Editorial Statement

CATALYST is the flagship journal of Asia-Pacific International University (AIU). It is an interdisciplinary, peer-reviewed journal published by AIU’s Institute for Interdisciplinary Studies through its publishing arm, Institute Press. The journal is published online with a limited number of hard copies available.

Scope

As an interdisciplinary journal CATALYST brings together articles in several areas of the humanities and social sciences such as religion, education, arts and humanities, and business, as well as social science research in other disciplines.

Objectives of CATALYST

1. To facilitate scholarly activity among the faculty of AIU
2. To engender scholarly exchange with other universities within Thailand and with visiting lecturers, pastors, and teachers from other parts of the world
3. To encompass scholarly as well as professional articles, seminar/forum papers, research papers and book reviews

Publishing Schedule

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Indexing

Thailand Citation Index (TCI), ASEAN Citation Index, (ACI), and EBSCO

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From the Editor

This is the second issue of Catalyst for 2016. The journal is an interdisciplinary peer-reviewed journal of Asia-Pacific International University (AIU) which is recognized as a quality journal by the Thai Journal Citation Index (TCI) and the ASEAN Citation Index (ACI).

In this issue of Catalyst, there are 10 articles submitted by various researchers, some of whom are external to the university, as well as researchers from within the university. It is a delight to see reports, discussions, findings, and analysis from a variety of academic fields, including Christian education, science education, health care education, finance, marketing, management, tourism, and psychology. Half of the articles in this issue reflect interests not only from a Thai context, but also from international environments in China, Columbia, Indonesia, and Nepal. This broad spectrum of articles have made this issue of Catalyst a very interesting one indeed.

We would like to express our sincere gratitude to all of the journal’s authors, reviewers, editorial board members, administrative board members, as well as the journal staff who have contributed and made this issue of Catalyst a reality. As part of our commitment to serve the community, we always welcome your suggestions to continue improving the journal. We would also like to invite you to submit your scholarly output to us and to serve as reviewers. You may find more information at our website, http://www.apiu.edu/academics/publications/catalyst.

Damrong Sattayawaksakul
Creating a Christ-Centered School Climate for Educational Excellence: Philosophical, Instructional, Relational, Assessment, and Counseling Dimensions

Elvin S. Gabriel, Carole Woolford-Hunt, and Esther Hooley

Abstract

Interest is peaking among educators in North America, and around the world, on issues relating to school climate. A primary reason for this strong interest is research confirmation that school climate may have a positive or negative effect on educational processes. A Christ-Centered school climate provides the best opportunities for stakeholders to work collaboratively to achieve four primary educational outcomes. These are: (1) creating and sustaining bias free learning environments where relationships are nurtured by love, respect, tolerance, and kindness; (2) establishing faith-based instructional and service learning programs which cater to the needs of students; and (3) utilizing quality assessment tools to measure school climate, and instructional goals/objectives. This is a monumental task, but it can be accomplished if stakeholders are deeply and passionately committed to the foundational tenets of Christian education.

Introduction

There is heightened interest on matters pertaining to school climate among educational stakeholders in North America, and around the world. A primary reason for this interest is strong research evidence, which confirms that school climate may impede or enhance educational outcomes (Thapa, Cohen, Higgins-D’Alessandro & Guffey, 2012). Since the 1950s, educators are becoming more involved in systematic studies of school climate. (Cohen, McCabe, Michelli and Pickeral, 2009). A landmark meta-analysis study conducted by Wang, Haertel, and Walberg (1997) revealed that school culture and climate were extremely influential in promoting student achievement. Other significant studies have confirmed, that that school climate impacts students’ self-esteem (Hoge, Smit, & Hanson, 1990), and affects emotional and health outcomes of students (Kuperminic, Leadbeater, Emmons, & Blatt, 1997).

Conceptualizations of the importance of school climate have been documented in educational literature for many years. Perry (1908), was probably the first educator to write about the significance and impact of school climate on students’ learning.

Loukas (2007) referred to the challenges of creating a concise definition of school climate. He concluded that most researchers agreed on its multidimensional nature, that incorporates: (1) the physical dimension, which is comprised of the school building, school size, ratio of students to teachers in the classroom, resources available, and comfort and safety; (2) the social dimension, which includes the quality of interpersonal relationships among school personnel, the fair and equitable treatment of students by teachers and staff, the degree of competition and social comparison between students, and the degree to which all school personnel are involved in decision making; and (3) the academic dimension, which refers to the quality of instruction offered, teacher expectations for student achievement, monitoring the progress of students, and sharing such results with parents. Tableman and Herron (2004) shared the views of Loukas (2007) on the academic,
physical and social dimensions of school climate, however they introduced an affective dimension which includes feelings of belonging and positive self-esteem among teachers, students, and staff. Cohen (2006) acknowledges that school climate is defined by eleven factors, namely: (1) structural issues (e.g., size of the school); (2) environmental (e.g., cleanliness); (3) socio-emotional, physical order, and safety; (4) expectations for student achievement; (5) quality of instruction; (6) collaboration and communication; (7) sense of school community; (8) peer norms; (9) school-home based community partnerships; (10) student morale; and (11) the extent to which the school is a vital learning community (p. 212).

It is clearly evident, from the views of Perry (1908); Table & Herron (2004); Cohen, (2006); & Loukas (2007) that the pulse of a school’s climate may be measured by the perceptions, behaviors, attitudes, and feelings of inclusion by those who are directly or indirectly involved in the process of education. These are stakeholders, administrators, teachers, students, parents, auxiliary staff, board members, and community personnel.

This article focuses on five significant dimensions of school climate, which profoundly influence the instructional, developmental, and learning processes of educational institutions. These are: (1) philosophical; (2) instructional; (3) relational; (4) assessment; and (5) counseling. It emphasizes how each dimension positively affects educational outcomes through intentional, and developmentally appropriate Christ-Centered teaching and learning approaches.

The Philosophical Dimension

Many initiatives have been undertaken by educational systems around the world, to measure and improve school climate. However, stakeholders who are directly or indirectly involved in the creating and sustaining such meaningful climates for optimum learning outcomes, will not be able to fully and comprehensively achieve these goals until they espouse a philosophy which first establishes God as the “Source of all true knowledge, and the Holy Scriptures as the perfect standard of truth” (White, 1903, pp. 16 &17).

A philosophy of education is important because it defines the purpose, and focus of an educational institution. It becomes a part of its mission statement, which in turn defines what subjects are taught, how they are taught, and, perhaps more importantly, the values that are taught both implicitly and explicitly along with the subjects being covered (Thompson, 2007, para 2).

A Christocentric educational philosophy emphasizes not only academic knowledge, but stresses balanced development of the spiritual, intellect, physical, emotional and social powers of each student. It also provides educational administrators, teachers, and parents with opportunities to establish a climate of learning in which students are taught to: (1) envision the world as God envisions it; (2) embrace the world as God embraces it, and (3) love people unconditionally, as God loves people unconditionally.

The products of these endeavors are: (1) character building which is informed by God’s personhood; (2) faith in God development; (3) exhibiting respect for the dignity of all human beings; (4) developing original, reflexive, and independent thinking skills; (5) giving loving service to God and mankind; and (6) embracing all that is true, good, and beautiful (General Conference Policy Manual, 2003, p. 221). It is only as the mind of Christ is nurtured in all educational stakeholders, that these products can be realized. Philippians 2:5 should permeate every facet of the each dimension of the educational process. It reads “Let this mind be in you, which was also in Christ Jesus (New King James Version).
The Instructional Dimension

Teachers have been given the awesome responsibility to create a climate in which instructional excellence is reinforced, and where students are provided with the necessary tools for effective service to God and mankind. The pathways toward optimum instructional excellence are carved out by teachers who have accepted God’s call to serve in this capacity. Some essential teacher qualities and characteristics which are vital to the instructional climate include: (1) recognizing God’s call to the ministry of teaching; (2) depending on God continually for counsel, guidance, patience and fortitude; (3) integrating and synthesizing their Christian faith with teaching, scholarship and service; (4) demonstrating in word and deed, that the ultimate objective of education is the salvation of men and women, boys and girls; (5) exhibiting genuine unconditional love for students, and colleagues regardless of their cultural, social, economic, or religious backgrounds; (6) exuding a passion and enthusiasm for teaching; (7) communicating and applying knowledge in the classroom, generated from personal experience, academic and professional training, continuing education, and in-service activities; (8) becoming lifelong, infectious, and contagious learners; (9) teaching students the art of peacemaking; (10) being committed to ongoing professional development; (11) implementing instructional approaches and best practices which are uniquely relevant to the individual learning styles and abilities of students; (12) espousing the belief that all students must succeed (regardless of their, genetic, physical, social, intellectual, cultural, or behavioral challenges; (13) adopting best practices in teaching and learning; (14) maintaining optimum physical, spiritual, psychological, and emotional health to deal more effectively with the ongoing demands and challenges of the teaching and learning environment; (15) being advocates for students; (16) providing students with opportunities to engage in activities/projects which benefit churches, schools, homes, and communities; and (17) ensuring that the physical layout of their schools contributes to students’ learning, health and safety.

Roles and Functions of School Administrators

The support of the educational administrators is critical to the viability of the instructional environment. These leaders are in a position to empower teachers to do the work for which they have been commissioned by God to do. Committed educational administrators: (1) recognize that they are called of God to the ministry of educational administration; (2) apply and synthesize their Christian faith with teaching, learning, and administration; (3) demonstrate in word and deed that the ultimate objective of education is the salvation of men and women, boys and girls; (4) exhibit unconditional love for teachers, students, parents, and fellow administrators; (5) demonstrate a passion and enthusiasm for teaching and administration; (6) communicate and apply knowledge generated from their personal experiences, and their academic and professional preparation to enhance the teaching and learning process; (7) espouse the values and attributes of servant leaders; (8) possess strong social, interpersonal, intrapersonal and collaborative skills; (9) empower their teachers and fellow administrators, to effectively perform their roles and functions; (10) clearly articulate the philosophy, vision, mission, goals, objectives, and outcomes of the institutions to which they are assigned; (11) model best practices in educational administration, research, assessment, and service, in collaboration with teachers and other stakeholders; and (12) forge meaningful partnerships with community personnel who support their institution’s philosophy, vision, mission, goals, objectives and learning outcomes.

Administrators should take the lead in encouraging parents to become involved in the activities of a school. This is a critical component of the instructional environment. Schools should inform families about school programs and student progress with school-to-home, and home-to-school...
communications. This creates channels of communication between families, teachers, and administrators; (2) schools can involve families with their children in academic learning activities at home, including homework, goal setting, and other curricular-linked activities; (3) families should be included as participants in school decisions, governance, and advocacy activities through PTA committees, councils and other parent organizations (Epstein et al., 2002).

A community-school partnership can be instrumental in creating pathways for students to achieve their academic, professional, socio-cultural, civic, and spiritual goals. There is growing evidence which confirms that successful collaboration between school and community groups has led to improved academic and social/emotional outcomes of youth (Mastro and Grenz Jalloh, 2005). When community groups and schools develop educational community partnerships, positive results include: (1) upgraded school facilities; (2) improved school leadership and staffing; (3) higher quality learning programs for students; new resources and programs to improve teaching and curriculum; (4) resources for after-school programs and family supports; and (5) increased social and political capital of participants (Iowa School Boards Foundation, 2007, p. 2).

Opportunities must be created for students to work with faith-based organizations such as, churches, synagogues, Maranatha Volunteers International, Adventist Development Relief Agency, and Prison Programs. What better way to demonstrate one’s loyalty and love for God, than through selfless service to others who are in need? This should be the essence of all educational endeavors. God promises that if we show this kind of compassion to the hungry, naked, poor, weak, infirmed, disenfranchised, ostracized, and marginalized, then our salvation will come like the dawn, our wounds will quickly heal, our godliness will lead us forward, and God’s glory will protect us from behind. Then when we call, He will answer, and quickly reply, “I am here.” Our light will shine out from the darkness, and the darkness around us will be as bright as noon. The lord will guide us continually, and give us water when we are dry, and will restore our strength. We will be like a well-watered garden, like an ever-flowing spring (Isaiah 58: 8, 9, & 11, New Living Translation). This is, no doubt, one of the strongest evidences of instructional excellence.

The Relational Dimension

This dimension is probably the crux of the educational enterprise, since it focuses on developing and sustaining genuine social interactions among students, teachers, administrators, parents, community leaders, volunteers, and auxiliary staff. Each constituent member of a school system has a responsibility to engage in self- development experiences, insight promoting activities and bias reduction events to ensure that they have the “EQ” emotional quotient to develop healthy relationships with others. Individuals with these relational skills will naturally foster collaborative and caring learning communities that are vital to the energy and life of educational institutions. Without them, all other dimensions of the educational enterprise (philosophical, instructional and assessment) lose their significance, and potency.

Hiatt-Michael (2001) proposed that a learning community is one in which all members acquire new ideas, and accept responsibility for making the organization work. She reiterated that all the workers, from the school gardener to the school district leader, must feel that their insights are valued, and taken into account in community life. In addition, parents and students have to be seen as participants in the life of the school, not simply as recipients of services that the professionals deemed important.

Gootman (2008) fully grasped the essence of the essential attributes of a caring classroom community. She stated “all classrooms are communities, but not all classrooms are caring communities. What makes a classroom community a caring community? It is when everyone, including teachers, students, and parents, feel a sense of belonging and connectedness to each
other. It is when everyone is treated with kindness, respect and helpfulness. It is when everyone has a mutual sense of responsibility” (p. 6). In a Christ-Centered caring classroom community: (1) unconditional love permeates the fabric of relationships; (2) the spiritual nurturing of children is a priority; (3) diversity is celebrated; the needs of learners are satisfied; (4) Christian faith is embedded throughout the curricular and the extra-curricular activities; (5) quality instructional and emotional assistance is provided for students who are experiencing difficulty is achieving learning and behavioral goals; (6) students’ efforts are celebrated, even when they did not achieve stipulated learning goals and objectives (7) the strengths of students are emphasized; (8) administrators, teachers, students, auxiliary staff, and parents emulate the mind and character of Christ; (9) the fruits of the Spirit (love, joy, peace, forbearance, kindness, goodness, faithfulness, gentleness and self-control) are reflected in the daily activities and functions of school personnel (Galatians 5:22, 23, New International Version).

The relational dimension of education may be most accurately reflected in the way that Christ was able to connect at the deepest level with humankind. It was written of Him that “in every human being He discerned infinite possibilities. He saw men as they might be, transfigured by His grace—“in the beauty of the Lord our God (Psalm 90:17).” Looking upon them with hope, He inspired hope. Meeting them with confidence, He inspired trust” (White, 1903, p. 80).

The Assessment Dimension

Assessment is needed to determine how well students are achieving the tasks of learning. Slavin (2013) emphasized that assessment may serve important purposes, such as: (1) providing feedback to students on the results of their efforts, so that they will be able to utilize strategies which will enhance or improve their chances of success; (2) providing feedback to teachers on the effectiveness of their instructional strategies so that they can, if necessary, make adjustments and accommodations which will improve students’ retention of the content of lessons presented; (3) providing information to parents, so that they can become more aware of the need to work collaboratively with teachers in establishing optimum learning environments for their children; and (4) motivating students to do their best. Rewards such as grades or prizes can be given to them for accomplishing certain tasks. Two major forms of assessments are used to determine how well students are adjustment to the challenges and expectations of the school environment. These are (1) classroom assessment; and (2) school climate assessment.

Classroom Assessment

Classroom assessment is an approach designed to help teachers find out what students are learning in the classroom, and how well they are learning it. According to Angelo & Cross (1993) this approach is learner-centered, teacher-directed, mutually beneficial, formative, context-specific, ongoing, and firmly rooted in good practice (p. 4).

The effectiveness of classroom assessment in Christ-Centered institutions is predicated on the extent to which students perceive that the highest forms of learning are realized, when elements of the philosophical foundations of their schools, i.e., Christian faith, character development, unconditional love, spiritual nurturing, intellectual, physical, and social development, student dispositions, and true religion) are inextricably tied to classroom learning outcomes. The challenge for educators is to develop and/or refine models of teaching and learning which reflect the integration of these learning outcomes.
School Climate Assessment

Since school climate is a strong indicator of the quality of learning outcomes and relationships among the primary stakeholders, it is therefore necessary to develop ways and means of assessing it. It is probably one of the best measures of accountability. School climate is best evaluated with surveys that have been developed in a scientifically sound manner, and are comprehensive in two ways: (1) recognizing student, parent, and school personnel voice; and (2) assessing all the dimensions that color and shape the process of teaching and learning, and educators’ and students’ experience in the school building (Cohen, Pickeral, & McCloskey, 2009, p. 1). In Christ-Centered schools, stakeholders must be given opportunities to record their perceptions of how well their institutions are fulfilling the philosophical mandate for educational excellence.

The Counseling Dimension

By nature, Christian institutions have been instructed to care for those in attendance as a sign of obedience to Christ. One way in which Christian institutions can address the needs of students is to promote the use of counseling services. These may be psychological, emotional, medical, spiritual, vocational or academic in nature, and are usually provided to students and teachers by trained licensed professional. These services are geared towards meeting the unique and diverse needs of those who seek it. Promoting a service which celebrates unique stories and experiences can contribute to the sense that a person is being cared for and that each person matters.

Several factors speak to the relevance of counseling services in Christian institutions. The first consists of promoting the biblical message of caring for those who are hurting. The concept of seeing another’s need for care and healing is central to the nature of Christ and therefore of utmost significance for those who consider themselves Christ-followers. Even as Christ was dying He was able to see His mother in front of Him in need of someone to care for her (John 19:26-27). It is this call to identify the needs of and care for those around us that speak to the significance of mental health services in Christian institutions.

Secondly, not all students who attend a Christian institution are religious, or spiritual. What better way to be the hands and feet of Jesus then to be attuned to their mental and emotional needs, recognizing that every person is made in the image of God and therefore emotional by nature invites the institution to respond to the emotional needs of a person. It is through this action that a person’s inner-life and experiences can be honored and also serve as a testimony Christian institutions.

Thirdly, religion and counseling have often been in opposition. However, as Sullivan et al (2014, p. 1273) has reported, both the mental health field and religious groups are “moving from a period of ‘antagonism’ to ‘mutual understanding.’” This mutual understanding can be altered to a more integrative stance of valuing both religion and science to bring about the common goal of promoting human flourishing. Christian institutions play a major role in shaping those who will impact the future relationship of mental health and Christianity. If, while studying at a Christian institution, a person is able to utilize psychological service and find it to be valuable, it would be assumed that this person may promote the use of mental health services in their future work. Thus continuing to positively affect the relationship between psychology and religion.

In theory all Christian institutions should promote the idea of caring for one another (e.g. bearing one another’s burdens). However, it is often hard to bring this theory into fruition when policies, procedures, or the business of academia are at the forefront of importance. One way in which Christian institutions can exercise this desire to truly care for one another is by providing counseling...
services to students, faculty, and staff. It is through these services that a theoretical gospel becomes reality.

Conclusion

The ultimate goal of Christian teachers, educational administrators, parents, and community leaders is to shape and nurture the minds and hearts of students for meaningful service to God and mankind. They need to work collaboratively to create a caring and responsive school climate by integrating each of the five dimensions within the curricular and extra-curricular programs of their schools.

In comparison with other educational stakeholders, teachers spend more hours each week in supervising, instructing and advising students. Therefore, their quintessential role is that of demonstrating evidence, and identifying ways of action that underscore the possibility of an authentic bridging of the divide between the ideals of Christian faith, and the lived experience of Christians. It is upon this demonstration that commitment grows, disbelief evaporates, and faith is confirmed (Matthews & Gabriel, 2001, p. 34). In relation to the five dimensions of school climate, this ‘bridging of the divide between the ideals of Christian faith (creed), and the lived experience of Christians’ (deed), must be reflected and reinforced in the daily interactions between students and teachers.

There is no system or structure of education that can match the long-term benefits to be derived from one which is Christ-Centered. “It cannot be gotten for gold neither shall silver be weighed for the price thereof. It cannot be valued with the gold of Ophir, with the precious onyx, or the sapphire. The gold and the crystal cannot equal it, and the exchange of it shall not be for jewels of fine gold. No mention shall be made of the coral, or of pearls: For the price of wisdom is above rubies (Job 28: 15-18, King James Version).

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References


Indonesian Avifauna: Some Physical and Biological Relationships

Warren A. Shipton and Alwyn A. Chacko

Abstract

Avifauna check lists were used to indicate relationships among physical and biological parameters and families/species numbers in mainly Indonesian islands and territories. Bird species and family numbers represented in territories were related to island area ($r=0.765$ and $0.839$, respectively). Species numbers also correlated well with the ecoregion score ($r=0.934$), which indicated special habitat zonation factors favour species diversity. The data on ecoregions was not correlated with the level of endemicity found. The ease of movement of birds across straits between islands was assessed using an index of common species approach. Some support was gained for the proposition that in the past sea levels were lower, thus establishing land bridges such as from Lombok to Alor. The ranked correlation with one analysis of sea depth and species commonality returned a negative ranked correlation coefficient ($r=-0.823$; $P=0.012$). Separation distance between islands failed to show a significant correlation to species commonality.

Keywords: Avifauna, island area, species numbers, endemicity, ecoregions, sea depth

Introduction

The diversity of the avifauna found in Indonesian territories is one of the highest known, yet there are a number of features governing the emergence and movement of species that are not well understood. Papua stands on the eastern edge of Indonesian territories and is located on the Sahul shelf, which it shares with Australia. At the other extreme, Sumatra, Java, Bali and Kalimantan sit on the Sunda shelf that connects these islands via shallow seas to the Asian mainland. Between these two sets of territories are many islands that are collectively part of the biogeographical area termed Wallacea. It has the distinction of being separated from the Sunda and Sahul shelves by deep ocean trenches. The Wallace line runs between Borneo and Sulawesi (Makassar Strait) and between the narrow strait separating Bali from Lombok (Lombok Strait). The Lydekker Line runs close to the Papuan western boundary and delimits the Aru islands from the Kei and Tanimbar islands. These together with Halmahera and Seram sit in the Wallacean region. The natural affinities of the avifauna west of the Wallace line is with East Asia, whereas those of the fauna east of the Lydekker line is with New Guinea and Australia (Lincoln, 1975; Mayr, 1944). These associations are explained by the concept that during periods when the sea level was lower than at present, the land masses on the respective shelves were mostly joined, allowing ready movement of mammals, birds and an easier movement of floral components.

Much remains to be discovered, particularly in Papua and selected islands of Wallacea (Mittermeier et al., 2013). We have attempted to add to the discussion of some basic questions using published data on avifauna sightings. The results of our investigations are set out in this descriptive paper.
Methods

Species data

Bird species lists were taken from the International Ornithological Congress (IOC) lists for 2014 (Avibase, 2015). Introduced birds were not included in calculations for the 27 islands. In the Indonesian territories such as Kalimantan, West Timor and Papua, data for the complete territory, i.e., Borneo, Timor and New Guinea was presented so as to give a more accurate picture. The IOC lists for Sumatra, Sulawesi and Papua included birds recorded in associated islands and archipelagos. The birds specialized to these small land areas were removed by consulting the following sources (del Hoyo et al., 1992–2011; Howard & Moore, 1984; Jeyarajasingam & Pearson, 2012; Pratt, Beehler, Anderton & Kókay, 2015). In calculations of the relationship of bird species and bird families to island area, species diversity in Biak, Missol, Salawati, Waigeo and Yapen were presented as separate entities from mainland New Guinea. Data on endemicity was collected during this process.

An index of species commonality (ICS) was calculated in order to assess the movement of birds across straits between islands. The index was calculated as follows: \( cs_a \cdot i/n_a + cs_b \cdot i/n_b/2 \) \( cs = \) common species; \( n = \) number of species of birds; the letters \( a \) and \( b \) refer to the territories compared. The index had similarities to that constructed by Lincoln (1975).

Plumage differences noted between the sexes were colour differences, striping patterns, iridescence and differences in dullness. Records of differences came principally from well-recognized sources (del Hoyo, et al., 1992–2011; Howard & Moore, 1984; Jeyarajasingam & Pearson, 2012; Pratt et al., 2015). The territories of Flores, Papua, Kalimantan, Java, Halmahera, Seram, Sulawesi and Sumatra were studied.

Land areas and distances

Area figures used were from official sources where possible or from island area lists (High Commission of the Independent State of Papua New Guinea, 2015; Republik Indonesia, 2015; Wikipedia, list of islands 2015). Where species lists existed for smaller islands associated with principal islands, land areas were adjusted accordingly. Hence, for Sulawesi, the land area did not incorporate the Sangihe archipelago land estimates. The same treatment was accorded Sumatra and New Guinea and its associated archipelagos and larger associated islands.

Island strait distances were taken from published lists or estimated from scale maps (Wikimapia) and allowance was made for small island stepping stones in the estimates.

Ecological features

Islands (19) were given a score according to the occurrence of certain ecosystem and environmental features (ecoregions). The ecoregions identified for the study areas were those of Wikramanayake et al., (2002). These were based on vegetation maps and the boundaries were delimited by climate, elevation and biogeographical considerations. A value of 1 was allocated for every ecoregion category listed for a particular island by Wikramanayake et al. (2002). This included grasslands and mangroves. Consultation of the Atlas of Mangroves (Spalding, Kainuma & Collins, 2010) for islands resulted in those with mangroves and yet not classified as possessing an ecoregion component being given a value of 0.25. All islands possessed the specialized habitats associated with seashores apart from that given to isolated patches of mangroves. This means that no additional score was given for this feature.

Habitats encouraging birds associated with wetlands are featured in the ecoregion classification (fresh water swamp forests, peat swamp forests and flooded grasslands). We made no extra provisions for the presence of freshwater lakes and rivers as all islands possessed some characteristic areas of this type. Some consideration was given to the presence of significant areas of
grasslands. Grassland ecoregions specifically identified were given a value of 1, but other localities also possessed variable areas of grasslands. These were assessed principally by consulting specialized accounts for the island groups (MacKinnon, Hata, Halim & Mangalik, 1997; Whitten, Damanik, Anwar & Hisyam, 1997; Whitten, Soeriaatmadja & Atiff, 1997; Whitten, Mustafa & Henderson, 2002; UNCCD, 2015). The figures presented in these papers require updating for greater accuracy, but such research is a future activity. The species commonly encountered in grassland are *Imperata*, *Paspalum*, *Chloris*, *Eleusine*, *Themeda*, *Tetrapogon*, *Polytrias* and *Desmodium* (Nitis, 2006). Specific island group information established that some islands possessed extensive grasslands (e.g., Timor has over 15 percent of its area occupied) and others a lesser amount (Monk, de Fretes & Reksodiharjo-Lilley, 1997; Trainor, Imanuddin, Aldy, Verbelen & Walker, 2009). The former category was allocated a value of 0.5 and those with lesser amounts a value of 0.25.

The cumulative scores established as a result of this exercise were used to estimate the correlation between ecoregions and bird diversity. In this calculation, Kalimantan, West Timor and Papua are represented by data for Borneo, Timor and New Guinea respectively, as ecoregions in part of an island may not always represent that found in the entire territory leading to a distortion of the association being investigated.

### Results

The number of species of birds increased with the size of the island territory according to expectations. The data analysed incorporated islands from Sumatra to Papua (New Guinea). The relationship between log area vs log species was linear (correlation coefficient 0.765—Figure 1). A log:log plot of the number of bird families represented against area showed a similar and even stronger linear relationship (r=0.839—Figure 2). There seemed to be no observable relationship between the dichromatic status of birds and the location, number of species of birds, or area occupied. The figures ranged from 25.7 to 34 percent over eight territories, with Papua showing 30.3, Java 29.5 and Flores a figure of 29 percent. Sumatra and Kalimantan returned figures of 32 and 34 percent respectively. The number of endemic species observed did not bear any relationship to the area occupied (data not shown). Some small islands like Biak and Waigeo supported endemics, whereas larger islands like Bangka and Timor recorded none.
The relationship between the size of an island territory and ecological niches available for colonization yielded useful data. Recognized ecoregions on islands was supplemented with other information considered important to species colonization and expressed as a numeric value. When these figures were plotted against species numbers, a linear relationship was observed as illustrated in Figure 3 (r=0.934). The ecoregion figures did not bear any relationship to the number of endemic species observed. Endemic occurrence figures were usually below 8 percent, although Sulawesi was in the region of 19 percent.

We investigated the proposition that on account of suggested sea water level changes in past ages giving rise to shallower seas, evidence of bird movement between islands would be greatest near islands now surrounded by shallow ocean depths and which were close to their neighbour. The details are given in Table 1. Here the ICS's are listed for a selection of islands where adequate data were available. Channel depth between islands is presented together with separation distance. The Table might be taken to indicate that islands surrounded by shallow seas experienced greater prior bird exchange accounting somewhat for the diversity observed. Analysis was difficult as sill depths are not known with precision. Thus, depth intervals where ranked and a test of association between sill depth and ICS was sought. This analysis revealed a negative correlation (0.823; P=0.012), indicating that low sea depths were associated with higher indices of common species. Notable exceptions were recorded to the suggested relationship. The most notable from our perspective was the comparison of Bali and Lombok. The index of common species was 0.71; we expected it to be lower. Other exceptions also are noted in Table 1. When separation distance was considered, the relationship with the ICS values did not reach a level of significance.
In seeking to identify the features facilitating spread, various known ecological, behavioural and flight characteristics of birds were studied among those not crossing the Lombok Strait. The pink-headed fruit dove (*Ptilinopus porphyreus*) appeared to be restricted by habitat considerations (altitude and food); some members of the cuckoo family were migratory, but did not venture across the strait. This also indicated the possible significance of habitat factors. A number of species not moving across the Lombok Strait were able to cross other water expanses (e.g. *Aerodramus maximus*—Black-nest Swiftlet; *Anthraceros albirostris*—Oriental Pied Hornbill; *Rhyticeros undulates*—Wreathed Hornbill). Subspecific specialization was noted in a number of birds restricted to the Sumatra–Java–Bali region, such as in *Aegithina tiphia*—Common Iora, *Dicrurus paradiseus*—Greater Racket-tailed Drongo and *Psittacula alexandri*—Red-breasted Parakeet. If the subspecific status was discounted, then the basal species enjoyed a widespread distribution.

**Discussion**

The influence of area available for colonization and species richness or bird family representation was strongly related as commonly found (Newton, 2003). Until around 50,000 km² (or 5x10⁴ to 10⁵ our data), the species added tapered off as additional area was made available (MacArthur & Wilson, 1967; Whittaker, 1998). The data mean that the probability of encountering a species increases with colonisable area.

The strong relationship between species richness and ecoregions noted in this study is of interest, but fails to identify the most significant ecological features involved for particular families or species. The system of ecoregion classification adopted by Wikramanayake et al. (2002) was heavily dependent on vegetation features, but did not consider the small patches of divergent vegetation types present.

*Figure 3. Relationship of Ecoregions Encountered to Bird Species Numbers Observed in Many Indonesian Islands*
Table 1. Index of Common Species (ICS) calculated between islands and territories across barriers separated by deep ocean trenches and shallow seas. Sea, shore birds, ducks and diurnal birds of prey were excluded from calculations. Separation distances were derived from López Martin (2010), Pigram & Davies (1987) and Wikimapia. Sea depth data came from a variety of sources (Feng, Liu, Wang, Yu & Yuan, 2013; Ghofar 2002; Gordon, Giulivi & Ilahude, 2003; Hope & Aplin 2005; Metzger et al., 2010; Tomczak & Godfrey 2003; Wyrki 1961).

<table>
<thead>
<tr>
<th>Movement</th>
<th>ICS</th>
<th>Separation Distance (km)</th>
<th>Sea Depth–Sill or Bottom (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shallow Sea Separation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sumatra–Bangka</td>
<td>0.67</td>
<td>~13</td>
<td>~50–80</td>
</tr>
<tr>
<td>Sumatra–Java</td>
<td>0.71</td>
<td>8</td>
<td>~50–80</td>
</tr>
<tr>
<td>Java–Bali</td>
<td>0.75</td>
<td>3.2</td>
<td>~50–80</td>
</tr>
<tr>
<td>Lombok–Sumbawa</td>
<td>0.57</td>
<td>~11</td>
<td>&lt;200</td>
</tr>
<tr>
<td>Sumbawa–Flores*</td>
<td>0.61</td>
<td>~14</td>
<td>&lt;200</td>
</tr>
<tr>
<td>Papua–Salawati</td>
<td>0.62</td>
<td>~2 km</td>
<td>&lt;80</td>
</tr>
<tr>
<td>Papua–Misool</td>
<td>0.60</td>
<td>~70</td>
<td>&lt;115</td>
</tr>
<tr>
<td>Papua–Aru Islands</td>
<td>0.58</td>
<td>110</td>
<td>&lt;115</td>
</tr>
<tr>
<td><strong>Deep Sea Trench Separation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aru–Kei Islands</td>
<td>0.36</td>
<td>130</td>
<td>&gt;1000</td>
</tr>
<tr>
<td>Kei Islands–Papua</td>
<td>0.38</td>
<td>~140</td>
<td>&gt;1000</td>
</tr>
<tr>
<td>Waigeo–Halmahera</td>
<td>0.36</td>
<td>~225</td>
<td>&gt;580</td>
</tr>
<tr>
<td>Misool–Seram</td>
<td>0.28</td>
<td>~95</td>
<td>&gt;580</td>
</tr>
<tr>
<td>Kalimantán–Sulawesi</td>
<td>0.31</td>
<td>~100</td>
<td>&gt;680</td>
</tr>
<tr>
<td>Bali–Lombok</td>
<td>0.71</td>
<td>~18</td>
<td>&gt;300</td>
</tr>
<tr>
<td>Wetar–Timor</td>
<td>0.81</td>
<td>~50</td>
<td>&gt;1000</td>
</tr>
<tr>
<td>Flores–Timor</td>
<td>0.63</td>
<td>~150</td>
<td>&gt;1000</td>
</tr>
</tbody>
</table>

*Sape Strait is between Pulau Kelapa Island (just east of Sumbawa) and Komodo. Its waters represent the effective sill depth found between Sumbawa to Flores.

We adjusted for this feature in several instances by giving a notional value to the presence of smaller areas of mangroves and grasslands. Habitat diversity generally increases with island size and is significant to colonization and maintenance of species as well as accounting for the generating of new species. There is no easy way to separate area and habitat factors, so both can be considered determinants of species richness (Ricklefs & Lovette, 1999; Whittaker, 1998). In this mix might be added factors such as latitude (not relevant in Indonesia) and distance to the nearest mainland or larger island (Martin, Gaston & Hittier, 1995; Power, 1972).

The failure to find a relationship between the incidence of sexual dichromatism and factors such as island size and ecoregions is not surprising, since the discrimination available to birds is much greater than that possible via the unaided human eye (Santos, Edward & Lumeij, 2006).

Since Wallace’s time, the differences between the avifauna east and west of the Lombok Strait has intrigued scientists. Lincoln (1975) has stated correctly that observing the presence or absence of a particular bird species gives different impressions than when both presence and frequency figures are considered. Lincoln was of the conviction that the wetter islands to the west of the Strait with their relatively greater abundance of fruiting trees giving succulent food accounted for the predominance of fruit eaters in Java/Bali as against seed and nectar eaters further east. The eastern islands are much drier than those westward and with less extensive cultivation. He considered that the habitat was of greater significance than the width of the sea gaps between islands in determining species richness. Mayr (1944) also believed that ecological factors rather than distances across straits were the most significant factor in species occurrence. We essentially agree with this conclusion. However, our data, which is also based on the presence or absence of species, differ from Mayr’s in that he considered the Lombok Strait to be a more efficient barrier in interfering with transfer than the others in the Lesser Sunda group of islands.

The popular concept is that these straits ceased to exist during times when lower ocean levels prevailed while the Lombok Strait continued to exist, although its width changed with the lower sea levels (Heinsohn & Hope, 2006; van Oosterzee, 2006). While we are not challenging this proposition,
our data may be taken to suggest that the expression of avifaunal diversity has not been overly hindered by the Lombok Strait. Bird diversity undoubtedly is influenced by multiple factors. This is in accordance with Carlquist’s early data as reported by Whittaker (1998) for the islands from Bali to Alor. We do not question that the Strait has interfered with the colonization of islands east by some species originating in Asia.

The Lombok Strait contrasts favourably with straits further east that have relatively small separation distances. In our analysis there was greater similarity in the avifauna (excluding sea, shore-birds, the duck family and diurnal birds of prey) when Bali and Lombok were compared (Lombok Strait) than when Lombok and Sumbawa (Alas Strait) and Sumbawa and Flores (Sape Strait) were compared. Again it appears that the ecological features and niches found in these islands were major factors determining whether a species established, adapted and flourished.

Separation of islands by shallow seas, that are presumed previously to be land bridges, does appear to have some impact on colonization by some birds. For example, the presence of cassowaries on Biak, Salawati and Yapen islands speaks to their previous connection by dry land to mainland Papua. The absence of birds of paradise beyond the islands of Misool and Waigeo in the westward direction from Papua could be taken as evidence of a previous land connection, but it probably also relates to suitable habitats within a reasonable flying distance of the mainland. In these small island domains, endemic species were sometimes present (e.g., Biak, Misool and Waigeo). Failure of these to move elsewhere and establish may simply be an expression of the preemptive exclusion principle rather than exclusivity. Similarly, the much greater similarity of species found on Aru to those in Papua rather than on the Kei group could be taken to indicate that previous land connections with Papua played some significance. The Aru Islands also are distinguished by having a cohesive group of large islands making for more conducive bird habitats with its larger combined land area (“six times larger) than on the Kei islands.

The long separation distance between Kalimantan and Sulawesi could reasonably be expected to inhibit some bird movement, a feature also apparently operating with movement from Papua west to other large islands (Seram and Halmahera). In our brief study of bird movement, the overwhelming impression was gained that distribution was primarily determined by habitat and food availability, and not the depth of the strait functioning as a physical barrier to colonization in the past. Selective pressure undoubtedly contributed to subspecific specialization noted with a number of species.

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References


Determinants of Housing Price: The Case of Bucaramanga (Colombia)

Jhon Alexander Bueno

Abstract

The housing prices in the city of Bucaramanga (Colombia) experienced a constant increase from 2006, raising fears that a housing bubble could happen in the growing city. Stiglitz (1990) explains a bubble as a constant increase in the price of a financial asset that is not justified by economic fundamentals. The purpose of this study was to find out if the increasing housing price in Bucaramanga from 2007-2014 could be attributed to a housing bubble, or could be explained as the result of other factors. Quarterly data for this period was used to analyze the response of house prices to changes in national and local economic fundamentals. House prices data for the city allowed a multiple regression analysis of several economic factors (area licensed for construction, construction cost, Gross Domestic Product (GDP), mortgage interest, unemployment, inflation) to establish the main determinants of its behavior. The study found that house prices for Bucaramanga varied significantly in their response to Gross Domestic Product (GDP) trend. Hence, GDP was found to be the only significant predictor of housing prices among the independent variables selected for the study.

Keywords: Housing price, housing bubble

Introduction

Background of Study

Colombia’s housing price experienced a deep drop from 1995 until the end of 1999 during the country’s last financial crisis. Prices slowly recovered but did not show a consistent increase until 2006. From that year henceforth, prices have increased by a total of 160%, while purchasing power has only increased by 50% (Ahumada, 2015).

One of the classical definitions of “bubble” was given by Stiglitz (1990), who explained it as a constant increase in the price of a financial asset that is not justifiable by economic fundamental factors. Thus, the problem with the constant increase in housing prices in Colombia brings about the fear of a “housing bubble”. This is a justifiable fear, especially when considering the devastating effects of the last housing bubble on the US economy.

An early study of the determinants of housing price in Colombia published by the Central Bank (Banco de la República) in 2004, when housing prices were stabilizing after the financial crisis, showed that housing price was very elastic to area licensed for building and construction cost, and to mortgage interest rate in lower degree (Clavijo, Jana, & Muñoz, 2004).

Headlines announcing record increases in housing prices in the Colombian market and the possibility of the existence of a housing bubble have flooded local newspapers in the last few years. Probably the one with the highest impact was the declaration of Robert Schiller, the Yale economist and Nobel Laureate who predicted the collapse of the US housing market, who said in an interview in 2013 that he suspected housing bubbles brewing in emerging markets including Colombia (Schmidt & Castellani, 2013).

As a result, the Central Bank (Banco de la República) published a paper for the Colombian Federation for Development (Fedesarrollo) analyzing the behavior of housing price against the fundamentals that determine it. The study included land price as an offer factor as well as other
demand factors. Even though the study warns about historical maximums reached on housing price/rent price ratio and a similar behavior to that observed in the housing crisis in the 90’s, the final conclusion of the authors is that housing prices could be explained as a normal answer to the fundamentals of the economy from the offer, specifically land price. The authors also concluded that if factors other than land price are used, house price is then shown misaligned (Salazar, Steiner, Becerra & Ramirez, 2013).

Another paper published later in the same year by a group of researchers of the Central Bank of Colombia (Banco de la República) found that traditional methods to detect housing bubbles suffer serious limitations and are not able to detect explosive bubbles when sample data include other bubbles that have been bursting. Since those methods could be inappropriate for the Colombian case, they applied a non-traditional method to the Colombian housing market that does not present the mentioned limitation and, in fact, allows detecting the starting and final date of the bubble. The method, developed by Phillips, Wu, and Yu (2008) was used to accurately predict the Hong Kong housing bubble while academic literature was denying it. The test on the Colombian housing market was able to detect a housing bubble between March and April 1998 and another recent one that began in June 2012. Even though the findings contrasted other papers studying the behavior of the Colombian housing market by implementing standard bubble detection tests, the authors were unable to test the robustness of their results since they only could deflate the Housing Price Index using Housing Rental Price Index and Consumer Price Index but could not use Household Income Index or Land Price Index due to lack of monthly data (Gómez, Ojeda, Rey & Sicard, 2013).

A recent report from the Colombian Construction Chamber – CAMACOL (Salcedo, Ortega, & Sarmiento, 2014) analyzing the behavior of housing prices per city found that the excessive price problem was not pervasive in all cities in Colombia. According to the authors, only two cities (Bogota and Bucaramanga) were found having Housing Price Index way above the average, as shown in Figure 1.

![Figure 1](Image1.png)

**Figure 1.** Housing Price Index (Fisher Index) per city compared to national average (Nacional_f). CAMACOL(2014).
The case of Bogota city was analyzed by the Planning Secretary of Bogota District in a research report published by Cediel and Velasquez (2013a). The authors used the same method developed by Phillips, Wu, and Yu (2008) to predict the Hong Kong housing bubble, and used later on by Gómez et al. (2013) to suggest the existence of a housing bubble in Colombia as mentioned before. Their results confirmed, for the specific case of Bogota city, the findings of Gómez et al. (2013) for data collected from government agencies (DANE and DNP). Housing prices showed an explosive behavior from December 2008 for New Housing Price Index, and from June 2012 for Housing Price Index. They also found that the explosive behavior for housing price was different for each city area. Most areas showed the same behavior from the beginning of 2005 to the beginning of 2012. Even though the findings were the same, the authors did not claim that a housing bubble actually exists in Bogota but pointed to the need for further research.

An additional study from the same government agency found that housing price for high class housing in Bogota could not be explained by the fundamentals of the economy (Land price and Gross Domestic Product). Therefore, the existence of a housing bubble was confirmed for high class housing. For middle class housing, since a deficit in housing was not found, the authors explained high prices as the result of market speculation practices from investors. For low class housing, a housing deficit was found as the most probable explanation for high prices. The authors pointed out that the consequences of the detected housing bubble are expected to be mild since only 50% of the housing in Bogota is paid for using borrowed funds (Cediel & Velasquez, 2013b).

Research Problem

The case of housing price in Bucaramanga (Colombia) deserves careful consideration because of the following reasons:

a. Even though the size of Bucaramanga’s economy is smaller than those of cities like Bogota, Medellin or Barranquilla, it still shows a much higher Housing Price Index than them from 2007 as shown in Figure 2.

![Figure 2. Housing Price Index (DANE Index) for four cities in Colombia. Data taken from National Administrative Department of Statistics (DANE).](image-url)
b. The behavior of the GDP for housing market in Santander state (where Bucaramanga city is located) has been higher than the national average since 2006, showing an important activity for the sector in the last 10 years.

c. Although construction cost is one of the fundamental drivers of housing price that could explain the high housing prices in the city, the variation of the Construction Cost Index for Bucaramanga has been lower than the national average from the beginning of 2013.

Even though the health indicators of the housing market in Bucaramanga city show symptoms of overheating, government authorities kept on justifying the behavior of the high prices by pointing to the fundamentals of the economy (Celedon, 2013).

Robert Schiller, quoted by Schmidt and Castellani (2013), after expressing his suspicion on a bubble brewing in Colombia, said, “There’s always a way to argue for any price increase,” and he added: “People like to think that this is a stable and steady increase. I was saying things about the U.S. just like this in 2005 and I got angry responses.”

Then, the question that arises is: Can the high housing price trend in the city of Bucaramanga (Colombia) be explained from the economic fundamentals, so a housing bubble can be discarded?

Significance of Study

This study is significant for several reasons. First, finding the determinants of house prices is very important, as house prices are a good indicator of the economic health of a country and its financial stability. Next, though several studies intended to explain the behavior of house prices have been performed in the past about the Colombian case but no study analyzing the case of Bucaramanga city has been published so far. Furthermore, due to historical maximums reached recently, and a clear overheating of house prices, a study that finds out if the current behavior of house prices in Bucaramanga can be explained from the economic fundamentals is required. A recent research study (Cediel & Velasquez, 2013b) analyzing the case of the capital city of Colombia (Bogota) warned about the existence of housing bubbles for certain economic segments of the market. The case of Bucaramanga requires consideration since the Housing Price Index is currently much higher than the one of Bogota. Finally, investigating the possible existence of relationships between traditional and non-traditional economic indicators and house prices will help understand what may be the reason for house prices behavior and, therefore, help policy-makers make informed decisions.

Literature Review

Related research works or publications

An early study published by Peek and Wilcox (1991) analyzed different series of house pricing data collected in the U.S. between 1950 and 1989 and the factors that could account for movements in real house prices. They found that house pricing declines with increases in mortgage rate, rises with both cyclical and more permanent income increases, and increases relative to construction cost increases. Demographic factors were also found as significant determinants of house pricing.

Another extensive study intended to identify the differences in the way house prices react to local economic factors was performed by Lamb (1999). The study analyzed data collected for a period of 30 years (1960-90) in the U.S. House price change was separated into components representing rent change and change in the user cost of housing capital. The author used a regression analysis of those components and found that regional house prices varied significantly as a response to population shifts, employment and income trends. The author also found that the determinants that are significant to regional housing prices changed during the period of time studied.
Capozza et al. (2002), in a study done using data from 69 U.S. metropolitan areas for the period 1979-1995, found that high real income, population growth and real constructions costs show a high serial correlation with housing prices.

Tsatsaronis and Zhu (2004) studied the behavior of housing prices in developed countries and the importance of a number of macroeconomic factors affecting them. Their most interesting result was the prevalence of inflation as common factor in the determination of real house prices regardless of the differences in individual country housing markets.

In an attempt to contrast the behavior of house prices in developed economies with that of developing countries, Vizek (2010) analyzed sample data from 1997 to 2009 for three developed EU countries (Ireland, Spain, and the U.K.) and four post-transition EU countries (Bulgaria, Croatia, the Czech Republic, and Estonia). The purpose of the study was to detect house price determinants for Eastern European countries. The results suggested that, in the long run, interest rate explained house prices behavior in both groups of countries, while income is significant only for developed EU countries. In the short run, house loan changes explain the behavior of house prices, only for the case of post-transition EU economies.

Égert and Mihaljek (2007) also performed a study on house prices in order to find if its behavior was being driven by conventional fundamental determinants such as GDP per capita, real interest rates, housing credit and demographic factors. Their findings confirmed their hypothesis as housing prices could be explained well by those factors.

Another interesting and recent study is the one done by McQuinn and O’Reilly (2008), who also tested housing price data for the Irish market finding a long-run relationship with the amount individuals can borrow. The study worked on the assumption that borrowing levels depend on disposable income levels and current interest rates.

Algieri (2013), in a more recent study, analyzed house prices data from the five main Euro area countries (Germany, France, Italy, Spain, and the Netherlands) and from the Anglo-Saxon economies (the United Kingdom and the United States) for the 1970-2010 period. He used a multivariate unobserved component model to catch those price movements that are not fully explained by economic fundamentals. He found that real income, long-run interest rates, stock prices and inflation had an important role in explaining real house prices.

**Research Model**

Based on the literature review, the independent variables chosen for this study are: Area licensed for construction, construction cost, Gross Domestic Product (GDP), mortgage interest, unemployment, and inflation. The dependent variable is housing price.

Figure 3 summarizes the research model of this study that incorporates the major potential determinants affecting housing price.
Hypotheses of Research

Hypotheses drawn in this study are the result of common factors found in the literature review.

Area Licensed for Construction:

Clavijo, Jana, and Muñoz (2004) indicated that housing price was very elastic to area licensed for construction in Colombia. This is a relevant factor to be considered since the shortage of area licensed for construction in Bucaramanga has been one explanation to high housing prices provided by local government authorities (Celedon, 2010). Hence, the following hypothesis is included in the study:

$H_1$: Area licensed for construction is significantly negatively related to housing price.

Construction Cost:

One of the classic fundamentals of the economy intensively mentioned as a determinant of house prices in academic literature is construction cost (Peek & Wilcox, 1991; Capozza et al., 2002; Clavijo, Jana, & Muñoz, 2004). Hence,

$H_2$: Construction cost is significantly positively related to housing price.

Gross Domestic Product (GDP):

Gross Domestic Product (GDP) was found to be one of the main determinants of housing price in several scholarly works (Égert & Mihaljek, 2007; Vizek, 2010; Cediel & Velasquez, 2013b; Algieri, 2013; ). A series of data of Gross Domestic Product (GDP) has been used as a proxy for wealth. The variable is expected to be positively related to house price because income growth improves house affordability. Hence,

$H_3$: Gross Domestic Product (GDP) is significantly positively related to housing price.

Mortgage Interest:

Mortgage Interest Rate is another fundamental of the economy that affects Housing Price according to the literature review (Peek & Wilcox, 1991; Clavijo, Jana, & Muñoz, 2004; Égert & Mihaljek, 2007; McQuinn & O'Reilly, 2008; Vizek, 2010; Algieri, 2013). Hence,

$H_4$: Mortgage interest is significantly negatively related to housing price.

Unemployment:

Lamb (1999) found that regional house prices varied significantly as a response to employment among other factors. Therefore, unemployment rate will be included as one possible determinant of house price. Hence,

$H_5$: Unemployment is significantly negatively related to housing price.
Inflation:

Tsatsaronis and Zhu (2004) found inflation as a common factor in the determination of real house prices in a cross-country study. Algieri (2013) also found inflation among the factors explaining real house prices. A series of data containing the percent variation of Consumer Price Index in two periods of time (represents the observed inflation in the same period) was taken as a measurement of inflation. Hence,

\[ H_0: \text{Inflation is significantly positively related to housing price.} \]

Research Methodology

Procedure of Data Collection

The National Administrative Department of Statistics, commonly referred to as DANE (for its acronym in Spanish), is the Colombian Administrative Department responsible for the planning, implementation, analysis and diffusion of the official statistics of Colombia.

Data used in this study was collected from the DANE website since it is publicly available. Data is provided in MS Excel format in the website.

Sample Selection and Measures

The period of time selected for the study includes the first quarter of 2007 until the third quarter of 2014. Quarterly data was used for all variables included in the analysis.

The most recent studies of house prices for the Colombian market included data up to 2012 (Cediel & Velasquez, 2013). However, the last two years of data may provide a new insight since house prices showed a steep increasing trend totalizing 160% for the period of study (Ahumada, 2015). This provided the justification for the sample selection.

As a result of the literature review, the following independent variables were chosen for the study:

- Area licensed for construction
- Construction cost
- Gross Domestic Product (GDP)
- Mortgage interest
- Unemployment
- Inflation

Data Analysis Techniques

This study used a quantitative approach. The quantitative data analysis was performed using PASW version 21.

Multiple Regression Analysis (Veal, 2005) was used to study the individual influence of area licensed for construction, construction cost, Gross Domestic Product (GDP), mortgage interest, unemployment, and inflation on housing prices in the city of Bucaramanga (Colombia).
Results of Study

The value of $R^2=0.98$ as shown on Table 1 indicates that the chosen independent variables explain 98% of the variance in house prices. Meaning that house prices can be adequately predicted based on the given model.

Table 1. Model summary table for multiple regression analysis showing $R$ and $R^2$ values.

<table>
<thead>
<tr>
<th>Model</th>
<th>$R$</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.990$^a$</td>
<td>.980</td>
<td>.975</td>
<td>8.97448</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Inflation, Mortgage Interest, Area Licensed for Construction, Unemployment, Construction Cost, Gross Domestic Product

The significance level of the overall F of the model is less than 0.001, thus the model is considered significant, as shown on Table 2.

Table 2. Analysis of variance table reporting how well the regression equation fits the data.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>95389.003</td>
<td>6</td>
<td>15898.167</td>
<td>197.391</td>
<td>.000$^a$</td>
</tr>
<tr>
<td>Residual</td>
<td>1932.992</td>
<td>24</td>
<td>80.541</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>97321.994</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Gross Domestic Product, Inflation, Area Licensed for Construction, Unemployment, Mortgage Interest, Construction Cost  
b. Dependent Variable: Housing Price

The multiple regression coefficients shown on Table 3 evidence that Gross Domestic Product (GDP) was significantly and positively related to house prices ($\beta=0.81$, $p < 0.001$). $H_3$ was consequently supported by the results.

On the other hand, unemployment was significantly and positively related to house prices ($\beta = 0.106$, $p = 0.027$), and inflation was significantly and negatively related to house prices ($\beta = -0.078$, $p = 0.031$). Hence, $H_5$ and $H_6$ were not supported by the results.

Additionally, area licensed for construction ($\beta = -0.065$, $p = 0.067$), construction cost ($\beta = 0.234$, $p = 0.117$), and mortgage interest rate ($\beta = -0.031$, $p=0.644$) are considered marginal. Therefore, $H_7$, $H_8$, and $H_9$ were not supported by the results.
Table 3. Multiple regression coefficients table with necessary information to predict housing price and determine statistical contribution to the model from selected independent variables.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-492.274</td>
<td>78.717</td>
<td>-6.254</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Area Licensed for Construction</td>
<td>-7.595E-5</td>
<td>.000</td>
<td>-.065</td>
<td>-1.916</td>
</tr>
<tr>
<td></td>
<td>Construction Cost</td>
<td>1.005</td>
<td>.618</td>
<td>.234</td>
<td>1.627</td>
</tr>
<tr>
<td></td>
<td>Gross Domestic Product</td>
<td>.004</td>
<td>.001</td>
<td>.810</td>
<td>4.348</td>
</tr>
<tr>
<td></td>
<td>Mortgage Interest</td>
<td>-2.155</td>
<td>4.602</td>
<td>-.031</td>
<td>-.468</td>
</tr>
<tr>
<td></td>
<td>Unemployment</td>
<td>4.787</td>
<td>2.033</td>
<td>.106</td>
<td>2.355</td>
</tr>
<tr>
<td></td>
<td>Inflation</td>
<td>-462.507</td>
<td>201.810</td>
<td>-.078</td>
<td>-2.292</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Housing Price
Discussion

As an answer to the research question of whether the high housing price trend in the city of Bucaramanga (Colombia) could be explained from the economic fundamentals, the result of this study showed Gross Domestic Product (GDP) as the only significant predictor of housing prices out of the six chosen independent variables (Area licensed for construction, construction cost, Gross Domestic Product (GDP), mortgage interest, unemployment, and inflation).

These results contradict the findings of early (Clavijo, Jana, & Muñoz, 2004) and late (Salazar et al., 2013) studies performed on the Colombian market that could explain the behavior of housing prices from fundamentals of the economy included in this study like area licensed for building and construction cost, and mortgage interest rate.

Even more, the results of this study partially contradict the recent findings of Cediel and Velasquez (2013b) showing that housing price behavior for the capital city of Colombia (Bogota) could not be explained by fundamentals of the economy like Gross Domestic Product and land price.

Then, is it valid to conclude that there is no housing bubble in Bucaramanga because only one of the fundamentals of the economy (Gross Domestic Product - GDP) was found to be a significant predictor of housing price? Shiller (2007) suggests that when it seems impossible to explain the boom in the housing market in terms of fundamentals like rents or construction cost, a feedback mechanism or social epidemic that makes people see housing as good investment opportunity may be the best explanation for increasing housing prices trend. In an earlier study (Case & Shiller, 1988), home buyers were surveyed in cities experiencing a housing boom and the researchers found that their high expectations about future price were the basis of the real estate boom, and therefore, the cause of an excess in demand that pushes house prices up. This could be the reason why the only factor explaining the high trend in house prices is the good performance of the Colombian economy (GDP). However, generalizations should be made with caution.

Conclusion

House prices in several cities of Colombia have soared extraordinarily rapidly in recent years, and their increase went so highly above the historical average that they do not seem to be fully explained by economic fundamentals like the case of Bogota (Cediel & Velasquez, 2013b).

A handful of studies have been done for the capital city of Colombia (Bogota) in the last few years but, there seems to be no study published for the case of Bucaramanga where the highest values for the Housing Price Index have been found since 2007. For this reason, the purpose of this study was to find whether the high housing price trend in the city of Bucaramanga (Colombia) could be explained from the economic fundamentals.

Results from a multiple regression analysis using area licensed for construction, construction cost, Gross Domestic Product (GDP), mortgage interest, unemployment, and inflation as possible determinants of housing price revealed that only Gross Domestic Product (GDP) is a significant predictor of housing price.

Future Scope of Research

Further research could be conducted including information about population since a new demographic census is planned to take place in 2016. Also, house buyers’ sentiment could be surveyed and included as one of the factors that could influence the behavior of house prices in a housing boom as suggested by Shiller (2007).
Limitation of Study

A recent study denying the presence of a housing bubble found land prices as the only economic factor able to explain house prices behavior in the capital city of Colombia (Salazar et al., 2013). Unfortunately, there is no data available about land prices for Bucaramanga city. Therefore, it couldn’t be included as part of this study.

Another important limitation of this study is the absence of demographic factors as part of the independent variables chosen. Several authors referenced in the literature review found population as one of the drivers of house prices (Lamb, 1999; Ëgert & Mihaljek, 2007; Capozza, Hendershott, Mack & Meyer, 2002). However, the National Department of Statistics (DANE) only provides a yearly projection of population based on the last census done in 2005 which also makes GDP per capita not the most reliable source for real income.

For these reasons, the results of this study need to be interpreted and inferred cautiously.

About the Author

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References


Determinants of Capital Structure for Listed Companies in the Colombian Industrial Sector

Paola Suarez

Abstract

The purpose of this study was to determine the relationship between tangibility, corporate taxes, age, and company size to the capital structure of Colombian firms. Thirty five (35) companies of the industrial sector listed by the Colombian Stock Exchange were chosen as the sample for this study. Financial data used in the analysis was collected from their public annual reports. A Pearson correlation coefficient was used to analyze the linear dependence between leverage (firm’s capital structure) and the independent variables (tangibility, corporate tax rate, age, and company size). The results indicate that tangibility, corporate tax rate, and age of companies don’t have a significant relationship with the leverage of the company. But, there exists a significant positive correlation between the size of the company and its capital structure which is consistent with the trade-off theory of capital structure.

Keywords: Capital structure, tangibility, corporate tax rate, company size, age

Introduction

Background of the study

Capital structure is one of the most important and complicated areas of corporate strategy and financial decision making. It indicates the combination of debt, equity, and other sources of funds a company uses to finance its operations.

Modigliani and Miller (1958), as the pioneers of the study of the determinants of corporate capital structure, provided the foundation for an understanding of the differences between unlevered and levered firm values, which increased the interest on the study of capital structure analysis and the key factors influencing financing decisions.

Zamudio (2005) observed that the capital structure of private companies in Colombia depended to a large extent on debt financing, and only few companies from the industrial sector used bonds and stocks as a source of financing. Tenjo, López, and Zamudio (2006) indicated that financing decisions of Colombian companies were significantly related to higher information asymmetries.

According to Mazur (2007), studies have recently shifted their focus to the pecking order theory, indicating disagreement on the factors influencing the firms’ capital structure.

Wadnipar and Cruz (2008) found that the pecking order theory was described as a factor concerned with short-term financing decisions of Colombian managers. He further noted that, for small and medium size companies, financial obligations and account payables were the most important determinants of capital structure.

Few empirical studies have been carried out in Colombia to provide sound evidence of the determinants of capital structure, although Colombia is characterized by its industrial sector that plays a great role on the growth of the economy of the Country as it adds and counted second to the increase of Colombian Gross Domestic Product (Medina, Salinas & Ochoa, 2012).

The aim of this study was to provide a more focused perspective on what are the factors that relate to the capital structure decisions of listed companies of the industrial sector of Colombia.
**Research Problem**

The problem of capital structure has attracted intense dialogue within the field of corporate finance. The fundamental question is whether there exists an optimal level of leverage, and what might be its determinants.

Whereas there are several studies done in developed countries, the developing countries are trying to increase the research on this subject. To date, limited research has been done in Colombia.

This study was intended to investigate the situation in Colombia. The findings may provide a better foundation for financial decisions making in the industrial sector of Colombia. The study was based on the following questions: What factors have been identified by scholars as determinants of capital structure? Is there any significant relationship between those factors and the capital structure of listed Colombian industrial companies?

**Literature Review**

**Theories on Capital Structure**

Capital Structure is described as the mix of debt (issuing bonds) and equity (issuing stocks), or hybrid securities a firm uses to finance its capital expenditures and day to day operations. In simple terms, it is defined as the leverage ratio (Saxena, 2014).

Capital structure and its effect on the company’s value was initially introduced by Modigliani and Miller (1958) when they stated that under conditions of perfect capital markets, the financial leverage of the company was irrelevant to its value. Later on, in 1963, Modigliani and Miller took taxation under consideration. Their theory suggested that the higher debt use is, the higher the firm’s value is. This is because interest on debt is a tax-deductible expense.

Many theories of capital structure evolved from Modigliani and Miller’s model, and they can be classified into two groups: The first group are those which recognize the existence of an optimal level of debt, such as trade-off theory (Kraus & Litzenberger, 1973), the agency theory (Jensen & Meckling, 1976), and the free cash flow theory (Jensen, 1986). The second group does not recognize any optimal level of debt and includes the pecking order theory (Myers & Majluf, 1984) and the equity market timing theory developed by Baker and Wurgler (2002).

The Trade-off theory explained by Kraus and Litzenberger (1973) identified a tax advantage to debt financing as Modigliani and Miller did in 1963. Since interest expenses are tax deductible, financial leverage decreases the company’s corporate income tax liability and increases its after-tax profit. However, they also acknowledged that there is a financial risk of adding debt. If the company cannot meet its debt obligations, it is forced into bankruptcy and it will have to bear all the costs of financial distress. Thus, this theory suggests that companies should choose their optimal capital structures by trading off the benefits and costs of debt and equity.

On the other hand, a group of researchers suggested considering the problem of agency cost as an important element in determining capital structure of firms. Jensen and Meckling (1976) recognized that a conflict between managers and shareholders results in agency cost of equity, and the conflict between shareholders and debt-holders results in agency cost of debt. Moreover, Jensen (1986) developed a theory that explains the benefits of debt in reducing agency costs of free cash flows. This theory is applied to companies with extra-high free cash flow. It states that companies should give back extra cash flows to investors to prevent managers from investing the excess of cash flows in projects with returns below the cost of capital or in any capital expenditure that will not maximize shareholders wealth.

Contrary to the trade-off theory, there is the pecking order theory developed by Myers and Majluf (1984), which indicates that there is no target level of leverage since companies have a specific preference order for capital used to finance their businesses. This theory suggests that
managers prefer internal over external funds and if there is a need for external financing, managers issue debt first and issue equity only as a last resort. Some of the reasons discovered by Myers and Majluf (1984) as to why managers behave in this way are: First, managers found that it is generally better to issue low risk debt than high risk equity. Second, firms whose investment opportunities outpace operating cash flows, and which no longer have the opportunity to issue save securities, may sacrifice profitable investments rather than choosing equity to finance them. Lastly, issuing stock to finance investment may lead to a fall in stock prices, but if companies issue debt the stock price may not fall.

Finally, a new theory about capital structure was developed by Baker and Wurgler (2002). They found that there is a strong relationship between capital structure and market values, and that capital structure is the accumulation of market timing financing decisions.

**Determinants of Capital Structure**

Having reviewed the theories of capital structure, let’s now review the variables selected for this study in the lights of local and foreign studies. Zhang (2010), Alkhatib (2012), Cortez et al. (2012), Masnoon and Anwar (2012), Medina et al. (2012), and Umer (2014) showed that tangibility has a significant impact on the capital structure of the firms.

Mazur (2007) did not find a significant relationship between the corporate tax rate and the capital structure. However, later on Nur (2014) showed that corporate tax rate has a significant impact on the capital structure of the firms.

Hall, Hutchison, and Michaelas (2000) showed that age has a significant impact on the capital structure of the firms. Although, Zhang (2010) and Nur (2014) did not find a significant relationship between age and the capital structure.

Saylgan, Karabacak and Küçükkocaoglu (2006), Zhang (2010), and Umer (2014) showed that size has a significant impact on the capital structure of the firms. Although Cortez and Susanto (2012) showed that size does not have an impact on the capital structure of the firms.

The literature review has produced a list of factors considered by scholars as determinants of capital structure. The reasons why tangibility, corporate tax rate, age and size of the company are considered for this study are explained below.

**Tangibility**

Alkhatib (2012) defines tangibility as the fixed assets to total assets ratio. The assets structure of a company is important in determining the capital structure, because tangible assets can serve as collateral for loans (Umer, 2014). According to the trade-off theory, there should be a positive relationship between fixed assets and debt.

Zhang (2010), who studied the determinants of leverage in the manufacturing industry of England, identified tangibility as a determinant of capital structure. Alkhatib (2012) did the same for listed companies on the Jordanian Stock Exchange and his results showed that tangibility had a significant relationship with leverage. Masnoon et al. (2012) also found that tangibility has a positive relation with leverage, during a study done on the determinants of the capital structure of Karachi Stock Exchange listed pharmaceutical companies of Pakistan. This is broadly consistent with the findings of Umer (2014) who analyzed the determinants of the capital structure of companies in Ethiopia.

Another study done on Japanese manufacturing companies listed in Tokyo Stock Exchange showed that assets structure had a significant relation with the leverage level of the companies (Cortez & Susanto, 2012).

For the Colombian manufacturing sector, Medina et al. (2012) found a strong positive relation between tangibility and leverage of small companies. However, the same study found that tangibility
had a negative relation with leverage when analyzing big companies in the same sector. This is attributed to the fact that big companies prefer to use internal funds first, which is consistent with the picking order theory of capital structure that predicts that firms holding more tangible assets will be less likely to issue debt (Myers & Majluf, 1984).

**Corporate Tax Rate**

Companies cannot avoid the corporate tax which together with the financing decisions of a listed company play a fundamental role in the company’s total market value (Ping & Caixia, 2011). Modigliani and Miller (1958) came to the conclusion that the bigger the amount of debt financing, the bigger the company’s total market value. They proposed that together with corporate taxes, the total market value of a firm with leverage is equal to the value of an unlevered firm plus the present value of the tax shield. Therefore, if the government increases the corporate tax rate, the tax benefit from the debt will become bigger than before, and the company will prefer to use debt financing because the firm’s total value will increase.

On the other hand, Mazur (2007) did not find a significant relation between the corporate tax rate and the leverage of Polish firms trading on the Warsaw Stock Exchange. His sample included 238 companies belonging to 13 industries.

Nur (2014) in a study of Malaysian firms listed in the Kuala Lumpur Stock Exchange found that as the corporate tax rate increases, companies are forced to lower corporate taxes which would lead them to utilize more debt in their capital structures.

**Age**

The pecking order theory suggests that older companies are less likely to use debt financing because they have more time to accumulate funds. Consistent with this theory Hall et al. (2000) carried out a study in the UK on small and medium sized enterprises and found that leverage was related negatively to age.

Contrary to the findings of Hall et al. (2000), Zhang (2010) and Nur (2014) found that age did not have a significant relationship with the leverage of the firm.

**Size**

Another important potential determinant of capital structure can be the size of the firm. According to the trade-off theory, debt levels increase with the size of the company. Therefore, large firms tend to have more debt as they have lower bankruptcy costs. This is supported by a study done by Sayylan et al. (2006) showing that size has a positive association with the leverage ratio, and that it is a significant determinant of the capital structure decisions of Turkish manufacturing firms.

Later on, Zhang (2010) showed that size was positively related to the debt/equity ratio of British manufacturing firms.

The pecking order theory suggests that large companies have less incentive to issue debt because the asymmetric information will be smaller between the company and the investors. During a study done on the determinant of the capital structure of KSE listed pharmaceutical companies of Pakistan, Masnoon (2012) found that size had a negative relation with leverage.

Umer (2014) also found that size is positively correlated with leverage when analyzing the determinants of the capital structure of companies in Ethiopia.

Contrary to the studies mentioned above that found a relation between size and the leverage of the firm, a study done on Japanese manufacturing companies listed in the Tokyo Stock Exchange showed that size does not have a significant relation with capital structure (Cortez & Susanto, 2012).
Conceptual Framework

Although, the review of literature seems to suggest that there is no complete agreement from different research findings in studies done in different countries, the four variables reviewed above where chosen to form the framework to test the Colombian case.

The following framework is the result of the review of the literature. This conceptual framework is used to test the relationship between company characteristics (tangibility, corporate tax rate, age and size of the company) and capital structure decisions.

Figure 1. Conceptual framework

The dependent variable in this research study is leverage ratio (firm’s capital structure) which is calculated as total debt divided by total equity. The independent variables of this study are: tangibility (calculated as fixed assets/total assets), corporate tax rate (calculated as total tax/total taxable income), age of the company (in years), and company size (measured as sales revenue).

Hypothesis

Tangibility

According to the trade-off theory, a statistically significant positive relationship is expected between debt/equity ratio and the tangibility of assets.

H1: Tangibility is significantly and positively related to leverage ratio (firm’s capital structure).

Corporate Tax Rate

According to Modigliani and Miller’s proposition, a statistically significant positive relationship between the corporate tax rate and leverage should be expected.

H2: Corporate tax rate is significantly and positively related to leverage ratio (firm’s capital structure).

Age of the company
According to the pecking order theory, a statistically significant negative relationship between the age of the company and leverage should be expected. Hence,

\[ H_3: \text{Age is significantly and negatively related to leverage ratio (firm's capital structure).} \]

\textit{Size of the company}

According to the trade-off theory, a statistically significant positively relationship is expected between debt/equity ratio and the size of the companies.

\[ H_4: \text{Size is significantly and positively related to leverage ratio (firm's capital structure).} \]

\textbf{Research Methodology}

\textit{Research Design}

A quantitative approach was used in this research to determine the relationships between the independent variables and the independent variable. A Pearson correlation coefficient (Veal, 2005) was used to analyze the linear dependence between leverage (firm's capital structure) and the independent variables (tangibility, corporate tax rate, age, and company size).

Data used in this study was collected from the Colombian Stock Exchange website and from the companies’ annual reports posted in their websites. PASW version 21 was used to carry out statistical procedures to determine correlations between the dependent variable and the independent variables.

Numerical data was used to answer the research question.

\textit{Sample Selection}

Since the Colombian industrial sector is small, the whole population was chosen for the study. The Colombian Stock Exchange lists a total of forty four (44) companies. However, only thirty five (35) of them make their financial data available. Data used in this study was collected from their public annual reports available in their websites and the Colombian stock exchange website. Two years of financial data was used for the analysis (2011 to 2012). The characteristics of the companies selected vary in terms of industry sectors, years of experience, assets value, and leverage.

\textit{Characteristics of the Research Sample}

\textbf{Acerías Paz del Río} with 67 years of experience, this company is the only integrated steel company in the country. Its total assets were \$2,431.551 COP million in 2011 and \$2,262.518 COP million in 2012. Its debt to equity ratio was 0.79 in 2011 and 0.45 in 2012.

\textbf{Agroguachal S.A.} has 39 years of experience and is engaged in the cultivation and processing of agricultural products. Its total assets were \$17,455.25 COP million in 2011 and \$17,288.34 COP million in 2012. Its debt to equity ratio was 4.61 in 2011 and 1.66 in 2012.

\textbf{Alimentos Derivados De La Cana S.A.} has 19 years of experience and is engaged in the production and distribution of sugar cane and its derivatives. Its total assets were \$81,588.70 COP million in 2011 and \$92,087.93 COP million in 2012. Its debt to equity ratio was 0.80 in 2011 and 0.84 in 2012.

\textbf{Avianca Holdings S.A.} represents the integrated operation of several airlines that operate domestically and internationally. It has 96 years of experience. Its total assets were \$3,975.688 COP
million in 2011 and $4,320.923 COP million in 2012. Its debt to equity ratio was 4.03 in 2011 and 4.75 in 2012.

Caracol Televisión S.A. was formed in August 1969, and over the last 46 years, it is dedicated to providing television services and the production of audiovisual content. Its total assets were $955.720 COP million in 2011 and $1,096.079 COP million in 2012. Its debt to equity ratio was 0.52 in 2011 and 0.66 in 2012.

Cartón de Colombia S.A also known as Smurfit Kappa Cartón de Colombia was founded in 1944 and over the last 71 years, it is engaged in the production of corrugated cardboard packaging, pulp and paper. Its total assets were $1,711.986 COP million in 2011 and $1,929.949 COP million in 2012. Its debt to equity ratio was 0.25 in 2011 and 0.22 in 2012.

Carvajal Empaques S.A specializes in the design, production and distribution of disposable, single-use packaging. It has 40 years of experience. Its total assets were $846.102 COP million in 2011 and $862.398 COP million in 2012. Its debt to equity ratio was 5.03 in 2011 and 1.41 in 2012.

Castilla Agrícola S.A. is an agricultural and Livestock Company founded in 1940. Its total assets were $370.620 COP million in 2011 and $442.854 COP million in 2012. Its debt to equity ratio was 0.08 in 2011 and 0.06 in 2012.

Celsia S.A E.S.P is an electric utility company with direct operations in power generation and participation in the distribution of energy. It has 96 years of experience. Its total assets were $6,796.027 COP million in 2011 and $6,840.008 COP million in 2012. Its debt to equity ratio was 1.02 in 2011 and 0.85 in 2012.

Cementos Argos S.A. is a company that produces and markets cement and ready-mix. It has 81 years of experience. Its total assets were $16,781.066 COP million in 2011 and $10,266.716 COP million in 2012. Its debt to equity ratio was 0.44 in 2011 and 0.78 in 2012.

Cemex Latam Holdings S.A is a regional leader in the building solutions industry. It has 109 years of experience. Its total assets were 2,386.470 COP million in 2011 and $6,963.270 COP million in 2012. Its debt to equity ratio was 0.88 in 2011 and 2.21 in 2012.

Colombina S.A. is a food company that has been running for 88 years. It is the leader in confectionery and second largest chocolate, preserves and ice-cream producer in Colombia. Its total assets were $1,012.489 COP million in 2011 and $1,108.537 COP million in 2012. Its debt to equity ratio was 1.35 in 2011 and 1.29 in 2012.

Coltejer S.A. is a market leader in the textile sector with 108 years of experience. Its total assets were $606.204 COP million in 2011 and $614.845 COP million in 2012. Its debt to equity ratio was 0.61 in 2011 and 0.28 in 2012.

Compañía Agrícola San Felipe S.A. has 39 years of experience and is engaged in the production and distribution of sugar cane and its derivatives. Its total assets were $18,115.42 COP million in 2011 and $18,277.91 COP million in 2012. Its debt to equity ratio was 0.05 in 2011 and 0.03 in 2012.

Compañía De Empaques S.A. is a company with 77 years of experience in manufacturing and marketing products made of natural (fique) and synthetic fibers, for the oil, gas, mining, construction, infrastructure, and agribusiness sectors. Its total assets were $203.253 COP million in 2011 and $214.413 COP million in 2012. Its debt to equity ratio was 0.40 in 2011 and 0.35 in 2012.

Construcciones El Condor S.A. is a Colombian engineering company with 36 years of experience, engaged in the development and investment in public and private infrastructure. Its total assets were $697.582 COP million in 2011 and $809.042 COP million in 2012. Its debt to equity ratio was 0.58 in 2011 and 0.30 in 2012.

Coomeva Entidad Promotora De Salud S.A is in charge of enrollment, member registration, collections, transfers and application of contributions, promotion and prevention in health risk management and the organization and guarantee of mandatory health plan services. It has 20 years of experience. Its total assets were $563.796 COP million in 2011 and $754.521 COP million in 2012. Its debt to equity ratio was 3.54 in 2011 and 6.24 in 2012.

Ecopetrol S.A. has 94 years of experience. It is the nation's only integrated crude oil and gas company (E&P, transport, refining and petrochemical). Its total assets were $92,277.386 COP million
in 2011 and $113,879.578 COP million in 2012. Its debt to equity ratio was 0.65 in 2011 and 0.72 in 2012.

**Enka De Colombia S.A.** founded in 1964, is one of the leading producers of nylon and polyester in Latin America. Its total assets were $538.264 COP million in 2011 and $552.161 COP million in 2012. Its debt to equity ratio was 0.21 in 2011 and 0.25 in 2012.

**Fabricato S.A.** is a company that has been in the textile market for 94 years. It is engaged in the production and marketing of fabrics based on highly specialized international quality standards. Its total assets were $1,210.391 COP million in 2011 and $1,106.638 COP million in 2012. Its debt to equity ratio was 0.37 in 2011 and 0.41 in 2012.

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**Fogansa S.A.** is a partially government-owned company with 74 years of experience in everything related to cattle farming. Its total assets were $109.713 COP million in 2011 and $107.089 COP million in 2012. Its debt to equity ratio was 0.07 in 2011 and 0.07 in 2012.

**Fondo Ganadero Del Tolima** has 53 years of experience and is engaged in the production, processing and marketing of agricultural goods and services. Its total assets were $16,569.96 COP million in 2011 and $19,249.15 COP million in 2012. Its debt to equity ratio was 0.22 in 2011 and 0.15 in 2012.

**Grupo Orbis S.A**. is a Colombian multinational group focused on Latin America. It was established in 1921, its four main businesses are: Paint (Pintuco), Trade (Mundial), Water (O-tek), and Chemical (Andercol). Its total assets were $1,909.773 COP million in 2011 and $2,218.125 COP million in 2012. Its debt to equity ratio was 1.36 in 2011 and 1.61 in 2012.

**Industrias Estra S.A.** is a Colombian company specialized in plastic solutions for homes and industries. It has 62 years of experience. Its total assets were $100.055 COP million in 2011 and $89.219 COP million in 2012. Its debt to equity ratio was 0.62 in 2011 and 0.91 in 2012.

**Interconexion Electrica S.A. E.S.P.** focuses its activities on the businesses of Electrical Energy Transmission, Telecommunications Transport, Road Concessions, and the Intelligent Management of Real-Time Systems. It has 31 years of experience. Its total assets were $26,659.165 COP million in 2011 and $25,770.989 COP million in 2012. Its debt to equity ratio was 2.46 in 2011 and 2.53 in 2012.

**Inversiones Venecia S.A.** has 35 years of experience and is engaged in the production, and exploitation of sugar cane and its by-products. Its total assets were $24,281.53 COP million in 2011 and $24,564.33 COP million in 2012. Its debt to equity ratio was 0.0076 in 2011 and 0.0042 in 2012.

**Mayaguez S.A.** is a leading agribusiness company in the production of sugar, biofuels and bioenergy, with 78 years of experience. Its total assets were $768.391 COP million in 2011 and $869.382 COP million in 2012. Its debt to equity ratio was 0.40 in 2011 and 0.24 in 2012.

**Mineros S.A.** is a private Colombian business group with 40 years of experience, dedicated to the exploration and mining of precious metals, especially gold. Its total assets were $516.273 COP million in 2011 and $608.773 COP million in 2012. Its debt to equity ratio was 0.18 in 2011 and 0.14 in 2012.

**Organizacion Terpel S.A.** has 47 years of experience and is engaged in the production, and exploitation of sugar cane and its by-products. Its total assets were $3,527,033.92 COP million in 2011 and $3,807,598.94 COP million in 2012. Its debt to equity ratio was 1.14 in 2011 and 1.33 in 2012.

**Pacific Rubiales Energy Corp** is the premier independent company, leading oil and gas E&P Company in Latin America, and the second largest producer of crude oil and gas in Colombia. It has 11 years of experience. Its total assets were $10,585.393 COP million in 2011 and $12,531.467 COP million in 2012. Its debt to equity ratio was 0.87 in 2011 and 0.78 in 2012.

**Productos Familia S.A.** is a company that generates well-being, through hygiene solutions for persons, home and professional care with leading brands. It has 57 years of experience. Its total assets were $1,316.848 COP million in 2011 and $1,426.631 COP million in 2012. Its debt to equity ratio was 0.35 in 2011 and 0.30 in 2012.
R.C.N. Television S.A. is a company dedicated to providing television services and the production of audiovisual content. It has 48 years of experience. Its total assets were $855,173 COP million in 2011 and $916,156 COP million in 2012. Its debt to equity ratio was 0.33 in 2011 and 0.39 in 2012.

Riopaila Agricola S.A. is an Agricultural and Livestock Company founded in 1928. Its total assets were $344,489 COP million in 2011 and $416,847 COP million in 2012. Its debt to equity ratio was 0.11 in 2011 and 0.09 in 2012.

Riopaila Castilla S.A. is an agribusiness company with 97 years of experience. Its total assets were $907,192 COP million in 2011 and $1,009,619 COP million in 2012. Its debt to equity ratio was 0.41 in 2011 and 0.49 in 2012.

Tablemac S.A. is engaged in the production of wood panels for building, furnishing, display atmosphere and remodeling spaces. It has 27 years of experience. Its total assets were $245,455 COP million in 2011 and $361,635 COP million in 2012. Its debt to equity ratio was 0.37 in 2011 and 0.32 in 2012.

Results of Study

Descriptive Statistics

Table 1. Descriptive statistics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>D/E ratio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 0.5</td>
<td>17</td>
<td>48.6</td>
</tr>
<tr>
<td>0.5-0.1</td>
<td>9</td>
<td>25.7</td>
</tr>
<tr>
<td>0.1-1.5</td>
<td>4</td>
<td>11.4</td>
</tr>
<tr>
<td>1.51-2.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Above 2.1</td>
<td>5</td>
<td>14.3</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
<tr>
<td>Tangibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 0.1</td>
<td>12</td>
<td>34.3</td>
</tr>
<tr>
<td>0.1-0.2</td>
<td>12</td>
<td>34.3</td>
</tr>
<tr>
<td>0.21-0.3</td>
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<td>20</td>
</tr>
<tr>
<td>0.31-0.4</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>0.41-0.5</td>
<td>3</td>
<td>8.6</td>
</tr>
<tr>
<td>0.51-0.6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
<tr>
<td>Tax rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 0.5</td>
<td>25</td>
<td>71.4</td>
</tr>
<tr>
<td>0.5-1.0</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>1.1-1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1.51-2.0</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Above 2.1</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 20</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>20-40</td>
<td>9</td>
<td>25.7</td>
</tr>
<tr>
<td>41-60</td>
<td>6</td>
<td>17.1</td>
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<tr>
<td>61-80</td>
<td>7</td>
<td>20</td>
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<tr>
<td>81-100</td>
<td>9</td>
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</tr>
<tr>
<td>101-120</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 1 billion</td>
<td>25</td>
<td>71.4</td>
</tr>
<tr>
<td>1.0-5.0 b</td>
<td>6</td>
<td>17.1</td>
</tr>
<tr>
<td>5.1-10 b</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>10.1-15 b</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>15.1-20 b</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>
The majority of the companies (48.6%) recording a D/E ratio below 0.5. Nine (9), (25.7%) recorded a debt to equity ratio of 0.5-0.1 over the period. Another four (4), (11.4%) recorded a D/E ratio of 0.1-1.5. None of the companies recorded a D/E of between 1.51 and 2.0. Only 14.3% of the companies recorded a D/E ratio of above 2.1.

Twelve (12) out of the 35 companies (34.3%) recorded a tangibility below 0.1, another twelve (12) companies (34.3%) indicated a tangibility between 0.1-0.2. Additional seven (7) companies (20%) indicated a tangibility between 0.21-0.3; while another one (1) (2.9%) fell under 0.31-0.04. The remaining three (3), (8.6%) recorded a tangibility of above 0.4.

The modal age of the companies assessed was between 20 to 40 years and 81 to 100 years with nine (9) (25.7%) companies.

In regards to the tax rate, the majority of the companies (71.4%) recorded a tax rate below 0.5. Seven (7) companies (20%) recorded a tax rate of 0.5-1.0 over the period. None of the companies recorded a tax rate of between 1.1-1.5. The tax category 1.51-2.0 had the least number with only one (1) company (2.9%) falling under this category. Another two (2) companies (5.7%) recorded a tax rate of above 2.1.

The descriptive statistics indicated that majority of companies assessed were small in size with 71.4% falling below 1 billion in sales. 17.1% of them recorded sales between 1 and 5 billion. And another 5.7% recorded sales between 5.1 and 10 billion. Only 5.8% of the companies recorded sales above 10 billion.

**Correlation**

Table 2. Correlation between leverage (firm’s capital structure) and the independent variables (tangibility, corporate tax rate, age, and company size)

<table>
<thead>
<tr>
<th>D/E ratio</th>
<th>Tangibility</th>
<th>Tax rate</th>
<th>Age</th>
<th>Size</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>-0.159</td>
<td>0.160</td>
<td>-0.060</td>
<td>0.377**</td>
<td>-0.021</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.189</td>
<td>0.186</td>
<td>0.624</td>
<td>0.001</td>
<td>0.864</td>
</tr>
<tr>
<td>N</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>

Pearson’s correlation coefficient was used to analyze the relationship between the independent and dependent variables. The relationship between D/E ratio (firm’s capital structure) and tangibility is negative. This means that as tangibility increases the D/E ratio decreases. Pearson’s correlation shows that (r=-.159, p=.189 > a=0.05), meaning that there was no statistically significant relationship between tangibility and the leverage of the company. The research hypothesis H1 was thus rejected.

The correlation between D/E ratio (firm’s capital structure) and taxes is positive as indicated by Pearson’s correlation (r=.160, p=.186 > a=0.05). This implies that D/E ratio increases with the tax rate. As the corporate tax rate is raised, firms utilize more debt in their capital structures. However, the relationship between taxes and D/E ratio is statistically insignificant. Therefore, the research hypothesis H2 was rejected.

The age of the company negatively correlates with the D/E ratio. This implies that the older companies have a lower D/E ratio than the young companies. Pearson’s correlation shows that (r=-.06, p=.624 > a=0.05). Thus, this relationship is not statistically significant. Therefore, the research hypothesis H3 was rejected.

Finally, there exists a statistically significant positive correlation between size and D/E ratio (r=.377, p=.001 < 0.05). This implies that the D/E ratio (firm’s capital structure) increases with the
size of the company. The bigger companies have a higher D/E ratio than the smaller ones. The research hypothesis $H_4$ was therefore retained.

Discussion

As an answer to the research question: Is there a statistically significant relationship between tangibility, corporate taxes, age, the company size and the capital structure of listed Colombian companies in the industrial sector? The empirical study showed that only size of the company had a statistically significant positive correlation with the capital structure of Colombian companies which is consistent with the trade-off theory of capital structure. According to the trade-off theory, debt levels increase with the size of the company because they have lower bankruptcy cost. Therefore, we can conclude that although larger listed Colombian companies in the industry sector have more debt that the smaller ones, we cannot affirm that is due to lower bankruptcy costs.

This study also supports the studies done by Sayilgan et al. (2006), Zhang (2010), and Umer (2014). But, it contradicts the findings of Masnoon et al. (2012). Some possible explanations for this contraction could be the different time horizon used in his study and the strong differences in corporate culture.

Limitation of Study

This study faced the following limitations:

First, the focus was only on listed Colombian companies in the industrial sector, which is a small number although is one of the most important.

Second, only 80 percent of the companies make their financial data available. The remaining 20 percent could not be included in the study affecting the results of the study.

Third, the period of time used for the analysis may be small to fully understand the behavior of the variables involved in the study.

Future studies may use a larger sample size, and data for a longer period of time to fully analyze the relationships between the independent variables and the capital structure of Colombian firms.

Conclusion

The main objective of this study was to examine whether the chosen firm-specific factors (tangibility, corporate tax rate, age, and company size) had a relationship with the corporate choice of capital structure of thirty-five (35) Colombian listed companies of the industrial sector.

A set of financial data from 2011-2012 was evaluated using Pearson's correlation coefficient to test the relationship between the dependent and independent variables.

The results revealed that factors such as tangibility, taxes rate, and age don’t have a statistically significant relationship with the leverage of the company (firm’s capital structure). But, a positive statistically significant correlation between the size of the company and its capital structure was found, which indicates than debt levels increase with the size of the company.

A word of caution is necessary. The study was based on secondary data available online at the Colombia Stock Exchange website and companies’ annual reports. The study sample was restricted to two years only: 2011-2012. Only listed companies in the industrial sector were analyzed, and only four factors (Tangibility, taxes rate, size and age) were used. The results may not be appropriate for making wide inference.

These limitations present a potential opportunity for future studies. It is suggested that future studies use a larger sample size to fully capture the relationship between the independent variables and the capital structure of the companies. Additional variables may be included.
About the Author

Paola Suarez is a lecturer at the Faculty of Business Administration, Asia-Pacific International University.

References


Luxury Value Perceptions and Attitude toward Purchase Intention of Luxury Automobiles in Thailand

Korrapun Vinijcharoensri

Abstract

The objective of this research was to investigate the influence of luxury value perceptions on attitude toward luxury products, which leads to intention to purchase luxury cars. This study was adapted from the luxury value perceptions by Shukla (2012) and the findings of qualitative research. The main survey was quantitative, using self-administered surveys which contained structured questions. Two sampling frames were employed for data collection; the first was the 2016 Bangkok International Motor Show, and the second was authorized car dealers of luxury cars in the Bangkok area. Data from 436 questionnaires data were analyzed using structural equation modeling (SEM). The findings revealed that conspicuous value has a positive and significant impact on attitude toward luxury products. Moreover, three sub-dimensions of functional values and attitude toward luxury products showed positive and significant relationships. Finally, attitude toward luxury products was positively and significantly related to intention to purchase luxury cars.

Keywords: Luxury value perceptions, luxury products, attitudes, intention to purchase, consumer behavior

Introduction

Luxury goods are characteristically expensive even though they are not necessities and offer fewer functional advantages as compared with complementary products (Dubois & Duquesne, 1993). Luxury items consistently include important features such as superb quality, craftsmanship, exclusivity, and admirable service (Dubois & Duquesne, 1993). Furthermore, luxury products are prominently perceived as prestigious, which results in representing a higher status in the social hierarchy (Strach & Everett, 2006). Possession of luxury products also helps to reflect the owner’s identity by connecting internal and external worlds (Jenkins, 2004). For example, a luxury brand of
handbag can symbolically reflect high social class and economic power for the owner. Kapferer (2001) argued that luxury goods basically include an international reputation, creativity, uniqueness, and desirability. However, luxury products can reflect different degrees of luxury and distinctiveness (Vigneron & Johnson, 2004). For example, a Cadillac and a Rolls-Royce are both considered premium luxury cars, but one may have a higher level of luxury than the other. As per the trend of luxury consumption, the Altagamma Foundation (2011) confirmed that the global luxury market experienced an approximate 2 percent annual growth rate, even though the world economy has been in a recessionary period. Furthermore, Silverstein and Fiske (2001) argued that the luxury market is considered as a substantial segment in which growth in luxury consumption has been brought on by social and business factors. In addition, luxury products are not only demanded in the Western world (refers to European countries and the United States), but also in emerging countries such as China, Korea, India, and the Middle East (Tynan et al., 2009). In terms of luxury consumption in Southeast Asia, economic status is conceived of as an important indicator of social status in the hierarchical and newly industrialized societies wherein financial achievement is communicated through public visibility (Abe et al., 1996: Markus & Kitayama, 1991). As a consequence, Southeast Asians, including Thais have a high tendency to consume luxury goods, such as brand-name products, designer-labeled items, luxury cars, jewelry, and so on (Wong & Ahuvia, 1998).

There are many types of luxury products, such as fashion goods, perfumes and cosmetics, wines and spirits, jewelry and others (Jackson, 2004: Chevalier & Mazzalovo, 2008); different individual preferences in luxury consumption depend on types of luxury products. Among the variety of luxury products perceived as important to consumers, cars are one of the most important in terms of ownership (Hupfer & Gardner, 1971). Moreover, cars are used as a symbol to illustrate users' status, personality, and self-image, and as a way to communicate these things to other people (Mason, 1981). Therefore, this study aims to explore luxury value perceptions and attitudes that influence Thai consumers' intentions to purchase luxury cars. Moreover, this study defined luxury cars by brand (Keller, 1993), focusing only on the following brands: Mercedes Benz, BMW, Volvo, Lexus, Mini Cooper, Audi, Volkswagen, Alfa Romeo, and Jaguar.

Literature Review

According to several previous research studies in the area of luxury consumption, value perceptions have been studied and categorized into different types (Vigneron and Johnson, 1999: Reddy & Terblanche, 2005: Smith and Colgate, 2007: Tynan et al., 2009: Berthon et al., 2009: Wiedmann et al., 2009). In this study, luxury value perception derived from the study by Shukla (2012) in which he studied value perceptions on luxury purchase intention is applied in three main dimensions of latent value perceptions. These are social values (conspicuous value and status value), personal values (hedonism value and materialism value), and functional values (uniqueness value and price-quality value). In this framework, price value is logically included in quality value, namely price-quality value perception, which is supported by Rao and Monroe's (1989) research. They argued that price has a significant correlation with quality in the context of luxury consumption. As a result, financial value as a sub-dimension is not included in this study. In this study, the first dimension of luxury value perceptions is social values in which consumers tend to consume luxury products due to influences from their social groups. There are two sub-dimensions in social values, which are conspicuous value and status value. The second dimension is personal values, in which consumers have a tendency to purchase luxury products in order to satisfy their preferences. Hedonism value and materialism value are considered as two sub-dimensions of personal values. Functional values are the final dimension of luxury value perceptions, in which consumers tend to purchase luxury products because of the benefits and utilities of luxury products. Functional values have three sub-dimensions, namely uniqueness value, quality value, and convenience value. Subsequent to exploratory research using in-depth interviews, the findings reported one interesting value entitled “convenience value” in luxury value perceptions. Moreover,
convenience value from the findings of in-depth interviews refers to the advantage that consumers can gain from consuming luxury products. In other words, affluent consumers receive convenience via other people, when others acknowledge the exclusivity of the brand. As a result, the researcher decided to add a new variable, namely convenience value, under the construct of functional values in the construct of value perceptions.

An attitude refers to continuing systems of motivation, emotion, perception, and cognition with regard to some part of the environment (Hawkins et al., 2007). In other words, attitude is considered as the way individuals think, feel, and perform towards their environment. Furthermore, attitude is different from consumers’ values; however, consumers’ values provide guidelines for object evaluation and attitude formation, and motivate individuals to find objects for satisfaction and fulfillment. In addition, several earlier studies have explored value perceptions in the context of conspicuous consumption (Vigneron & Johnson, 1999; Reddy & Terblanche, 2005; Smith & Colgate, 2007; Tynan et al., 2009; Berthon et al., 2009; Wiedmann et al., 2009; Shukla, 2012).

The Theory of Planned Behavior (TPB) is widely applied in the area of marketing in order to explore intention to purchase a particular product or service (Ajzen, 1991). In addition, this framework is principally adopted for assessing consumer decision making, which is theoretically based on behavior and attitude. In the areas of marketing and consumer behavior, the notion of behavioral intention is widely used, and is a more powerful predictor compared with actual behavior. Purchase behavior is influenced by the purchase intention, which is consequently influenced by attitudes.

Research Framework

Based on the theoretical frameworks and literature reviewed, the research framework of this study is presented in this section. The objectives of this study are to explore the influence of luxury value perceptions and attitude on purchase intentions towards luxury cars. The research framework is derived from three theories, which are the Theory of Planned Behavior (Ajzen, 1991), the Theory of Impression Management Process (Goffman, 1959) and the Conspicuous Consumption Theory (Veblen, 1899). The research framework, as shown in Figure 1, mainly focuses on luxury value perceptions, which are adapted from Shukla (2012) to understand the effect of value perceptions of luxury consumption on attitude and intentions of Thai consumers to purchase luxury cars.

![Figure 1. Research Framework of this Study](image)
Research Hypotheses

Relationship between Luxury Value Perceptions and Attitude toward Luxury Products

In the current study, luxury value perceptions are adapted from Shukla (2012). There are three dimensions of luxury value perceptions in order to differentiate value perception and luxury consumption among Thai consumers. The first dimension is social values, which relates to influence from the social group to purchase luxury products. This dimension consists of conspicuous value and status value. The second dimension is personal values, which represents individuals’ preferences and references towards luxury consumption. Hedonism value and materialism value are included in this factor. The last dimension is functional values, which is related to the benefits and utilities inherent in luxury products. This last factor contains facets from uniqueness value, quality value, and convenience value.

Therefore, the following hypotheses of luxury value perceptions are posited:

Social Values:
\[ H1a: \text{Conspicuous value is significantly related to attitude toward luxury products}. \]
\[ H1b: \text{Status value is significantly related to attitude toward luxury products}. \]

Personal Values:
\[ H2a: \text{Hedonism value is significantly related to attitude toward luxury products}. \]
\[ H2b: \text{Materialism value is significantly related to attitude toward luxury products}. \]

Functional Values:
\[ H3a: \text{Uniqueness value is significantly related to attitude toward luxury products}. \]
\[ H3b: \text{Quality value is significantly related to attitude toward luxury products}. \]
\[ H3c: \text{Convenience value is significantly related to attitude toward luxury products}. \]

Relationship between Attitude toward Luxury Products and Intention to Purchase Luxury Cars

In the Theory of Planned Behavior (TPB), Ajzen (1991) mentioned that individuals with a positive attitude toward a certain behavior have a higher tendency to perform that particular behavior. Furthermore, previous research findings have supported that there is a positive relationship between attitude and purchase intentions (Chen 2007, Lane and Potter, 2007; Tang and Medhekar, 2010). One research study found that there are considerable differences in attitudes towards the concept of luxury, and luxury items of different classes of consumers (Dubois & Laurent, 1994). However, it is confirmed that affluent consumers tend to have positive attitudes towards luxury consumption, since luxury products are regarded as a part of their lives (Dubois & Laurent, 1994). Thus, it was hypothesized that:
\[ H4: \text{Attitude toward luxury products has a significant relationship with purchase intentions toward luxury cars}. \]

Research Methodology

This study applied descriptive research using a cross-sectional design. Both a quantitative as well as a qualitative research design was employed in the study. Firstly, the qualitative research method was conducted by using exploratory in-depth interviews in order to acquire additional information.
and knowledge, apart from extant literature reviews on purchase intentions toward luxury cars among Thai consumers. Secondly, the quantitative research method was conducted by self-administered surveys which contained structured questions in order to gather primary data. The target population of this study was Thai consumers in the Bangkok area who are seeking to purchase luxury cars in the future. This study employed non-probability sampling in order to meet the sampling objectives. Two sampling frames were used to select respondents for the study. The first was the Bangkok International Motor Show 2016 at Impact Muang Thong Thani which was held from 23 March to 3 April 2016. The second sampling frame was the authorized dealers of each specified luxury car brand. A total of 600 self-administered questionnaires were distributed by using judgment sampling, with 400 questionnaires distributed at the Bangkok International Motor Show, and 200 questionnaires distributed at the authorized dealers. Of these, 453 questionnaires were returned, and 17 were invalid due to missing data. Hence, a total of 436 questionnaires were usable and applied in this study. Two statistical programs – SPSS 23.0 and AMOS 21.0 - were utilized for data analysis in this study.

The questionnaire was in Thai and was divided into four sections. The first section began with general information about age, gender, education level, and occupation. The second section was about the luxury value perceptions of Thai consumers. The third section contained questions about attitudes toward luxury products. Finally, the respondents were asked about their intention to purchase luxury car(s) in the future. A five-point Likert scale was used in the questionnaire, with responses ranging from 1 = strongly agree, 2 = agree, 3 = undecided, 4 = disagree to 5 = strongly disagree. For the second to the fourth sections, the measurement items of luxury value perceptions were adapted from the research of Shukla (2012), Teimourpour et al. (2013), and Liu et al. (2013). The construct of attitude toward luxury products consists of cognitive and affective dimensions. The measurement items used to assess both cognitive and affective factors were adapted from Dubois et al. (2005). For the dependent variable, which was intention behavior to purchase luxury car(s), the measurement items were adapted from Hung et al. (2011).

Since the original questionnaire was in English, back translation was required in order to translate it into Thai, as the main respondents were Thai consumers. Back translation is the process of questionnaire translation from one language to another, as well as subsequently translating the product back into the original language (Zikmund, 2000). In order to provide consistency in the meaning of the questions in both English and Thai version, this questionnaire was translated by a professional who is fluent in English and Thai language; this individual currently works as a translator in the Embassy of the Republic of Singapore.

In order to measure the reliability of the questionnaires, a pre-test was conducted before the main survey as suggested by Iacobucci & Churchill (2010). In the process of pre-testing, a total of 80 questionnaires were distributed to target respondents in luxury car authorized dealerships in Bangkok. The pre-test reliability results scale showed that 34 measurement items of three main constructs used in the questionnaires were reliable, with Cronbach’s Alpha ranging from between 0.615 and 0.947. Moreover, there were some minor revisions that were made prior to the main survey.

**Findings**

The majority of the respondents were female at 67.66%; males represented 32.34% of total respondents. In terms of age groups, most respondents were aged between 25 and 30 years old at 46.56%, followed by those aged between 31-40 years old at 44.04%. The rest were aged between 41 and 50 years old (5.28%), more than 50 years old (3.44%), and less than 25 years old (0.69%). As for the education level, over half of the respondents held master's degree at 69.27%, while the next biggest group of respondents (27.29%) held bachelor degrees. Only few respondents had lower than bachelor degree (2.75%), and higher than master degrees (0.69%). Last but not least, the majority group of respondents had their own businesses (49.77%), whereas, 40.83% of total respondents
worked as employees in private firms. The remaining respondents worked in other areas (6.42%), worked as public officers at 2.52%, and were students at 0.46%. According to the luxury car brands that respondents are interested to purchase, the results illustrated that half of the respondents chose to purchase Mercedes Benz in the future at 54.36%, followed by BMW at 22.48% and Mini Cooper at 11.01%. A total of 5.5% of respondents preferred to purchase Lexus in the future; the rest decided to purchase Audi (2.8%), Jaguar (1.8%), Volkswagen (1.1%), Volvo (0.7%) and Alfa Romeo (0.2%), respectively.

Confirmatory factor analysis (CFA) was performed to measure construct reliability and validity, as well as structural equation model (SEM) was applied to test the proposed hypotheses. The results of CFA reported that \( \chi^2 (df = 611) = 1434.739, P < 0.001, GFI = 0.853 \) and RMSEA = 0.056. The scores of baseline comparison fit indices ranged from between 0.812 and 0.905, which are close to and exceed 0.9 (recommended point). Therefore, this can imply that all measurement items have reliability and convergent validity. In terms of SEM, the results of absolute fit measure for the structural model were \( \chi^2 (df = 623) = 1460.037, P < 0.001, GFI = 0.851 \) and RMSEA = 0.056. Chi-square and other statistics indicate that the model had a moderate fit with the data set. One of the reasons is because of a larger sample size, which creates sensitivity for the chi-square test (Ho, 2014). In terms of incremental fit measure, the baseline comparisons indices (NFI, RFI, IFI, TLI and CFI) ranged from between 0.812 and 0.903, which represented a satisfactory fit for the structural model as most indice values were close to the recommended point (0.9). Consequently, the study's hypothesized model fitted well with the data. Figure 2 below shows the hypotheses test results of the analysis.

Table 1. A Summary of Hypotheses Test Results on Thai Consumers’ Intention to Purchase Luxury Cars

<table>
<thead>
<tr>
<th>Hypothesis No.</th>
<th>Structural Path</th>
<th>Standardized Regression Weight (β)</th>
<th>Critical Ratio (C.R.)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>Conspicuous value → Attitude toward luxury products.</td>
<td>0.216**</td>
<td>2.766**</td>
<td>Supported</td>
</tr>
<tr>
<td>H1b</td>
<td>Status value → Attitude toward luxury products.</td>
<td>-0.132</td>
<td>-1.452</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H2a</td>
<td>Hedonism value → Attitude toward luxury products.</td>
<td>0.174</td>
<td>1.752</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H2b</td>
<td>Materialism value → Attitude toward luxury products.</td>
<td>-0.008</td>
<td>-0.039</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3a</td>
<td>Uniqueness value → Attitude toward luxury products.</td>
<td>0.349*</td>
<td>2.449*</td>
<td>Supported</td>
</tr>
<tr>
<td>H3b</td>
<td>Quality value → Attitude toward luxury products.</td>
<td>0.215*</td>
<td>2.589*</td>
<td>Supported</td>
</tr>
<tr>
<td>H3c</td>
<td>Convenience value → Attitude toward luxury products.</td>
<td>0.228**</td>
<td>3.352**</td>
<td>Supported</td>
</tr>
<tr>
<td>H4</td>
<td>Attitude toward luxury products → Purchase intention toward luxury cars.</td>
<td>0.424**</td>
<td>7.862**</td>
<td>Supported</td>
</tr>
</tbody>
</table>

***p<0.001, **p<0.01, *p<0.05, Not Supported = Not Significant.
As per the data analysis, the first hypotheses were posited on the basis of the relationship between conspicuous value and attitude toward luxury products, and the relationship between status value and attitude toward luxury products. The findings revealed that conspicuous value is positively and significantly related to attitude toward luxury products. However, no significant relationship between status value and attitude toward luxury products was observed. The second hypotheses were based on the relationship between hedonism value and attitude toward luxury products, and the relationship between materialism value and attitude toward luxury products. The results showed that both hedonism and materialism have no significant relationships with attitude toward luxury products. In terms of the third hypotheses, the findings from this study revealed that uniqueness value has a positive and significant effect on attitude toward luxury products. Moreover, there is a positive and significant relationship between quality value and attitude toward luxury products. The findings of the present research study demonstrated that convenience value is also positively and significantly related to attitude toward luxury products. For the fourth hypothesis, the findings showed that there is a positive and significant relationship between attitude toward luxury products and intention to purchase luxury cars.

**Conclusions**

This study investigated the relationships between luxury value perceptions and attitude toward luxury products, as well as the relationships between attitude toward luxury products and intention to purchase luxury cars by Thai consumers. The findings suggested that consumers, who pay attention to conspicuous value, tend to have a positive attitude toward luxury products. Conspicuous value relates to consuming luxury products in public areas; hence, this can influence consumers to use their luxury products publicly in order to illustrate their wealth (O’Cass and Frost, 2002). Vigneron and Johnson (2004) also argued that conspicuous value is a main aspect to increase preferences for using luxury products in public areas. However, the findings relating to status value did not correspond with previous studies (Dubois & Duquesne, 1993; Eastman et al., 1999: O’Cass & Frost, 2002), as there is no effect of status value on attitude toward luxury products among Thai consumers. Han et al. (2010) supported that not all consumers aim to consume luxury products in order to illustrate their social status. Luxury automobile consumption is considered to be a complex purchase with high involvement (Kotler, 2003). This can imply that consumers of luxury cars are mostly those who already have a certain level of social and financial prosperity.
The findings showed that hedonism value and materialism value have no impact on attitude toward luxury products among Thai consumers. Hedonic value is less important in Asian cultures as compared with Western cultures (Teimourpour & Hanzae, 2011). Wong and Ahuvia (1998) mentioned that individuals may have different ways of seeking self-pleasure through their consumption behaviors across cultures, with individualistic consumers paying more attention to goods as a source of pleasure. As for materialism value, Douglas and Isherwood (1996) argued that collectivist cultures, as in Asia, commonly stress modesty and humility in consumption to reduce the potentially negative consequences of envy. This is likely to be the reason for the non-significance of materialism in this study when purchasing luxury products.

In terms of functional value, consumers who place emphasis on uniqueness value have a positive attitude toward luxury products. This is supported by Lynn (1991), who revealed that consumers are more likely to have a positive attitude towards luxury products when the luxury products embody exclusivity and rareness. Furthermore, consumers with high perceptions of quality value also have a positive attitude toward luxury products. As suggested by Gentry et al. (2001), quality is considered as the main factor affecting positive attitude and purchase of luxury products. Moreover, many previous studies showed that quality can influence decisions to purchase luxury products because they offer better benefits than normal products (O’Cass and Frost, 2002; Vigneron and Johnson, 2004). In addition, consumers who focus on convenience value tend to have a positive attitude toward luxury products. This can be explained by findings from the exploratory research study, in which respondents mentioned that convenience value was experienced when they displayed their luxury products to other people, and in turn, gained better services and privileges.

Finally, consumers, who have a positive attitude toward luxury products also have a high tendency to purchase luxury cars in the future. This result is consistent with previous research studies regarding purchase intention in the area of luxury consumption (Chen 2007, Lane and Potter, 2007; Tang and Medhekar, 2010). Additionally, this finding supports the theory of planned behavior, which predicts that behavior intention is determined by attitude.

**Implications**

The empirical findings of this study provide several theoretical and practical contributions. First, the findings create new knowledge regarding sub-dimensions of luxury value perceptions. Second, the findings provide new knowledge in studying luxury consumption in the area of luxury automobiles, especially in an emerging market such as Thailand. Finally, the model is explained through three theories, namely the Theory of Impression Management (Goffman, 1959), the Conspicuous Consumption Theory (Veblen, 1899) and the Theory of Planned Behavior (Ajzen, 1991) which can be used to empirically explain the phenomenon of intention to purchase luxury cars among Thai consumers. Marketers can better comprehend luxury car brands and apply the findings to communicate their brands to high potential segments. They can also use this knowledge to create marketing campaigns and advertisements in order to encourage Thai consumers to purchase luxury automobiles. In addition, automakers can apply the knowledge of luxury values perception to create a branding strategy which relies on the brand’s symbolic meaning of prestige, status, and achievement. Finally, the Thai government can use the findings to create policies and campaigns for targeting selected segments with high spending capability in order to create more positive development of the Thai economy.

**Limitations and Future Research**
Similar to other studies, this current research has some limitations. This study focuses only on the luxury automobile industry in Thailand. The findings of this study can be summarized and interpreted for the influences on luxury consumption in this particular context only. In addition, the findings can differ when investigating different types of luxury products and demographic segments. The next limitation was the use of convenience sampling in the study yielded more female respondents than males. Whilst the percentage of female buyers may not represent the population of luxury car buyers in Thailand, the result could be explained by the fact that more females visited the luxury car booths at the Bangkok Motor Show. In terms of future direction, research can be conducted by including super or niche cars in order to cover all segments in Thailand’s luxury automobile market. Moreover, research can be extended to other big cities in Thailand, such as, Chiang Mai, Phuket, and so on. Finally, comparative studies can also be conducted in other ASEAN countries, as they are emerging markets for luxury consumption.

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References


Factors Affecting Nurses’ Clinical Judgments Regarding Earthquake Response in a Referral Hospital, Nepal

Pritika Basnet, Praneed Songwathana*, and Wipa Sae-Sia

Abstract

The chaos during disaster may lead nurses to make poor and inappropriate clinical judgments and decisions. Limited evidence is found which has identified the interaction between variables affecting a nurse’s clinical judgment in dealing with earthquake disasters, especially in Nepal. The aim of this study is to identify the predictive factors of Nepalese nurses’ clinical judgments regarding earthquake response. Eighty-two nurses were purposively selected from different wards of a central referral hospital located in eastern Nepal. Data was collected using a Demographic Data Questionnaire (DDQ), a Nurses’ Knowledge regarding Earthquake Disasters Questionnaire (NK-EDQ) and a Nurses’ Judgment regarding Earthquake Disasters Questionnaire (NJ-EDQ). Multiple regression analysis was performed using statistical software. The results revealed that a combination of six independent variables explained a total of 42.3% of variance in clinical judgment regarding earthquake response. The nurses’ knowledge concerning earthquake response and educational level had positive direct effects on nurses’ judgment regarding earthquake response (p < .001). It was revealed that nurses’ knowledge is important, and improvement is needed in judgment and decision-making skills. It is recommended that training should be more focused on decision-making skills based on scenarios for appropriate disaster management to enhance and facilitate appropriate judgment and decision-making skills among Nepalese nurses.

Keywords: Disaster, judgment, nurses, earthquake, predictive factors

Introduction

Asia has been often hit with disasters, which comprise 40.7% of all natural disasters and 90% of total global disaster victims (Guha-Sapir, Hoyois, & Below, 2014). In particular, Nepal - popularly known as a Himalayan nation - is ranked 11th in the world for earthquakes. Two big earthquakes, with magnitudes of 7.9 and 7.2 respectively on the Richter Scale in April and May 2015, killed more than 8,673 people, injured 21,594 people, and left hundreds of thousands of people homeless (United Nations High Commissioner for Refugees, 2015). In this event, all healthcare workers - including nurses - were alerted regarding their roles and responsibilities in emergency response.

Various physical and psychological health impacts crop up after an earthquake disaster (Doocy et al., 2013; Lu-Ping et al., 2012; Tachibana et al., 2014). Nurses’ skills, along with knowledge and clinical judgment, are vital to lessen these health impacts caused by an earthquake disaster. Nurses, as the largest healthcare workforce throughout the world, need to be competent in order to deal with disaster events (Wee, 2011; Yang et al., 2010). The International Council for Nurses (ICN) has alerted every nurse to have basic knowledge, skills, and judgment in order to respond effectively to disaster events (ICN, 2009).
Problem Discussion

Appropriate skills and judgment have been considered as vital to treat victims properly, quickly, effectively and at a high medical standard when responding to disasters (Yang et al., 2010). However, the

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skills required for nurses to perform clinical procedures must be supported by knowledge and judgment in related field (Evans & Donnelly, 2006). The ability for critical thinking is a cognitive skill which is required in order to make sound decisions and judgments in clinical practice (LaMartina & Ward-Smith, 2014). In addition, the effectiveness of clinical practice is influenced by the decisions and judgment of nurses while performing nursing care (Bjørk & Hamilton, 2011). The literature related to the judgment and decision-making ability of nurses in disaster situations is limited in nursing research. Their judgments related to emergency or mass casualty situations were reviewed.

Judgment is defined as the outcome of critical thinking and/or reasoning where nurses gather information by direct observation and patient assessment in order to make an informed clinical decision with the help of their empirical knowledge, experience, intuition, and ethical-moral beliefs (Van Graan, Williams, & Koen, 2016). The judgment and decision made in a critical situation decides the patient’s outcome (Noon, 2014). Due to the chaos of mass casualty events in a disaster, this situation may lead nurses to make poor and inappropriate judgments and decisions. Nurses working in emergency departments were found to have a low accuracy of triage judgment (Chen et al., 2010).

In addition, several factors are associated with the judgment and decision-making ability of nurses in clinical practice. For example, Kilner found that nurses’ triage judgment was not affected by training and education (Kilner, 2002). However, another study found that the educational level of nurses was positively associated with judgment and decision-making during medication management (Vargo, 2009). In addition, years of experience, training, and education related to triage, the level of a hospital, and the triage mode of delivery were predictive factors of triage nurses’ judgment in the emergency department (Chen et al., 2010). Moreover, nurses’ age, gender, years of experience, continuing education and areas of clinical practice were significant predictive factors of nurses’ clinical decision making in a hospital setting (Bjørk & Hamilton, 2011). However, these factors did not clearly show in the context of disaster nursing.

Knowledge is considered a key factor in order to make appropriate clinical judgments (Evans & Donnelly, 2006), and it was found to be significantly related with triage decisions and judgment (Considine, Botti, & Thomas, 2007). These studies explored the nurses’ decisions and judgment in general clinical practice and specific to triage nurses. Some factors are still inconclusive in different clinical settings.

The decisions made in emergency situations are complex and different than those required in regular clinical practice (Aliakbari et al., 2015). Nurses working in an emergency or disaster situation have to make judgments and decisions quickly within minutes, hours, and days that are critical for successful outcomes and the overall recovery from the disaster (International Council for Nurses [ICN], 2009). Currently, there is no evidence found which has identified nurses’ judgment during an earthquake disaster or what the predictive factors are, especially in Nepal, which has been frequently hit by earthquakes. It is essential to identify the selected predictive factors of nurses’ judgment in emergency and disaster situations, in order to plan and facilitate appropriate judgment and decision-making skills.

Purpose

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The aim of this study was to identify the predictive factors associated with nurses’ clinical judgment, especially during the recent earthquake disaster response in Nepal.

**Literature Review**

Clinical judgment is the informed opinion that relates to the observation and assessment of patients to identify and evaluate alternative nursing options (Standing, 2014). During emergencies and disasters, where nurses are faced with a large number of injured victims, prioritization for care and treatment may be based upon physical factors rather than clinical needs (Kilner, 2002). In addition, judgment and decisions are quickly made during emergency and disaster situations. For example during triage, the decision whether to put injured victims in the red zone or yellow zone must be made within 30 seconds to 1 minute. Therefore, the judgment and decisions made in these situations may be static or dynamic, and determine patient outcomes (Noon, 2014).

A study conducted by Chen et al. (2010) on the accuracy of triage judgment among triage nurses revealed that nurses had a low accuracy of triage rating accuracy. Some factors were significantly correlated with triage judgment such as the age of the nurses, years of experience as a registered nurse, and the level of the nurse on the clinical ladder. In addition, years of experience in an emergency department, hours of triage education, and triage mode of delivery were found as predictive factors which accounted for 40% of the total variance of triage judgment (Chen et al., 2010). Moreover, knowledge was found to be significantly correlated with triage decisions and judgment (Considine et al., 2007). On the contrary, Kilner (2002) found that there was no relationship between triage decision scores and experience from training and education related to triage.

Clinical decision making and judgment were found to be influenced by several factors (Bjørk & Hamilton, 2011; Considine et al., 2007; Evans & Donnelly, 2006). Age and gender of the nurses, clinical experience, field of practice, and continuing education and trainings were significantly correlated with clinical decision making among registered nurses working in a hospital setting in Norway. Furthermore, the combination of these variables explained a total of 38% of variance in clinical decision making among Norwegian nurses. In addition, knowledge of nurses in related fields also determines decision making and clinical judgment. The educational level of nurses was also found to be positively associated with judgment and decision making during medication management (Vargo, 2009).

From the above literature, it has been found that most of the studies were conducted in clinical settings rather than disaster situations where nurses have limited resources to make judgments and decisions. Thus, this study was intended to discover the most significant factors affecting nurses’ judgment during disaster situations in order to prepare Nepalese nurses for future disasters with appropriate decision making and judgment abilities.

**Conceptual Framework**

Based on the ICN disaster nursing framework (ICN, 2009) and the literature review, clinical judgment competency is one of the most important components in disaster response. Nurses’ judgment abilities are crucial in a disaster response phase where they have to make quick judgments and decisions (Good, 2008; Sandman & Nordmark, 2006). In this study, the clinical judgment of nurses regarding earthquake disasters consists of decision making related to the care of the community, the care of individuals and families, psychological care, and care for a vulnerable population.

**Methodology**

A cross-sectional study was conducted among nurses working in different clinical settings in one of the central hospitals located in eastern Nepal. This hospital is a teaching hospital and is the highest level of referral hospital in eastern Nepal with a capacity of 750 beds. Thorndike’s formula was used to calculate the sample size (Polit & Beck, 2012). One hundred and ten nurses were initially
approached who had at least 3 years of diploma level of education in general nursing, were currently working in a hospital setting, and were willing to participate in the study.

**Ethics**

The study was approved by the Institutional Review Board of the Faculty of Nursing, Prince of Songkla University, Thailand, the Nepal Health Research Council (NHRC), Nepal, and the Institutional Review Committee of the hospital. Written informed consent was taken after the explanation of the study objective was given to the nurses. The information collected was kept confidential, and the researcher maintained anonymity using a code in each questionnaire.

**Research Instruments**

The tool was a self-reported questionnaire developed by the investigator, based on the International Council for Nurses (ICN) disaster nursing framework and a relevant literature review. It was comprised of three parts. The first part included nurses’ demographic characteristics or a Demographic Data Questionnaire (DDQ), which consisted of age, educational level, previous experience, training, and experience related to the disaster. The second part was a Nurses’ Knowledge regarding Earthquake Disasters Questionnaire (NK-EDQ) composed of 24 T/F items with the score of 0 given for an incorrect and 1 for a correct answer. The third part contained a Nurses’ Clinical Judgments regarding Earthquake Disasters Questionnaire (NJ-EDQ) with 10 disaster situation scenario–based items in the response and recovery phases. In the response phase, there are four domains: 1) care of community (2 items); 2) care of individual and families (3 items); 3) psychological care (2 items); and 4) care of vulnerable population (1 item). The recovery phase is composed of one domain: long-term individual, family, and community recovery (2 items). The multiple choice format was used to ask the appropriate response that the participants thought they would do in the situation (scenario). Each correct answer was given a score of 1 and incorrect answer received a score of 0.

Three experts in disaster and surgical nursing were asked to validate the content of the instrument: two academic lecturers from Thai universities, and the other from a general public hospital in Nepal. Both tools (NJ-EDQ and NK-EDQ) were tested for internal consistency reliability with 20 participants who were not part of the final study using the Kruder-Richardson formula (KR-20), which yielded coefficients of .79 and .74 respectively.

**Data Collection**

Data was collected in April 2016. After obtaining permission from the hospital ethics board, the researcher contacted the hospital nursing director for formal permission to collect the data. The head nurses of six wards (emergency, medical, surgical, critical care unit, obstetrics and gynecology, and pediatric ward) were approached and asked for a list of names of the nurses working in each ward. The participants were purposively selected based on the inclusion criteria until the researcher reached the target number. Participants were given 2 days to 1 week to complete and return the questionnaires. Follow up phone calls were made in the case of no response for a week. A total of 110 Registered Nurses (RNs) were approached for study participation; 88 RNs returned the questionnaires, yielding an 80% response rate. Incomplete questionnaires were excluded (n= 6); finally, 82 questionnaires were used for data analysis.
Table 1. Predictors of Nepalese Nurses’ Clinical Judgment regarding Earthquake Response

<table>
<thead>
<tr>
<th>Variables</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>R² Change</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Previous experience in disaster care</td>
<td>0.094</td>
<td>0.009</td>
<td>0.004</td>
<td>0.009</td>
<td>0.72</td>
<td>0.40</td>
</tr>
<tr>
<td>2. Previous experience in disaster care, previous training and education related to disaster</td>
<td>0.166</td>
<td>0.027</td>
<td>0.003</td>
<td>0.019</td>
<td>1.51</td>
<td>0.22</td>
</tr>
<tr>
<td>3. Previous experience in disaster care, previous training and education related to disaster, experience as a registered nurse</td>
<td>0.275</td>
<td>0.076</td>
<td>0.40</td>
<td>0.048</td>
<td>4.07</td>
<td>0.04</td>
</tr>
<tr>
<td>4. Previous experience in disaster care, previous training and education related to disaster, experience as a registered nurse, educational level of RNs</td>
<td>0.461</td>
<td>0.212</td>
<td>0.172</td>
<td>0.137</td>
<td>13.37</td>
<td>0.00</td>
</tr>
<tr>
<td>5. Previous experience in disaster care, previous training and education related to disaster, experience as a registered nurse, educational level of RNs, age of RNs</td>
<td>0.483</td>
<td>0.233</td>
<td>0.183</td>
<td>0.021</td>
<td>2.04</td>
<td>0.16</td>
</tr>
<tr>
<td>6. Previous experience in disaster care, previous training and education related to disaster, experience as a registered nurse, educational level of RNs, age of RNs, knowledge regarding earthquake response</td>
<td>0.650</td>
<td>0.423</td>
<td>0.377</td>
<td>0.190</td>
<td>24.69</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Table 2 Each Predictor of Nepalese Nurses’ Clinical Judgment regarding Earthquake Response

<table>
<thead>
<tr>
<th>Predictors</th>
<th>b</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Having previous experience in disaster care</td>
<td>0.21</td>
<td>0.05</td>
<td>0.51</td>
<td>0.6</td>
</tr>
<tr>
<td>2. Having previous training and education related to disaster</td>
<td>0.76</td>
<td>0.16</td>
<td>1.73</td>
<td>0.08</td>
</tr>
<tr>
<td>3. Experience as a nurse</td>
<td>0.14</td>
<td>0.31</td>
<td>1.48</td>
<td>0.14</td>
</tr>
<tr>
<td>4. Educational level of nurses</td>
<td>1.39</td>
<td>0.32</td>
<td>3.36</td>
<td>0.00</td>
</tr>
<tr>
<td>5. Age of nurses</td>
<td>0.12</td>
<td>0.29</td>
<td>1.36</td>
<td>0.18</td>
</tr>
<tr>
<td>6. Knowledge regarding earthquake response</td>
<td>0.26</td>
<td>0.46</td>
<td>4.97</td>
<td>0.00</td>
</tr>
</tbody>
</table>
**Data Analysis**

Demographic data were analyzed using descriptive statistics. Multiple regression analysis was performed for predicting the factors of nurses’ judgment after the assumptions of normality, linear relationship, and homoscedasticity were met. The level of significance (α) less than 0.05 was considered statistically significant.

**Results**

**Demographic Data**

The nurses in this study were aged between 20 to 40 years (M = 25.82, SD = 4.59). The majority of the nurses (74.4%) had a diploma degree and 69.5 % of the nurses had less than 6 years of working experience (M = 4.11, SD= 3.86). Eighty-two percent of the nurses did not have any training or education related to any kind of disasters, and only 18% of the nurses had direct experience in disaster care during the last five years.

**Predictors of Nurses’ Clinical Judgment in Earthquake Response**

At first, six blocks of variables were entered into the regression model. The first and second block consisted of having previous experience, as well as previous training and education respectively, related to disasters. The third block consisted of years of experience as a nurse, and the fourth and fifth blocks contained the educational level and age of the nurses. Finally, the last or sixth block, consisted of having adequate knowledge regarding earthquake response.

A summary of the findings of the multiple regression models is shown in Table 1, which explains that the total R² accounted by having previous experience in disaster care in block 1 was only 0.9%. The addition of having previous training and education related to disasters to the model in block 2 increased the variance explained in nurses’ judgment by 1.8% with a total R² of 2.7%. Further addition of the years of experience as a nurse in the model increased the variance by 4.9%, increasing the total variance to 7.6%. The addition of the nurses’ educational level increased the variance of nurses’ judgment up to 21.2%, a difference of 13.6%. The fifth block was added with the age of the nurses, which increased the change of variance explained in nurses’ judgment by 2.1%. Finally, having knowledge regarding earthquake response increased the variance of nurses’ judgment by 19 %. The combination of all independent variables explains a total of 42.3 % of variance in clinical judgment regarding earthquake response. In addition, the nurses’ knowledge in earthquake response and having a higher level of education were significant predictors of nurses’ clinical judgment regarding earthquake response. The detailed figures are shown in Table 2.

As shown in Table 3, further analysis was done by entering the two blocks of variables which were the significant predictors of nurses’ judgment. The knowledge of nurses regarding earthquake response alone and educational level of the nurses alone could explain 25.9 % and 11.4 % variance in nurses’ judgment respectively. Moreover, the combination of these two independent variables explains the total 37.3 % of variance in clinical judgment regarding earthquake response.

<table>
<thead>
<tr>
<th>Table 3 Significant Predictors of Nepalese Nurses’ Clinical Judgment regarding Earthquake Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Significant Predictors</strong></td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>1. Knowledge regarding earthquake response</td>
</tr>
<tr>
<td>2. Knowledge regarding earthquake response and educational level of nurses</td>
</tr>
</tbody>
</table>

**Discussion**
The findings of the study revealed that a higher educational level and knowledge related to earthquake response were significant predictive factors of nurses’ clinical judgments in earthquake disaster response. These two variables explain a total of 37.3% of variance in clinical judgments regarding earthquake response. Several factors might have influenced the findings of this study, which are discussed as follows.

Firstly, knowledge forms a basis for human judgment and decision making (Evans & Donnelly, 2006; Gunnarsson & Warrén Stomberg, 2009; Phaneuf, 2008). This means that nurses need adequate knowledge in the area of disaster nursing in order to make correct judgments in nursing practice. In addition, being an expert and having good assessment skills were important factors associated with triage judgment and decisions (Morteza et al., 2014). The finding is consistent with the previous study in which higher levels of factual knowledge were found to enable better triage decisions (Considine et al., 2007).

Secondly, nurses’ educational levels were found to be significant predictors of their judgment in earthquake response. Educational level can influence judgment and decision-making abilities among nurses in clinical settings (Bakr et al., 2013; Vargo, 2009). In addition, studies have found that nursing competence, clinical judgment, and critical thinking abilities of nurses with a higher degree were better than those with a Bachelor’s or diploma level of education (Chang et al., 2011; Shin et al., 2006; Vargo, 2009). Therefore, having a higher level of education can help nurses to develop sufficient skills to seek information and gain insights related to appropriate judgment and decisions. This finding is in accordance with a previous study where further education was a significant predictor of Norwegian nurses’ clinical decision making in hospital settings (Bjørk & Hamilton, 2011). This finding also supports the idea that higher educational levels help guide Nepalese nurses towards better clinical judgments.

Age and previous work experience of the nurses were not significant predictors of nurses’ judgments in an earthquake response. Studies have found that nurses with higher clinical experience felt that they were more confident in making clinical judgments (Gunnarsson & Warrén Stomberg, 2009; Jahanpour et al., 2010). The nurses in this study were mostly young (85%) and had been working less than 6 years. So, the lower age and less experience of the nurses might have influenced the non-significant findings of this study. However, Bakr et al found that years of experience and an older age of nurses were significant predictors of nurses’ decision making in a hospital setting (Bakr et al., 2013). This contrast in findings may be partly due to the different ages and experiences of the participants, as well as the study situation occurring in daily clinical practice, whereas the current study includes the judgments and decisions made in a disaster situation.

The other two variables - previous disaster experience and previous disaster training and education - were not found to be significant predictors of nurses’ judgment. These findings may be because the majority of the respondents in this study did not have any experience in disaster training or direct experience in disaster care. In addition, the existing training course was mainly directed to improve technical skills rather than judgment skills. The finding is consistent with a previous study in that training and education were not significantly associated with triage judgment (Kilner, 2002). However, it may be in contrast to previous studies which have found that experience and training can help nurses gain insight, absorb information from others, and learn from mistakes and repeated action in similar situations. This may increase the knowledge and skills of nurses in order for them to make appropriate judgments and decisions (Chapman & Arbon, 2008; Hammad et al., 2012; Hermawati, 2010; Husna, 2010; Phaneuf, 2008). The inconsistent findings may be related to the different instrument used and the context of the disaster experience.

Limitations

The sample of this study was nurses from one hospital; thus, the findings may not be generalizable to measure Nepalese nurses in all areas. In addition, this study used a cross-sectional
design, which does not allow the inference of causality. Finally, using a self-administered questionnaire could have limited the measurement of nurses' actual judgment performance.

Conclusion and Recommendations

The findings reveal that the combination of all independent variables (previous training and experience concerning disasters, age and educational level of nurses, previous work experience) explained a total of 42.3% of variance in clinical judgments in earthquake response. However, knowledge related to earthquake response and the educational level of nurses in particular were the most significant predictors, explaining a total of 37.3% of variance in clinical judgments regarding earthquake response. The findings may suggest that nurses could have a better level of judgment through improving knowledge and supporting continuing education. Educational packages should be developed using more scenarios and simulation in order to upgrade nurses' knowledge to enhance and facilitate appropriate judgments and decision-making skills.

Acknowledgments

The authors would like to thank the Graduate School and the Research Center for Caring and Healing of People with Trauma, Emergency, and Disaster, Prince of Songkla University, Thailand, for partially funding this study. We wish to express our sincere thanks to Dr. Alan Geater from the Epidemiology Unit, Faculty of Medicine, for editing this paper.

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Factors Influencing Purchase Intention toward Low-Cost Carriers: The Case of Chinese In-bound Passengers to Thailand

Xiaochen Zhu and Phanasan Kohsuwan

Abstract

During the past ten years, the numbers of Chinese in-bound passengers to Thailand has increased exponentially due to the dramatic growth of Chinese middle-income consumers. Prior research has paid little attention to explaining why and how Chinese tourists choose low-cost carriers. This study fills this gap by exploring the factors that influence purchase intentions of Chinese passengers to Thailand in choosing low-cost carrier services. Specifically, this study examines how brand awareness of the low-cost carrier, perceived quality, perceived value, and brand attitude influence passenger purchase intentions. The responses from 387 Chinese passengers at Don Mueang International Airport in Thailand were analyzed using Structural Equation Modeling. The model fit result reveals that brand awareness, tangible and empathy dimensions of perceived quality, and perceived value have a positive influence on brand attitude, and consequently brand attitude positively influences purchase intention. A result of this study could be guidelines for designing efficient marketing strategies for low-cost carrier service providers to better attract a growing number of outbound Chinese tourist.

Key words: Brand awareness, perceived quality, perceived value, brand attitude, purchase intentions, low-cost carrier, Chinese passengers
Introduction

From a global perspective, low-cost carriers (LCC) appeared in the United States soon after air traffic controls were relaxed in the 1970s. They began to flourish in the mid-1980s, and then this model spread to continental Europe. With optimization of operating modes and improved management methods, LCCs gradually began to overwhelm traditional airlines in Europe and America (Hooper, 2005). In contrast, low-cost carriers in Asia-Pacific region started later, but since the start of the 21st century, low-cost carriers have sprung up like mushrooms after rain (O’Connell & Williams, 2005). In Southeast Asia, the low-cost carrier market penetration rate (capacity share or percentage of total seats in the market) has increased from 3.3% in 2001 to 58.4% in January 2014 (Figure 1). International routes have played a key role in the development of Asian LCCs (Gross & Schröder, 2007). Actually LCCs have successfully entered many main Asian markets such as Japan, India, and Indonesia. Nevertheless, in the Chinese market, the penetration rate is still in the single digits (Figure 2).

![Figure 1. Low-Cost Carrier (LCC) Capacity Share (%) of Total Seats within Southeast Asia: 2001-2014*](image)

* Year to Month indicated
Source: CAPA - Centre for Aviation with data provided by OAG
With growing purchasing power, the lifestyle of Chinese middle-income consumers is changing, and they are willing to spend more time and money on leisure activities, entertainment and overseas travel (Marsh & Li, 2015). In 2013, the spending of Chinese tourists on overseas travel was over 1 trillion Yuan, or a 35% increase compared with 2012. The spending of the top 25% outbound Chinese tourists was an average of 43,770 Yuan per trip (China-Britain Business Council [CBBC], 2013). With the popularity of the Chinese film “Lost in Thailand”, Thailand has become a popular destination for Chinese travelers (Zhu, 2013). Chinese media outlets have claimed that Thailand replaced Hong Kong as the top destination for Chinese travelers during the May Day holiday in 2013 (Zhu, 2013). As a result, data from the Thai Department of Tourism shows that the number of Chinese visitors to Thailand reached 7.9 million in 2015 (an increase of about 71% from 2014). China’s fast-growing middle class is becoming the main force driving consumer spending, including air travel expenditures (Dichter, Saxon, Weber, and Yu, 2014). China is a potential market for Thai low-cost carriers.

Developing long-term relationships with passengers is necessary for the success of airline companies. It is found that purchase intention is often associated with the behavior, perceptions, and attitudes of consumers, and these may be effective instruments to forecast consumers’ purchase behavior (Ghosh, 1990). Consumers face many product and brand choices in daily life (Zeithaml, 1988). To help consumers make decisions, they need information - both internal and external clues about products - as an important basis for evaluation when making buying decisions. These external clues include brand, manufacturer name, price, warranty, product source, and so on; internal clues include design, quality, functions, shape, color, and so on (Zeithaml, 1988). External and internal clues influence consumers’ evaluation of brands or products, which then play a role in forming brand attitudes, and hence further influence buying decisions. Thus, the overall views of consumers towards brands and perceived quality should be key factors that affect perceived value, brand attitudes, and consumer purchase intention (Aaker & Keller, 1990; Zeithaml, Bithner, & Gremler, 2006). Konecnik and Gartner (2007) explain that high brand awareness may potentially result in high brand association in the minds of customers. Consumer brand attitudes and purchase intentions increase if a product has higher similarity and familiarity (Kamins and Marks, 1991). Furthermore, purchase intention may change as a result of the impact of perceived quality and value (Gogoi, 2013).
Since the penetration rate of LCCs on short-haul routes within Southeast Asia is already approximately 60%, the overall market is now relatively mature (CAPA, 2015a). According to CAPA’s analysis, the capacity growth of LCCs will be relatively slow within Southeast Asia. However, more rapid growth will occur on routes connecting Southeast Asian countries with other parts of the Asia-Pacific region, such as routes between Thailand and China. As mentioned above, China markets still have huge growth potential for LCCs, with a relatively low penetration rate and explosive growth of the Chinese middle class. However, there is a relative lack of explanation regarding how Chinese consumers choose low-cost carriers. This research study is meant to fill the gap in examining how actual in-bound Chinese passengers to Thailand choose low-cost carriers.

The purpose of this study is to explore the factors that influence in-bound Chinese passengers to Thailand in choosing low-cost carrier service providers. More specifically, this study intends to understand how brand awareness of low-cost carriers, perceived quality, perceived value, and brand attitude influence Chinese passengers’ purchase intentions. Meanwhile, this study creates an integrated model which explores the interrelationships among brand awareness, perceived quality, perceived value, and brand attitude, and their effect on Chinese passenger purchase intentions toward low-cost carriers.

This section introduces the subject of this study – that is, the LCC purchase intentions of Chinese passengers. The next section describes the relevant literature from previous studies that suggests variables which are explored in this study, and their relationships as mentioned above, including the theoretical framework for the study.

**Literature Review**

This section contains three parts. First, all relevant variables that may be used when passengers select low-cost carriers are identified. Next, the relationship among these variables is discussed and hypotheses are stated. Finally, a conceptual framework is created based on this theoretical background for use in the current study.

**Definitions of Relevant Variables**

*Brand Awareness* is a part of brand equity defined as the ability of consumers to recognize or recall a certain brand in product categories in a specific purchase situation (Aaker, 1991). Hence, brand awareness can provide familiarity with and commitment to a brand (Aaker, 1991). Brand awareness plays an important role when consumers think about a product category. Enhancing brand awareness improves the likelihood that a brand will be a member of the consideration set (Nedungadi, 1990).

*Perceived Value* is a consumer’s overall evaluation about the utility of a product based on the perception of gain and pay (Zeithaml, 1988). In other words, perceived value is a holistic conception measuring clients’ cognitive and utilitarian perceptions. In a service context, perceived value is a customer’s comparative evaluation of perceived benefits and sacrifices or costs paid resulting from the usage of a service (Teas & Agarwal, 2000; Zeithaml, 1988).

*Perceived Quality* is defined as the customer’s evaluation of a product’s entire superiority or excellence (Zeithaml, 1988; Aaker & Jacobson, 1994). Most research suggests a common model to measure perceived service quality, which is reflected in the SERVQUAL (Service Quality) instrument (Chen & Chang, 2005; Pakdil & Aydın, 2007; Philip & Hazlett, 1997). Five key dimensions of perceived service quality dominate in the airline industry and may be listed and briefly characterized as follows (Kim & Lee, 2011; Parasuraman et. al, 1988; Park, Robertson, & Wu, 2004; Zeithaml et. al, 2006):

1. Tangibles are the dimension that refers to the physical facilities, equipment, appearance of staff, and communication materials in the service process. For the airline industry, these variables include seats (comfort, space, and legroom), cleanliness in the aircraft interior, in-flight
entertainment facilities (books, newspapers, magazines, etc.), food and beverage service (items, appearance, freshness, taste, and quantity), and appearance of the flight crew.

(2) Responsiveness can be defined as the willingness to provide timely and efficient service for customers.

(3) Reliability is related to the ability to deliver service dependably and accurately.

(4) Assurance may be explained as the ability to convey trust and confidence to passengers, such as knowledge and competence to answer questions.

(5) Empathy is associated with individualized treatment, care, and attention provided to passengers, such as an online pre-order system so that passengers can choose seats or meals in advance or a Frequent Flyer Program.

*Brand Attitude* is described as an individual’s overall evaluation of a brand as good or bad (Mitchell & Olson, 1981). It is formed by consistent customer preference or dislike for a brand, based on learning and judging all of its elements (Fishbein & Ajzen, 1977) that produces a comprehensive result. This means that brand attitude depends primarily on a consumer’s own perceptions toward a brand, and it is considered a reliable indicator to forecast consumers’ purchasing behavior toward brands (Shimp, 2013).

*Purchase Intention* is the tendency to take personal action associated with a brand (Bagozzi, Tybout, Craig, & Sternthal, 1979). Purchase intention is described as a purchase possibility related to an intention category at the percentage of individuals who will likely buy a product or service (Whitlark, Geurts, & Swenson, 1993). Therefore, purchase intention is the most accurate variable among behaviors that predict buying (Morwitz & Schmittlein, 1992).

**Relationship of Relevant Variables and Research Hypotheses**

*Brand Awareness and Perceived Value*

Baldauf, Cravens, and Binder (2003) found that consumers who are familiar with a product, a brand, or a company’s logo are willing to pay a price premium. High consumer brand awareness can increase their positive evaluation of products. Therefore, if consumer brand awareness is high, their perceived value may also be high (Rao & Monroe, 1988). The current study developed the following first hypothesis as a result of these findings.

H1: Brand awareness has a positive influence on perceived value when Chinese passengers choose low cost carriers.

*Perceived Quality and Perceived Value*

Past researchers have argued that product or service quality plays a predictive role in the perceived value of consumers (Chen and Hu, 2010; Zeithaml, 1988). The study of Dodds (1985) showed that perceived quality had a significant effect on perceived value and purchase intention. Similarly, perceived service quality positively influenced perceived value in the Australian airline industry (Park, Robertson, & Wu, 2006). Therefore, based on previous studies and the five dimensions of perceived quality, the following hypotheses are explored:

H2: Perceived quality has a positive influence on perceived value when Chinese passengers choose low-cost carriers.

H2a: The tangible dimension of perceived quality has a positive influence on perceived value when Chinese passengers choose low-cost carriers.

H2b: The responsiveness dimension of perceived quality has a positive influence on perceived value when Chinese passengers choose low-cost carriers.
H2c: The reliability dimension of perceived quality has a positive influence on perceived value when Chinese passengers choose low-cost carriers.

H2d: The assurance dimension of perceived quality has a positive influence on perceived value when Chinese passengers choose low-cost carriers.

H2e: The empathy dimension of perceived quality has a positive influence on perceived value when Chinese passengers choose low-cost carriers.

**Brand Awareness and Brand Attitude**

Keller (1993) concurs that brand awareness plays an important role in the process of consumer decision-making, since consumers select products or services according to brand awareness, and then their brand attitude will be formed. Aaker and Keller (1990) found that high brand awareness increases consumers’ trust in products, as well as strengthens their attitudes toward a brand. Therefore, brand awareness can certainly influence consumers’ brand attitudes. Based on this previous research, the following hypothesis has been formulated:

H3: Brand awareness has a positive influence on brand attitude when Chinese passengers choose low-cost carriers.

**Perceived Quality and Brand Attitude**

Previous studies have proposed that perceived quality is a positive antecedent to brand attitude. Furthermore, perceived quality provides a foundation for when consumers evaluate the overall quality concept of a product, and it is a source for maintaining or shaping brand attitude (Batra, Ramaswany, Alden, Steenkamp, & Ramachander, 2000; Dimofte, Johansson, & Ronkainen, 2008). Some research studies (Dodds, Monroe, & Grewal, 1991) have verified that consumers’ perceived quality has a direct and positive influence on brand attitude. Therefore, based on above discussion, the following hypothesis is examined:

H4: Perceived quality has a positive influence on brand attitude when Chinese passengers choose low-cost carriers.

H4a: The tangible dimension of perceived quality has a positive influence on brand attitude when Chinese passengers choose low-cost carriers.

H4b: The responsiveness dimension of perceived quality has a positive influence on brand attitude when Chinese passengers choose low-cost carriers.

H4c: The reliability dimension of perceived quality has a positive influence on brand attitude when Chinese passengers choose low-cost carriers.

H4d: The assurance dimension of perceived quality has a positive influence on brand attitude when Chinese passengers choose low-cost carriers.

H4e: The empathy dimension of perceived quality has a positive influence on brand attitude when Chinese passengers choose low-cost carriers.

**Perceived Value and Brand Attitude**

Perceived value is the determinant affecting consumers’ attitude and evaluation toward a product or a brand and subsequently influencing their buying decisions. (Kardes, Posavac, & Cronley, 2004). Perceived value has a direct and positive influence on customer brand attitude (Johnson,
Herrmann, & Huber, 2006; Swait & Sweeney, 2000). In the current study, the following hypothesis is proposed:

H5: Perceived value has a positive influence on brand attitude when Chinese passengers choose low-cost carriers.

**Brand Attitude and Purchase Intention**

According to the Theory of Reasoned Action (TRA), a person’s attitude has a positive impact on his behavioral intention (Ajzen & Fishbein, 1980). Previous research reveals that a consumer’s brand attitude towards a product or service influences the intention to purchase (Jin & Suh, 2005; L. C. Leonidou, C. N. Leonidou, & Kvasova, 2010). Leonard, Cronan, and Kreie (2004) confirm that behavioral intentions are noticeably affected by a person’s attitude. Hence, the last hypothesis is put forward as follows:

H6: Brand attitude has a positive influence on purchase intention when Chinese passengers choose low-cost carriers.

Based on the above literature review, a research framework for the current study in Figure 3 shows the research model with all the hypotheses.

![Figure 3. Research Model](image)

Four variables were extracted from the literature to investigate passenger purchase intention, including brand awareness, perceived quality, perceived value, and brand attitude. These four variables and their relationship to purchase intention have been explained in this section, which established a research model. The next section describes the primary research method used in order to test these hypotheses.

**Methodology**

*Sample and Data Collection*
The target population for this study was Chinese passengers from mainland China who arrive or depart from Don Mueang International Airport, Thailand, using any low-cost carrier at least one time. By the end of 2014, Bangkok’s Don Mueang Airport had become the world’s largest airport for low-cost carriers, having overtaken Kuala Lumpur International Airport, Europe’s Barcelona El Prat Airport, and North America’s Las Vegas McCarran Airport. Don Mueang Airport has gradually emerged as Bangkok’s main low-cost carrier airport (CAPA, 2015b). Thus, this research proposed Don Mueang Airport as a suitable survey location. Five hundred questionnaires were distributed among Chinese passengers waiting in departure lounges at Don Mueang Airport from November 23rd to 29th, 2015. According to Cochran’s formula (Cochran, 2007), the minimum sample size was 384 persons to ensure adequate data for statistical analysis in this paper. The random convenience sampling method was used to select respondents. Data was collected from Chinese passengers using a self-administered paper questionnaire survey. After removing questionnaires with missing or incomplete data, a total of 387 questionnaires were used to explore factors influencing purchase intentions of in-bound Chinese passengers.

Measures

The formal questionnaire in this paper contained two parts, which were a demographic information section, and a research framework section with five variables. In the research framework section, a total of 27 items were used to measure the nine variables (twelve items for five dimensions of perceived quality, two items for brand attitude, and four items each for brand awareness, perceived value, and purchase intention). Moreover, the measuring scale was a five-point Likert response scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Analysis Techniques

Cronbach’s alpha was used to measure the reliability of all variables. The questionnaire’s validity was measured using factor analysis. Structural equation modeling (SEM) was employed to test the validity of the proposed research model and the hypotheses.

This section explains that the methodology used to collect data from the respondents. The SEM analysis technique was employed to simultaneously test the interrelationships of relevant variables. The next section will discuss particularly the data analysis results, including the goodness-of-fit of the research model, and the test results for all hypotheses in the model.

Data Analysis

This research study used Cronbach’s alpha to test scale reliability. The Cronbach’s alpha values for all variables were from 0.721 to 0.869. Thus, all constructs of this study were accepted for internal consistency. All factor loadings were between 0.73 and 0.93, which are above the threshold value of 0.50. As a result, the above values indicate high convergent validity for all constructs. In addition, confirmatory factor analysis (CFA) results for all constructs demonstrated that data fit well with the measurement model (Table 1), and established an essential precondition for the validity of subsequent structural model estimations.

Table 1. Goodness-of-fit Measures of All Constructs

<table>
<thead>
<tr>
<th>Goodness-of-Fit Measure</th>
<th>Criteria</th>
<th>Brand Awareness</th>
<th>Perceived Value</th>
<th>Brand Attitude</th>
<th>Purchase Intention</th>
<th>Perceived Quality &amp; Perceived Value</th>
<th>Perceived Quality &amp; Brand Attitude</th>
</tr>
</thead>
</table>

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Chi-Square Value (\(\chi^2\)) | 0.11650 | 0.91602 | / | / | 242.72265 | 239.04564
---|---|---|---|---|---|---
P-Value | 1 | 1 | 0 | 0 | 0 | 0
df | < 3 | 2.46382 | 0.01112 | 0 | 0 | 2.50230 | 2.81230
\(\chi^2/df\) | 1 | 1 | 0 | 0 | 97 | 85
GFI | > 0.9 | 0.99683 | 0.99999 | 1 | 1 | 0.92770 | 0.92430
AGFI | > 0.8 | 0.96825 | 0.9986 | / | / | 0.89863 | 0.89314
CFI | > 0.9 | 0.99756 | 1 | / | / | 0.91304 | 0.91369
NFI | > 0.8 | 0.99594 | 0.9998 | / | / | 0.86483 | 0.87351
RMR | < 0.08 | 0.01555 | 0.00059 | / | / | 0.06689 | 0.07057
RMSEA | < 0.08 | 0.06158 | 0 | / | / | 0.06239 | 0.06852

Note: Key to abbreviations - Degrees of Freedom (df), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), Normal Fit Index (NFI), Root Mean Residual (RMR) and Root Mean Square Error of Approximation (RMSEA)

All variables were simultaneously tested as proposed in the initial research model to establish whether the model could predict Chinese purchase intentions towards LCCs. This test would determine the model’s GOF (Goodness of Fit), and the hypothesized paths between variables.

The proposed model generated a ratio \(\chi^2/df = 1.759\) that was below the threshold of 3.0. The values of GFI, AGFI, CFI, NFI, RMR, and RMSEA were 0.904, 0.881, 0.941, 0.874, 0.062, and 0.044, respectively (Table 2). Thus, analysis of the overall fit statistics demonstrated that the fit of the proposed structural model was good, and it provided a reasonable level of overall fit with the real world data. These hypothesized paths were checked with the help of standardized path coefficients and their respective critical ratios (t-values). The results showed that brand awareness positively influences perceived value (\(\beta=0.16, t\text{-value}=2.74, p<0.05\)). Brand awareness and perceived value both had a positive influence on brand attitude (\(\beta=0.30, t\text{-value}=5.33, p<0.001; \beta=0.12, t\text{-value}=2.19, p<0.05\)). The tangible and empathy dimensions (\(\beta=0.2, t\text{-value}=3.33, p<0.001; \beta=0.17, t\text{-value}=2.65, p<0.05\)) of perceived quality also affected positively brand attitude. It was also confirmed that brand attitude has a positive effect on Chinese passengers’ purchase intentions towards LCC (\(\beta=0.53, t\text{-value}=8.55, p<0.001\)). Thus, hypotheses H1, H3, H4a, H4e, H5, and H6 were supported. These results are shown in Table 2.

Discussion

The results of the current study show that a high level of brand awareness for LCCs may generate high perceived value for their Chinese passengers. Chinese passengers’ evaluation of flight experience is impacted by brand awareness of airlines. For a Chinese passenger’s brand attitude, the analysis results reveal that brand awareness has a significant and positive influence on brand attitude. A passenger’s brand attitude is more easily formed by an LCC with high brand awareness.

Table 2. Summary of Testing of Hypotheses

<table>
<thead>
<tr>
<th>Hypothesized Path</th>
<th>Standardized Coefficients((\beta))</th>
<th>C.R. (t-value)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand awareness → Perceived value</td>
<td>0.16</td>
<td>2.74*</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Tangible → Perceived value</td>
<td>0.06</td>
<td>0.94</td>
<td>Rejected</td>
</tr>
<tr>
<td>b. Responsiveness → Perceived value</td>
<td>0.08</td>
<td>1.16</td>
<td>Rejected</td>
</tr>
<tr>
<td>c. Reliability → Perceived value</td>
<td>0.002</td>
<td>0.04</td>
<td>Rejected</td>
</tr>
<tr>
<td>d. Assurance → Perceived value</td>
<td>0.04</td>
<td>0.64</td>
<td>Rejected</td>
</tr>
</tbody>
</table>
### Hypothesized Path

<table>
<thead>
<tr>
<th>Hypothesized Path</th>
<th>Standardized Coefficients (β)</th>
<th>C.R. (t-value)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>e. Empathy → Perceived value</td>
<td>0.03</td>
<td>0.56</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**H3**
Brand awareness → Brand attitude  

0.30  

5.33***  

Supported

**H4**

Partially supported

<table>
<thead>
<tr>
<th>Path</th>
<th>Standardized Coefficients (β)</th>
<th>C.R. (t-value)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Tangible → Brand attitude</td>
<td>0.20</td>
<td>3.33***</td>
<td>Supported</td>
</tr>
<tr>
<td>b. Responsiveness → Brand attitude</td>
<td>0.09</td>
<td>1.24</td>
<td>Rejected</td>
</tr>
<tr>
<td>c. Reliability → Brand attitude</td>
<td>0.08</td>
<td>1.41</td>
<td>Rejected</td>
</tr>
<tr>
<td>d. Assurance → Brand attitude</td>
<td>0.09</td>
<td>1.41</td>
<td>Rejected</td>
</tr>
<tr>
<td>e. Empathy → Brand attitude</td>
<td>0.17</td>
<td>2.65*</td>
<td>Supported</td>
</tr>
</tbody>
</table>

**H5**
Perceived value → Brand attitude

0.12  

2.19*  

Supported

**H6**
Brand attitude → Purchase intention

0.53  

8.55***  

Supported

### Model Goodness-of-Fit Statistics:

χ²=540.052 (p < 0.000); df=307; χ²/df = 1.759;  
GFI= 0.904; AGFI=0.881; CFI=0.941; NFI=0.874, RMR=0.062; RMSEA=0.044

*Note:* Cut-off t-value is 1.96 (*p < 0.05, ***p<0.001)

The current study shows a positive (albeit weak) relationship between the empathy dimension of perceived quality and brand attitude among Chinese passengers. This result implies that convenience of flight schedules, reservations, and payment are important issues that should be noticed by LCCs that want to enter the Chinese market. In addition, the tangible dimension has a significant influence on LCC passenger brand attitudes. Perceived value is a comparative assessment after consumers consider benefits and sacrifices or costs that are paid when they utilize a service. For passengers, this evaluation is the result of comparing ticket prices with an airline’s service. This study indicates that better prices from other LCCs may influence passengers’ attitudes. Hence, the influence of fare prices is noticeable in the formation of a passenger’s brand attitude. Certainly, this is important, but it is not the only consideration.

Chinese passengers’ brand attitude toward LCCs may be a good predictor for their purchase intentions. Passengers who have a favorable impression towards an airline may prefer the airline, and intend to make subsequent purchases from it. Chinese passengers with positive brand attitudes are thus a critical factor in the success of LCCs.

### Conclusion and Recommendations

This study provides an in-depth theoretical perspective investigating Chinese passengers’ purchase intention and the reasons behind purchase intention. An integrated structural equation model was created to explore the antecedent variables of passengers’ brand attitudes to aid in interpreting their purchase intentions. The importance of brand awareness in the process of passenger decision-making was emphasized, especially for newly established LCCs. Airline
management should emphasize building a favorable image in the minds of passengers to enhance an airline’s brand awareness, and strengthening publicity in China. Meanwhile, this study demonstrated that the tangible and empathy dimensions of perceived quality positively influence passenger brand attitudes toward LCCs. Besides scheduling more flights and improving reservation and payment systems, airlines should also invest in physical facilities such as more seat space and legroom to ensure comfortable seats. Occasional great in-flight meals and entertainment service can add more perceived value to passengers’ impression, as it goes beyond their expectations. Moreover, LCC companies should sustain their low cost advantage, especially in the long-haul markets, and develop strategies to strengthen passengers’ value perceptions. Finally, the research model fit analysis results of this study suggest that understanding passengers’ purchase intentions and obtaining favorable brand attitudes are not based on a single variable, but airline management needs to develop an integrated marketing strategy aligned with the inter-relationships among all the relevant variables noted above.

Although the study collected a large sample data, the study was limited to a few regions of Chinese passengers. A future study could be expanded to passenger segmentation of China. In reality, passenger decision processes are quite complex. Future research could explore other variables that influence passengers’ LCC purchase intentions in depth. Additionally, the research framework that emerged from this study may also be extended to other service industries such as hotels, hospitals, or restaurants.

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Assistant Professor Dr. Phanasan Kohsuwan is a Lecturer, International College, Panyapiwat Institute of Management, Thailand.

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An Adaptation Model for Creative Tourism Businesses: A Case Study of Khao Yai Economic Roads and Foreign Tourists

Natanan Limsopitpun, Theathanick Siriwoharn, Sunanta Laohanan

Abstract

The objectives of this study are: 1) to investigate creative tourism activities affecting the adaptation of creative tourism businesses; 2) to study the opinions of foreign tourists towards creative tourism activities and the adaptation of creative tourism businesses; and 3) to propose an adaptation model for creative tourism businesses: a case study along economic roads near Khao Yai National Park, Thailand, involving foreign tourists.

The main approach used in this research study was a quantitative one. Data collected from 390 foreign tourist respondents was analyzed to determine percentages, means, standard deviations, and using multiple regression. Qualitative research was supplemented by interviewing 13 key entrepreneurs who operate creative tourism businesses on economic roads near Khao Yai National Park. The proposed model was reviewed and critiqued by experts during a seminar organized by all parties involved in the project. The interview outcome indicates that the 5 most important factors of tourists’ adaptation activities are learning, participation, networking, cooperation, and guidance. The tourists’ opinions regarding activities and adaptation of tourism businesses were very favorable. The study reveals that foreign tourists’ personal factors and activities that affected the 6 aspects of adapting creative tourism businesses were: 1) sightseeing, 2) contemplating, 3) souvenir purchases, 4) learning, 5) participation, and 6) co-creation. The result was 71.40 percent ($R^2 = 0.714$) of the variation of the adaptation at a statistically significant level of 0.05.

Keywords: Adaptation of tourism businesses, creative tourism businesses, creative tourism

Introduction

Tourism in Thailand has grown rapidly and been continuously developing for the past 40 years, although this smooth ride has met with occasional obstacles. Due to its prominence, tourism is a vital contributor to national and local economies in Thailand and is considered to be a high development priority, with support from the government. However, the growth of tourism in Thailand faces a sustainability dilemma because of challenges within and outside the country. Today, the nature of tourism tends to be pursuit of an experience rather than just plain sightseeing. Creative tourism therefore offers opportunities for tourists to experience and participate in activities, learning the arts, history, heritage, and special character of a place. Tourism industries should offer innovative ideas and activities from their knowledge and practices to tourists for unique and unforgettable experiences. Tour managers must recognize that creativity among local people can provide new opportunities to fulfill the evolving interests and demands of tourists. These activities can be milking cows, picking grapes for wine making, growing and picking mushrooms on a farm, etc. Businesses will be more profitable, productive, and consequently enhancing companies’ value. Tourists will spend more time engaging in their participative activities of interest and interact more with local social and culture life.

It is therefore necessary to study the factors and develop ideas to complement the adaptation of creative tourism businesses that are important to local economies and foreign tourists, and are located along roads leading to the northern entrance of Khao Yai National Park. The authors
designed an appropriate adaptation model for planning and developing tourism businesses for foreign tourists. It is hoped that this research will lay some ground work with useful and pragmatic information to help business entrepreneurs develop and adapt Thai tourism industries in the future.

Research Objectives

1. To investigate creative tourism activities that affect adaptation of creative tourism businesses
2. To study the opinions of foreign tourists towards creative tourism activities and the adaptation of creative tourism businesses
3. To propose an adaptation model for creative tourism businesses: a case study along Khao Yai economic roads involving foreign tourists

Research Hypothesis

1. Activities of creative tourism affect the adaptation of creative tourism businesses.

Research Conceptual Framework

The authors selected 3 variables for this research. The first variable was adapted from the conceptual model of creative tourism by Richards (2011). The second was obtained from review of 40 related articles from the literature and publications. The third was activities with a creative tourism component that was adapted from the study of adaptation of creative tourism components by Pine and Gilmore (1999).

![Figure 1. Conceptual Framework](image)

Independent Variables

- Creative Tourism Activities
  - Sightseeing
  - Contemplating
  - Souvenir purchases
  - Learning
  - Participation
  - Co-creation

Dependent Variables

- Adaptation Activities of Creative Tourism Businesses
  - Events
  - Networks
  - Partnerships
  - Creative Entrepreneurs
  - Guides

Potential Benefits from This Research

1. Information collected from creative tourism activities may positively affect the adaptation of creative tourism businesses. This will help business entrepreneurs to plan tour activities that better serve foreign tourists in creative tourism.
2. Opinion levels of creative tourism activities collected from foreign tourists will help business entrepreneurs in marketing, planning, and management of creative tourism.
3. This adaptation model of creative business tourism along “Khao Yai Economic Roads for foreign tourists” will help with future planning and development in the tourism industry.

Related Literature

Richards (2010) has proposed two Basic Modes of Implementing Creative Tourism: using creativity as a tourist activity, and using creativity as backdrop for tourism. Richards suggests that
This new format will transform tourism from long days of travel of ever-worsening quality. Traditional tourism takes travelers to visit and take pictures of interesting and important natural and cultural sites, including beaches, cultural heritage, museums, and monuments. But a new generation of tourists likes to participate in the distinctive features of the areas that they visit. Creative tourism is an initiative that directs attention away from Tangible Cultural Resources to Intangible Cultural Resources. During the 3rd Tourism Development Seminar held from 13 to 16 July 2015, organized by the Creative Academy for Cultural and Historical Tourism, Mahidol University, an article about creative marketing for cultural and historical tourism was presented by Dr. Malinvisa Sakdiyakorn. She asserted that the research conducted by Pine and Gilmore (1999) discovered that creative tourism consists of 5 key factors. These include Sightseeing, Contemplating, Learning, Participating and Co-creation.

The research of Suddan Wisudthiluck and others (2011) discovered that creative tourism encourages visitors to exchange knowledge in order to jointly understand local social, cultural, and environmental values through a profound experience with local residents. An important aspect of creative tourism is that it must include local features and processes in a variety of distinctive cultural and/or natural activities. These activities must lead to cross-cultural knowledge, offering opportunity for experiences with owners of the culture, who help to provide a deeper understanding of them. A factor that leads to the success and sustainability of communities is a sense of the value of cultural and natural heritage, along with a willingness to exchange knowledge with tourists through joint activities. These shared experiences will create bonds between tourists and local residents, along with lasting memories of the “spirit” of tourist locations and a sustainable social, cultural, economic, and natural balance.

The research of Atitayaporn Arunpipattanapong (2011) developed four creative ethnic tourism plans in Nakhon Phanom province, which are: 1) conservation of cultural heritage and local ethnic wisdom; 2) development of the creative tourism body of knowledge; 3) raising the standards of creative ethnic tourism; and 4) cooperation with communities in managing creative tourism initiatives.

The research of Paimanee Kaewsanga and Nisachol Chamnongsri (2012) discovered that nowadays, the behavior of tourists has changed. Tourists want to participate more in tourist activities, and this is coupled with the emerging issues of tourism resource management. Hence, creative tourism proposes that tourists and local communities be enabled to take part in tourism management. Thailand has plenty of tourism resources that can be used to develop creative tourism. Now creative tourism is taking place in many countries around the world. The creative activities consist of traditional cultural goings-on that are part of everyday life. Each tourist activity passes on the local community’s knowledge and experience to tourists through participation in various events, all of which are guided by a professional at all times. Some activities may depend upon experience, combined with tourists’ feelings, such as painting, engraving, and photography, in order to produce creative works.

Research Scope
1. This study covers the area of 3 main roads around Khao Yai National Park: Thanarachata Road (2090), Pansuek-Gudkla (Veterans) Road (1016), and Khao Yai-Wang Nam Khiew Road (2304).
2. Two sample groups were targeted:
   - Group 1: 13 creative tourism business entrepreneurs (data as of February 2015)
   - Group 2: 390 foreign tourists from 13 locations, with 30 tourists per location

Methodology

The authors mainly employed quantitative research methods which were based on an indefinite population, because no data has been collected regarding the number of tourists who visit this area. The sample size was calculated using Cochran formula (W. G. Cochran, 1953) was 384. The authors
added another 6 samples for total of 390 so that each group from 13 locations yielded the same number of 30 samples. Stratified random sampling was applied, and the data collection tool was a questionnaire. A validity test showed an Index of Correspondence (IOC) of 0.62.

The questionnaire was tried out first with 30 creative tourists. Cronbach’s Alpha Coefficient (Kalaya Vanichbancha, 2003) was found to be 0.96, and therefore it was regarded as a reliable tool according to the pre-defined criteria. Statistical analysis was expressed in terms of percentage (%), mean (x̄), and standard deviation (S.D.). Multiple regression analysis was conducted using a statistical software program, and supplemented with qualitative in-depth interviews of 13 creative tourism business entrepreneurs along Khao Yai economic roads. The authors specifically selected certain data to build a prototype, which was reviewed and approved with recommendations of business experts during a seminar organized for this purpose.

Results

1. Activities of creative tourism affecting the adaptation of creative tourism businesses.

<table>
<thead>
<tr>
<th>Constant/Variable</th>
<th>b</th>
<th>SEb</th>
<th>β</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.446</td>
<td>.118</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sightseeing</td>
<td>.069</td>
<td>.034</td>
<td>.077</td>
<td>2.067</td>
<td>.039*</td>
</tr>
<tr>
<td>Contemplating</td>
<td>.085</td>
<td>.031</td>
<td>.102</td>
<td>2.713</td>
<td>.007*</td>
</tr>
<tr>
<td>Souvenir Purchases</td>
<td>.158</td>
<td>.027</td>
<td>.202</td>
<td>5.861</td>
<td>.000*</td>
</tr>
<tr>
<td>Learning</td>
<td>.147</td>
<td>.028</td>
<td>.194</td>
<td>5.196</td>
<td>.000*</td>
</tr>
<tr>
<td>Participation</td>
<td>.251</td>
<td>.035</td>
<td>.284</td>
<td>7.103</td>
<td>.000*</td>
</tr>
<tr>
<td>Co-creation</td>
<td>.179</td>
<td>.031</td>
<td>.221</td>
<td>5.751</td>
<td>.000*</td>
</tr>
</tbody>
</table>

Table 1 demonstrates 6 aspects of creative tourism activities affecting creative business entrepreneurs:
1. Sightseeing
2. Contemplating
3. Souvenir Purchases
4. Learning
5. Participation
6. Co-creation

The correlation between adaptation of creative tourism business entrepreneurs and personal factors, together with activities of creative tourism, was 84.50% (R = 0.845). The predictive value of adaptation by creative tourism business entrepreneurs was 71.40% (R² = 0.714) of adaptive variability, with a statistically significant level of 0.05, and a standard error of ±.266 using the following equation:

\[ R = \frac{R^2}{\sqrt{1 - \frac{R^2}{n}}} \]

\[ R^2 = \frac{\sum (y - \bar{y})^2}{\sum (y - \bar{y})^2 + \sum (x - \bar{x})^2} \]

\[ \bar{y} = \frac{\sum y}{n} \]

\[ \bar{x} = \frac{\sum x}{n} \]
\[ \hat{Y} = 0.446 + 0.069X_1 + 0.085X_2 + 0.158X_3 + 0.147X_4 + 0.251X_5 + 0.179X_6 \]

Where:
- \( \hat{Y} \) = Adaptation of Creative Tourism Businesses
- \( X_1 \) = Sightseeing
- \( X_2 \) = Contemplating
- \( X_3 \) = Souvenir Purchases
- \( X_4 \) = Learning
- \( X_5 \) = Participation
- \( X_6 \) = Co-creation

The interview results revealed that the two most important factors of creative tourism activities are (1) Learning and (2) Participation. The 3 most important adaptation aspects for business entrepreneurs of creative tourism activities are (1) Networking, (2) Cooperation, and (3) Guides, which was recently identified.

2. Opinion levels of foreign tourists towards creative tourism activities and adaptation of creative tourism business entrepreneurs are shown in Tables 2 and 3.

**Table 2. Opinions of Foreign Tourists towards Creative Tourism Activities**

<table>
<thead>
<tr>
<th>Opinions of Foreign Tourists Towards Creative Tourism Activities</th>
<th>( \bar{x} )</th>
<th>S.D.</th>
<th>Satisfaction Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sightseeing</td>
<td>4.12</td>
<td>0.548</td>
<td>High</td>
<td>1</td>
</tr>
<tr>
<td>2. Contemplating</td>
<td>3.85</td>
<td>0.592</td>
<td>High</td>
<td>5</td>
</tr>
<tr>
<td>3. Souvenir Purchases</td>
<td>3.87</td>
<td>0.631</td>
<td>High</td>
<td>4</td>
</tr>
<tr>
<td>4. Learning</td>
<td>3.91</td>
<td>0.652</td>
<td>High</td>
<td>3</td>
</tr>
<tr>
<td>5. Participation</td>
<td>3.97</td>
<td>0.558</td>
<td>High</td>
<td>2</td>
</tr>
<tr>
<td>6. Co-creation</td>
<td>3.85</td>
<td>0.607</td>
<td>High</td>
<td>6</td>
</tr>
</tbody>
</table>

Overall: 3.93, S.D. = 0.461, High

Table 2 demonstrates that the overall satisfaction level of foreign tourists towards creative tourism activities was high \( \bar{x} = 3.93 \), S.D. = 0.461; the Sightseeing aspect received the highest satisfaction rating \( \bar{x} = 4.12 \), S.D. = 0.548, and the Co-creation aspect received the lowest satisfaction rating \( \bar{x} = 3.85 \), S.D. = 0.607.

**Table 3. Opinions of Foreign Tourists towards Adaptation of Creative Tourism Activities**

<table>
<thead>
<tr>
<th>Opinions of Foreign Tourists Towards Creative Tourism Adaptation Activities</th>
<th>( \bar{x} )</th>
<th>S.D.</th>
<th>Satisfaction Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Events</td>
<td>4.02</td>
<td>0.599</td>
<td>High</td>
<td>1</td>
</tr>
<tr>
<td>2. Networks</td>
<td>3.86</td>
<td>0.597</td>
<td>High</td>
<td>5</td>
</tr>
<tr>
<td>3. Partnerships</td>
<td>3.90</td>
<td>0.640</td>
<td>High</td>
<td>4</td>
</tr>
<tr>
<td>4. Creative Entrepreneurs</td>
<td>3.91</td>
<td>0.641</td>
<td>High</td>
<td>3</td>
</tr>
<tr>
<td>5. Guides</td>
<td>3.96</td>
<td>0.682</td>
<td>High</td>
<td>2</td>
</tr>
</tbody>
</table>

Overall: 3.93, S.D. = 0.494, High

Table 3 demonstrates that the overall satisfaction level of foreign tourists towards adaptation of creative tourism activities was also high \( \bar{x} = 3.93 \), S.D. = 0.494, Events received highest satisfaction rating \( \bar{x} = 4.02 \), S.D. = 0.599, and Networks received the lowest satisfaction rating \( \bar{x} = 3.86 \), S.D. = 0.597.
3. An adaptation model for creative tourism businesses: A case study of Khao Yai economic roads and foreign tourists is shown in Figure 2.

Figure 2. Diagram Showing Adaptation Model of Creative Tourism Businesses: A Case Study of Khao Yai Economic Roads and Foreign Tourists

Figure 2 demonstrates an adaptation model for creative tourism businesses: a case study of Khao Yai economic roads and foreign tourists consists of the following 6 aspects: (1) Sightseeing, (2) Contemplating, (3) Souvenir Purchases, (4) Learning, (5) Participation, and (6) Co-creation. Participation has the largest effect on adaptability of creative tourism businesses \( (b = 0.25) \), and Sightseeing has the least effect on their adaptability \( (b = 0.07) \).

Discussion

Table 1 shows that all creative tourism activities have some influence on the adaptation model of creative tourism businesses in this study along Khao Yai economic roads. This result is consistent with interview research results, which revealed that all creative tourism activities have some influence on the adaptation model of creative tourism businesses, and that the two most important factors for creative tourism activities were (1) Learning, and (2) Participation. The conceptual model of creative tourism from Richards study (2011) asserted that creative tourism emphasizes experiences, and products were five factors including Sightseeing, Contemplating, Souvenir Purchases, Learning, and Participating. This finding is also consistent with the research by Pine and Gilmore (1999), who discovered that the key elements of tourism were five factors, including Sightseeing, Contemplating, Learning, Participating, and Co-creation.

The model produced by this study (Figure 2) shows that Participation has the largest effect on adaptability of creative tourism businesses \( (b = 0.25) \). This result is consistent with the interview research results, which revealed that one of the most important factors for creative tourism activities is Participation. This result also shows that Sightseeing has the least effect on adaptability of creative tourism businesses \( (b = 0.07) \). This is consistent with research on cultural tourism by young tourists in Delphi, Greece by Boukas (2008), who stated that culture was one of the most important driving forces in travel. These tourists were more interested in local exhibits in the community than convenient facilities. They were fairly satisfied with beauty and scenery in Delphi, but less interested in human inventions. Evidence indicated that awareness of travel sites positively contributed to tourist satisfaction, while educational issues exhibited a negative contribution. A logical marketing strategy is to fulfill the needs and interests of younger tourists who are becoming
major consumers in cultural tourism that increases their knowledge. Sightseeing becomes the basis for creative tourism because foreign tourists prefer involvement in local cultures which are unique and particular. Tour business operators should preserve distinctive identity features in order to attract foreign tourists, rather than trying to over-adapt via modern tourist innovations.

Foreign tourists’ opinions towards creative tourism activities reveal that sightseeing received the highest level of satisfaction (Table 2) which correlates to the research of eco-cultural and health tourism in provinces located in Northern Thailand – Chiangmai, Lampoon, Lampang, and Maehongson (Promburam, 2015). Factors that impacted tourists’ experience were location environment and atmosphere, value for money, and activities were of primary importance. This finding is also consistent with research by Patarathammaporn (2008), who discovered that the main reasons tourists visited Chiangmai were scenic sightseeing, followed by tasting Thai food, mountain climbing, and shopping.

Chowdhary and Prakash (2007) investigated the ranking of service quality factors, and they discovered that physical surroundings were a very important consideration. Service-oriented tourism should shift from focusing on individuals to emphasizing the physical environment such as materials, objects, and places. Probably reasons were that the Khao Yai area has gorgeous scenery and clean tourist areas that impress tourists with a variety of participative events with good value for money. Co-creation earned the lowest satisfaction level from foreign tourists; this result was consistent with the research of Tan, Kung, & Luh (2014), who studied the taxonomy of creative tourism. They discovered that creative tourists as co-producers were subjective, experienced different feelings regarding their creative experiences. These creative experiences were generated from internal reflections, and consisted of mindfulness/awareness, needs, initiatives, and also outside interactions with surroundings, people, and activities. This might be because tourists had little opportunity to express their opinions, because business operators did not quite welcome their opinions and advice due to concerns regarding profitability. Tourists also felt that there were few chances to help improve activities or to fully show their abilities.

Foreign tourists opinions towards adaptation of creative tourism activities reveal that Events received the highest level of satisfaction (Table 3), which correlates to the research on culinary tourism for young adult travelers and its connection to destination management (Redl, 2013). Tourists interested in local food, drinks included with the intention to join the activities. This may be due because society Cultural differences Making the tourists are interested in the events. They like experimental knowledge, and the events are also unique. It also organizes activities to more promote tourism. Networks earned the lowest level of satisfaction from foreign tourists, which correlates to the research on tourism networking by communities through participatory action research in the Central Region – (Naknat et al., 2008). Weakness in tourism management is largely a matter of management and services, and a lack of coordination networks at both the community and provincial levels. This finding is also consistent with the interview results, which revealed that there is still insufficient support from government networks in terms of basic infrastructure, expert advice to business entrepreneurs, transportation, road signs and convenient facilities. Partnerships in some tourist areas were not yet implemented, and businesses became competitive instead of cooperative.

Suggestions

There is still insufficient support from government networks in terms of basic infrastructure, expert advice to business entrepreneurs, transportation, road signs, and convenient facilities. Most business operators have seemed to cooperate well with each other in the past. However, in some cases, businesses have been more competitive than cooperative. Government agencies should take necessary measures to provide assistance and resources to promote a strong cooperation network among business operators and local residents. Formal meetings should be organized to include members from government representatives, business operators, and local residents to develop
strategic marketing, and tourism planning to achieve year-round tourism. Smaller informal meetings or workshops should also be organized to include all involved parties to gather new and innovative ideas, and plan for long-term and sustainable tourism.

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Informational Influence of Social Network Sites on Consumer Engagement Intention: A Context of Civic Engagement

Khomson Tunsakul

Abstract

This study investigates the informational influence of Thai political social network sites on civic behavioral intention. The dual routes of informational influence – content quality and source credibility – represent two independent variables. Perceived ease of use (PEOU) and perceived usefulness (PU) of social network sites are two mediators between the independent variables and civic engagement intention. The target population was Thai Facebook users who own a smart phone, tablet, or personal computer, were engaged in Thailand’s mass political event in 2013, and have discussed political viewpoints or issues on their Facebook timelines, friends’ spaces, or groups since then. Structural Equation Modeling (SEM) was employed as the statistical analysis tool for 402 respondents. The results of Confirmatory Factor Analysis (CFA) show that all the measurement indicators have both convergent validity and discriminant validity. The results reveal that both content quality and source credibility influence users’ engagement intention. Nevertheless, PEOU and PU mediate the relationships between independent and dependent variables. While content quality is significantly related to PEOU, source credibility has a strong impact on PU.

Keywords: Social Network Site (SNS), Informational Influence, Elaboration Likelihood Model (ELM), Technology Acceptance Model (TAM), Civic Engagement
Introduction

Consumers today have access to various sources of information. Besides traditional or offline information sources, there are online information sources which include web sites and virtual communities. Virtual communities, online platforms that bring Internet users together, are popular information sources. People in virtual communities usually share a common interest and communicate (Hagel & Armstrong, 1997; Williams & Cothrel, 2000). Virtual communities encompass social network sites (SNSs) as well as all types of websites in which users interact and exchange information.

Instead of using a general marketing or business context, this study was conducted through a civic engagement context in which social network site users discussed public interest issues and civic activities. Civic engagement encompasses both political and non-political activities such as political voting, discussion about public interest or social issues, participating in political activities, and other non-governmental organizations’ activities (Erentaite, Zukauskiene, Beyers, & Pilkauskaite-Valickiene, 2012; Nissen, 2010). There were distinct civic and political movements facilitated by social media, including the Arab Spring in 2009, the Tunisian Revolution in 2010, and the Egyptian Revolution in 2011 (Tufekci & Wilson, 2012). In such events, SNS users published information on social network sites before and during the protests, and engaged in political activities (Calistie & Patton, 2013; Tufekci & Wilson, 2012). In Thailand’s 2013 political situation, the protest issues by the anti-government group were calling for changes in government policies and ousting the government (Chia, 2015). Facebook, Twitter, YouTube, Instagram and LINE were online platforms that facilitated both online and offline political activities such as sharing digital content (texts, photos, videos, and audios) with others, and inviting them to participate in offline activities such as political rallies (Chia, 2015). In addition to political issues, civic activities also include product boycotts (Teney & Hanquinet, 2012), participation in campaigns to reduce energy consumption (Senbel, Ngo, & Blair, 2014), discussion of social issues (Warren, Sulaiman, & Jaafar, 2014), and other cause-related activities.

The Scope of the Study

This study emphasizes persuasive capabilities of SNSs that trigger users’ attitudes and behavioral responses. Petty & Cacioppo’s (1986) Elaboration Likelihood Model (ELM), Davis’ (1989) Technology Acceptance Model (TAM), and Ajzen’s (1991) Theory of Planned Behavior (TPB) are adopted to develop and explicate the conceptual framework. ELM is used to support the two independent variables, content quality and source credibility of social network sites. TAM helps to explain the two mediators, users’ perceived ease of use (PEOU) and perceived usefulness (PU) of SNSs. However, the dependent variable of TAM is adoption of the system, but not the behaviors influenced by system use. Therefore, the Theory of Planned Behavior is adopted to explain the dependent variable of this study, civic engagement intention; this theory includes perceived behavioral control (PBC), which is similar to PEOU and PU.

Research Objectives

This research aims to investigate the behavioral patterns of digital consumers influenced by information from social network sites. The main research objectives are: 1) to determine whether content quality and source credibility can influence users’ intention to engage in civic activities in Thailand; and 2) to evaluate the mediating effects of perceived ease of use and perceived usefulness.
**Significance of the Study**

The study has original value for both for-profit and not-for-profit organizations. The study can contribute to the knowledge base of social marketing, cause-related marketing, and marketing communication. Even though this study treats engagement intention as the dependent variable, the respondents were selected based on their actual engagement (either online or offline) in Thailand’s mass political movements of 2013.

**Conceptual Framework**

*Independent Variables: Content Quality and Source Credibility*

The independent variables consisted of a central and a peripheral cue influencing political SNS users according to Petty & Cacioppo’s (1986) dual-process Elaboration Likelihood Model (ELM). The dual-process variables, content quality and source credibility, were adopted from Sussman & Siegal’s (2003) study. ELM was introduced and developed by Petty & Cacioppo (1986) to explain the process by which individuals are likely to be impacted by the information they receive. Regarding the ELM theory, people use either a central route or a peripheral route with the information to which they are exposed. Central route processing is indicated by conditions of high message elaboration and a high level of cognitive capacity to evaluate the message. Peripheral route processing, on the other extreme, is determined by cues irrelevant to the rationality of the argument. When people are highly involved in a topic or able to process the arguments in a message, peripheral cues such as source credibility rarely have an impact on their attitudinal changes, while central cues work in an opposite direction (Sussman & Siegal, 2003). Political SNS users are believed to process information either by a central or a peripheral route. If they have high regard for content quality, they will have less regard for message source, and vice versa.

This research uses the term ‘content quality’ instead of ‘argument quality’ to include informational media as text, images (infographic), audio and video, or combinations. Petty and Cacioppo (1986) noted that when people evaluate content or argument quality, they use a central route or high rationality. Source credibility is a perception that uses a peripheral route. With such a route, SNS users do not rationally consider the essence of the message, but rather the credibility of the message’s source, such as friends, experts, celebrities, or opinion leaders. Source credibility may bias people’s argument quality (Chaiken & Maheswaran, 1994). According to Mak, Schmitt, & Lyytinen (1997), source credibility determines user acceptance and decision-making when an argument is ambiguous.

According to the conceptual model, quality of content (relevant to public interest issues) and source credibility are hypothesized to significantly influence perceived ease of use and perceived usefulness of SNS as two mediating variables. The dual routes are also hypothesized to directly influence civic engagement intention.

*Mediators: Perceived Ease of Use and Perceived Usefulness*

Perceived Ease of Use and Perceived Usefulness are two constructs adopted from Davis’ (1989) Technology Acceptance Model. According to TAM, both PEOU and PU positively influence attitude, which, in turn, influence users’ behavioral intention to use social network sites. In addition, PU is partially determined by PEOU. Roberts and Henderson (2000) suggested that PU and attitude toward usage of technology jointly determine behavioral intention. Lee, Cheung, & Chen (2005) suggested that a consumer’s attitude and PEOU also influence behavioral intention. Previous studies also suggested that both argument quality and source credibility of persuasive messages had a positive influence on users’ PEOU and PU (Sussman & Siegal, 2003; Kim, Chung, Lee, & Preis, 2015; Li, 2015).

Thus, according to the conceptual model, SNS users’ PEOU is influenced by central and peripheral routes of persuasion. In the conceptual framework, PU is determined by content quality, source credibility and PEOU.
Dependent Variable: Civic Engagement Intention

SNS help people to develop attitudes and self-efficacy so that they are aware of political issues and their ability to change those situations (Al-Kandari & Hasanen, 2012). Bello and Rolfe (2014) mentioned that SNS users’ political views came from their discussions with those who shared similar political preferences. Huckfeldt, Pietryka, and Reilly (2014) noted that SNS users’ attitudes were highly influenced by expert opinions due to their powers of persuasion. Conroy, Feezell, and Guerrero (2012) pointed out that online participation was also correlated with offline participation. Exploratory research also supports the idea that people participate in political movements due to informational influence of the SNSs they are using. The conceptual framework is formed by noting that civic engagement intention is influenced by content quality and source credibility within SNSs. This is supported by previous studies (Chang et al., 2015; Kim et al., 2015; Sussman & Siegal, 2003; Zheng et al., 2013). In the overall conceptual framework, people swayed by central or peripheral routes of informational influences find that SNSs make it easy to learn about public interest issues, and they are also useful for social reform. Furthermore, SNS information adoption is assumed to influence civic engagement intention.

Research Hypotheses

There were nine hypothesis statements for this research study.

**H1: Content quality of SNSs has a significant influence on perceived ease of use of SNSs.**

Previous studies suggested that SNSs and information quality contributed to information-based and SNS trusts (Elliot, Li, & Choi, 2013; Johnson & Kaye, 2015) and trust could lead to knowledge-sharing self-efficacy (Hsu, Ju, Yen, & Chang, 2007) or users’ PEOU. When users have trust in a community, they can develop self-efficacy or perceived ease of community use in terms of receiving and sharing information that can lead to social change. Therefore, content quality of SNSs can have a significant influence on their perceived ease of use.

**H2: Content quality of SNSs has a significant influence on perceived usefulness of SNSs.**

According to Sussman & Siegal (2003), argument quality was related to workers’ PU of email within an organization. A study by Kim et al. (2015) suggested that argument quality significantly influenced SNS users’ perceived usefulness of mobile tourism shopping. Zheng et al.’s (2013) study also suggested that SNS users’ perceived content quality also contributed to perceived usefulness of an online community. Thus, content quality of SNSs is assumed to significantly influence their perceived usefulness.

**H3: Source credibility of SNSs has a significant influence on perceived ease of use of SNSs.**

According to Li (2015), source credibility was also found to influence perceived ease of information system use. Johnson and Kaye’s (2015) study also pointed out that credibility of news sources in terms of impartiality would result in SNS users’ political self-efficacy, and this increased users’ motivation to use the site. Therefore, source credibility of SNSs is assumed to have a significant influence on their perceived ease of use.

**H4: Source credibility of SNSs has a significant influence on perceived usefulness of SNSs.**

A study by Kim et al. (2015) suggested that source credibility also significantly influenced SNS users’ perceived usefulness of mobile tourism shopping. A study by Sussman and Siegal (2003) also
indicated that people who considered source credibility perceived that using email in the organization was useful in improving performance. Therefore, this research study may confirm the significant relationship between source credibility and SNS users’ PU.

**H5: Perceived ease of use of SNSs has a significant influence on perceived usefulness of SNSs.**

According to Davis’ (1989) TAM, PU is partially determined by PEOU. This is in congruence with Bandura’s (1977) study of self-efficacy that affected outcome expectation. Chang, Hung, Cheng, & Wu’s (2015) and Cegarra-Navarro, Garcia-Perez, & Moreno-Cegarra’s (2014) studies also confirmed that SNS users’ PEOU was a determinant of PU. Therefore, PU (outcome expectation) should be determined by PEOU (self-efficacy), even in a social issue context.

**H6: Perceived ease of use of SNSs has a significant influence on civic engagement intention.**

Studies by Hsu, Ju, Yen, & Chang (2007) and Chen and Hung (2010) suggested that SNS users’ knowledge-sharing self-efficacy or PEOU was related to knowledge contributing behavior, which is a part of user engagement. Cegarra-Navarro et al.’s (2014) study also suggested that perceived ease of SNS use affected citizen engagement. In this research, it is hypothesized that when people know that they can drive changes, regardless of outcome expectation, they also form a behavioral intention to engage in either online or offline political activities.

**H7: Perceived usefulness of SNSs has a significant influence on civic engagement intention.**

A study by Chiu, Hsu, & Wang (2006) indicated that personal outcome expectation or its equivalent, PU, affected quality and quantity of knowledge sharing, a part of user engagement. Zhao, Lu, Wang, Chau, & Zhang’s (2013) and Zheng et al.’s (2013) studies supported the fact that perceived usefulness of virtual communities had some influence on users’ intention to share information with other members. Citizen engagement was influenced by SNS users’ PU according to Cegarra-Navarro et al.’s (2014) study. Therefore, SNS users are hypothesized to form an intention to participate in social reform activities when they perceive that SNSs are useful in driving change.

**H8: Content quality has a direct and a significant influence on civic engagement intention.**

**H9: Source credibility has a direct and a significant influence on civic engagement intention.**

Even though dual-process informational influences were not directly mentioned as independent variables in previous studies related to political participation, the results of studies provide some guidelines that they can affect behavioral intentions. Information from friends, for example, could influence SNS users to vote in an election (Baek, 2015). This can indicate SNS users’ behavior was driven by information from others. People choose to discuss political issues with those who share similar viewpoints, and their behavior also affected social network friends (Bello & Rolfe, 2014). Erentaite et al.’s (2012) study suggested that interpersonal discussions regarding news (probably driven by content quality or source credibility) could affect civic engagement. Opinion leaders could also significantly influence political communication effects due to their persuasive powers, as well as the durability of their knowledge contribution (Huckfeldt Pietryka, & Reilly, 2014). A study by Kruikemeier (2014) showed that candidates who used Twitter during the course of the 2010 election campaign received more votes than those who did not, which was congruent with LaMarre & Suzuki-Lambrecht’s (2013) study that Twitter increased chances of winning the election. Opinion leaders who used Twitter could also influence information seeking behavior and political engagement (Park, 2013). A study by Senbel, Ngo, & Blair (2015) also suggested that peer activities and information on SNSs could affect civic engagement. Huckfeldt et al.’s (2014) study indicated that
expert opinion significantly influenced political communication effects, and that decay effects were low among those influenced by expert opinion leaders. The influence of experts was due to their powers of persuasion and the durability of their own privately formulated opinions (Huckfeldt et al., 2014). However, Men & Tsai’s (2013) study showed no effect of perceived source credibility on SNS user engagement. Thus, from previous studies, content quality and source credibility are hypothesized to have significant influences on user engagement.

Figure 1 shows the conceptual model with hypotheses. All variables are measured using interval scales. Operational definition of content quality was adopted from Zheng et al.’s (2013) study and includes reliability, objectivity, relevancy, richness, format, and timeliness. Source credibility’s operational definition was adopted from Eisend’s (2006) study and includes trustworthiness, competence, and attraction. Perceived ease of use’s operational definition was adopted from Davis’ (1989) study and includes ease of learning, controllability, understandability, flexibility, ease of becoming skillful, and ease of using. Perceived usefulness’s operational definition was adopted from Davis’ (1989) study and includes working more quickly, improving performance, increasing productivity, effectiveness, facilitating mission, and usefulness. Political engagement intention’s operational definition was adopted from Paek et al.’s, (2013) study and includes social media communication intention, offline communication intention, and helping intention.

Research Methodology

Study Respondents

The target population was identified from the author’s social networks. Those people were added from the author’s circle of around ten thousand friends because they commented, clicked ‘likes’ on the author’s existing friends’ posts or discussed political issues in other groups or pages. The author’s Facebook friends (around four thousand) were used in order for the author to observe their usage behavior (as some users allowed only friends to see their profiles and their posts were shown on the author’s news feed), and they could be reached through the chat room. Facebook was used as the main platform because it represents the term ‘social network site’ as defined by Boyd & Ellison (2007) in terms of generating public or semi-public (for friends only) profiles, posting a status (articulating), interacting, viewing and traversing lists of connections (a number of connections identified). The reasons to use the 2013 political event as the reference point were that political issues were heavily discussed on social network platforms a few years before the mass protests in 2013, and many Facebook users were enthusiastic about participating in the 2013 protests.
In conclusion, target respondent’s attributes encompassed Thai Internet users who have a Facebook account, own a smart phone, tablet or personal computer, engaged in Thailand’s mass political events in 2013, and have discussed political viewpoints or political issues on their Facebook timelines, friends’ spaces, or groups since then.

A minimum sample size for this study was calculated to be about 385 people, which has 95% level of confidence and allows ±5% margin of error (Blankenship, Breen, & Dutka, 1998). This number is consistent with Berenson and Levine’s (1999) recommendation for appropriate sample size for a population of unknown size to ensure that the result can be generalized to the population. In addition, the sample size was sufficient for the minimum requirements of using Structural Equation Modeling (SEM) as an analytical tool (Hair, Black, Babin, Anderson, & Tatham, 2006).

**Sampling Procedure**

The selection of target respondents was based on a purposive sampling method, which depends on the researcher’s judgment that the sample would represent the target population. Target respondents were approached via Facebook Messenger and LINE and were requested to click the link to the online questionnaire and to complete all the questions. In order to ensure achievement of the minimum number of samples, the questionnaire page was checked for progress after each request was sent. For example, if ten requests were sent at one time, the question page was checked to see whether the number of responses increased by ten. Unless the target was reached, more respondents were approached. In total, the questionnaire link was sent to 500 people.

**Research Instrument / Questionnaire**

According to the questionnaire development, second-order constructs were used except for perceived ease of use and perceived usefulness, which have indicators under each variable.

Content quality measures were guided by the work of Zheng et al. (2013). Content quality consists of six variables: reliability, objectivity, relevancy, richness, format, and timeliness. The reliability variable consisted of 4 indicators (α = 0.75); the objectivity variable consisted of 2 indicators (α = 0.70), and the relevancy variable had 2 indicators (α = 0.73). The richness variable has 3 indicators, but no Cronbach’s alpha score is available. Zheng et al. (2013) suggest that only the richness variable is formative, because its measures do not mean the same thing, while all other variables are reflective. According to Petter, Straub, & Rai (2007), an internal reliability check is not important and necessary for formative constructs. The format variable has 3 indicators (α = 0.74), and the timeliness variable consists of 2 indicators (α = 0.59).

The source credibility measures are adapted from Eisend’s (2006) study. The variables of source credibility include trustworthiness, competence, and attraction. The trustworthiness variable contains 7 indicators (α = 0.829), competence 6 indicators (α = 0.836), and attraction 6 indicators (α = 0.847).

Measurement indicators of perceived ease of use are adopted from Davis’ (1989) study. The construct for PEOU contains 6 indicators with a Cronbach’s alpha of 0.94. Measurement indicators for PU are adopted from Davis’ (1989) study. The construct of perceived usefulness contains 6 indicators with a Cronbach’s alpha of 0.98.

Civic engagement intention measurement indicators are adapted from Paek, Hove, Jung, & Cole’s (2013) measurement indicators for behavioral outcomes of social media use. The measurement indicators consist of social network communication behavior, offline communication behavior, and helping behavior, which are similar to Erentaite et al.’s (2012) definitions and variables of civic engagement, and to the term ‘engagement’ in other studies (Nam, 2012; Lee et al., 2014; Mano, 2014). Social network communication intention consists of 4 indicators (α = 0.85), offline communication intention 2 indicators (α = 0.62), and helping intention 3 indicators (α = 0.82).
Although two variables have Cronbach’s alpha of less than 0.70, this is considered as acceptable according to Nunnally (1978). Moss et al. (1998) also support the view that a Cronbach’s alpha value of above 0.6 is generally acceptable, while Hair et al. (2006) agree that in a study with a small sample size, low Cronbach alpha scores such as 0.6 are acceptable.

The respondents were asked to indicate their response for all questions on the scale of 1 to 5, including 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree to 5 = strongly agree.

The Cronbach’s alphas for all indicators in the pretest of 70 samples (n = 70) ranged from 0.777 to 0.951, which are acceptable according to Maholtra (2007).

**Data Gathering Procedure**

Primary data were gathered via self-administered questionnaires from prospective respondents who used Facebook. A link to the online questionnaire was sent to each respondent through Facebook Messenger and LINE applications. No hard copies of the survey were distributed as this study aimed to test online behaviors. The process of data gathering took 15 days (from June 1 – 15, 2016). Each respondent was approached one by one. Some responded immediately, while others replied days after being approached. In total, 500 people were approached and 402 responses were received. The response rate was 80.4%, which was higher than the minimum requirement for appropriate sample size as recommended by Blankenship et al. (1998) and Berenson & Levine (1999). All questions were answered because questions could not be skipped.

**Research Results**

**Demographic Profiles of Respondents from Political SNSs**

The demographic profile in this study is comprised of six areas, including gender, age groups, education levels, whether each respondent has a social group, most frequently used platform, and whether respondents have met in real life. Google Docs provided descriptive data, including frequencies and percentages. The results are shown in Table 1.

<table>
<thead>
<tr>
<th>Demographic Profile of Respondents from SNSs</th>
<th>Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Frequency</td>
</tr>
<tr>
<td>Male</td>
<td>209</td>
</tr>
<tr>
<td>Female</td>
<td>193</td>
</tr>
<tr>
<td>Age Group</td>
<td></td>
</tr>
<tr>
<td>18-30 years old</td>
<td>60</td>
</tr>
<tr>
<td>31-40 years old</td>
<td>141</td>
</tr>
<tr>
<td>41-60 years old</td>
<td>193</td>
</tr>
<tr>
<td>Above 60 years old</td>
<td>8</td>
</tr>
<tr>
<td>Educational Level</td>
<td></td>
</tr>
<tr>
<td>Less than bachelor degree</td>
<td>112</td>
</tr>
<tr>
<td>Bachelor degree</td>
<td>223</td>
</tr>
<tr>
<td>Master degree</td>
<td>58</td>
</tr>
<tr>
<td>Higher than master degree</td>
<td>6</td>
</tr>
<tr>
<td>Having SNS Group</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>349</td>
</tr>
<tr>
<td>No</td>
<td>53</td>
</tr>
<tr>
<td>Most Frequently Used SNS Platform</td>
<td></td>
</tr>
<tr>
<td>Facebook</td>
<td>304</td>
</tr>
<tr>
<td>LINE</td>
<td>77</td>
</tr>
<tr>
<td>Twitter</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
</tr>
<tr>
<td>Met Other SNS Friends in Real Life</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>349</td>
</tr>
<tr>
<td>No</td>
<td>53</td>
</tr>
</tbody>
</table>
Confirmatory Factor Analysis

The main objective of Confirmatory Factor Analysis (CFA) is to determine the degree of model fit. The CFA results indicate the degree to which the factors in the measurement model represent the actual data set (Hair et al., 2006). Moreover, these results can also be used to assess the standardized residual and explained variances for the measurement variables (Ho, 2006). According to Hair et al. (2006) and Ho (2006), there are two important types of goodness-of-fit in order to determine the results of measurement models. The first is an Absolute Fit Measure assessing the level of fit for the proposed model with the actual data. The key indices include statistical analysis of Chi-square statistics, Goodness-of-Fit Index (GFI), and Root Mean Square Error of Approximation (RMSEA). There is no generally acceptable point for the Chi-square statistics ($\chi^2$) because the Chi-square ratio results are sensitive to the sample size, especially, when the number is larger than 200 respondents. Researchers are thus warned not to rely only on Chi-square statistics. The other recommended key indices are GFI and RMSEA (Ho, 2006). The GFI is a non-statistical measure ranging from 0 (poor fit) to 1 (perfect fit), but there are no threshold levels for acceptability. For RMSEA, values ranging from 0.05 to 0.08 are considered to be acceptable, values from 0.08 to 0.10 indicate mediocre fit, and those greater than 0.10 indicate poor fit.

Second, Incremental Fit Measures are considered as another key measurement that compares the proposed (default) model to the baseline model. Baseline models are often used as null or independence models (Ho, 2006). The five indices that measure incremental fit are Normed Fit Index (NFI), Relative Fit Index (RFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI). The fit indices represent comparisons between the proposed model and a null or independence model, and show the improvement of a proposed model over the null model, and range from 0 (a fit no better than the independence model) to 1 (a perfect fit). The recommended value for the incremental fit indices should be above 0.9 (Hair et al., 2006; Ho, 2006). However, there are notes of cautions for using incremental fit indices as rules of thumb (McDonald & Marsh, 1990; Hu & Bentler, 1998; Marsh, Hau, & Wen, 2004). First, designating cutoff values for each fit index does not work equally well with various types of fit indices, sample sizes, estimators, or distributions. Second, other aspects like adequacy and interpretability of parameter estimates, model complexity, and other issues are more critical than merely relying on high incremental fit indices (>0.90).

According to the CFA results, Chi-Square Minimum (CMIN) table in Model Fit Summary (Table 2) shows that the model does not fit with the dataset, $\chi^2(N = 402, df = 1462) = 2.611, p < 0.05$ but GFI shows quite acceptable fit (close to 1). In addition, baseline comparisons fit indices of NFI, RFI, IFI, TLI, and CFI show improvement in fit for the hypothesized model (default model) compared to the null model from 0.114 to 0.181, which appears to be so small as to be of little practical significance.

<table>
<thead>
<tr>
<th>Table 2: Summary of Fit Indices of Measurement Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures of Absolute Fit</td>
</tr>
<tr>
<td>$\chi^2$/df</td>
</tr>
<tr>
<td>Rules</td>
</tr>
<tr>
<td>Model</td>
</tr>
</tbody>
</table>

Reliability, Convergent and Discriminant Validity

Reliability is assessed by computing Average Variance Extracted (AVE), Composite Reliability (CR) and Cronbach’s Alpha. AVE is computed by the sum of squared factor loadings divided by the number of indicators. The generally acceptable cut-off values are 0.50 for AVE, and 0.70 for both CR and Cronbach’s Alpha (Bagozzi & Dholakia, 2002; Fornell & Larcker, 1999). Therefore, all indicators used to represent each construct are reliable.

Campbell and Fiske (1959) developed the Multitrait-Multimethod Matrix to assess the construct validity of a set of measures in a study. The approach emphasizes the importance of using both
convergent and discriminant validation techniques to assess new tests. Convergent validity can be estimated using correlation coefficients. A successful assessment of convergent validity shows that a test of a concept is highly correlated with other tests designed to measure theoretically similar concepts. According to Zheng et al. (2013), convergent validity reflects the extent to which the indicators for each construct measure the same construct, and a factor loading of 0.6 is used as the cut-off value for convergent validity. Therefore, all indicators have convergent validity.

On the other hand, a successful evaluation of discriminant validity shows that a test of a concept is not highly correlated with other tests designed to measure theoretically different concepts. According to Fornell & Larcher (1999), if the correlation between a pair of constructs is less than the square root of the AVE of each construct, discriminant validity is achieved. Table 3 shows that all of the square roots of AVEs on the main diagonal are greater than the pairwise correlations between constructs on the off diagonal, implying that all constructs are distinct.

**Table 3: Construct Correlation Matrix, Average Variance Extracted (AVE), Cronbach’s Alpha, and Composite Reliability (CR) (n = 402)**

<table>
<thead>
<tr>
<th></th>
<th>CQ</th>
<th>SC</th>
<th>PEOU</th>
<th>PU</th>
<th>CEI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Quality (CQ)</td>
<td>0.859</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Credibility (SC)</td>
<td>0.857</td>
<td>0.922</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Ease of Use (PEOU)</td>
<td>0.786</td>
<td>0.708</td>
<td>0.787</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Usefulness (PU)</td>
<td>0.697</td>
<td>0.658</td>
<td>0.739</td>
<td>0.867</td>
<td></td>
</tr>
<tr>
<td>Civic Engagement Intention (CEI)</td>
<td>0.628</td>
<td>0.565</td>
<td>0.680</td>
<td>0.731</td>
<td>0.949</td>
</tr>
<tr>
<td>Average Variance Extracted (AVE)</td>
<td>0.738</td>
<td>0.851</td>
<td>0.619</td>
<td>0.751</td>
<td>0.900</td>
</tr>
<tr>
<td>Cronbach’s Alpha (n = 402)</td>
<td>0.939</td>
<td>0.970</td>
<td>0.907</td>
<td>0.947</td>
<td>0.926</td>
</tr>
<tr>
<td>Composite Reliability (CR)</td>
<td>0.944</td>
<td>0.945</td>
<td>0.906</td>
<td>0.948</td>
<td>0.964</td>
</tr>
</tbody>
</table>

**Hypothesis Testing**

Structural Equation Modeling (SEM) is used to investigate and explain the relationships among the predictor variables and the dependent variables of the political SNSs used in this study. Direct relationships between each route of persuasion and civic engagement intention as well as the mediating roles of perceived ease of use and perceived usefulness are investigated. The results of SEM indicate that the unstandardized regression weights are all significant by the critical ratio test (C.R. > ±1.96, p < 0.05), except the relationships between content quality and PU (C.R. = 1.720), content quality and civic engagement intention (C.R. = 1.256), source credibility and PEOU (C.R. = 1.478), and source credibility and civic engagement intention (C.R. = -0.484). The unstandardized regression weights of the relationships between two constructs range from -0.043 to 0.631. The explained variances for all independent variables are represented by the squared multiple correlations. The percentage of variance explained ranges from 0.581 or 58.1% (perceived ease of use) to 0.622 or 62.2% (perceived ease of use). For all measurement variables, the residual variances range from 33.8% to 41.9%.

Figure 2 shows the structural path model with p-values and hypotheses 1 to 9. The solid lines represent hypotheses supported by the findings, while the dot lines represent those not supported by the findings. The arrows pointing to the latent constructs perceived ease of use, perceived usefulness, and civic engagement intention represent unexplained (residual) variances for these 3 factors. The residual variances are calculated by subtracting the factors’ squared multiple correlations (explained variances). Thus, for this hypothesized model, 33.8% of the variation in PEOU is unexplained, or 66.2% of the variance is accounted for by the joint influence of the content quality and source credibility predictors. Similarly, 41.1% of the variation in PU is unexplained, or 58.9% of the variance is accounted for by the joint influence of content quality, source credibility, and PEOU.
Lastly, 41.9% of the variation in the civic engagement intention is unexplained, or 58.1% of the variance is accounted for by the joint influence of content quality, source credibility, PEOU, and PU.

Table 4 shows the summary of hypothesis testing in which H1, H4, H5, H6, and H7 are supported by the findings. It also includes unstandardized regression coefficients, critical ratios, and p-values. According to the structural path model with unstandardized path coefficients, content quality of the political SNSs has a significant and positive influence on users’ perceived ease of use (β = 0.585, p < 0.001). However, content quality does not have a direct and significant influence on perceived usefulness (β = 0.172, p > 0.05) and on civic engagement intention (β = 0.193, p > 0.05). Source credibility has a significant influence on users’ perceived usefulness (β = 0.192, p < 0.001), but is insignificantly related to users’ perceived ease of use (β = 0.112, p > 0.05), and has an insignificant and a negative influence on civic engagement intention (β = -0.043, p > 0.05). SNS users’ perceived ease of use has a significant influence on their perceived usefulness (β = 0.631, p < 0.001), While their perceived ease of use has a significant influence on civic engagement intention (β = 0.295, p < 0.001). Lastly, SNS users’ perceived usefulness has a significant influence on civic engagement intention (β = 0.439, p < 0.001).

Table 4. A Summary of Hypothesis Testing

<table>
<thead>
<tr>
<th>No.</th>
<th>Path of Relationship</th>
<th>Unstandardized Regression Coefficient (β)</th>
<th>Critical Ratio (C.R.)</th>
<th>p-value</th>
<th>Hypothesis Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Content quality of SNSs has a significant influence on perceived ease of use of SNSs.</td>
<td>0.585</td>
<td>6.856</td>
<td>0.000</td>
<td>Yes</td>
</tr>
<tr>
<td>H2</td>
<td>Content quality of SNSs has a significant influence on perceived usefulness of SNSs.</td>
<td>0.193</td>
<td>1.720</td>
<td>0.085</td>
<td>No</td>
</tr>
<tr>
<td>H3</td>
<td>Source credibility of SNSs has a significant influence on perceived ease of use of SNSs.</td>
<td>0.112</td>
<td>1.478</td>
<td>0.139</td>
<td>No</td>
</tr>
<tr>
<td>H4</td>
<td>Source credibility of SNSs has a significant influence on perceived usefulness of SNSs.</td>
<td>0.192</td>
<td>2.006</td>
<td>0.045</td>
<td>Yes</td>
</tr>
<tr>
<td>H5</td>
<td>Perceived ease of use of SNSs has a significant influence on perceived usefulness of SNSs.</td>
<td>0.631</td>
<td>6.677</td>
<td>0.000</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Discussions and Conclusions

According to the research results, SNSs have some informational influence on users’ intention to engage in civic activities. Nevertheless, users who considered content quality or source credibility needed to form their perceived ease of use and perceived usefulness of the SNSs. Even though people realize that their SNSs have content quality, they may not participate in a civic activity unless they perceive that the information helps them to learn about social issues or enables them to drive social change. When SNS users feel that they can be a driver of social reform and such a perception is influenced by informational contents from their social networks or information providers, they may think that the power of change lies within their hands. However, users’ engagement intention may or may not lead to actual engagement or civic behavior because users may be constrained by uncontrollable factors such as government policies to curb protests, or by limited financial resources due to economic slowdown. This is similar to a situation in which consumers have purchase intention, but they have limited purchasing power. Or they may intend to volunteer in an activity, but they lack the energy and time to do so.

There were two main objectives of this study, and both of them were achieved. The first objective was to determine whether content quality and source credibility can influence users’ intention to engage in civic activities in Thailand. According to the research results, SNSs can influence users’ engagement intention through central and peripheral routes to persuasion (content quality and source credibility respectively). However, the influence of both routes was mediated by SNS users’ PEOU and PU. This research result is in line with Men & Sai’s (2013) findings in that source credibility had no direct and significant influence on SNS user’s engagement.

The second objective was to evaluate the mediating effects of PEOU and PU. The findings reveal that both PEOU and PU have mediating effects on the relationship between the informational influence of SNSs and users’ civic engagement intention. In addition, PU is also partially determined by PEOU. The results are consistent with the studies by Davis (1989), Elliot et al. (2013), Johnson & Kaye (2015), Hsu et al. (2007), Sussman & Siegal (2003), and Kim et al. (2015). In addition, PEOU has a significant influence on civic engagement intention, which is consistent with the studies by Hsu et al. (2007), Chen & Hung (2010), and Cegarra-Navarro et al. (2014). PU also has a significant influence on civic engagement intention, which is in line with the studies by Chiu et al. (2006), Zhao et al. (2013), Zheng et al. (2013), and Cegarra-Navarro et al. (2014).

In conclusion, even though not all hypotheses were supported by the findings, there are some learning points as explained in the next topics.

Implications and Recommendations

Theoretical Implications

This research study can bridge the gap of informational influence of SNSs on users’ engagement intention. First, this study has connected three main theories, Elaboration Likelihood Model (ELM), Technology Acceptance Model (TAM), and Theory of Planned Behavior (TPB). Content quality and source credibility are adopted from the ELM, while Perceived Ease Of Use (PEOU) and Perceived
Usefulness (PU) are from the TAM. In addition, the relationship of the whole model from the independent variables to civic engagement intention is supported by the TPB. As the dependent variable of TAM is the system use, this research also shows that people who have both PEOU and PU also form intention to engage in a behavior, or civic engagement intention. Therefore, the conceptual model of this study contributes to the fact that there is informational influence of SNSs on users’ engagement intention. Second, this study reveals that PEOU is more significantly related to the central route than the peripheral route of persuasion. The keywords related to PEOU include ease of learning, helping to know, ease of understanding, flexibility, helping to become skillful, and easy to use. Third, the results also show that PU seems to be more significantly related to the peripheral route than the central route of persuasion. The keywords related to PU include quickening the process, enhancing the performance, increasing achievements, enhancing the effectiveness, facilitating the process, and usefulness. Such perceptions may not be influenced by the informational content, but, instead, by other people (such as friends or experts) in the SNS. Therefore, this can be one learning point regarding the informational influence. Fourth, there are mediating effects of PEOU and PU within SNSs. While PEOU mediates the relationship between content quality and civic engagement intention, PU mediates the relationship between source credibility and civic engagement intention. In addition, PU is also a mediator between PEOU and behavioral intention.

In conclusion, when more indicators of content quality and source credibility were used, significant relationships between content quality and PEOU and between source credibility and PU were more distinct. Furthermore, there is a connection between the concepts of TAM and TPB.

Practical Implications

According to the research results, political SNS users formed behavioral intention (civic engagement intention) through different routes of informational influence. The findings provide perspectives to different types of organizations that are using or aim to use social network sites or social media to influence their target audience. Marketers must be aware that there are both active and passive groups of audiences, and each group is differently motivated.

In past political movements, some Thai people participated in protests due to their own considerations, while others who had limited knowledge of political issues simply joined the events because of subjective norms. In order to expand a social network of supporters, a leader or an organizer needs to understand audience behavior. He or she should attract people who are active informative receivers by improving the quality of the social network’s content. Improving the content quality in terms of reliability, objectivity, relevancy, richness, format, and timeliness will enable people to perceive that they are smarter, more knowledgeable, and aware that their social network sites are easy to use. Then, they may also help to achieve the group’s desired objectives. On the other hand, the leader or organizer must not overlook passive audience who make decisions based on others’ opinions. According to the exploratory study, some people mentioned that friends and celebrities influenced them to participate in Thailand’s political protests in 2013. During that time, some celebrities also appeared on stages and used social media to publicize their political activities. Opinion leaders should also possess the qualities of trustworthiness, competence, and attractiveness so that target audiences will feel that their social network sites are useful.

Besides political SNSs, this study can also contribute to SNSs of social institutions. For example, a foundation that aims to raise funds to rescue animals from brutality or from the brink of death may make use of social media that leads people to engage by sharing the content or donating money. A net idol with a positive image or qualities of trustworthiness, competence and attractiveness may be used to influence audiences. Social network friends can also influence their circles of friends. A political party, in addition, may use its SNS as a tool to tighten its relationship with voters. What all social institutions can do is to use content marketing as well as to develop opinion leadership that can influence target audiences.

This study also provides practical implications for business marketing. For example, when two consumers want to purchase a digital camera, they may use a social network site of a brand as an information source. If one consumer has some knowledge about cameras, he or she could perceive
the content quality of the SNS, including reliability, objectivity (unbiased information), relevance to his or her need, richness of information, understandable format, and timeliness (updated information). If the other consumer knows a little about the cameras, he or she may mainly consider trustworthiness, competence, and attractiveness of the information providers or camera experts. The experts simply explain that this brand is good. They may also show their photos taken by this brand of camera. The consumer who has high regard for source credibility may be attracted to the experts, but he or she may not know about the camera. The consumer who considers the message content may feel that this SNS enables him or her to understand more about the cameras (due to the information) and that the SNS is useful. On the other hand, the consumer who considers mainly about the experts may feel that the SNS is useful, but may not find it easy to learn about complexities of cameras. The dimensions of civic engagement intention are also equivalent to users’ engagement intention. The engagement intention also includes social network communication (e.g. liking, commenting, or sharing), offline communication (e.g. searching for additional information at stores), and helping (e.g. buying a community t-shirt to support the community’s activities, attending a photo trip, building a school in rural areas, or reporting cheating behavior of some sellers). In addition, SNS users may reflect their purchase intention by sharing useful information from the SNS to their families, and looking for additional information from brochures or magazines.

Behavioral intention, however, does not always lead to immediate actual purchase due to several factors. For example, SNS users may have limited financial resources, or they may compare the information to other sources. A virtual community needs to find ways to develop community commitment. Other virtual business communities or non-business communities may also consider the usefulness of the conceptual model developed from this study. Their virtual communities or SNSs should have both content quality and opinion leaders who can influence users who have little knowledge about a subject. If users have community commitment or trust, they tend to develop relationships with the community.

Limitations and Suggestions for Further Research

This study has some limitations. One limitation is that this study used a self-reported questionnaire, and there were many question items. Therefore, respondents might not carefully respond to all questions. However, this limitation was offset by using a large number of respondents and measuring the mean and standard deviation of each item. Some respondents mentioned that they had problems in opening the questionnaire link due to Internet instability, causing slowness in responding to the questions. However, when they finished the questionnaire, they captured the page showing the completeness. Another limitation is that some respondents reflected their attitude changes toward civic participation. Even though they participated in the 2013 political movements, they mentioned that it would be difficult to drive change. Some mentioned that they squandered a lot of money and they would not do the same in the future. However, they said they would continue to use social media to follow public issues. Therefore, the results from civic engagement context should be generalized with caution, especially attitudinal aspects.

This study also provides suggestions for further research. First, some variables (e.g. personality traits, or frequency and continuity of Internet use) may be adopted as moderators to influence the relationship between content quality and PEOU, between content quality and PU, source credibility and PEOU, and source credibility and PU. This is not limited to the civic engagement context. As there are not many studies on civic engagement in Thailand, this study may provide a research opportunity for different contexts as compared to the marketing context.

Studies on SNSs in various contexts also contribute to cross-disciplinary studies. For example, research results reveal that a political candidate’s use of Twitter enabled him to win an election. Such a result can also contribute to advertising and public relations knowledge in terms of Twitter contents and frequency. Researchers may use any type of SNSs as samples and see their behavioral patterns. The results can be compared to a business context. The area of marketing has borrowed concepts and theories from different disciplines to explain consumer behavior. Outstanding areas are psychology, behavioral sciences, and information technology. This study adopts political and civic
engagement contexts to explain marketing behavior, which has not been studied before. Besides, political context is such a sensitive subject in Thailand that discussing political issues with people of different viewpoints may cause a strong dispute.

However, this study paves the way to think that these are merely perspective and behavioral patterns. All respondents are compared as consumers of information instead of products and services. Contents or posts on SNSs may include strong and violent language, but they reflect users’ insights that are worth studying. Lastly, according to the researcher’s viewpoint, any study contributes some knowledge. Marketing is also related to all social entities. Marketers need to influence and satisfy their target audience. A business firm that does something contradictory to consumers’ sense of morality (e.g. entangled in red tape or in environmental destruction) may be boycotted, in which case a firm may need crisis management in order to make the public understand and to regain its reputation.

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References


Structural Family Counseling Model of Family Relationship, Knowledge, Understanding and Medication Behavior among Schizophrenic Patients in Thailand

Thongrob Thiensan

Abstract

Schizophrenia is a chronic mental disease characterized by abnormalities of thinking, emotions, and recognition. It affects overall behavior and personality, impacting all daily life functions, activities, self-care, social obligations, follow-up treatment, adherence to medication behaviors, relapse, and family relationships. Without suitable family structures and mutual support, patients cannot maintain their former lifestyles. Moreover, social oppression often affects family attitudes and relationships, negatively impacting patient well-being. Surely family relationships have a direct influence on the quality of life of schizophrenic patients.

Structural family counseling helps schizophrenic patients and their families to achieve better family structures and relationships, helping to resolve problems by taking action to: (1) assess family structure and strengthen family relationships; (2) identify problems and jointly set goals and plans; (3) explain the nature of disease disorders and the proper use of medication; (4) support families in resolving patients' improper medication usage behavior; and (5) develop skills and provide solutions to patients' issues. This counseling will help patients' family relationships, mutual care, and support of patients and families for better outcomes. In turn, schizophrenic patients in the community will adhere more effectively to proper medication behavior.

Keywords: Structural family counseling, family relationships, knowledge of daily practices, schizophrenic patients, medication adherence behaviors

Introduction, Background, and Significance

Schizophrenia is a chronic, severe, and disabling psychiatric disorder that affects 1 percent of the population worldwide. Schizophrenia is a complex major disease that manifests itself in psychotic behavior (delusions and hallucinations), disorganization, dysfunction in normal affective responses, and altered cognitive functioning (Li et al., 2015). Because of limited treatment options until recently, its prognosis has been worse than that of other mental health disorders, and it is often characterized by social and psychological disabilities (Kızıltoprak, 2006; Öztürk, 2008; Yılmaz and Okanlı, 2015).

Schizophrenia causes substantial damage to patients' employment, business, daily lives, and personalities compared to other physical diseases (Norton et al., 2006). Patients are generally hospitalized for about 3–4 weeks (Udomratana and Vasignanont, 2009). Several years ago, however, the Thai Department of Mental Health issued a policy to discharge schizophrenic patients from hospitals as soon as possible to shorten the length of hospital stays and reduce treatment costs. When discharged patients are returned to community care, they must continue receiving treatment to control their symptoms. However, most discharged schizophrenics do not comply with medication regimens (Sullivan et al., 1995). Statistics show that 26% of schizophrenics stop taking medications in the first year after discharge, and an additional 30% suffer relapses due to medication non-adherence behaviors (Gillmer et al., 2004). This causes severe deterioration in these patients’ conditions (O’Donnell et al., 2003). Some common symptoms are delusions, hallucinations, thought disorders, loss of interest in self-care and family situations, and inability to function in their
communities and society. These patients lose touch with reality and cannot contribute to society. Their condition also has a great impact on family caregivers physically, mentally, socially, and economically, and may cause a drastic decline in caregivers’ relationships with families and others (Laidlaw et al., 2002).

Healthcare reforms introduced by the Thai government in 2009 (National Health, 2009) emphasize patient and family participation in self-care once they have learned the basic facts about disorders and their treatment, and can make informed decisions about their care. Thus, average hospitalization has been cut down to about 2 weeks (Department of Mental Health, 2009). Efforts are made to reduce patients' hospitalization by promoting self-management and encouraging family participation in care arrangements. Hence, families and relatives play a major role in the treatment and care of patients, along with ensuring their medication adherence behavior (Puengkatessoontorn, 2010; Hou et al., 2008; Khongtor, 2007). Furthermore, families help ensure that schizophrenics comply with ongoing treatment regimens; this results in more efficient and successful adherence to medication guidelines (Vongsurapratik, 2006).

Although one reason for relapse is non-adherence to medication schedules, another equally important reason is family situations. Family arguments, temperaments, criticism, unfriendly or unwelcome gestures, and nagging of patients can make it difficult to maintain their lifestyles; this social pressure can also worsen patients' conditions (Ruengtrakul, 2006). Relapse can lead to family frustration and confusion; poor family relationships can also translate to poor patient living conditions because they are directly correlated (Phoomchan, 2005). When schizophrenics are aware of their illness, this can hurt their emotions, family relationships, careers, and society. Patients are inclined to avoid threatening and painful situations, and eventually will not adhere to medication treatment (Adams and Scott, 2000). Patients’ refusal to accept treatment may cause their neurological condition to deteriorate (Marder, 2003), which is also borne out by the study of Ruengtrakul (2011). The findings indicated that during relapses, interpersonal relationships between families and patients often deteriorated, and were characterized by unfriendly gestures, criticism, and bad moods.

Therefore family therapy, which consists of family counseling and psychoeducation, is a highly recommended treatment for schizophrenics (Chuvanichvongs, 2006). Psychoeducation is a program of cognitive, behavioral, educational and supportive intervention within the complex program of treating psychotic patients. It can be targeted to individual patients to improve outcomes, enhance compliance, and increase knowledge, including early relapse recognition, thereby contributing to a better sense of well-being (Prasko et al., 2011). This article mainly emphasizes family counseling; however, psycho-education, which is the fundamental treatment for all classifications of schizophrenics and is already widely practiced, will be discussed as a part of family counseling in the family education area. At present, structural family therapy is a new interventional technique in family counseling to empower schizophrenic patients, and to help them learn about the disorder, develop self-management, and improve medication adherence behavior.

Family counseling in the form of structural family therapy becomes an essential treatment tool for people with schizophrenia and their families. It helps families adjust and restructure their relationships in order to resolve issues which may present obstacles to patients achieving good medication adherence behavior. It can also help build better relationships within the family. Structural family therapy helps bring about proper behavioral adjustment of schizophrenics and family members for better management skills in self-care at home. When a patient understands and makes appropriate adjustments to living with schizophrenia, improved medication adherence behaviors will be achieved. Hence, the objectives of this article are to study people with schizophrenia and family counseling in structural family therapy.
Methodology

This article presents a brief summary of the primary and secondary literature from various sources related to this topic, including Routine to Research, textbooks, educational literature, and journals, all of which are peer-reviewed. The theory of schizophrenic patient therapy, theory of family counseling, and theory of group structural family therapy were published during 2007 – 2013; some old classic works on this subject were also reviewed. Some citations were obtained electronically and directly from original research sources at some universities. Resources were also obtained from Science Direct, Proquest, Medline, Union Catalog (UCTAL), Thai Digital Collection (TDC), Thai Library Integrated System (ThaiLIS), and Thai Journal Online (ThaiJO) using keywords such as structural family counseling; family relationships; knowledge of daily practices; schizophrenic patients; and medication adherence behaviors.

Contents

This article examines linkages between individuals with schizophrenia, structural family counseling, and family relationships; it may also enhance and promote knowledge and understanding of the behavior of family members and patients, including medication adherence behaviors.

The study of Hedge et al. (2007) showed that family counseling was an effective way to develop caregivers’ potential when patients were being treated at home, especially when combined with learning about the disorder. Caregivers would also be more competent to observe signs and symptoms when caring for patients; this also enhances good relationships within families. Family counseling, along with improved psycho-education, will encourage patients’ to adhere to better medication behaviors (Luebunthawatchai, 2010; Keawsod, 2007). Families of individuals with schizophrenia play the most important role in caring for patients (Addington et al., 2005). A study by Lim and Ahn (2003) revealed that caregivers and family members were extremely important in assisting schizophrenic patients to attain suitable behaviors.

Schizophrenic Patients

Definition

Ruengtrakul (2006) defined Schizophrenia as a psychosis, a mental disorder often characterized by abnormal thinking, cognition, emotion and behavior without any causes from physical illness, mental illness, medication side effects, or continuous substance abuse for over six months.

The International Statistical Classification of Disease and Related Health Problems 10th Revision, or ICD-10, (World Health Organization, 2006) defined schizophrenics as individuals with false beliefs, unclear or confused thinking, inappropriate emotions, and a fair level of perception and intelligence. Significant expressions of mind are thought echoes (thoughts are heard as if spoken out loud); thought insertion or withdrawal (alien thoughts being inserted into the mind), thought broadcasting (thoughts being transmitted from one's mind and broadcast to everyone), delusional perceptions (misinterpret or believe that normal perceptions have special meaning), delusions of control (thoughts or actions are controlled by external agents), influence (authority to control others), passivity (submitting or yielding to the authority of others), and hearing or believing that others are talking about them.

Therefore, schizophrenia is defined as a chronic disease that creates abnormalities of thought, emotion, and perception without any brain disease or – in most cases – physical cause. The disease impacts the behavior and character of a person as a whole, which influences the daily lives of the person, the family, and the community (Thiensan, 2013).
Causes

The causes of schizophrenia can be biological factors, psychological factors, and socio-cultural factors. This study will focus only on psychological and socio-cultural factors, because these two directly address problems in family structural relationships.

1) Psychological factors: these indicate relationships between individuals’ personality traits and society. Mind theory analysis reveals that psychosis is the result of abnormal function of the ego and stressful mental conditions, which may lead to schizophrenia (Tantipalacheeva, 1996).

2) Socio-cultural factors: patients often find themselves in positions with low social status and limited economic means. The social causation hypothesis states that social oppression is a cause of the increasing number of people with schizophrenia. The downward drift hypothesis states that intermittent psychosis prevents patients from maintaining their normal lifestyles, and family relationships may also affect schizophrenic conditions (Tantipalacheeva, 1996). Pumsrisawas (1998) explained that frequent relapses of the disorder were found in family environments with a high level of expressed emotions – for example, criticism, hostility, or excessive efforts to control patient behavior.

A study by Thiensan (2013) entitled “The Effect of Family Counseling and Psycho-education Program on Medication Adherence Behavior of Schizophrenic Patients in the Community” indicated that prior to receiving structural family counseling, overall family relationships, individual roles, and family structure were not suitable. There was not much talking or discussion, with little attention paid and concern for schizophrenic patient care in the community. These are the reasons for poor medication adherence behaviors and issues of subsequent symptom control. However, the program can be used to improve family structure of schizophrenic patients and problem-solving strategies. Good to very good levels of relationships can be achieved. This will expand the knowledge and understanding of self-management for better medication adherence behaviors.

Symptoms

Schizophrenia usually starts in the late teens and it often does not go away completely. Most patients have relapses from time to time. The symptoms of schizophrenia fall into two categories: positive and negative symptoms (Lorttrakul & Sukkanich, 2005). The onset phase is typically positive symptoms which may include hallucinations and delusions, as well as thought, speech and movement disorders. The later phase is generally negative symptoms when patients do not respond well to medications. Common negative symptoms include less talking, lack of emotional expression, lack of interest, and isolation. A study by Oehl et al. (2000) found that with regard to attitudes and family relations, people with negative symptoms tried to avoid revelation of their psychoses by not getting proper treatment and not adhering to medications. Negative symptoms appear to contribute more to poor quality of life, ability to function, and the burden on others than do positive symptoms.

During the progress of this disease, there are times when some patients improperly adhere to medications due to their behaviors and family relationships. Their behaviors are clearly altered which may be from delusions, hallucinations or thought disorders. Some confine themselves, giving up good relations within the family and other social activities. They may not fall asleep at night, wander around, shout or yell, laugh, and are sloppy in their dress and hygiene. Some lose self-control and become social withdrawn, nervous, and easily irritated. When they are offended or prohibited from doing something by family members, they become agitated and respond with aggressive mannerisms. These may be the reasons conflict in relationships, misunderstandings in the family, and poor medication adherence behaviors.

Factors known to cause medication non-adherence behaviors in schizophrenics include lack of knowledge and understanding of the disorder and its treatment, side effects from medications, and improper self-administration of medications (Kumer and Sedgwick, 2001b). Families have a duty and play an important role in helping patients to live meaningful lives during worsening conditions or
recovery periods (Loukissa, 2005). Furthermore, patients do not live normal and happy lives when symptoms return or become worse. In cases of worsening symptoms from medication side effects, patients tend to skip taking medications and stop treatment; this may lead to social isolation and affect family relationships (Puengkatesoontorn and Luebunthavatchai, 2011). This demonstrates the significance of medication adherence in preventing a relapse of the disease. Patients who consistently adhere to medication regimens will attain more effective treatment outcomes (Haynes et al., 2005).

**Treatment**

Since schizophrenia may have many causes, most treatment management is an integration of medical, psychological, and psychosocial inputs. Treatment of schizophrenia is predominantly a combination of antipsychotic medications and various psychosocial therapies to restore meaning to patients’ lives. The most effective treatment is antipsychotic therapy, because it controls positive symptoms and alleviates the severity of relapses.

Psychosocial treatment mainly concentrates on psychological functions through discussions with patients, either individually or in groups, together with family members and relatives. This treatment covers psychosocial intervention and environment enhancement, including cognitive remediation. Cognitive remediation is a behavioral treatment that uses practice drills to develop thinking skills, as well as compensatory and adaptive strategies to facilitate improvement in targeted cognitive areas like memory, attention, and problem solving. Psychosocial intervention is usually conducted in combination with anti-psychotic medications, and appears to improve long-term adherence to medications.

As mentioned previously, this study concentrates on structural family counseling and family relationships based on a knowledge and understanding of schizophrenic behavior, which may lead to improved medication adherence behaviors. Counseling therapy mainly emphasizes treatment to alter the behavior of patients and their families. Structural family counseling – together with antipsychotic medication treatment – makes better outcomes possible. This treatment combination offers the best hope of restoring normalcy for patients so that they may lead fulfilling lives in their communities.

**Structural Family Counseling and Family Relationships**

Family counseling consists of educating family members to understand each other, to recognize and accept problems, and to work together effectively to find the right solutions. The objective of family counseling is to restructure family relationships to meet the needs and desires of the particular family with concise rules and regulations. It provides reasonable flexibility to allow families to adjust to all situations and to solve problems effectively. Furthermore, it employs theory and pertinent counseling techniques to achieve the best possible outcomes for a family to be happy (Luebunthawatchai, 2010). One of the leading theories by Minuchin (1974) suggests that every family has a structure consisting of rules and regulations. Those with clear rules and regulations are better equipped to adapt to all situations. These families are flexible in making changes and adapting to live a normal happy life. However, those without clear rules and regulations – along with those that lack flexibility and cannot adapt to changes – cannot solve problems effectively when confronted with problematic situations.

Family counseling actually began and was brought into practice in 1980 by a conceptual theory, which was the Structural Family Therapy Theory (Trangkasombat, 2001). It described how family theory supported structural family therapy. The originator of this theory, Minuchin (1974), explained further that the emphases of structural family therapy were the following: (1) present and future assessment and remedies that emphasize living in the "here and now"; (2) environmental factors are more important than genetic factors in perceptions about people in society; (3) the
reciprocal nature of systemic causality, which means that anyone's behavior could affect and be affected in his own society; (4) processes of communication or correspondence are considered more important than their content; and (5) families are a social subsystem whose behavior is shaped by social influences, with family members considered as parts or integral members of the whole family.

An example of a family counseling application can be found in the study by Thiensan (2013) entitled "The Effect of Family Counseling and Psycho-education Program on Medication Adherence Behaviors of Schizophrenic Patients in the Community." In this study, the potential causes of poor family relationships were misunderstandings between mothers (principal caregivers) and schizophrenics, unsuitable family structures, poor relationships, living apart, mothers providing insufficient care, side effects from medications, non-adherence to medication regimens that led to psychotic episodes, and patients who were unable to assist with house chores and were being blamed. Therefore, the researcher took the following initiatives: (1) establishing family relationships and assessing family structure; (2) identifying issues and jointly setting goals and plans; (3) educating and better understanding the disorder and benefits of medication; (4) providing on-going family support to avoid non-adherence to medication schedules; and (5) developing skills to cope with patients' problems, to improve family relationships, and to help effectively adhere to medication guidelines.

Surely, structural family counseling and therapy introduced by Minuchin (1974) can help to enhance family relationships and to remedy emotions with various therapy techniques. Family-focused interventions promote better relationships between patients and their families, including better understanding, feelings, and mutual acceptance. Amiable interactions lead to more affectionate feelings and to adherence to medication schedules (Thiensan, 2013). They also bring better quality of life for both patients and families as stated by Tothong (2005). Moreover, Kittithirasak (2004) developed a tool to measure family relationships following Minuchin's concept (1974). The results revealed that family therapy boosts family relationships from a moderate to good level. Better family relational outcomes are achieved when patients and family members are open for discussions to express their feelings, thoughts, ideas, understanding, real needs, and assistance during family therapy sessions.

Benefits of Structural Family Therapy

Family therapy is one of the highly recommended treatments for schizophrenic patients. It consists of family counseling and psycho-education (Chuvanichvongs, 2006). The principal benefits of structural family therapy are: (1) Establishing an understanding of the personal behavior of schizophrenic patients and their families; and (2) Implementing medication adherence behavior.

1. Establishing an understanding of the personal behavior of schizophrenics and their families

Luebunthavatchai (2010) stated that ideally, integration of behavioral therapy process should follow step-by-step recommended guidelines, particularly in specific relationship counseling. This helps solve problems more successfully and effectively with participation from schizophrenic patients, family members, and caregivers. Moreover, family psycho-education is a beneficial therapy in helping schizophrenic patients cope with mental disorders and adhere to proper medication behaviors. This is consistent with the findings of Anderson, Hogarty and Reiss (1986). Psycho-education offers knowledge about mental health in terms of support and educational services to patients and families. The objective is to provide information and resources to strengthen coping skills, eliminate wrong ideas, and establish networks for group support. These are evidence-based guidelines that comprise a well-formulated system. It empowers them to deal with situations in an optimal way based upon the training received from psychiatric nurses and mental health professionals. The process can be demonstrated by encouraging schizophrenic patients to adhere to
medications. De leo et al. (2005) indicated that families who have learned about mental disorders – along with their treatment, care and training – should have a role in helping with medication adherence. This will encourage and build more self-confidence in their ability to care more effectively for the patient. In conjunction with psychotherapeutic treatment, this will enhance knowledge about the disorder, treatment, coping skills, and patients’ regaining own capabilities. The psycho-education process, a key factor in cooperation and treatment compliance, can positively affect knowledge, ability, self-confidence in one’s own care, and problem solving skills (Department of Mental Health, 2008).

In 2004, Pandaeng devised a psychometric tool for a joint study of structural family therapy and family psycho-education to measure the mental comprehension scale of schizophrenic patients. Results revealed that 19 out of 20 patients scored quite well or > 80% on this comprehension scale. The results imply that interpersonal therapy focuses on the behaviors and interactions of patients with their families used within the context of mental health and psychiatric nursing. These depend on particular family backgrounds, such as society, culture, beliefs, religion, etc. to achieve best possible outcomes from family education.

2. Implementing medication adherence behavior

Structural family counseling, a concept of Minuchin (1974), postulates that every family has an existing structure consisting of rules, regulations, adaptation to situations, and flexibility to changes. Families will lead happy and meaningful lives with an emphasis on autonomy, attachment, and compassion. These objectives are: (1) establishing family structure; (2) strengthening family relationships; (3) supporting emotion; (4) accepting social; and (5) the family is the social system. This psychotherapy is utilized to prevent relapses of schizophrenic patients in community (NHS Center, 2000) due to non-adherence to medications. Hegde et al. (2007) also stated that family counseling enabled schizophrenic patients and families to improve medication adherence behaviors.

Establishing a relationship between patient and caregiver is the key to medication adherence behaviors in schizophrenic patients (Oehl et al., 2000; Kajaraks, 2002). When a psychiatric nurse has a good relation with a schizophrenic and the caregivers, the nurse helps empower, build trust, motivate and encourage self-management. Motivation has power to make things happen (Miller, 1922), and this has been confirmed by the studies of Chamroonsawasdi (1993); Puthkao (1998); Kayama et al. (2001); and Kumar and Segwick (2001). They all concluded that a good relationship between a psychiatric nurse, his/her schizophrenic patients, and patient caregivers helps improve medication adherence behavior.

Farragher (1999) and Kanthasaibour (2001) found that maintaining medication adherence behavior was related to self-management, and following recommendations of mental health providers and psychiatrists. There are 5 elements in medication adherence: (1) take medications continuously; (2) do not stop taking medications by oneself; (3) properly administer medications as prescribed; (4) take medications as scheduled - do not miss taking two consecutive times or twice per week; and (5) take the exact prescribed dosage - do not increase or decrease dosage without a doctor’s order.

Hence, structural family counseling reframes the family sub-structure to help it become more suitable, flexible, and resilient to situations. This improves the psychosocial behavior of schizophrenics and their families, and promotes adherence to medication regimens. A nurse has a role to listen attentively and to observe schizophrenic patient behavior. Counseling regarding proper administration of medications and maintaining good relations with patients and families as part of psychotherapy and psychiatric treatment improves medication adherence behaviors in the community (Thiensan, 2013).

A benefit of family psychotherapy is to strengthen closer and better family relations, which are important tools for schizophrenics to handle ever changing conditions in their family and community environments. A family living together means that members are connected biologically and/or
legally. They may be a father (husband), mother (wife), children and relatives. All members are obligated to perform their duties to each other with love, caring, kindness, and goodwill in all economic and social conditions (Kanthasaibour, 2001). It becomes evident that psychiatric treatment and family support promotes good health among schizophrenics, and also improves medication adherence behaviors. A research study by Razali and Yahya (1995) stated that schizophrenic patients living with their families achieved better medication adherence behavioral results than those who do not live with their families or live alone.

Conclusions and Suggestions

Structural family counseling encourages schizophrenic patients and all family members to accommodate each other, to establish suitable relationships, and to develop a clearly articulated model of family function. All members have set goals, flexibility, problem-solving skills, and know how to respond to developing needs and to interact with medication adherence behaviors. The objective of family interventions is not to help any particular individual, but the family as a whole. It positively affects individuals to influence change for the entire family by emphasizing family relationships. It also strengthens mutual understanding, feelings, communications, obligations, self-care, and family relationships.

Professional nurses – especially mental health or psychiatric nurses – are healthcare providers who play an important role in integrating social and cultural concepts to provide effective counseling by structural family therapy. The nurse realizes the significant influence of an individual's culture and society to success. Cultural restraints must be taken into consideration when treating this patient population. The nurse must know, understand, listen, accept, and show interest in caring. This will lead to trust and cooperation. Observation and learning from patients enables nurses to appropriately adapt treatment to bring about successful results.

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