<tr>
<td></td>
<td>Creates values</td>
<td>Career &amp; Development</td>
</tr>
<tr>
<td></td>
<td>Beating the Competition</td>
<td>New generation</td>
</tr>
<tr>
<td></td>
<td>Positive Experience</td>
<td>Customer</td>
</tr>
<tr>
<td></td>
<td>Customers</td>
<td>Looking for retire</td>
</tr>
<tr>
<td></td>
<td>Technology helping</td>
<td>Race</td>
</tr>
<tr>
<td></td>
<td>Sharing knowledge</td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>externally</td>
<td></td>
</tr>
<tr>
<td>I can see the customer</td>
<td>Religion</td>
<td></td>
</tr>
<tr>
<td>Total =19 Items</td>
<td>Employee safety</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trade Union activity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employees thanked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employees features in AR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee involvement with community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee and Executive compensation plans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee benefits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee share and option ownership plans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Value added statements</td>
<td>Employee numbers</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------</td>
<td>------------------</td>
</tr>
</tbody>
</table>

**Source:** *Nurunnabi et al. (2011)*
Effect of the Socio-Cognitive Technique on Tobacco Smoking Cessation among Undergraduates in Selected Public Universities in South-West Nigeria

Aaron Olalekan Akinloye, Olufemi Adegbesan and Mary Sam-Odutola

Abstract

This study investigated the effect of the socio-cognitive technique on tobacco smoking (TS) cessation (TSC) among undergraduates in selected universities in Nigeria. The study adopted pretest-posttest, control experimental research design with 2x2x3 factorial matrix. One hundred and twenty one participants were sampled for the study, using purposive and network sampling techniques. Participants were randomly assigned to the socio-cognitive technique and control group. TSCQ was used ($r = 0.86$). A socio-cognitive training package was used to complement the questionnaire. Data were analysed using ANCOVA. The results of the analysis showed that treatment had a significant effect on TS among smokers; there was no significant effect of gender on TS; a significant effect of smoking experience on TSC existed. Female smokers responded better to treatment than their male counterparts while the post hoc treatment mean score for beginners was greater than for intermediate smokers, followed by advanced smokers. The interaction effect of treatment and smoking experience was significant. The study concluded that TS is still prevalent among undergraduates despite all efforts made thus far. It is, therefore, recommended that agencies in TSC should employ the use of the socio-cognitive technique as adjunct and the strategy should be adopted in the university to identify undergraduate smokers early and help them quit the habit since it is easier to stop when one is a beginner; laws should be promulgated on the ban of TS in public
places; agencies involved in anti-tobacco smoking should intensify efforts towards TSC education in Nigeria and TSC education should be included as a topic in the general studies.

**Keywords:** socio-cognitive technique, tobacco smoking cessation, undergraduate smokers.

**Authors:**

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Olufemi Adegbesan, Department of Human Kinetics and Health Education, University of Ibadan, Nigeria;

Mary Sam-Odutola, Department of Human Kinetics and Health Education, University of Lagos

1. **Introduction**

Tobacco smoking is a health problem inducing habit in which many young adults, most especially undergraduates, engage. Tobacco can be taken in several forms: it can be chewed; drunk as tea; sniffed or smoked in the form of cigarettes. Smoking is a contributory factor to peoples’ ill health and their possible sudden death. It is the most commonly smoked substance (Stead & Lancaster, 2000). By nature, people can get involved in some actions regardless of circumstances which sometimes lead to unpleasant results.

Cigarette smoking is a significant risk factor for cardiovascular disease, cancer, respiratory function impairment and also one of the major causes of premature mortality in industrialised and developing nations (Doll, Edwards & Forbes, 2004). Tobacco is prepared with the nicotine-rich leaves of an American plant,
which involves the process of drying and fermenting so as to promote smoking or chewing. Cessation of tobacco smoking increases the user’s life span and reduces morbidity (United States Department of Health and Human Services, 1990). Many attempts to stop smoking are made unaided, with a success rate of around 2% to 4% (Hajek & Stead 2000; Hughes, 2007). Aided quitting attempts, particularly through a combination of behavioural counselling and nicotine replacement therapy (NRT), bupropion or varenicline, can improve success rates but these still remain low (Cahill, 2010; Hughes, 2007).

The World Health Organization (WHO) (2004) confirmed that, among persons who might ultimately achieve tobacco abstinence without therapy, the benefits can be profound if treatments help them to achieve tobacco abstinence earlier, because the risk of disease is strongly related to the duration of tobacco use. Tobacco smoking is assumed to be prevalent among adolescents and youths in the age range 4-14 years, 15-24 years, 30 years and above. Fawibe and Shittu (2011) affirmed that TS control is urgently needed to prevent the epidemic of tobacco-related diseases and deaths in developing countries, especially among undergraduates of the University of Ilorin. Umaru et al. (2014) examined the effect of a cognitive restructuring intervention on tobacco smoking among university students and found that the intervention given had a significant effect on TSC. Odey et al. (2012) noted that the prevalence of cigarette smoking was higher among young adults in Nigeria, especially male young adults. They further observed that cigarette smoking was significantly associated with obesity and diabetes among smokers. Salawu et al. (2009) noted that 28% of university students in north-east Nigeria engaged in risk behaviours such as alcohol use, bullying, smoking and prostitution, among others. Tobacco use remains the leading cause of preventable morbidity and mortality worldwide and serves as precursor to various diseases such as cancer, cardiovascular and respiratory diseases that place a lot of challenges on the fragile health care systems of most people in developing countries.
(Moronkola & Akinterinwa, 2003). Consequently, the evidence which indicated the foregoing prompted the researcher to investigate whether this habit is applicable and extrapolates to other universities in Nigeria. Adelusi (2012) confirmed that tobacco consumption increased to 14.1% among university students in south-west Nigeria. It is conceptualised that federal universities are a focus of government policy, hence, the outcome of this study would be applicable to all other universities in Nigeria.

Bandura (1986) affirmed that behaviours are performed if people believe that they have control over the outcome, perceive few external barriers towards reaching their goals and have confidence in their ability to achieve them. Self-efficacy and outcome expectancies (related to the situation and to action) represent the two central concepts of social cognitive theory. The efficacy of social cognitive behavioural therapy for the treatment of tobacco dependence has been comprehensively reviewed and this is based on the reports from the US Surgeon General (United States Department of Health & Human Services, 2000) and the Royal College of Physicians; United Kingdom (Gligor-Serban, 2012). A variety of behavioural therapies have been shown to be efficacious for many smokers. Behavioural therapy ranges in complexity from simple advice offered by a physician or other health-care provider to much more extensive therapy offered by counsellors or specialised smoking-cessation clinics. Clearly, as the level of complexity of the therapy increases, the cost to the smoker or third party provider increases and the availability of the therapy, particularly among developing countries, decreases.

Social cognitive theory (SCT) has been successfully applied to many health behaviours including quitting cocaine, weight control, adolescent delinquent behaviours, safer sex, condom use, sunscreen use and mammography screening (Prochaska, Hall & Humfleet, 2008). Studies employing SCT to predict TSC success have found that individuals in the contemplation and preparation stages are more likely
to succeed in cessation than those in the pre-contemplative stage (Dijkstra & De Vries, 2000). Behavioural support, with multiple sessions of individual or group counselling, assists smoking cessation. Both individual and group therapy have been shown to improve quit rates beyond those seen with self-help materials alone (Lancaster et al., 2000). There appears to be no difference between individual and group therapy in terms of TS quit rates; therefore, either therapy may be of benefit (ibid., 2000). Groups are theoretically more cost effective but their usefulness may be limited by difficulties in recruiting and retaining participants (Stead & Lancaster, 2000).

A general trend has been uncovered whereby experiential processes are used more extensively earlier in the stage progression, whereas, socio-cognitive behavioural processes tend to peak later in the stage continuum, around the time of action and maintenance (Lancaster et al., 2000). Consistent relationships between the movement through the stages and the decisional balance have also been found, in that early in the process, the pros of smoking tend to outweigh the cons but, at about the contemplation stage, a cross over occurs whereby the cons begin to outweigh the pros (Frangos-Christos & Frangos-Constantinos, 2010). However, one study by Bandura (1986) found that the processes of change and the pros and cons of smoking failed to predict progressive stage movements at one and two year follow-ups in a work site cessation programme (Herzog et al., 1999). Studies employing the SCT (Bandura, 1986) have identified factors that are related to successful initial quitting. These predictors of successful quitting were less nicotine dependence, social and environmental factors, self-esteem, social supports, increased physical activity and self-efficacy in quitting (Fiore, 2000; Hajek & Stead, 2000).

South West is one of the six geo-political zones in Nigeria and it consists of Ekiti, Ondo, Lagos, Ogun, Osun and Oyo States. There have been several quit attempts on TS among university students generally, particularly in Nigeria but there is a dearth of such studies on smoking
cessation using socio-cognitive therapy among undergraduates in South Western Nigeria. Meta-analytical studies indicate that several therapies have been applied to quitting smoking but the success rate is low, hence, this study investigated the effect of the socio-cognitive technique on quitting smoking among undergraduates in first generation universities in Nigeria.

2. Methods and Materials

The research design that was used in this study is the pretest, posttest, control experimental design using a 2x2x3 factorial matrix. The study adopted the design because the participants for the study were randomly assigned to the treatment group or the control group. The factorial matrix that was used in this study is based on the fact that the study involves the use of an independent variable - socio-cognitive technique with control at two levels - moderating variables of gender that is, male and female at two levels and smoking experience, that is, beginner, intermediate and advanced at three levels. One hundred and twenty one undergraduate smokers were sampled as participants using network and purposive sampling techniques. The instrument used was a self-developed questionnaire which was factor loaded using exploratory factor analysis setting the retention criterion at 0.06.

2.1. Inclusion Criteria

The criteria included in this study are:

- Full time undergraduates from Universities of Ibadan, Ibadan, Oyo State and Obafemi Awolowo University, Ile-Ife, Osun State;
- Smokers who were undergraduates;
- Those screened and confirmed to be smokers;
- Male and female undergraduate smokers who showed genuine interest by filling in the informed consent form and questionnaire;
Those who were available and accessible throughout the intervention and complied with the conditions of the study.

### 3. Results

There is no significant main effect of treatment on TSC among undergraduates in the selected universities.

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Eta²/Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>29170.321</td>
<td>2</td>
<td>9723.440</td>
<td>241.824</td>
<td>0.000</td>
<td>0.861</td>
</tr>
<tr>
<td>Pretest Tobacco</td>
<td>0.265</td>
<td>1</td>
<td>0.265</td>
<td>0.007</td>
<td>0.935</td>
<td>0.000</td>
</tr>
<tr>
<td>Treatment</td>
<td>28450.781</td>
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<td>14225.390</td>
<td>353.789</td>
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<td>0.858</td>
</tr>
<tr>
<td>Error</td>
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<td>118</td>
<td>40.209</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>33874.744</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 1: Effects of Treatment on Tobacco Smoking Cessation among Undergraduates; source: Original Research** (R-squared = 0.861, Adjusted R-Squared = 0.858)

The results in Table 1 above showed that there was a significant effect of the treatment group on TSC among undergraduates (F(2,118) = 353.789, P <0.05, $\eta^2 = 0.858$). This denotes a significant difference in the groups on TSC among undergraduates. Hence, the null hypothesis is rejected; the table also shows the contributing large effect size of 85.8%. This value indicates how much of the variance in the dependent variable is explained by the independent variables.

This implies that the treatments given had impact on undergraduate smokers. This implies that there would be a substantial improvement towards cessation of TS with different population groups, particularly university students in Nigeria using these treatments.
There is no significant main effect of smoking experience on TSC among undergraduates.

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Eta²/ Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
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<td>3</td>
<td>1384.176</td>
<td>5.449</td>
<td>0.002</td>
<td>0.123</td>
</tr>
<tr>
<td>Pretest Tobacco</td>
<td>237.187</td>
<td>1</td>
<td>237.187</td>
<td>0.934</td>
<td>0.336</td>
<td>0.008</td>
</tr>
<tr>
<td>Treatment</td>
<td>3432.986</td>
<td>2</td>
<td>1716.493</td>
<td>6.757</td>
<td>0.002</td>
<td>0.104</td>
</tr>
<tr>
<td>Error</td>
<td>29722.217</td>
<td>117</td>
<td>254.036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>33874.744</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Effects of Smoking Experience on Tobacco Smoking Cessation among Undergraduates; source: Original Research (R-squared = 0.123, Adjusted R-Squared = 0.100)

The results in Table 2 showed that there was a significant effect on smoking experience on TSC among undergraduates ($F(3,117) = 6.757$, $P <0.05$, $\eta^2 = 0.104$). This denotes a significant difference in the groups with respect to TSC. Hence, the hypothesis is rejected. The table also showed a contributing effect size of 10.4%. This indicates that smoking experience has influence on tobacco smoking cessation among undergraduate smokers.

<table>
<thead>
<tr>
<th>Smoking Experience</th>
<th>Mean</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginner</td>
<td>61.125</td>
<td>2.218</td>
</tr>
<tr>
<td>Intermediate</td>
<td>59.472</td>
<td>2.522</td>
</tr>
<tr>
<td>Advanced</td>
<td>47.815</td>
<td>2.999</td>
</tr>
</tbody>
</table>

Table 3: Estimated Marginal Means of Smoking Experience on TSC; source: Original Research

Table 3 showed participants who were beginner smokers ($\bar{x} = 61.125$) had the highest mean score, followed by the intermediate smokers and
lastly by the advanced smokers ($\bar{x} = 47.815$). The mean score of ($\bar{x} = 61.125$) for beginners is greater than ($\bar{x} = 59.472$) for intermediate smokers and ($\bar{x} = 47.815$) for the advanced smokers respectively. It could, therefore, be concluded that undergraduate beginner smokers had better chances of quitting than those who are in between the intermediate and advanced smokers, while those at the intermediate have better chances of quitting that those at the advanced stage.

There is no significant interaction effect of treatment and smoking experience on TSC among undergraduates.

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Eta(^2)/ Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
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<td>6</td>
<td>3297.673</td>
<td>87.242</td>
<td>0.000</td>
<td>0.876</td>
</tr>
<tr>
<td>Pretest Tobacco</td>
<td>6.711</td>
<td>1</td>
<td>6.711</td>
<td>0.178</td>
<td>0.674</td>
<td>0.002</td>
</tr>
<tr>
<td>Main Effect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>23721.544</td>
<td>1</td>
<td>11860.772</td>
<td>313.785</td>
<td>0.000</td>
<td>0.850</td>
</tr>
<tr>
<td>Smoking Experience</td>
<td>120.583</td>
<td>2</td>
<td>60.292</td>
<td>1.595</td>
<td>0.208</td>
<td>0.028</td>
</tr>
<tr>
<td>2-Way Interactions</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment x Smoking Experience</td>
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<td>86.420</td>
<td>2.286</td>
<td>0.045</td>
<td>0.176</td>
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<td>37.799</td>
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<td></td>
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<tr>
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<td>33874.744</td>
<td>120</td>
<td></td>
<td></td>
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</tbody>
</table>

**Table 4:** Interaction Effects of Treatment and Smoking Experience on TSC among Undergraduates; **source:** Original Research (R-squared = 0.876, Adjusted R-Squared = 0.866)

Main effect: there was a significant difference in the treatment groups and in smoking experience. There was also a significant interaction
effect of treatment and smoking experience (F(6,114) = 2.286, P < 0.05, \( \eta^2 = 0.176 \)).

This indicates that there was a significant difference in TSC among undergraduates based on the interaction between treatment and smoking experience. Hence, the null hypothesis is rejected. The table also showed a contributing effect size of 17.6, which means that 17.6% of the variance in cessation of TS is accounted for by the interaction of treatment and smoking experience. The interaction effect of treatment and smoking experience had significant influence on cessation of tobacco smoking among undergraduate smokers.

4. Discussion of Findings

A variety of behavioural therapies has been shown to be efficacious for many smokers. Behavioural therapy ranges in complexity from simple advice offered by a physician, information, health educators or other health-care providers to much more extensive therapy offered by counsellors or specialised smoking-cessation clinics. This result corroborates the view of Prochaska, Hall and Humfleet (2008) that social cognitive theory (SCT) has been successfully applied to many health behaviours including quitting cocaine, weight control, adolescent delinquent behaviours, safer sex, condom use, sunscreen use and mammography screening.

Gender differences in smoking quitting rates are frequently reported and are the subject of much speculation but this study found no significant effect of gender on smoking cessation. This result is contrary to the view of Ellis et al. (2008) that women were more responsive to tobacco control programmes but men required a more intensive strategy. Potential mediating mechanisms include reductions in weight gain, withdrawal symptoms and cigarette cravings, in particular. The latter two factors are known contributors to cessation resistance and smoking relapse. On the smoking experience, the general consensus has been that the kind of experience one has affects
the likelihood that this person will remain with smoking as a habit. Upon review of the literature, it was found out that researchers who reached this conclusion typically categorised the smoking experience variable as follows: beginners, middle smokers and high smokers and heavy smokers (Taylor & Katomeri, 2007). When smoking experiences are defined in this manner, smoking prevalence sometimes differs little between those who are low level smokers and those of higher levels and sometimes the prevalence of smoking cessation is higher (Patrick, 2009). Bjornson et al. (1995) also concluded that the interaction of gender with smoking experience as far as quitting smoking is concerned was not significant. Marcus et al., (1998) found that women had significantly higher quit rates in a cessation intervention, compared with programmes with no fitness component.

Dijkstra and De Vries (2000) also supported the findings of this study when they stated that studies employing the SCT to predict tobacco smoking cessation success have found that individuals in the contemplation and preparation stages are more likely to succeed in cessation than those in the pre-contemplative stage. Lancaster et al. (2000) stated that a general trend has been uncovered whereby experiential processes are used more extensively earlier in the stage progression, whereas socio-cognitive behavioural processes tend to peak later in the stage continuum, around the time of action and maintenance. Frangos-Christos and Frangos-Constantinos (2010) also in line with the findings stated that consistent relationships between the movement through the stages and the decisional balance have also been found in that, early in the process, the pros of smoking tend to outweigh the cons but, at about the contemplation stage, a cross over occurs whereby the cons begin to outweigh the pros. However, Herzog et al. (1999) in contrast to this finding found that the processes of change and the pros and cons of smoking failed to predict progressive stage movements at one and two year follow-ups in a work site cessation programme.
Lancaster et al. (2000) in support of the findings of this study stated that both individual and group therapies have been shown to improve quitting rates beyond those seen with self-help materials alone. There appears to be no difference between individual and group therapy in terms of TS quitting rates; therefore, either therapy may be of benefit (ibid., 2000). Groups are theoretically more cost effective but their usefulness may be limited by difficulties in recruiting and retaining participants (Stead & Lancaster, 2000). Fiore (2000) and Hajek and Stead (2000) that the predictors of successful quitting were less nicotine dependence, social and environmental factors, self-esteem, social support, increased physical activity and self-efficacy.

5. Conclusion and Recommendations

The outcome of this study suggests that health care providers should promote the application of socio-cognitive therapy, most especially among the young adults who believe that life is characterized by freedom and is a mere adventure. Also, the results of this study indicated that, though several attempts to stop cigarette smoking have yielded little success rate, with the conceptualization and application of this treatment, the confidence level of student smokers in the institutions of higher learning in the world, particularly at the universities in Nigeria would be boosted. Subsequently, the following recommendations were made: agencies that are involved with TS cessation should also employ the use of socio-cognitive strategy (goal setting, self-efficacy and behaviour change each time the urge comes) as an adjunct in smoking cessation programmes, counselling units should be established within the university to identify undergraduate smokers early and help them quit the habit since it is easier to stop when one is a beginner. Also, laws should be promulgated on the ban of cigarette smoking in public places, while agencies involved in Anti-tobacco smoking should intensify efforts towards TS cessation in Nigeria.
6. References


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Physical Activity Intervention Effects on Tobacco Smoking Cessation among University Students

Aaron Olalekan Akinloye, Mary Sam-Odutola and Adetoun Akinwusi

Abstract

Meta-analytical studies have confirmed that tobacco smoking is on the increase and that by the year 2020 tobacco use will cause 18%, and 11% of all deaths in developing and developed countries respectively. Although multiple studies have examined the effects of several techniques on quitting tobacco smoking with different population groups, the success rate is low. This study, therefore, investigated the effects of physical activity intervention on tobacco smoking cessation among university students in southwestern Nigeria. The moderating effect of gender was also examined. The study adopted a pretest-posttest, control group, experimental design with 2x2 factorial matrix. One hundred and twenty one undergraduate active smokers were selected from the Universities of Lagos and Ibadan, using network and purposive sampling techniques. Participants were randomly assigned to Physical Activity and Control groups. The Tobacco Smoking Cessation Questionnaire (r= 0.86) was used. The treatment lasted eight weeks. Two hypotheses were tested at the 0.05 level of significance. Data were analyzed using analysis of covariance. Treatment had a significant effect on tobacco smoking cessation among undergraduate smokers (F (3,117)= 353.789, n²= 0.85). Undergraduate smokers exposed to physical activity intervention performed best with a mean score of (♂=70.55) compared to Control (♀=35.48) group. There was no significant main effect of gender on tobacco smoking cessation. There was no significant interaction effect of treatment and gender on smoking cessation (F(6,114)= 407, n² = 0.07). Physical activity intervention was empirically effective in quitting tobacco smoking among university students. Health care
.providers involved in anti-tobacco smoking cessation education should expose university undergraduate smokers to this intervention.

**Keywords:** physical activity intervention, tobacco smoking cessation, University students.

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**1. Introduction**

Tobacco smoking is a health problem inducing habit in which many young adults, most especially undergraduates, engage. Tobacco can be taken in several forms; it can be chewed, drunk as tea, sniffed and smoked in the form of cigarettes or cigars. Smoking is one of the contributory factors to peoples’ ill health and sudden death. It is the most consumed form of tobacco use and the substance most commonly smoked. By nature, people get involved in some actions regardless of circumstances which sometimes lead to unpleasant results.

Tobacco smoking is a significant risk factor for cardiovascular disease, cancer, respiratory function impairment and also one of the major causes of premature mortality in industrialised and developing nations (Doll, Edwards & Forbes, 2004). Cessation of
tobacco smoking increases the user’s life span and reduces morbidity (United States Department of Health and Human Services, 1990). Many attempts to stop smoking are made unaided, with a success rate of around 2% to 4% (Hughes, 2007).

Physical activity therapy for tobacco dependence and withdrawal can contribute substantially to improved health by enabling cessation of tobacco use. The World Health Organization (2004) confirmed that, among persons who might ultimately achieve tobacco abstinence without therapy, the benefits can be profound if treatments help them to achieve tobacco abstinence earlier, because the risk of disease is strongly related to the duration of tobacco use. Tobacco smoking is assumed to be prevalent among adolescents and youths in the age range 4-14 years, 15-24 years, 30 years and above.

Fawibe and Shittu (2011) affirmed that tobacco smoking control is urgently needed to prevent the epidemic of tobacco-related diseases and deaths in developing countries, especially among undergraduates of the University of Ilorin. Umaru et al. (2014) examined the effect of cognitive restructuring intervention on tobacco smoking among university students and found that the intervention given had a significant effect on tobacco smoking cessation. Odey et al. (2012) noted that the prevalence of cigarette smoking was higher among young adults in Nigeria, especially male young adults. They further found that cigarette smoking was significantly associated with obesity and diabetes among smokers. Salawu et al. (2009) noted that 28% of university students in north-east, Nigeria engage in risk behaviours such as alcoholism, bullying, smoking and prostitution, among others. Tobacco use remains the leading cause of preventable morbidity and mortality worldwide and serves as precursor to various diseases such as cancer, cardiovascular and respiratory diseases that place a lot of challenges on the fragile health care systems of developing countries (Moronkola & Akinterinwa, 2003). Consequently, the evidence which indicated the foregoing prompted the researchers to investigate whether this habit is applicable and
extrapolates to other universities in Nigeria. Successful cessation and relapse-prevention programmes for smokers of this category have drawn little attention. Several concepts in the literature have been advanced that contribute to a good understanding of the place of physical activity therapy in tobacco disease control efforts.

The emerging literature suggests that physical activity, that is, body movements that enhance or maintain physical fitness and overall health, along with psychological variables which promote exercise adherence, may mediate tobacco smoking cessation (Ussher, Taylor & Faulkner, 2008; Marcus et al., 1999). Potential mediating mechanisms include reductions in weight gain, withdrawal symptoms and cigarette cravings; notably, the latter two factors are known contributors to cessation resistance and smoking relapse (ibid., 1999; Taylor, Ussher & Faulkner, 2007; Van Rensburg et al., 2009). The mechanism underlying the observed beneficial effect of physical activity on withdrawal and craving is not clear. Physical activity has been shown to have some similarities to smoking in its effects on stimulating the central nervous system and neurobiological processes in the brain. Thus, that exercise may provide an alternative reinforcer to smoking (Horn et al., 2011).

The relationship between physical activity and smoking among undergraduates has reported both significant and non-significant findings. A systematic review of thirteen randomised controlled trials by Usshar et al. (2008) found mixed results for physical activity interventions as catalysts for smoking abstinence. Albrecht et al. (2004) confirmed that studies showed significantly higher smoking abstinence rates among participants who received the physical activity intervention, compared with control subjects, at the end of the intervention period. For example, Hedblad et al. (1997) observed that middle-aged male smokers who regularly participated in leisure-time activity demonstrated a reduction in the risk of cardiovascular disease compared to sedentary smokers. Another study by Manson et al. (1999) posited that results showed a 32% reduction in the risk of coronary heart
disease associated with regular bouts of walking and vigorous physical activity among current female smokers. Also, regular sessions of recreational activity could reduce the risk of lung cancer in smokers, as well as male and female smokers who were in the highest physical activity level had 28% and 35% abstinence reduction respectively (Mao et al., 2003).

2. Statement of the Problem

Smoking cigarettes is a vital risk factor for cardiovascular disease, cancer and respiratory diseases which may result in morbidity and premature mortality among people in industrialised and the developing nations of the world. Despite the well-known risks to health, cigarette smoking is still highly prevalent worldwide, even among university undergraduates in Nigeria. Previous studies indicated that university students indulge in negative health behaviours such as smoking, alcohol consumption, cultism, theft, examination malpractice, prostitution and the use of twisted logic, among other things. Non-involvement in smoking prolongs life and reduces morbidity and mortality but many attempts to stop smoking are made unaided around the world, with low success rates. There have been several studies on tobacco smoking among university undergraduates generally in Nigeria but there is a paucity of studies on physical activity interventions in relation to quitting smoking. Thus, this study determined the effects of physical activity therapy on tobacco smoking cessation among university students in Southwestern Nigeria.

2.1. Significance of the Study

This study is significant because the outcome has provided an empirical basis for the efficacy of physical activity intervention in modifying the behaviours of undergraduates.
2.2. Main Objective

The main aim of this study is to examine the effects of physical activity therapy on tobacco smoking cessation among university students in Southwestern Nigeria.

2.3. Hypotheses

The following hypotheses were tested in this study:

1. There is no significant main effect of treatment on tobacco smoking cessation among participants

2. There is no significant interactive effect of gender and smoking experience on tobacco smoking cessation among participants.

3. Methodology

The research design that was used in this study is a pretest-posttest, control quasi experimental design using a 2x2 factorial matrix. The study adopted this design because the participants for the study were randomly assigned to the treatment group and the control group. The factorial matrix that was used in this study is based on the fact that the study involves the use of Physical Activity with control at two levels, with moderating variables of gender that is, male and female, at two levels. The population for the study consisted of undergraduates (male and female full-time matriculated undergraduates) in two universities in Southwestern Nigeria, that is the University of Lagos and the University of Ibadan.

The sample size for this study consisted of 121 university undergraduate smokers. To select participants for the study, network and purposive sampling techniques were used. In the first instance, purposive sampling technique was adopted for the two universities.
from the Southwestern geopolitical zone. The second sampling technique that was used to identify undergraduate smokers in halls of residence in each of the institutions is the network sampling technique. The selected universities were grouped as thus: University of Lagos (Experimental group, Physical activity) and University of Ibadan (Control group, Placebo). The criteria included in this study are: smokers who were undergraduates; those screened and confirmed to be smokers; male and female undergraduate smokers who showed genuine interest by completing the informed consent form and questionnaire; those who were available and accessible throughout the intervention and who complied with the conditions of the study.

The research instrument used for data collection was a self-developmental instrumentation. The questionnaire has two sections. Section one consists of demographic profiling of the participants including age, sex and smoking experience, while section two contains question items relating to physical activity variables on Tobacco Smoking Cessation (the TSCQ).

4. Findings

On the distribution of participants by age, 28 (23.1%) of the participants were between the age of 18 and 22 years, 49 (40.5%) were between 23 and 27 years, 28 (23.1%) were between 28 and 31 years and 16 (13.2%) were aged 33 years and above. This showed that the majority of the participants were between the ages of 23 and 27 years. This implies that tobacco smoking as a habit is on the increase among university students in Nigeria, particularly those with 23 years to 27 years age bracket. The distribution of participants by gender, 80 (66.1%) of the participants are males and 41 (33.9%) are females, showing that the majority of the participants are male. The implication of this is that tobacco smoking is decreasing among female undergraduates in Nigerian universities compared to male counterparts. It is important to note that more awareness on the anti-
tobacco smoking crusade is needed in all educational institutions in Nigeria.

4.1. Hypotheses Testing

There is no significant main effect of treatment on tobacco smoking cessation among students in the universities in Southwestern Nigeria.

<table>
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<td>Total</td>
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<td>120</td>
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Table 1: Main Effects of Treatment on Tobacco Smoking Cessation among Students in the Universities in Southwestern Nigeria; source: Original Research (R-squared = 0.861, Adjusted R-Squared = 0.858)

The results in Table 1 above show that there is a significant main effect of the treatment group on tobacco smoking cessation among students in the universities (F(3,117) = 353.789, P < 0.05, \( \eta^2 = 0.858 \)). This denotes a significant difference in the groups on tobacco smoking cessation among university students in Nigeria. Hence, the null hypothesis is rejected.

The Table also shows the contributing large effect size of 85.8%, which value indicates how much of the variance in the dependent variable is explained by independent variables. This implies that the treatment given did have an impact on student smokers. This implies that there would be a substantial improvement towards cessation of tobacco smoking with different population groups, particularly university students in Nigeria, when using this treatment.

There is no significant interaction effect of treatment and gender on Tobacco smoking cessation among university students in Nigeria.
Table 2: Interaction Effects of Treatment and Gender on Tobacco Smoking Cessation among Undergraduates in the First Generation Universities; source: Original Research (R-squared = 0.863, Adjusted R-Squared = 0.855)

The main effect is that there was a significant difference in the Treatment group but none was found in Gender. There was no significant interaction effect of Treatment and Gender (F(6,114) = 0.407, P > 0.05, \( \eta^2 = 0.007 \)). This indicates that there is no significant effect of gender and treatment on tobacco smoking cessation among students in the universities. Hence, the null hypothesis is not rejected. The table also shows a contributing effect size of 0.07. The partial eta squared of 0.007 implies that the interaction effect of treatment and gender accounted for 0.07% of the observed variance on tobacco smoking cessation. It means that treatment and gender when taken together do not significantly on cessation of tobacco smoking among undergraduate smokers.
4.2. Discussion of Findings

The finding is in line with the view of World Health Organisation (2004), which stated that behavioural and physical activity therapy for tobacco dependence and withdrawal can contribute substantially to improved health by enabling cessation of tobacco use. The findings affirm the view of Ussher et al. (2008) as part of the emerging literature that suggests that physical activity, that is, body movements that enhance or maintain physical fitness and overall health, along with psychological variables which promote exercise adherence, may mediate tobacco smoking cessation. The mechanism underlying the observed beneficial effect of physical activity on withdrawal and craving is not clear. It seems plausible that the attention to somatic cues during physical activity presents a unique strategy for distracting smokers from the cravings and negative cognitions experienced during smoking abstinence. Physical activity has been shown to have some similarities to smoking in its effects on stimulating the central nervous system and neurobiological processes in the brain, thus that exercise may provide an alternative reinforcer to smoking cessation.

Besides the potential benefits of physical activity for moderating psychological withdrawal symptoms and cravings, physical activity has also been shown to reduce post-smoking cessation weight gain. The weight control benefits of physical activity may be of particular importance to female smokers who report taking up smoking to control weight and report fear of post-cessation weight gain as a motivation for continued smoking. Physical activity has also been shown to have a positive effect on other factors that may protect against smoking relapse, includes perceived coping ability and self-esteem. Albrecht et al. (2004) in support of this result, confirmed that studies showed significantly higher smoking abstinence rates among participants who received the physical activity intervention, compared with control subjects, at the end of the intervention period.
Gender differences in smoking quitting rates are frequently reported and are the subject of much speculation but this study found no significant effect of gender on smoking cessation. This result is contrary to the view of Ellis et al. (2008), who concluded that women were more responsive to tobacco control programmes but men required a more intensive strategy. Potential mediating mechanisms include reductions in weight gain, withdrawal symptoms and cigarette cravings, in particular. The latter two factors are known contributors to cessation resistance and smoking relapse. Morell et al. (2008) corroborated the above submission in their findings that there were no gender differences among undergraduates in terms of their smoking behaviour. Marcus et al. (1998) found that women had significantly higher quitting rates in a cessation intervention, compared with programmes with no fitness component.

Among students, cross sectional studies have consistently shown that smoking is negatively associated with participation in sport. There is some evidence to suggest that this pattern may be different for boys versus girls and some of the evidence is contradictory.

Lancaster et al. (2000), in support of the findings of this study, stated that both individual and group therapy have been shown to improve quitting rates beyond those seen with self-help materials alone. There appears to be no difference between individual and group therapy in terms of tobacco smoking quitting rates. Consequently, either therapy approach may be of benefit (ibid., 2000). Groups are theoretically more cost effective but their usefulness may be limited by difficulties in recruiting and retaining participants (Stead & Lancaster, 2000). Fiore, 2000; Hajek & Stead (2000) concluded that the predictors of successful quitting were less nicotine dependence, social and environmental factors, self-esteem, social supports, increased physical activity and self-efficacy.

This result is also in line with the views of Albrecht et al. (2004), who confirmed that studies showed significantly higher smoking abstinence rates among participants who received a physical activity intervention,
compared with control subjects, at the end of the intervention period. Hedblad et al. (1997) observed that middle-aged male smokers who regularly participated in leisure-time activity demonstrated a reduction in the risk of cardiovascular disease, compared to sedentary smokers. This result also corroborated the findings of Manson et al. (1999), that a 32% reduction in the risk of coronary heart disease is associated with regular bouts of walking and vigorous physical activity among female smokers. Mao et al. (2003) also found that regular sessions of recreational activity could reduce the risk of lung cancer in smokers, as well as male and female smokers who were in the highest physical activity level and who had 28% and 35% abstinence reduction levels respectively.

5. Conclusion and Recommendations

The conclusion is that physical exercise had significant effects on tobacco smoking quitting among university students in Southwestern Nigeria compared to those in the control group. The outcome of this study suggests that health care providers should promote the application of this treatment, most especially among the young adults who believe that life is characterized by freedom and mere adventure. Also, the results of this study indicate that though several attempts to stop cigarette smoking have yielded little success, with the conceptualization and application of this treatment, the confidence level of student smokers in the institutions of higher learning, particularly at the universities in Nigeria, would be boosted.

The following recommendations are made: stakeholders involved in tobacco smoking cessation should employ the use of physical activity (dance, step and chair aerobics, three times a week for 30 minutes each day) as a therapy among university student smokers; counselling units should be established within the universities to identify undergraduate smokers early and help them quit the habit, since it is easier to stop when one is a beginner; tobacco cessation education should be included as a topic in general studies across all Nigerian institutions of higher learning and agencies involved in anti-tobacco
smoking should intensify their efforts towards tobacco smoking cessation in Nigeria.

6. References


The Adoption Intentions of Smartphones among Young Consumers: Diffusion of Innovation Theory Perspective

Suleman Anwar, Ayesha Ramzan Butt, Eliane Bragança de Matos and Muhammad Kashif

Abstract

The current study aims to investigate the elements of the Diffusion of Innovation theory to determine their impact on the smart phone adoption intentions among younger consumers in Pakistan. The study is a cross-sectional survey in nature, where the data was collected by means of a self-reported questionnaire, randomly distributed among the users of smart phones. The data were analysed by means of quantitative analysis by following an objectivist frame of reference to reach meaningful conclusions. The results reveal that traditional structure of the Diffusion of Innovation theory does not fit well with the data which led us to the development of an alternative model – a first attempt to reach theoretical refutation and adjustment to make the theory more accustomed to mobile technology adoption studies in future. The refutation of the diffusion of innovation theory with reference to smart phone adoption and the developing country context of Pakistan are the unique contributions of this study.

Keywords: adoption, DOI theory, Pakistan, SEM, smart phones

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1. Introduction

Mobile phones have become a necessity all across the globe. The recent statistics on mobile phone penetration reveal almost six out of seven billion of the world population own a mobile phone (Daily Mail, 2017). Furthermore, the Smartphone penetration has also tripled and is expected to cross the two billion user threshold in the year 2016 with over a half of the world population owning Smartphones by the end of 2018 (E-Marketer, 2014). People use mobile phone devices for several purposes. In a recent survey conducted among American mobile phone users, the top four motives for mobile phone usage were: to send or receive messages (80%); to access the internet (61%); to send or receive email (52%) and to download apps (50%) (Pew Internet Center, 2017). The motives of Smartphone usage are slightly different as compared with all mobile phones. In a recent study published by Harvard Business Review (HBR), the top five motives of Smartphone usage found were: me time (46%); socializing (19%); shopping (12%); accomplishing (11%) and preparation (7%) (Harvard Business Review, 2013). As a general point of view, this rapid penetration of hand held devices must have relieved the brand managers of technology products who can now develop aperture while communicating brand messages to consumers – especially the mobile marketing as a tool to convey brand message. However, despite this proliferation of products among consumers from all across the globe, technology brands are facing challenges such as imitation by the market challengers and market followers (Giachetti & Lanzolla, 2015) which has made technology brand differentiation a difficult task to achieve, especially in the developing world where
local brands are becoming stronger players in the face of competition posed by international technology brands (Li & Kozhikode, 2008).

In developing countries such as Pakistan, the mobile phone penetration rate is among the highest in the world and this has also made the country a lucrative market for international and global brands to enter and serve consumer needs. However, alongside the entry of global players, counterfeit brands are also growing very quickly given the fact that, in terms of acceptance of technology brands, Pakistanis are very price sensitive (Naveed, Akhtar & Cheema, 2012). This is a threat to the growth and survival of high priced–high quality technological innovations. This is not a Pakistani case only as there are a few more price-centred markets, such as Brazil, India and China, in particular, where people tend to buy counterfeit mobile brands instead of high quality innovations such as Smart phones (Kwong et al., 2009). The market share of Smart phones has been declining over the last few years and while some attribute this to the death of the founder of one of the leading firms, others relate it to some unknown market forces which have caused a decline in the smart phones penetration. This is where the current study contributes to the body of knowledge at three levels. At the first level, the Diffusion of Innovation (DOI) Theory is challenged to make it much more valid to investigate the Smartphone users’ intentions to adopt innovative products. DOI is a psychosocial theory which integrates the social as well as the psychological elements fostering acceptance of innovations. The theory is widely employed by researchers to explain the rate of innovation among the users of a product or service (innovation). The theory has its roots in the study of sociology by Gabriel Tarde, a 19th century sociologist who has been regarded as the father of modern diffusion of innovation paradigms (Kinnunen, 1996). Philosophically, he related the diffusion of innovation process to the Law of Imitation and referred it to a continuous process of acceptance among individuals based on their social and personal dispositions. The idea evolved with the passage of time as researchers studied it under various circumstances, e.g. in the
context of agriculture, education, medical and consumer sciences. In the latter half of the 20\textsuperscript{th} century, a professor in sociology of rural dynamics synthesized more than 500 studies published over the years to offer a framework to study the innovation in organizational as well as in social settings (Rogers, 1971). The theory evolved over a period of time and researchers employed it to investigate innovation adoptions in social as well as organizational settings (Rogers, 1995) and having its roots embedded in sociology as well as the study of physics whence the \textit{Law of Imitations} emerged. Since then, the DOI theory has been employed to study social as well as organizational contexts.

The context of Pakistan is another valuable aspect of this study, which has not previously been been studied by employing a well-established psychosocial theory such as DOI to investigate innovation adoption. The socio-cultural environment can be one reason for the declining market share of smartphones – Pakistan as a country is very different when compared to the West as indicated by the work of Hofstede 2010). People generally are low risk takers which can be related negatively to innovation adoption but this has not yet been thoroughly explored through empirical studies. Finally, the smartphone brands have been considered as an innovation for the conduct of this study, mainly to offer some strategies to influence price sensitive consumers and in a counterfeit-driven market such as Pakistan.

2. Literature Review

2.1. Relative Advantage and Innovation Adoption

In collectivist societies, brand trust is an important element affecting the adoption of innovation. The consumer perceptions of doubt regarding the lack of performance of a brand in relation to its competitors (relative advantage) can easily lead to brand rejection which highlights an important role for relative advantage in innovation adoption (Hamid Hawass, 2013). Since there are always
multiple brands and substitutes to influence various market segments, consumers employ a relativity principle and select only those brands which are considered advantageous over others (Nowlis & Simonson, 1996). The relative advantage can take several forms – e.g., functional and social. In terms of functional advantage, the consumers seek to evaluate brands based on the assumption that these products fulfill the performance criteria as communicated by the brand team (Ballantyne, Warren & Nobbs, 2006). On the other hand, the consumers would like brands to fulfill their self-esteem and social needs better than the other available alternatives as a reason to accept the innovation (Sirgy, 1982). Elements such as price, availability, features and social status form the relative advantage as something pivotal influencing the innovation adoption. Based on this assumption, the following hypothesis is stated;

H1: The relative advantage relates to the adoption intention of smartphones.

2.2. Compatibility and Innovation Adoption

This refers to the ability of an innovative brand to meet the consumer’s lifestyle, habits and past experiences. A brand needs to be compatible with the lifestyle of its users and this has some social and personal implications (Labroo & Lee, 2006). For instance, the brands which are not socially compatible with consumers are criticised heavily for inculcating a hedonic, Western spirit among an Eastern community. The brand choice is highly dependent on the extent of congruity between the brand and its users. This is of supreme importance in collectivist cultures (including Pakistan) where people seek an in-group identity because the brands which do not reflect societal values in their positioning are criticised and rejected (Dong & Tian, 2009). In this regard, the brands are not criticised alone but, rather, their users are also criticised. On the other hand, incompatible brands are also purchased to seek attention for an individual and status among the members of the community (Cayla & Eckhardt, 2008).
Despite the duality of the nature of incompatibility and innovation adoption, the extant literature available on innovation adoption advocates a positive relationship between the compatibility of an innovation with the innovation adoption (Bohling, 2012). Based on the existing work, the following hypothesis is proposed:

H2: Compatibility relates to the adoption intention of smartphones.

2.3. Complexity and Innovation Adoption

Complexity refers to the extent to which an innovative product is difficult to understand and use by its users (Rogers, 1995). Complexity in innovation can take several forms – the intellectual difficulty which is related to use and understanding of an innovation and the difference between knowledge-intensive, high-quality or low-quality innovations (Drucker, 2002); as well as the relative newness and the past use of the technology (Rogers, 1995). Technology which is difficult to use can also offer an exciting experience of learning among its users and this is largely dependent upon the market segment a brand is aspiring to serve (Wood & Moreau, 2006). Furthermore, initially, at an early stage of the usage of an innovative brand, the consumers tend to be more exciting and learning-oriented – a spirit which fades away as time progresses. Above all, the users’ perceptions of the extent of complexity will influence their decision to adopt an innovation. There is an understanding that complexity (having new features) can also help in developing a point-of-differentiation among other competing brands to safeguard a brand from the realm of competition (Styles & Goddard, 2004). Consequently, there has been a relationship between the complexity of an innovation and its adoption which led us to formation of the following hypothesis:

H3: Complexity relates to the adoption intention of smartphones.
2.4. Trialability and Innovation Adoption

Trialability is the extent to which a consumer is likely to experience an innovative product (Rogers, 1995). The brand trial depends on several elements – social, personal, as well as psychological (Lam et al., 2013). The consumers generally are likely to try a brand which has a social appeal – that is, it is socially acceptable as well as acknowledged among members of society (Batra et al., 2014). It is also evident that product trial decisions are dependent upon the personal and psychological elements – the lifestyle of consumers (strivers, achievers and so on), their demographics, as well as their concept of life (welfare or hedonistic motives) (Arts, Frambach & Bijmolt, 2011). Most importantly, trialability can also reduce the perceived risk(s) associated with the innovation adoption. However, this relationship is scantly developed in technology adoption studies. Trialability has also been regarded as an important element to minimize the risks associated with innovation adoption. For example, if someone has already used and gone through the trial of an innovative product, the risk taking ability in that individual may have developed such that it opens the door to try further innovations in future (Hirunyawipada & Paswan, 2006). Consequently, the following hypothesis has been proposed:

H4: Trialability relates to the adoption intention of smartphones.

2.5. Social Influence and Innovation Adoption

Social influence can take two broader forms – normative and informational. The normative form refers to conforming to a set of expectations from others, while the informational deals with the information provided by other knowledgeable people who can influence the information symmetry (Deutsch & Gerard, 1955). In societies where people live in groups and seek an in-group identity, the social elements strongly affect the choice of products and services. There exists a very high chance of brand adoption in cases where
people can get social approval and recognition by consumption of the respective products and services (Dong & Tian, 2009). Culture has always been an important element affecting consumer choice. In the first half of the 20th century, when the consumer behaviour school of marketing thought was emerging, researchers delineated the important role of reference group members in product choice and consumption. Contemporary researchers have also highlighted the importance of reference group members who might approve a brand, the likelihood of its acceptance and adoption increases (Choi & Geistfeld, 2004). Social needs, as postulated by the classic work of Maslow (1943), are very important for human survival and can be applied to almost all the product categories where an element of risk such as social disapproval and rejection exists. It is believed it can be true for technological innovations such as smartphones. Consequently, the following hypothesis is proposed:

H5: Social influence relates to the adoption intention of smartphones.

2.6. Perceived Risk and Innovation Adoption

Perceived risk is the extent of risks associated with the purchase and consumption of products. The risks associated with purchase and consumption of products are classified into several dimensions – social, functional, time loss, physical and psychological (Mitchell, 1999). People tend to accept those products where the perceived risk is low and otherwise. Marketers make utmost efforts to minimize the level of risk as perceived by the consumers to induce purchase and trial of products (Hirunyawipada & Paswan, 2006). Advertisements and other brand related information is directed towards consumers in order to minimise the associated risk. In addition to that, the personality of a consumer also plays a pivotal role – innovators and achievers (psychographic market segment categories) are generally more risk taking in nature and are more likely to buy innovative brands as compared with makers and strivers, mainly due to income and work-life differences (Assael, 2005). The consumers of
technology brands need sufficient information and it is regarded a challenge among marketers to convince them to accept an innovation with innovative features – that is, something that never existed before. Consequently, the following hypothesis is proposed:

H6: Perceived risk relates to the adoption intention of smartphones.

3. Research Methods

For the purpose of data collection, quantitative measures were selected, using an already established questionnaire based on the seminal work of Rogers (1995). The questionnaire was adopted from the study of Ismail (2012). The questionnaire was adopted without any changes as it was employed in Malaysia (another largely Muslim, collectivist dominant country) in the recent past and this is a context similar to that of Pakistan. The questionnaire comprised of 27 items – spread across six dimensions of DOI theory as proposed by Rogers (1995). A Likert scale ranging from 1 = strongly disagree to 5 = strongly agree was developed. Table 2 provides a descriptive analysis of data that offers insights into the measurements of the six dimensions. The questionnaire was administered in English and was personally distributed by one of the authors of this research to smartphones users in private sector universities located in the suburbs of Lahore, which is a metropolitan city located in the largest province of Pakistan. It is difficult to find smartphone users in public places in Pakistan because the country is highly populous so that its markets and streets become quite congested and this made data collection almost impossible at public places. This is why the data was collected from universities located in the suburbs of Lahore. The universities were selected by convenience and so too, therefore, were the respondents. However, care was taken in respondent choice that only those people were requested to render their opinion who had used smartphones in the preceding six months. This was to make sure that respondents had enough experience in using the brand.
It was planned that the sample would be 200 people and so the questionnaire was distributed personally by the researcher involved in data collection. However, with a response rate of 77.2%, 193 people willingly completed and returned the questionnaires, which were retained for data analysis purposes. The response rate and sample size are comparable with recently conducted studies investigating adoption intentions (Ismail, 2012). The sample demographics of age, gender and number of years using smart phones as a brand are detailed in Table 1 below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency (n)</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 21</td>
<td>94</td>
<td>49.0</td>
</tr>
<tr>
<td>22-27</td>
<td>91</td>
<td>47.4</td>
</tr>
<tr>
<td>28-35</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>Above 36</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td>100.0</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>105</td>
<td>54.7</td>
</tr>
<tr>
<td>Female</td>
<td>87</td>
<td>45.3</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td>100.0</td>
</tr>
<tr>
<td>No. of Years Using Smartphone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 year</td>
<td>84</td>
<td>43.8</td>
</tr>
<tr>
<td>2 year</td>
<td>69</td>
<td>35.9</td>
</tr>
<tr>
<td>3 year</td>
<td>39</td>
<td>20.3</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Table 1: Demographic Characteristics; source: Original Research**

The descriptive analysis shows that 49.0% of the sample is less than 21 years old and 47.4% aged between 22 and 27 years old; 54.7% are women and 43.8% have used smartphones for 1 year and 35.9% for 2 years.
4. Results

4.1. Data Analysis through Structural Equation Modelling (SEM)

The data cleaning (missing values as well as the outliers) is a core task at hand among researchers before analysis – both structural as well as development of a measurement model. The multivariate outliers were identified by means of the Mahalanobis distance (D2) with a probability less than 0.1%, as suggested by psychology researchers (Schinka, Velicer & Weiner, 2003). Based on the analysis, it is found that there is a minimum acceptable distance which exists between the two points – making data an ideal candidate for further analysis. The analysis of indicators of the Kolmogorov-Smirnov normality test was also performed to establish a goodness of fit index at a later stage of analysis. The results of this test pointed towards lack of normality of the indicators used for this purpose. The findings are enough to establish a violation of multivariate normality, since the normal distribution of all variables in a block is a requirement for the existence of multivariate normality of all linear combinations of these variables (ibid., 2003).

The uni-dimensionality was based on the principal component analysis (PCA) with a Varimax rotation, after which all factors with eigenvalues > 1.00 were retained (Hair et al., 2006). According to this criterion, all constructs were considered uni-dimensional since the extracted variances were between 57.22% and 63.80% (within the limits suggested by the authors). For internal consistency, Cronbach’s alpha coefficient was used – the value ranged between 0.542 and 0.714. Convergent validity was also confirmed as all factor loadings of the indicators were significant in the factor analysis at the level of 5%. The construct Perceived Risk was the one which did not meet the criteria listed in the bibliography, with extracted variance of 42.29% and factor loadings of 0.444.
To assess the discriminant validity, we used the method developed by Fornell and Larcker (1981). The construct correlations should not exceed the value of 0.85 and construct squared correlations must not be greater than the average variance extracted. The results are shown in Table 2.

<table>
<thead>
<tr>
<th>Construct 1</th>
<th>Construct 2</th>
<th>Correlations</th>
<th>Construct squared correlations</th>
<th>AVE Construct 1</th>
<th>AVE Construct 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADP</td>
<td>COMPLEX</td>
<td>0.377</td>
<td>0.142</td>
<td>0.771</td>
<td>0.762</td>
</tr>
<tr>
<td>ADP</td>
<td>RA</td>
<td>0.231</td>
<td>0.053</td>
<td>0.771</td>
<td>0.664</td>
</tr>
<tr>
<td>ADP</td>
<td>SOC</td>
<td>0.708</td>
<td>0.501</td>
<td>0.771</td>
<td>0.861</td>
</tr>
<tr>
<td>ADP</td>
<td>TRI</td>
<td>0.663</td>
<td>0.440</td>
<td>0.771</td>
<td>0.720</td>
</tr>
<tr>
<td>COMP</td>
<td>ADP</td>
<td>0.290</td>
<td>0.084</td>
<td>0.902</td>
<td>0.771</td>
</tr>
<tr>
<td>COMP</td>
<td>COMPLEX</td>
<td>0.429</td>
<td>0.184</td>
<td>0.902</td>
<td>0.720</td>
</tr>
<tr>
<td>COMP</td>
<td>PERSK</td>
<td>0.326</td>
<td>0.106</td>
<td>0.902</td>
<td>0.762</td>
</tr>
<tr>
<td>COMP</td>
<td>RA</td>
<td>0.274</td>
<td>0.075</td>
<td>0.902</td>
<td>0.641</td>
</tr>
<tr>
<td>COMP</td>
<td>SOC</td>
<td>0.266</td>
<td>0.071</td>
<td>0.902</td>
<td>0.664</td>
</tr>
<tr>
<td>COMP</td>
<td>TRI</td>
<td>0.455</td>
<td>0.207</td>
<td>0.902</td>
<td>0.861</td>
</tr>
<tr>
<td>COMPLEX</td>
<td>RA</td>
<td>0.548</td>
<td>0.300</td>
<td>0.664</td>
<td>0.762</td>
</tr>
<tr>
<td>PERSK</td>
<td>ADP</td>
<td>0.943</td>
<td>0.889</td>
<td>0.641</td>
<td>0.762</td>
</tr>
<tr>
<td>PERSK</td>
<td>COMPLEX</td>
<td>0.794</td>
<td>0.630</td>
<td>0.641</td>
<td>0.664</td>
</tr>
<tr>
<td>PERSK</td>
<td>RA</td>
<td>0.396</td>
<td>0.157</td>
<td>0.641</td>
<td>0.861</td>
</tr>
<tr>
<td>PERSK</td>
<td>SOC</td>
<td>0.926</td>
<td>0.857</td>
<td>0.641</td>
<td>0.720</td>
</tr>
<tr>
<td>PERSK</td>
<td>TRI</td>
<td>0.961</td>
<td>0.924</td>
<td>0.641</td>
<td>0.771</td>
</tr>
<tr>
<td>SOC</td>
<td>COMPLEX</td>
<td>0.616</td>
<td>0.379</td>
<td>0.720</td>
<td>0.762</td>
</tr>
<tr>
<td>SOC</td>
<td>RA</td>
<td>0.468</td>
<td>0.219</td>
<td>0.720</td>
<td>0.664</td>
</tr>
<tr>
<td>SOC</td>
<td>TRI</td>
<td>0.932</td>
<td>0.869</td>
<td>0.720</td>
<td>0.861</td>
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<tr>
<td>TRI</td>
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<td>0.693</td>
<td>0.480</td>
<td>0.861</td>
<td>0.664</td>
</tr>
<tr>
<td>TRI</td>
<td>RA</td>
<td>0.777</td>
<td>0.604</td>
<td>0.861</td>
<td>0.762</td>
</tr>
</tbody>
</table>

Table 2: Average Variance Extracted (AVE) and Construct Squared Correlations; source: Original Research

Table 2 shows that some correlations are very high – higher than the 0.85 recommended by some researchers (ibid., 1981). As a result, the construct squared correlations showed results above the AVE of the construct. Hence, considering these results, the theoretical structural model was produced.
The relationships between dependent and independent variables were not all significant, as shown in Table 3. The constructs COMPLEX, COMP, TRI and RA showed no statistical significance of factorial scores, which guided us towards further robust analysis.

<table>
<thead>
<tr>
<th>Dependent Construct</th>
<th>Independent Construct</th>
<th>Standardized Regression Weight</th>
<th>Regression Weights</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADP</td>
<td>SOC</td>
<td>0.559</td>
<td>0.509</td>
<td>0.117</td>
<td>4.34</td>
<td>***</td>
<td>Supported</td>
</tr>
<tr>
<td>ADP</td>
<td>COMPLEX</td>
<td>-0.044</td>
<td>-0.044</td>
<td>0.098</td>
<td>-0.451</td>
<td>0.652</td>
<td>Not supported</td>
</tr>
<tr>
<td>ADP</td>
<td>PR</td>
<td>0.59</td>
<td>0.891</td>
<td>0.217</td>
<td>4.106</td>
<td>***</td>
<td>Supported</td>
</tr>
<tr>
<td>ADP</td>
<td>COMP</td>
<td>0.194</td>
<td>0.175</td>
<td>0.092</td>
<td>1.894</td>
<td>0.058</td>
<td>Not supported</td>
</tr>
<tr>
<td>ADP</td>
<td>TRI</td>
<td>0.216</td>
<td>0.212</td>
<td>0.1</td>
<td>2.123</td>
<td>0.034</td>
<td>Not supported</td>
</tr>
<tr>
<td>ADP</td>
<td>RA</td>
<td>0.669</td>
<td>-0.016</td>
<td>0.084</td>
<td>-0.193</td>
<td>0.847</td>
<td>Not supported</td>
</tr>
</tbody>
</table>

Table 3: Model Constructs Validity; source: Original Research

Since one of the aims of this study was to test and refute the DOI theory to develop a highly suitable model for future investigations pertaining to innovation adoption of technology (with respect to in particular), an alternative model was envisioned which is unique to this study, which is now discussed.

4.2. Alternative Model of Innovation Adoption

The alternative model considered the relationship between constructs previously identified and tested various combinations between the independent and dependent variables. The best suitable fit found among the all other combinations is presented in Figure 1 below.
Based on the measurement model, it became necessary to establish the degree of adjustment, i.e. the degree to which the models predict the correlation matrix (absolute measurements), as directed by researchers (Gerbing & Anderson, 1988; Hair et al., 2006). In order to achieve this, the following adjustment measures were taken – Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI) and Quality Adjusted Index. Besides these, we also considered the Normed Fit Index (NFI) and the Comparative Fit Index (CFI). These are presented in Table 4 below.
Fit Measures | Criteria | Results
--- | --- | ---
p Value | > 0.05 | 0.000
Chi-square/df 1 | 1 - 5 | 2.815
Goodness-of-fit (GFI) | > 0.9 | 0.808
Adjusted GFI (AGFI) | > 0.8 | 0.760
Comparative fit index (CFI) | > 0.9 | 0.841
Normed fit index (NFI) | > 0.9 | 0.854
Root mean square error of approximation (RMSEA) | > 0.03 - 0.08 | 0.087
R² | | 0.68

**Table 4: Fit Indices for CFA; source: Original Research**

The model adjustment data presented in Table 4 illustrates the small differences between desirable criteria for adjustment and the actual results. The difference may be explained by tendency convergence means and the high correlation between some constructs. The output model indicates that the constructs used and the relationships built between them explain 68% of the adoption innovation, which points to a high power model explanation.

![Table 4: Fit Indices for CFA; source: Original Research](image)

The constructs relationship analysis of alternative model (presented in Table 5) shows that adoption innovation for respondents is positive and strongly influenced by perception risk (PR = 0.714) and moderately affected by social influence (SOC = 0.409). Moreover, social influence is dependent on the relative advantage (RA = 0.376) and mainly by compatibility (COMP = 0.927). The construct

---

**Table 5: Regression Weights Alternative Model; source: Original Research**

The constructs relationship analysis of alternative model (presented in Table 5) shows that adoption innovation for respondents is positive and strongly influenced by perception risk (PR = 0.714) and moderately affected by social influence (SOC = 0.409). Moreover, social influence is dependent on the relative advantage (RA = 0.376) and mainly by compatibility (COMP = 0.927). The construct
perceived risk (PR) is strongly influenced by Trialability (TRI = 0.845) and moderately influenced by complexity (COMPLEX = 0.534). These relationships are significant statistically (p <0.001).

5. Discussion

The determination of the influence of psychosocial variables (as defined by Rogers (1995) in his famous DOI theory on smartphone adoption intentions of Pakistani consumers and the presentation of a replica model of DOI theory to investigate mobile technology adoption research in future are the unique products of this study. The findings of the traditional model based on the DOI theory depict the significant role of social influence ($r^2 = 0.559$) and perceived risk ($r^2 = 0.59$) on the adoption intentions of smartphone users. Pakistan being a collectivist society, where people mostly seek an in-group identity by becoming an important member of the group as well as gaining social approval and recognition of the reference group to which they belong (Hofstede, 2010), such results were expected. The roles of friends and familial influences are very common phenomena in collectivist societies. Another element which influenced the adoption in intention in a traditional DOI model is the perceived risk. Since people are low risk takers, they may not accept the innovation immediately and may like to reduce the amount of risk involved when adopting an innovation. The findings of our study are in line with the findings of study previously published in a Chinese context (which is another collectivist society), where the role of peers, friends and family was highlighted to adopt an innovation (Dong & Tian, 2009). Furthermore, the perceived risk is something which plays a significant role even in individualistic societies, as highlighted by previous studies (Ballantyne et al., 2006). The perceived risk dimension has important implications for product managers (regardless of their origin from a collectivist or individualistic society) to guide them through research in formulating strategies to strategic innovation adoption.
The alternative model presented a different approach to fostering innovation adoption and is logical with regards to the social settings of this study. The two dimensions of traditional DOI theory (perceived risk and social influence) are framed differently in a new relationship. For instance, the perceived risk is influenced (reduced) by trialability (TRI = 0.845) and complexity (COMPLEX = 0.534) which is understandable in that a consumer who is already the user of a smartphone will know how to use it and this can actually reduce the functional risk. In addition to that, if a consumer has already used an innovative product and has gained social approval for it, the perception of risk can again be minimized. Hence, we can say that trialability can reduce the risk perceptions which strongly influence adoption intentions. This relationship is justified in the context of previously published studies, where the role of trial has been highlighted to minimize the consumer perceptions of risk associated with product choice (Lam et al., 2013). The highly complex products carry high risk perceptions which can hinder innovation adoption. However, sometimes, the consumers are willing to take risks by going an extra mile while adopting an innovation provided that the experience of doing so offers them an excitement. This is where the consumer emotions are important stimuli in inducing the adoption of innovations (Wood & Moreau, 2006). Here, the degree of complexity of innovation can be related to perceived risk; i.e. high complexity and high risk. However, customers who are excited about the experience of using innovations can accept such risks.

Another dimension which influenced the adoption intention among smartphone users is social influence, controlled by relative advantage (RA = 0.376) and compatibility (COMP = 0.927). These relationships are also justified in the context of a collectivist society such as Pakistan. For instance, the demographic characteristics and other social determinants of an individual’s personality can cause brand distrust among consumers which can hinder mobile phone purchase, according to the findings of a study conducted in Egypt (Hamid Hawass, 2013). A brand which is not approved by the reference group
members (on quality parameters, i.e. relativity) becomes doubtful in the eyes of a prospect and does not result in product adoption. Another element is the compatibility of an innovation with the values and lifestyle systems of a society. It is a generally held belief that brands which are socially congruent have a higher probability to be accepted by the members of a community. Between the two brands, a socially-congruent brand has a fair chance of being selected by the consumer (Labroo & Lee, 2006) and, generally, belongs to the social influence where members of the community seem to appreciate such brands and criticize the incongruent brands (Bohling, 2012).

6. Limitations and Future Research

The cross-sectional nature of the data is a limitation, where researchers, by employing this technique, cannot observe and present the behavioural change in the mindset of the object – the very essence of the social science research. Keeping these methodological limits in mind, we foresee an opportunity for future researchers to employ a mixed-method study to paint a detailed picture of the local culture where the study is conducted. This can be approached by understanding the cultural nuances of innovation adoption and the elements embedded in a local culture, explored through collecting some primary data by interviewing people and then a model can be developed which can be further tested to derive a new theoretical paradigm. Given the rapid changes in the socio-cultural environment surrounding bottom-of-the pyramid markets, it would be wise to employ longitudinal studies to predict innovation adoption among the users of products and services.

7. Conclusion

The new relationships proposed indicate more complex innovation adoption behaviour than previously established by Rogers (1995) due to social and market changes caused in part by the rapid diffusion of innovations and the market expansion of innovative smartphone
brands studied in this research and confirmed by the specific data on the penetration and growth of the smartphone market in Pakistan. The specific cultural factors of innovative product markets tend to influence positively and markedly adoption innovation behaviour, as demarcated by studies of social psychology, which were based on the models of innovation adoption.

8. References


CONFERENCE REPORTS
International Conference on Recent Trends in Business Management (ICRTBM, 2017)

The International Conference on Recent Trends in Business Management (ICRTBM 2017) was held at the Graduate Campus of Shinawatra International University on Sunday, April 9th, 2017. This was the first conference that we have held in conjunction with Professor Rao of CRC Ltd (www.crcltd.org).
Photos in order: Keynote speaker Dr. Thanan Apivantanaporn, Acting President of the Office of Small and Medium-Sized Enterprises Development and former PhD student at SIU; delegates in the conference room and then the obligatory group photo in the lobby area; Professor Kashif Rao of CRC and Aj. Dr. Wilaiporn Lao-Hakosol of SIU (Photos by K Suntirach Lermanee (thanks K Bill)).

The conference was quite well-attended, largely with doctoral candidates from SIU but also with some external delegates, including Dr. Hermann Gruenewald from Burapha University. Several candidates arrived from Nepal to participate in the conference, including Drona Lal Puri, Shrijan Gyanwali and Binod Kumar Bista. Some papers from the conference will appear in modified forms in CRC’s double blind peer-reviewed academic journals, *International Review of Management and Development Studies* and *Recent Issues in Human Resource Management* and in other places. We look forward to hosting further conferences with Prof. Rao in the future; my thanks to all those who helped to make this conference successful.

*John Walsh, Shinawatra University*
BOOK REVIEWS
Thomas Piketty: Chronicles on Our Troubled Times
London: Viking, 2016
ISBN: 978-0-241-23491-4
X + 181 pp.
Translated from the French and annotated by Seth Ackerman

Thomas Piketty is best known, in English speaking countries at least, for his groundbreaking work on Capital in the Twenty-First Century (2014) but is also a well-established columnist in his native France. In this collection of columns, written between 2008-15 and first appearing in Libération and Le Monde, he turned his attention to the contemporary economic issues arising from the banking crisis and the subsequent crisis of austerity. One of the more important recurrent themes is the centrality of the European Union to social, political and economic life in Europe. As he observes: “… Europe’s political fragmentation and its inability to unite are particularly debilitating as it faces the instability and opacity of the financial system. When it comes to imposing the necessary prudential rules and tax laws on globalized markets and financial institutions, the nineteenth-century European nation-state is, obviously, no longer the right level at which
to act (pp.4-5).” This is an EU with France and Germany at its heart and, it goes almost without saying, one that is rooted in the need to maintain peace and stability in a continent that has witnessed centuries of warfare and destruction. Yet it is also an EU that is hamstrung by the lack of democracy and the primacy of banking above the rights of people. The fact that individual states can set their own interest rates while belonging to a common currency represents a disastrous potential for instability by states undermining each other to attract investment, which will inevitably have diplomatic and political repercussions. This is exacerbated by those states, he uses Ireland as a particular example of this, who set themselves up as attractive homes for international businesses by starving their own populations of needed resources. Even if such economies appear to prosper, the benefits disproportionately flow to the international firms and, when times are difficult, the government can be held to ransom by them. Piketty calls this policy approach ‘tax dumping’ and notes that it has been pervasively pursued across Eastern Europe by many countries which are not going to be able to extricate themselves without external assistance. In this, of course, the role of Germany is vital and here, as has been very evident from that country’s dealings with Greece (which are themselves a shameful indictment of the bankocratic EU) this can very quickly lead to recriminations based on historical events. Germany and bankers of all stripes are wrong to insist on Greece repaying its debts in full, not just on the grounds of equity but, instead, because Germany like France and others did not repay enormous levels of debt resulting from World War II. It is this kind of hypocrisy that Ha-Joon Chang (e.g. 2008) is fond of pointing out when it comes to development economics.

Another important theme is the role of undeclared assets hidden in the various tax havens of the world. Piketty uses the figure of US$10 trillion (p.20) as an estimate of the amount of wealth stashed away and argues that this is money that could be put to use in supporting public services through taxation or, at least, providing capital and liquidity to the banking system. Since these assets are not being used
productively, the ability of governments to deliver effectively managed democratically popular policies is limited. In part, therefore, this has an impact on the fragmentation of the political consensus across Europe as the choice offered to people has increasingly been limited to a centre-right pro-austerity neoliberal mainstream and a xenophobic, anti-open society far right fueled by resentment against the other – the current French presidential election is an example of this.

However, although Piketty does consider political and social issues, his principal focus is on economics and, thankfully, the mostly coherent macroeconomic wing of the dismal trade. In common with Paul Krugman, for example, he is able to use clear language (presumably the translator Seth Ackerman has provided a version that is true to the original in terms of style as well as substance) to explain how economics work and clearing away the obfuscation of so-called common sense. For example, the 2010 column “No, the Greeks Aren’t Lazy (pp.59-61).” In a right-dominated mediascape that has achieved great success through posturing and moralizing, it has become more possible for ugly nationalism to be used to drive through class-based divisions. Piketty counters acutely:

“The problem with these household metaphors is that at the level of a country – and for individuals as well – capitalism is not just about merit. Far from it. For two reasons that can be summarized simply: the arbitrary nature of the initial inheritance, and the arbitrary nature of certain prices, especially the return on capital (p.60).”

It is unfortunate that we now appear to live in a world in which facts such as these are not accepted. Nevertheless, we do at least have some commentators willing and able to penetrate the darkness. The nature of this book means that the reader will occasionally wish for some of the columns to be expanded and those with thematic similarity to be connected. However, this will do.
References


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Food Security in Post-Conflict Nepal: Challenges and Opportunities

Bishnu Raj Upreti, Sagar Raj Sharma and Suman Babu Paudel, eds.


168 pp.
In the preface to this volume, the editors note that, under the interim constitution of 2007, a fundamental right of the Nepali people is the ‘right to food (p.5).’ Consequently, efforts to rebuild the country and its economy after a decade of conflict and then the devastating earthquakes of 2015 require a focus on food security – the situation in which all the people of a country, all of the time, have access to sufficient safe and nutritious food to meet their dietary needs and which meets their food preferences for a healthy and active life (FAO, 1996). It does not matter whether the food is produced in the same country or not but it does mean that the country involved has sufficiently efficient distribution networks and market mechanisms to ensure that food reaches everybody when it is required (Pinstrup-Anderson, 2009).

Food security depends on a range of different factors, including but not limited to the ability of farmers to grow enough food. In addition, it is necessary to ensure that food in excess of farm household use is distributed in time and in suitable formats to those people who need to buy and eat it and excess can be stored until required. When markets become involved, other problems take over: “Multi-national and national corporations influence production systems, changes in food habits, food composition, and control food supply chains by commoditization and privatization of resources. Commoditization and privatization processes create dependency, paralyse indigenous food systems, and alter the purchasing capacity of people. From the process, people should gradually lose their autonomy to decide what to grow, what to cook, and what to eat (Upreti & Butler, 2016).”

Clearly, there are numerous problems in respect to trying to ensure food security in Nepal and these can be overlapping and be over-determined. Perhaps the single most significant factor is the lack of infrastructure, especially transportation infrastructure. Much of the infrastructure that did exist had been destroyed during the civil war, along with trust and cohesion within society. The insurgency mounted by the Communist Party of Nepal-Maoist (CPN(M)) received much of its support in the countryside and the response by the army often
destructive. There was a positive correlation between places of unrest and places of food insecurity. Complicating this situation is the extensive system of class and caste systems and the great variety of ethnic groups in the country. Some communities but not all occupy locations where subsistence agriculture is practicable but others do not. The long, open border with India to the south means that there is always an incentive, especially for men, to migrate for labour to earn some cash, perhaps on a seasonal basis. Poor families suffer problems with debt and a particular problem occurs when it is time to marry a daughter, since the provision of a suitable dowry can be a ruinous expense.

These factors can all act in concert as a form of intersectionality. In “Gendered Dimensions of Food Security in Nepal,” Yamuna Ghale elucidates how this takes place in practice: “The nature and form of discrimination intensifies and grows more complex when girls and women search for opportunities beyond the household responsibilities. For an example, a dalit girl or a woman suffers from gender-based discrimination with the family. When they come out of household to pursue out-of-home opportunities, they face caste-based discrimination from the community. When women cross certain boundaries … they have to multiple and intersecting discriminations in the name of gender, caste, class, educational background, and place of origin.” Food security exists within this context: women in food insecure situations are prevented from taking innovative actions to try to improve their circumstances or at least face several forms of discrimination if they try to do so. Ghale concludes that food insecurity has become a more severe problem for women because of the out-migration of men, climate change and market-led agriculture.

In “Improving Markets and Trade Policy for Food Security,” Nirmal Kumar Bishokarma adapts his doctoral research to indicate the extensive list of problems preventing improvements in Nepal’s agricultural sector. These include informal trade with India, limited harnessing of comparatively advantaged sectors, lack of transport agreements, phytosanitary standards, information gaps, import tariffs,
bandhs and closures and so forth. There is a long list of such problems but a rather shorter list of ideas as to how to solve them. In the concluding chapter, “Agricultural Productivity and Food Security: Challenges and Opportunities,” Babar Shahbaz, Ghazamfor Ali Khan and Muhammad Iftikar call for a transformation in the agricultural sector: “A paradigm shift in the overall vision of agricultural development is required to move beyond increasing crop yields to a more holistic food security and livelihood-centric approach.” Few people would, it is hoped, disagree with this but, at the household level, what does this mean other than better extension services and inputs provided by local government officials unable to do much more than they already do?

Overall, this is a useful and informative book based on problems which are, quite possibly, too difficult to solve in the foreseeable future. What poor people need, of course, is more money as a necessary but insufficient response to this situation. Whether such money can be provided under the present, perhaps interim political settlement remains to be seen.

References


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*Reclaiming Development: An Alternative Economic Policy Manual*

Ha-Joon Chang and Ilene Grabel, with a foreword by Robert H. Wade


ISBN: 978-1-78032-559-0

XXXI + 224 pp.
The notorious claim of the neoliberals is that ‘there is no alternative’ and a great deal of money and effort have been expended to try to squash anyone who disagrees with this position. In most western countries, political parties of the centre and centre-left have become intertwined with the interests of the rich, of bankers and the international financial system. As a result, their political offerings have become deracinated and unappealing to the working classes which used to elect them. That a political alternative is popular has been shown by the events in Greece and Spain and by the mildly social democratic manifestoes of Bernie Sanders and Jeremy Corbyn. An alternative, then, is required. What would it look like? To a considerable extent, this has already been answered in the work of Ha-Joon Chang and, with this book, his co-author Ilene Grabel. Chang has consistently taken a common sense approach to economics, informed by historical evidence, which has enabled him to point out the significant difference between what the supporters of the Washington Consensus wish to inflict on other countries and how their own countries actually behaved so as to achieve the economic success they have done. In short, the historical record shows that economic success is achieved through protecting and promoting infant industries, placing barriers to unwanted trade and providing subsidies in a variety of different ways for the home economy.
In this book, Chang and Grabel set themselves the task first of all of demolishing the free trade approach of the Washington Consensus supporters and then by suggesting alternative policies likely to perform better. In the first section, the argument is furthered by considering six myths: ‘today’s wealthy countries achieved success through a steadfast commitment to the free market;’ ‘neoliberalism works;’ ‘neoliberal globalization cannot and should not be stopped;’ ‘the neoliberal American model of capitalism represents the ideal that all developing countries should seek to replicate;’ ‘the East Asian model is idiosyncratic, the Anglo-American model is universal’ and ‘developing countries need the discipline provided by international institutions and by politically independent domestic policymaking institutions.’ The authors dispense with these shibboleths quite easily – perhaps too easily, since it is difficult to imagine opponents of this position to be persuaded without a great deal more data and dealing with all the whataboutery that would be involved. At which point, then, it might be as well to consider what the authors believe to be the purpose of the book. By using language that is accessible but with arguments that would be useful both to general readers and development economists, they outline their goals in this way:

“Our greatest hope for this book is that it is useful, empowering and accessible. We hope that it stimulates discussion of the ways that development policies can be reclaimed by those seeking to promote rapid economic development around the world that is equitable, stable and sustainable (p.4).”

The book was originally published in 2004, when the prospects for introducing the policies outlined seemed rather less possible than it does now. Despite the East Asian Financial Crisis (and its most obvious lesson: Dr. Mahathir’s firm capital controls ensured that Malaysia emerged more quickly and stronger than the other countries affected), history was almost immediately being rewritten with the claim that the crisis arose from crony capitalism and that it was because capitalism was not being done properly that the crisis began
in the first place rather than the inherent instability of capitalism that was to blame. Now (or, at least, in 2014) the seemingly endless crisis of austerity had destroyed so much and was ruining so many lives that people were willing to consider alternatives that the corporate media had been assuring them did not exist or, if they did exist, would be disastrous or dangerous or, at least, ruinously expensive. As people say here in Thailand, more or less, it is an opportunity for the frog to come out of the coconut shell and look at the whole of the sky.

In the second part of the book, which occupies three quarters of its length, policy prescriptions are advanced in five areas: trade and industry; privatization and intellectual property rights; international private capital flows; domestic financial regulation and macroeconomic policies and institutions. The ideas provided are clear and comprehensible. In some cases, they have been shown to work and, in others, they seem likely to have positive outcomes. For example, with respect to foreign direct investment (FDI), the authors write:

“… FDI policy stands the best chance of achieving developmental objectives if it is firmly tied to national development and/or industrial policy plans. Countries like Korea and Taiwan are known to have used strict regulation on FDI in most industries, while also taking a very liberal attitude towards FDI in others. This mixture of restrictive and illiberal policies was possible because the government developed a clear FDI strategy but differentiated among industries (p.145).”

In other words, there should be no attempt to find the solution that is the one size that fits all but, rather, the policymakers of individual states should take good stock of their specific situation, their configuration of resources and their cultural and geographical contexts and design developmental goals and plans accordingly. Certainly it is possible to learn from elsewhere but that does not mean importing programmes wholesale. Instead, the overall developmental objectives
should be linked to particular policies that will contribute towards achieving those objectives. Those same policymakers will find much in this book to help them achieve this planning and implementation.

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