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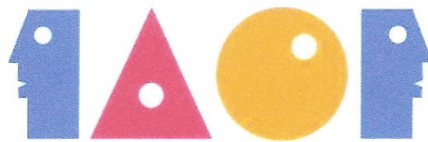
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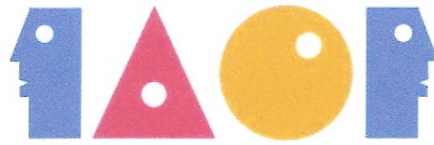
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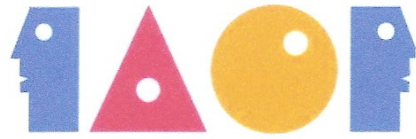
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ORGANIZATIONAL INNOVATION STRATEGIES: THE VALUE CO-CREATION STRATEGY (VCS) MODEL

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Abstract

Challenged with market competition, firms can effectively connect innovative research and development, marketing activities, and design resources by using a value co-creation method. After a pilot case study was completed and preliminary models were established, this study proceeded with 2 questionnaire surveys. The first questionnaire survey investigated the co-creation strategies of firms in marketing, innovation, and design. A total of 278 valid questionnaires were recovered. A second survey was conducted 1.5 years after new product launch to identify the NPD performance of the 278 sample firms. Eventually, a total of 242 valid questionnaires were recovered. The main findings in this study are presented as follows: a) A value co-creation strategy (VCS) conceptual model was proposed in response to innovation, marketing, and design co-creation strategies and NPD performance. b) A partial least squares method was used to examine the VCS model. The results show favorable fitness between the VCS model and questionnaire survey observation data, indicating that the VCS model has application value. c) The innovation, marketing, and design co-creation strategies of an enterprise affected NPD performance. In addition, through comprehensive co-creation strategies, these strategies and approaches affected NPD performance. The co-creation strategies in the VCS model were independent variables and mediating variables to NPD performance. Firms can reference the approaches proposed in this study to efficiently develop products and services on the basis of their organizational resources and market advantages and continually win market shares.

Key Words: Value Co-Creation Strategy (VCS), Marketing Strategy, Innovation Strategy, Design Strategy, New Product Development (NPD) Performance

Introduction

Since the concept of service science was proposed in 2004, IBM, the Big Blue in the personal computer industry, has been successfully transformed from designing computer hardware and equipment products to designing service-oriented products, which have attracted increasing attention worldwide. Firms have actively integrated tangible products and intangible services to pursue innovative value in an attempt to be close to consumers and the market timely. Ramaswamy and Gouillart (2010) investigated empirical business cases in the United States and determined that during new product development (NPD), firms emphasized value more than products or services. Value derives from the outcomes cocreated by all customers and members collaboratively participating in the value chain related to the enterprise. Thus, firms continue to communicate with consumers through value co-creation. In addition, the enterprise can consistently win market shares by developing only products and services jointly based on the collaboration among all departments in the enterprise, such as marketing, research and development (R&D), and design departments and stakeholders, including suppliers and employees (Camarinha-Matos et al., 2009; Bhalla, 2010).

How can design be involved in the value co-creation of firms? From the perspective of marketing, marketing and product design are closely matched (Souder & Song, 1997; Zhang et al., 2007; Luchs & Swan, 2011). During the process of launching new products, marketing and design departments must con-

tinually interact and exchange information with each other (Petiot & Grognet, 2006; Conway, 2007; Paul & Martin, 2007). Effectively connecting enterprise marketing activities and design is the impetus to product innovation (Gupta & Wilemon, 1990; Sherman et al., 2000).

From the perspective of R&D, innovation is the only and most effective survival capacity of an enterprise when posed with future challenges (Gary & Peter, 2001). Consistent innovation is the momentum to maintain enterprise advantages and ensure the growth of enterprise operations (Baxter, 1995; Dittrich & Duysters, 2007). In particular, during economic recession, rapidly introducing new products into the market helps firms overcome difficulties and reverses adverse situations (Ulrich & Eppinger, 2004; Booz, Allen, & Hamilton, 1982; Pugh, 1991; Christoph, 2007). From the perspective of stakeholders, marketing personnel and R&D designers of an enterprise must pay close attention to the challenges posed by changing market environments, respond to the movements of competitors, and integrate appropriate product design on the basis of goals established by the marketing and R&D departments to complete new products successfully (Tsai, 2006; Ravi, 2007; Girard et al., 2007; Luchs & Swan, 2011).

Therefore, research on how to jointly develop products and services as well as how to efficiently integrate business design processes and improve business performance has remained active (Andi & Minato, 2003; Hsu, 2006; 2011). Several studies have suggested that controlling enterprise product design

processes can improve NPD performance (Song et al., 1997; Olson, 1994; Durward et al., 1998). Previous studies have shown that design can be regarded as a critical value co-creation resource for firms and a crucial mechanism for integrating product development functions. Moreover, design is a section that composes the entire enterprise value chain (Baxter, 1995; Olins, 1990; Fujimoto, 1991; Ge & Wang, 2007; Aydin et al., 2007). When promoting product design, firms often require cooperation among and implementation at all business strategy levels to fulfil the comprehensive business strategy (Mozota, 2006; Renee, 2007). Thus, in this study, a value co-creation strategy (VCS) conceptual model was proposed to explain how firms achieve performance goals by considering innovation, marketing, and design strategies jointly. By applying the VCS, customers and firms can both acquire benefits and enhance customer satisfaction and enterprise brand value. In addition, Hsu (2012; 2013) have proposed relationship models regarding product design and marketing or innovative activities with respect to strategies and implementation. However, few empirical studies have examined the relationship model, as well as related practical approaches, between NPD performance and VCS, marketing, innovation, and design.

NPD project managers of the information and communications technology (ICT) industry, in which new products or services rapidly replace the old, were used as survey respondents in this study. The VCS conceptual model was proposed in response to innovation, marketing, design, co-creation strategies,

and NPD performance. In addition, the VCS model was validated, and data fitness was identified. Subsequently, the effect of the VCS model on NPD performance was analysed. Finally, the strategy types of the VCS model adopted by the sample firms were summarised, and NPD performance of the firms adopting diverse strategy types were compared.

Research Frameworks and Hypotheses

Relationship between enterprise innovation strategy and marketing strategy

Hsu (2013) asserted that combining marketing and innovation can create differentiated innovation processes and outcomes. In other words, marketing strategies can guide product innovation toward a correct direction. During the new product launch process, R&D and marketing departments of an enterprise must exchange information consistently (Petiot & Grognet, 2006; Conway, 2007; Paul & Martin, 2007). Effectively connecting enterprise marketing activities and design is the impetus of product innovation (Gupta & Wilemon, 1990; Sherman et al., 2000). Thus, firms appropriately using innovation strategies and marketing strategies can provide new additional value to customers and enhance enterprise competitiveness (Hsu, 2014). On the basis of the discussion on innovation strategy and marketing strategy, the following hypothesis was proposed:

H1. The innovation strategy of an enterprise significantly influences marketing strategy.

Relationship between enterprise innovation strategy and design strategy

Effective product innovation or service development is the cornerstone of enterprise survival and the motivation for maintaining competitive advantages (Driva et al., 2000; Pawar & Driva, 1999; Mozota, 2003; Veryzer & Mozota, 2005; Jamie & Costas, 2007). Firms must integrate goals established using innovation strategy with appropriate product design to complete NPD successfully (Sung & Gilmour, 2002; Mozota, 2006; Dell’Era & Verganti, 2007; Sari et al., 2007). When an enterprise undergoes product innovation, all strategic levels within the enterprise must cooperate to implement the overall enterprise strategy (Silbiger, 2005; Marxt & Hacklin, 2005; Veryzer & Mozota, 2005; Renee et al., 2007). In addition, firms combine goals established using innovation strategy with actual product design tasks and integrate innovation resources of the enterprise to complete new products through interorganisational communications and negotiations (Sung & Gilmour, 2002; Mozota, 2006; Claudio & Roberto, 2007; Sari et al., 2007). On the basis of this close relationship between innovation and design strategies of firms (Hsu, 2011a), this study postulated the following hypothesis:

H2. The innovation strategy of an enterprise significantly influences design strategy.

Relationship between enterprise marketing strategy and design strategy

Marketing and product design are closely correlated (Roy & Bruce, 1984;

Souder & Moenaert, 1992; Souder & Song, 1997; Zhang et al., 2007; Luchs & Swan, 2011). During the product launch process, marketing and design departments must continually interact and exchange information (Petiot & Grognet, 2006; Conway, 2007; Paul & Martin, 2007). Effectively linking enterprise marketing activities and design drives product innovation (Gupta & Wilemon, 1990; Sherman et al., 2000). Several studies have claimed that design can be a critical integration resource of firms, representing a crucial mechanism that integrates product development functions. In addition, design is a series of segments in the entire enterprise value chain (Baxter, 1995; Olins, 1990; Fujimoto, 1991; Bruce & Jevanker, 1998; Twigg, 1998; Ge & Wang, 2007; Aydin et al., 2007). Thus, firms combine goals established using marketing strategy with actual product design strategy and integrate enterprise resources to complete new products through interorganisational communications and negotiations (Souder & Song, 1997; Bloch, 2011; Luchs & Swan, 2011). Thus, the following hypothesis was proposed:

H3. The marketing strategy of an enterprise significantly influences design strategy

Co-creation strategy and NPD performance of firms

Numerous studies have suggested that by performing correct development processes, firms can improve NPD performance (Song et al., 1997; Olson, 1994; Durward et al., 1998). Research has indicated that design can be regarded as the value co-creation resource which

represent a crucial mechanism that integrates product development functions. In addition, design is a section that composes the entire enterprise value chain (Baxter, 1995; Olins, 1990; Fujimoto, 1991; Ge & Wang, 2007; Aydin et al., 2007). When firms innovate products, co-creation collaboration between all strategic levels within the enterprise is required to execute the overall strategy of the enterprise (Mozota, 2005; Renee, 2007). Hsu (2012; 2013) have claimed that the concept of VCS can integrate enterprise innovation, marketing, and design strategies to jointly achieve the performance goal of firms. Thus, by applying VCS, firms can effectively develop innovative products, which profit both customers and firms and enhance customer satisfaction and enterprise brand value. Therefore, the following hypotheses were postulated:

H4. The marketing strategy of an enterprise significantly influences value co-creation.

H5. The innovation strategy of an enterprise significantly influences value co-creation.

H6. The design strategy of an enterprise significantly influences value co-creation.

H9. Value co-creation of an enterprise significantly influences NPD performance.

Enterprise marketing strategy and NPD performance

Souder and Song (1997) asserted that marketing strategy is correlated with product development. Marketing strategy can guide and improve product quality (Jeremy et al., 2005) and the implementation process of product R&D (Luchs & Swan, 2011). Souder and Moenaert (1992) stated that successful technology application requires the integration of R&D and marketing departments. Gupta and Wilemon (1990) investigated the interaction between R&D and marketing departments and determined that product innovation of the high-technology industry relies on close cooperation between R&D and marketing. Kinchen (2010) and Hsu (2011) have indicated that product design could specify marketing strategy and demonstrate product development outcomes physically. Therefore, Sherman et al. (2000) claimed that interdepartmental functional integration between product development and marketing is a crucial factor that influences product development cycles. Several scholars have indicated that integrating enterprise product development processes can improve NPD performance (Carlsson, 1991; Griffin & Hauser, 1996; Gupta et al., 1985; Ruekert & Walker, 1987; Pinto et al., 1993; Rusinko, 1997; Song et al., 1997; Olson, 1994; Durward et al., 1998; Lau et al., 2007). Thus, the following hypothesis was proposed:

H7. The marketing strategy of an enterprise significantly influences NPD performance.

Enterprise design strategy and NPD performance

Product design strategy and NPD

performance are correlated (Cooper & Kleinschmidt, 1987; Souder & Song, 1997; Ulrich & Person, 1998). The effort that firms invest in product design can be evaluated according to NPD performance (Pawer & Driva, 1999; Driva et al., 2000). In addition, optimal NPD performance is a goal firms pursue (Baxter, 1995; Mumin, 2010; Ciriaco et al., 2010). Hsu (2009) indicated that firms exhibiting diverse design strategy types demonstrated different financial and nonfinancial performance. Thus, the following hypothesis was proposed in this study:

H8. The design strategy of an enterprise significantly influences NPD performance.

Enterprise innovation strategy and NPD performance

Innovation strategy can rapidly introduce new products into the market, which helps firms overcome difficulties and reverses adverse situations (Ulrich & Eppinger, 2004; Booz, Allen, & Hamilton, 1982; Pugh, 1991; Christoph, 2007). Firms combine goals established using innovation strategy with actual product design tasks and integrate innovation resources of the enterprise to complete new products through inter-organisational communications and negotiations (Sung & Gilmour, 2002; Mozota, 2006; Claudio & Roberto, 2007;

Sari et al., 2007). Several other studies have suggested that efficiently integrating the enterprise innovation process and capacity can improve NPD performance (Carlsson, 1991; Griffin & Hauser, 1996; Gupta et al., 1985; Ruckert & Walker, 1987; Pinto et al., 1993; Rusinko, 1997; Song et al., 1997; Olson, 1994; Durward et al., 1998; Handfield et al., 1999; Andi & Minato, 2003; Hsu, 2006). However, Roger et al. (2006) indicated that innovation strategy indirectly affects NPD performance through mediating variables. Thus, the following hypothesis was proposed:

H10. The innovation strategy of an enterprise significantly influences NPD performance

According to a review of relevant literature, the conceptual research framework established in this study and the 10 hypotheses (*H1 to H10*) are presented in Figure 1.

Research Methods

Sample and Data Collection

Pretest: At the questionnaire pretesting stage, the focus group interview method was used to determine the participants, research scope, and relationship among all of the variable dimensions. Seven professionals (four experienced product

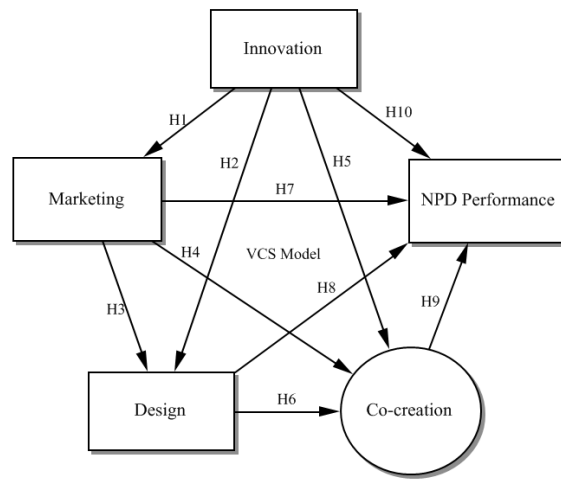


Figure 1. CVS conceptual model proposed in this study

decision-making managers from the industry and three expert scholars) were invited to discuss the preliminary cases and initial conceptual model. In addition, these professionals ascertained that the measurement variables extracted from the literature were suitable for the current study. Subsequently, pretest questionnaires were distributed. The respondents responded to each item on the questionnaire on the basis of their level of agreement with the content described. A 5-point Likert scale was used to denote the level of agreement (1 represents strongly disagree and 5 represents strongly agree, or 1 represents never and 5 represents always).

The member name list database of the Taiwan Electrical and Electronic Manufacturers' Association (TEEMA), in which a random sampling was conducted, was used as the sample population. The NPD project managers were used as survey respondents. A total of 150 questionnaires were distributed, and 38 questionnaires were recovered. Factor

analysis and reliability analysis were conducted to verify the construct validity and reliability of the questionnaire. The results showed that the meaning of all of the variables could be fully explained according to the extract factors, indicating construct validity. Co-creation (CS), marketing (MS), innovation (IS), and design (DS) strategies exhibited a significantly positive correlation with NPD performance (NP; Pearson correlation coefficient = 0.867, $p < .01$). In addition, the Cronbach's α of each item was higher than 0.85, indicating that the items had suitable reliability. Thus, a formal questionnaire survey was conducted on the basis of the validated questionnaire.

Formal questionnaire survey: From the TEEMA database, 1,000 firms were randomly sampled for two surveys. After repeated follow-up tracks, valid questionnaires from 283 firms were obtained in the first survey. After new product launch period of 1.5 year, a second survey was conducted on the firms that re-

sponded to the first survey to collect data on NPD performance. The survey result revealed that 231 valid questionnaires were recovered from the firms, yielding a 23.1% effective recovery rate.

This study adopted the partial least squares (PLS) method, which is an analysis technique used to explore or construct predictive models, particularly causal models between latent variables. PLS is superior to common linear structural relations models. This study adopted the PLS method on the basis of the following considerations: (a) Can employ multiple dependent as well as multiple independent variables (IVs). (b) Can handle multicollinearity among independent variables. (c) Robust despite data noise and missing data. (d) Strong prediction for independent latent variables based on response variables. (e) Allows for reflective and formative latent variables. (f) Applied to a small sample. (g) free from distributional constraints (Pirouz, 2006). The questionnaire data were repeatedly sampled for 1,000 times by using the bootstrap resampling method to estimate and infer the parameters.

Data Analysis and Results

Data Accuracy Analysis

Table 1 lists the means, standard deviation (SD), average variance extracted (AVE)², and correlation matrices of the primary dimensions of each strategy (MS, IS, DS, CS, and NP). Table 2 presents the standardised loading (SL), composite reliability (CR), and AVE of

all of the factor dimensions. The CRs of all of the primary dimensions were .897, .866, .915, .893, and .987. The overall CR was .912, which is higher than the standard value of .70 (Hulland, 1999), indicating favourable internal consistency of the model. In addition, the AVEs of the primary dimensions were .857, .859, .891, .893, and .897. The overall AVE was .879, which is higher than the .5 standard value (Fornell & Larcker, 1981).

A further observation of the conceptual model (illustrated in Fig. 2) showed the direct and indirect relationships between each strategy. The SL of the model reached a level of statistical significance, and the standardised path coefficient reached statistical significance. Moreover, the individual SL was higher than the SL of other factors. Overall, the reliability and validity of the model was acceptable, and R² values were used to determine the explanatory effect of the model.

Hypotheses Tests

Figure 2 shows that the innovation strategy directly affects marketing, design, co-creation, and NPD performance. The direct effect value of innovation on marketing was .513 ($\beta = .513$, $p < .01$), with an indirect effect of .347, reaching a level of significance. The overall effect was .860, and the explanatory power attained 92.3%. Thus, H1 was supported. The direct effect value of innovation on design was .507 ($\beta = .507$, $p < .05$), with an indirect effect

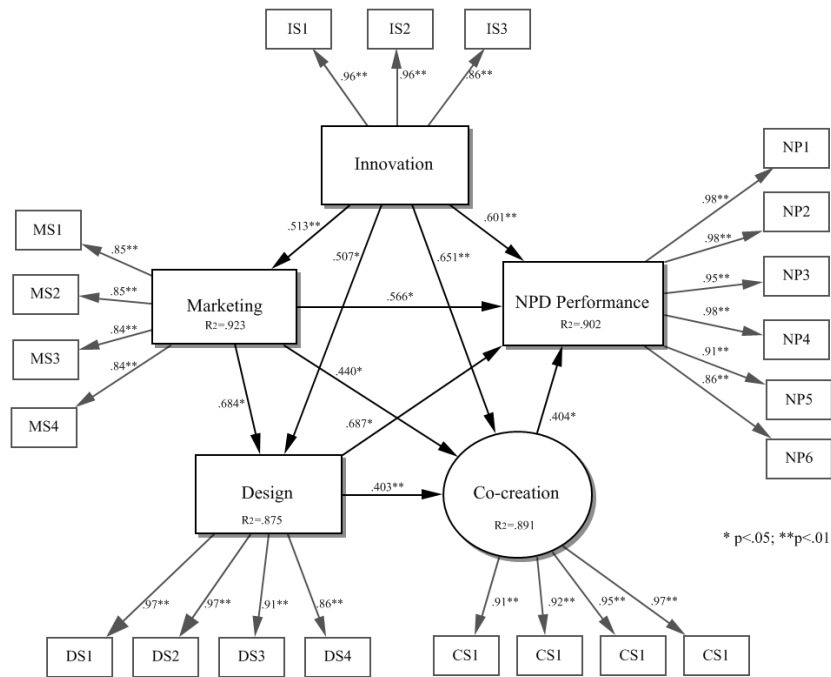


Figure 2. VCS framework PLS model

Table 1. Basic statistics

	Mean	Sd	MS	IS	DS	CS	NP
MS	4.449	.233	(.734)				
IS	3.674	.472	.817	(.738)			
DS	4.376	.210	.789	.822	(.794)		
CS	3.914	.385	.771	.850	.871	(.798)	
NP	4.135	.390	.816	.857	.815	.851	(.805)

Notes: MS: Marketing strategy; IS: Innovation strategy; DC: Design strategy; CS: Co-creating strategy; NP: New Product Development Performance; (): AVE²

of .351, reaching a level of significance. The overall effect was .858, and the explanatory power reached 87.5%. Thus, H2 was supported. The direct effect value of innovation on co-creation was .687 ($\beta = .687$, $p < .05$), with an indirect effect of .328, achieving a level of significance. The overall effect was .891, and the explanatory power reached

89.1%. Thus, H5 was supported. The direct effect value of innovation on NPD performance was .601 ($\beta = .601$, $p < .01$), with an indirect effect of .330, which was significant. The overall effect was .931, and the explanatory power attained 93.1%. Thus, H10 was supported.

Table 2. Accuracy analysis statistics

Core Constructs	Item	CLMS	CLIS	CLDS	CLCS	CLNP	Alpha	SL	CR	AVE
MS	MS1	.913	.823	.876	.822	.850	.989	.929	.897	.857
	MS2	.862	.816	.845	.813	.793				
	MS3	.968	.813	.861	.797	.884				
	MS4	.972	.916	.827	.793	.867				
IS	IS1	.936	.837	.856	.882	.898	.860	.847	.866	.859
	IS2	.931	.846	.804	.837	.835				
	IS3	.847	.858	.832	.846	.798				
DS	DS1	.827	.948	.906	.841	.931	.891	.953	.915	.891
	DS2	.924	.916	.975	.907	.941				
	DS3	.788	.833	.963	.903	.918				
	DS4	.796	.825	.968	.912	.944				
CS	CS1	.927	.951	.849	.852	.787	.885	.913	.893	.893
	CS2	.965	.944	.924	.841	.823				
	CS3	.836	.819	.962	.984	.798				
	CS4	.852	.833	.918	.976	.781				
NP	NP1	.849	.963	.924	.943	.861	.872	.920	.987	.897
	NP2	.918	.948	.853	.941	.953				
	NP3	.943	.931	.927	.938	.951				
	NP4	.944	.929	.813	.967	.915				
	NP5	.925	.958	.785	.915	.923				
	NP6	.941	.912	.953	.945	.963				

Notes: CL: Cross loadings; SL: Standardized loading; CR: Composite reliability; AVE: Average variance extracted.

In addition, Figure 2 illustrates the direct correlation effect of marketing on design, co-creation, and NPD performance. The direct effect of marketing on design was .684 ($\beta = .684, p < .05$), reaching a level of significance, and the explanatory power achieved 87.8%. Thus, H3 was supported. The direct effect of marketing on co-creation was .440 ($\beta = .440, p < .05$), with an indirect effect of .276, achieving a level of significance. The overall effect was .716, and the explanatory power attained 89.1%. Thus, H4 was supported. The direct effect of marketing on NPD performance was .556 ($\beta = .556, p < .05$), with an indirect effect of .178, which was significant. The overall effect was .734, and the explanatory power achieved 90.2%. Thus, H7 was supported. In addition, the direct effect of design on co-creation was .403 ($\beta =$

.403, $p < .01$), achieving a level of significance. Thus, H6 was partially supported. The direct effect of design on NPD performance was .651 ($\beta = .651, p < .01$), with an indirect effect of .163, reaching a level of significance. The overall effect was .814, and the explanatory power achieved 90.2%. Thus, H8 was supported. The direct effect of co-creation on NPD performance was .404 ($\beta = .404, p < .05$), reaching a level of significance. Thus, H9 was partially supported. Overall, except for the partially supported H6 and H9, all of the hypotheses were supported.

Conclusion and Management Meanings

Previous studies have considered design or design strategies as an integrated resource of firms and a product integration mechanism that represents a

section composing the overall enterprise innovation value chain (Baxter, 1995; Olins, 1990; Fujimoto, 1991; Bruce & Jevanker, 1998; Wheelwright & Clark, 1992; Twigg, 1998). However, most of these studies were cases or individual conceptual interpretations that lacked theoretical integration. This current study validated the relationship of these issues, particularly among marketing, innovation, and design co-creation strategies. The NPD project managers of ICT industries that launch new products or services to rapidly replace the old were used as the survey respondents. On the basis of the innovation, marketing, design, and co-creation strategies and NPD performance, a VCS model was proposed. In addition, the VCS model and survey data fitness were validated.

Through statistical analysis, the survey sample number of this study met construct validity. In other words, the convergent validity and discriminant validity of each variable reached statistical requirements. According to the empirical analysis results of PLS, the theory model constructed in this study and the collected observation data exhibited favourable fitness, supporting various hypotheses of this study.

Firms can combine the goal established by using marketing or innovation strategy with actual product design tasks. By using the VCS, firms can increase the efficiency of overall resource integration and facilitate interorganisational collaboration to complete innovative products. The findings of this study can enhance the results of previous studies (Maidique & Zirger, 1984; Gupta et al., 1985; Souder, 1987; Li & Atuahene-Gima,

2001; Sung & Gilmour, 2002; Mozota, 2006; Claudio & Roberto, 2007; Sari et al., 2007). Moreover, the product design can commercialise marketing and innovation strategies and can be used as a specific item to analyse product innovation. These findings corresponded with the research findings of Hsu (2013; 2014).

A review of Ulrich and Eppinger (2004) showed that the proportion of new product earnings to the total sales amount was approximately 30% to 40%. Using the US manufacturing industry as an example, 40% of the revenues derived from the contribution of new products. Regarding profits, 32% resulted from the earnings of new products (Haas, 1989). According to the US Product Development and Management Association, 32.4% of the enterprise turnovers resulted from the new products launched within the previous 5 years. For high-technology industries, this proportion reached 42.3% (Griffin & Hauser, 1996). This study was the first empirical study to examine critical factors, such as product innovation, marketing, design, and value co-creation strategies, and NPD performance by administering two-stage surveys. Enterprises can reference the proposed method according to their organisational resources and market advantages to develop products and services efficiently and face the ever-changing market.

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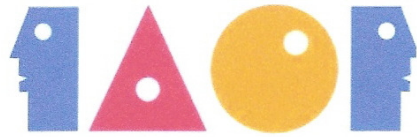
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PECULIARITIES IN THE HUMAN RESOURCES PROCESSES:
CAN THE SYSTEM POSSIBLY BE UNFAIR?

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Abstract

This research is a small case study of human resources processes in a government agency. The scholars look into a specific case study of a performance improvement plan issued to a union employee. The authors describe the case, and analyze the decision-making processes. Further, they make assessment and recommendations based on this case study.

Key Words: Human Resources Processes, Performance Improvement Plans, Union Employees, Fairness in the Workplace

Introduction

There are countless accounts of government employees experiencing joys of being caught up in the whirlwind that is the disciplinary action. Often times, leadership is not equipped to navigate the intricacies of these processes.

This particular case study looks at a government agency. This agency services local residents who were disabled prior to the age of eighteen. The agency coordinates services between vocational services providers, physicians, employers, and clients who wish to use their services. According to the agency's website, their main goal is to provide exemplary services, which

make it possible for people with disabilities to lead meaningful and productive lives within their communities.

The agency Director, who has been with the organization for eight years, was appointed to his current position in 2010. The senior executive team of fifteen people is charged with managing departments, such as Contracts and Procurement, Counselors, Employment Specialists, and others.

In an effort to protect the privacy of the employee with whose case is depicted in study, all names, duration of employment, and supervisor's names have been changed. The information gathered in this report was received by way of a first account interview with the employee and a review of the official timeline of events as signed by the recipient of the performance improvement plan lead and the HR representative assigned to the case.

Regretfully, HR was unwilling to discuss or explain the formal processes through which management conducted this case, before, during, and after the performance improvement plan has been issued to a staff member.

The Case

Ms. Polly Hardy, a unionized employee, has been employed at her present agency for over ten years. During this time, she has not been counseled, reprimanded, or written-up for anything related to her work performance. Furthermore, Ms. Hardy has never received an annual performance rating that falls below "Valued Performer."

The scale used to rate the performance of government employees (from lowest to highest) is as follows:

- Below Expectations – Performs duties below the standard as outlined during the Mid-Term Evaluation and/or Job Description.
- Valued Performer – Performs duties at the standard as outlined during the Mid-Term Evaluation and/or Job Description.
- Model Performer - Performs duties above the standard as outlined during the Mid-Term Evaluation and/or Job Description.

Ms. Hardy was often called upon to train new hires on the expectations and work functions for her particular department.

All of that changed on the afternoon of June 30, 2014. While away on vacation, Ms. Hardy received an email (to her personal account) from her lead, Mr. Jonathan Brookes. To her horror, the performance improvement plan was attached for her review and signature.

Upon returning to work on July 2, 2014, Ms. Hardy contacted her union president in order to discuss the next steps. She was instructed to write an official response to each of the items contained in the performance improvement plan and to formally notify Mr. Brookes that she is requesting union representation. Consequently, she would be respectfully declining to sign the document that was presented to her

for her review and signature.

After over a month of waiting for Mr. Brookes and HR to agree on a date to discuss the performance improvement plan, Ms. Hardy and her union representative, Mr. Matthews were finally able to meet with the aforementioned parties on August 14, 2014.

During that meeting, Mr. Matthews posed poignant questions to Mr. Brookes on behalf of Ms. Hardy. According to the official transcript, Mr. Brookes either would refuse or could not provide answers to these very simple questions found below:

1. Why are there a lack previous supervision meetings and write-ups/warnings in Ms. Hardy's file?
2. Can Ms. Hardy and I review (and provide a rebuttal/response/or contest) the alleged "complaints" received regarding her work?
3. Why is Ms. Hardy the only staff member who must inform Martin Robinson of her approved leave?
4. Why is Ms. Hardy being penalized for receiving and completing requisitions (6 since October 1, 2013) to which she was assigned? She does not create requisitions nor does she send them to herself.
5. Why is Ms. Hardy being penalized because the corporate office is not offering additional training classes and there are "no funds available" for outside courses/workshops in her field?

After 92 days of back and forth with HR and management, Ms. Hardy's performance improvement plan was removed from her file. Additionally, Mr. Brookes was required to write a formal letter of apology to Ms. Hardy in lieu of her filing a harassment claim against him. Her only desire was to have her good name and reputation officially restored by those with whom she works. She also requested the formal apology letter as assurance that potential employers or hiring managers would have concrete evidence of her vindication.

The entire process left Ms. Hardy equal parts exhausted, vindicated, and perplexed. She was exhausted in the sense that it took HR three long months and countless meetings before finally admitting that there was no grounds for the issuance of the performance improvement plan. In addition, she felt vindicated because her work ethic, reputation, and employee file were left spotless. However, Ms. Hardy emphasized how utterly perplexed she remained regarding the entire process. Ms. Hardy stated that no one from HR was able to articulate how and why they agreed to sign off the issuance of the performance improvement plan. In addition, it was never explained why, after the first meeting on July 2, 2014, HR continued to back Mr. Brookes when it became clear that he possessed no tangible proof of her poor work performance. She is clear about one thing, "HR thought I was going to let them steamroll me, but apparently, they didn't know me very well!"

Findings and Analysis

After reviewing the timeline, official memos, and speaking with Ms. Hardy, it cannot be determined what triggered the issuance of the performance improvement plan. Although office gossip should be taken with a grain of salt, the grapevine seems to think Mr. Brookes was the subject of a reprimand for his own subpar performance as a manager. Thus, he decided to retaliate against the person he believed to be an easy target.

The question still remains, why the HR department signed off on the performance improvement plan. There is nothing in Ms. Hardy's file that suggests that she is anything but a model employee. She has never been the subject of negative disciplinary actions while employed by this government agency. If there were an alternate theory or concrete reason behind the events that unfolded, it would never be known because HR has denied all requests to speak specifically about this case or the performance improvement plan process in general. HR and Senior Management are diligently trying to sweep this matter under the rug in order to protect themselves. If this case were to become public, it could ruin or tarnish the careers of Mr. Hardy, the HR Manager, and the Agency Director who has to sign the performance improvement plan before it is presented to the employee. It could be said that all parties who affirmed the performance improvement plan issued by Mr. Brookes are guilty of either signing documents blindly or not being educated on the Performance Evaluation

Process in which they are in charge.

The HR department is not in the business of advocating for staff, but ensuring the organization is "protected." However, there are times when the HR staff goes beyond the realm of what is considered ethical and/or legal.

This case is, by all accounts, reflective of management and HR wading in dangerous end of the pool. The performance improvement plan issued to Ms. Hardy should have never occurred: there is absolutely no documentation that proves or suggests that Ms. Hardy's work performance has been subpar.

Based on this case, we recommend that the following must occur without delay:

- Mr. Brookes be demoted for his misconduct.
- The HR Director to be reassigned.
- The Agency Director to pay closer attention to what she signs.
- Managers attend retraining on:
 - Ethics
 - Performance Evaluation Process
 - The Disciplinary Process for Union and Nonunion Employees
- Strong education in leadership and system management is promulgated throughout the enterprise (the most important recommendation).

Conclusion

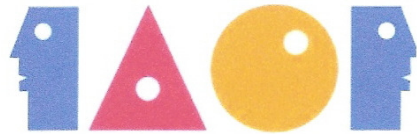
Rigorous and mandatory managerial training at the point of initial hire and subsequent annual training sessions will not stamp out instances of undocumented and seemingly unwarranted performance improvement plan distribution. However, it could reduce the likelihood of these situations arising. The cost of annual workshops for managerial staff would cost the agency less money than a lawsuit and possible payout. For example, some private companies require management to take at least five days of rigorous HR training.

Beyond that, management needs education in leadership and management, and not use formal and secretive HR processes to abuse and retaliate against people they do not like. Instead of the disciplinary or performance improvement plans, management must understand that employee performance is function of the management system they themselves designed and implemented (Ivanov, 2011, 2012, 2013, 2014, 2015), (Deming, 1994, 1996), (Jaques, 1996, 2002). Recalibration and understanding of the system, rather than personal vendettas, is what is needed in every organizational system today, and for the foreseeable future.

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EXPLORING OPPORTUNITY IDENTIFICATION AND OPPORTUNITY EXPLOITATION WITHIN THE VENTURE CREATION PROCESS

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Abstract

The aim of this study is to explore the opportunity phase within the venture creation process in order to explain that a distinction exists between opportunity identification and opportunity exploitation. Opportunity exploitation is recognised as an entrepreneurial behaviour as the individual has clear intentions to act entrepreneurially. Opportunity identification is represented by the searching dimension within the venture creation process model. The entrepreneurial activity of opportunity exploitation is represented through proposing an additional dimension labelled as seizing which occurs following the identification of a business opportunity. Three fundamental entrepreneurial constructs are explored in detail which includes: individual entrepreneurial orientation (IEO), entrepreneurial intention (EI) and entrepreneurial self-efficacy (ESE). A systematic review of the literature is conducted in two stages, secondary data collection and data synthesis, through the identification and inclusion of all relevant available research. A conceptual framework is proposed which integrates IEO, EI and ESE within the venture creation process in order to provide further insight into the process of becoming an entrepreneur. This study requires further testing and validation using statistical techniques to examine the impact of each construct as well as the proposed dimension of seizing in the development of a new business venture.

Key Words: Entrepreneurial opportunity, venture creation process, individual entrepreneurial orientation, entrepreneurial intention, entrepreneurial self-efficacy

Introduction

Entrepreneurship has recently been defined as a process which creates value,

through marshalling a unique combination of resources in order to exploit a particular opportunity (Shah, Gao & Mittal 2015). Furthermore, entrepreneur-

ship is described as a subversive activity, in which accepted ways of doing things are disrupted and challenged, and traditional behavioural patterns are altered (Smilor 1997).

Suddaby, Bruton and Si (2015), explain that more recently scholars have recognised the importance of understanding the origins of entrepreneurial opportunity. The two main perspectives which have been identified by researchers are: 1) entrepreneurs discover entrepreneurial opportunities and/or 2) entrepreneurs create entrepreneurial opportunities.

In a recent study conducted by Wang, Ellinger and Wu (2013) on antecedents of entrepreneurial opportunity recognition, it was revealed that entrepreneurial opportunity recognition is influenced by an individual's characteristics including self-efficacy, social networks and prior knowledge. In addition, entrepreneurial action and outcomes are not only a direct result of an individual's characteristics but also impacted by the quality of the opportunity exploited, as well as the fit between individual and opportunity (Davidson 2013). McGuire (2003) places great emphasis on the importance of the role of opportunity in entrepreneurship, and defines entrepreneurship as taking advantage of a market opportunity through the transformation of innovation into a new product, service or business.

Recently, Davidson (2013) has argued that literature on entrepreneurial opportunities lacks theoretical and empirical progress, which as a result is defined by only a few authors and the defi-

nitions lack consistency. This study focuses on the entrepreneurial opportunities definition provided by Eckhardt and Shane (2003, p. 336), which is "situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends or means-ends relationships". Venkataraman and Harting (2005) explain that entrepreneurs recognise different opportunities or even no opportunity at all when viewing situations, as each individual has unique desires, experiences, values and knowledge. As a result the identification of an opportunity is dependent on two main factors which are the entrepreneur and the opportunity context.

Researchers have identified that there is a substantial difference between the behaviours of opportunity identification and opportunity exploitation, with the latter demonstrating intentions to carry out entrepreneurial activities such as planning. This intention into actions to start a new business is what sets entrepreneurs apart from non-entrepreneurs as the lack of action is explained to be common among aspiring entrepreneurs (Gelderens, Kautonen & Fink 2015). Furthermore, Gelderen, Kautonen and Fink (2015) explain that the intentions of an individual to start a new venture is mostly developed at the venture level, rather than at the level of each specific task required to commence the new venture. This study aims to further explore the opportunity phase (consisting of both identification and exploitation) within the venture creation process. Another area which is also explored in this study is the relationship between the constructs of individual entrepreneurial orientation

(IEO), entrepreneurial intention (EI) and entrepreneurial self-efficacy (ESE) within the venture creation process. These relationships are explored in order to develop a more thorough understating of the process of becoming an entrepreneur.

McGee et al. (2009) integrate the five ESE dimensions: (1) searching, (2) planning, (3) marshalling, (4) implementing-people and (5) implementing-financial within a confirmatory factor analysis model for the venture creation process, which has been used as a foundation in developing the proposed conceptual framework in this study. The conceptual framework is proposed in order to add to the body of knowledge on the topic of venture creation process. It illustrates the relationship between all three constructs (IEO, EI and ESE). It also proposes a new additional dimension labelled as 'seizing' in the venture creation process, in order to demonstrate that the venture creation process is triggered once an individual decides to seize an opportunity.

Literature Review

This study focuses on IEO, EI and ESE constructs within the context of venture creation process in order to gain greater understanding of the development of new business ventures. Each of these constructs is explained in the next sub-sections.

IEO and the Venture Creation Process

Entrepreneurial Orientation (EO) is defined at the organisation level as "the strategy-making processes that provide

organisations with a basis for entrepreneurial decisions and actions" (Rauch et al. 2009, p. 762). In regards to entrepreneurial processes, Lumpkin et al. (2013) identify EO as a concept, which focuses on the processes, policies and practices relating to decision making within entrepreneurial organisations. EO is most often discussed in the context of organisations rather than at the individual level. Research has emphasised the importance of EO at the individual level (IEO), as it drives individual entrepreneurial action.

A study conducted by Hu and Zhang (2012), found that there is a positive correlation between the dimensions of EO and new venture performance, and furthermore, the results showed that EO is stronger in new ventures than in comparison to established companies. As most new ventures in comparison to established companies have limited resource capabilities and market impact, they must rely more heavily on strategic decisions, which lead to innovation, and proactiveness, and which require risk taking capabilities in order to maximise the survival and development of the new business ventures. In their study of the relationship between EO and new venture performance, Hu and Zhang (2012) found that there exists a positive correlation between innovation, risk taking and proactiveness and new venture performance (See Figure 1).

Therefore, the inclusion of this construct within the venture creation process as proposed by the conceptual framework in this study indicates the relevance and importance of understanding this construct at the individual level in order to gain a better understanding of

the process of becoming an entrepreneur.

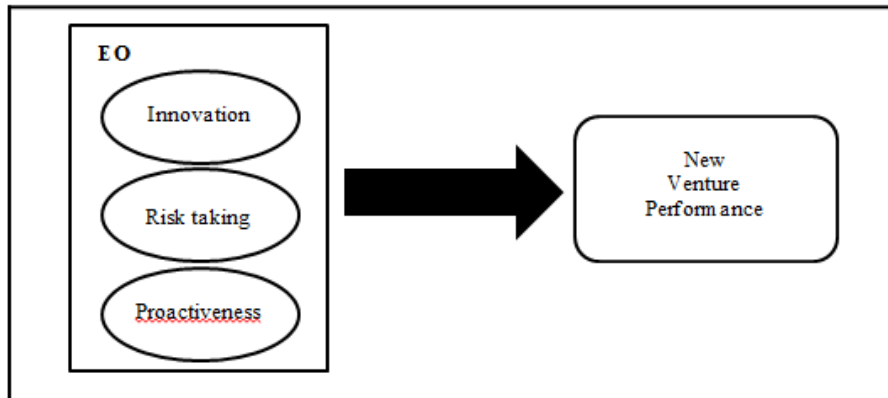
EI and the Venture Creation Process

Psychology literature explains individual intentions as a means for predicting actual behaviour, which is expected to take place (Ajzen 1991). Brice, Jr. and Spencer (2007, p. 53) define intentions as “signals of how intensely individuals are prepared to perform and how much

effort they are prepared to commit to carry out the expected behaviour”.

Entrepreneurial intention (EI) is further explained as a cognitive state, in which an individual decides to create and own a new business venture (Bullough, Renko & Myatt 2014). Therefore, it has been identified that an individual’s intent to start a new business venture,

Figure 1: Impact of EO on New Venture Performance



Source: Adapted from Hu and Zhang (2012, p. 320)

results in the commencement of the venture creation process. An individual, who has an intention to become an entrepreneur, is most likely to seize a recognised opportunity, and therefore the inclusion of this construct within the venture creation process is fundamental in explaining and understanding the development of new business ventures

ESE and the Venture Creation Process

The construct of entrepreneurial self-efficacy (ESE) has been developed

from general self-efficacy (GSE). ESE refers to the individual’s beliefs regarding their capability to successfully implement and perform entrepreneurial activities (Bae et al. 2014). ESE has been found to not only have a significant impact on an individual’s intention, but also on the amount of effort they put in to starting a new venture, their persistence in facing difficulties and obstacles, as well as their achievement in performing entrepreneurial activities (Pihie & Bagheri 2013). Furthermore in a study conducted by Zhao, Seibert and Hills (2005), found that increased levels of

ESE lead to increased levels of EI, which in turn leads to entrepreneurial action.

The foundation of this study on which the conceptual framework has been developed, is based on three main theories which are: theory of self-regulation, theory of planned behaviour (TPB) and human capital theory. These theoretical underpinnings and their relation to venture creation are discussed further in the next sub-sections.

Theory of Self-Regulation

The theory of self-regulation refers to one's ability to constantly direct thoughts and behaviour in order to achieve set goals despite having to face personal and environmental obstacles. This theory consists of two main components. The first component is referred to as promotion focus in which individuals focus on the positive outcomes of achieving a set goal. The second component is referred to as prevention focus in which individuals avoid any potential negative outcomes. The decision to be promotion or prevention focused is discussed as being based on past experiences as well as current situational factors (Bandura 2012).

Furthermore, a study conducted by Pihie and Bagheri (2013) confirms that self-regulation has significant and positive impact on individual's intention to

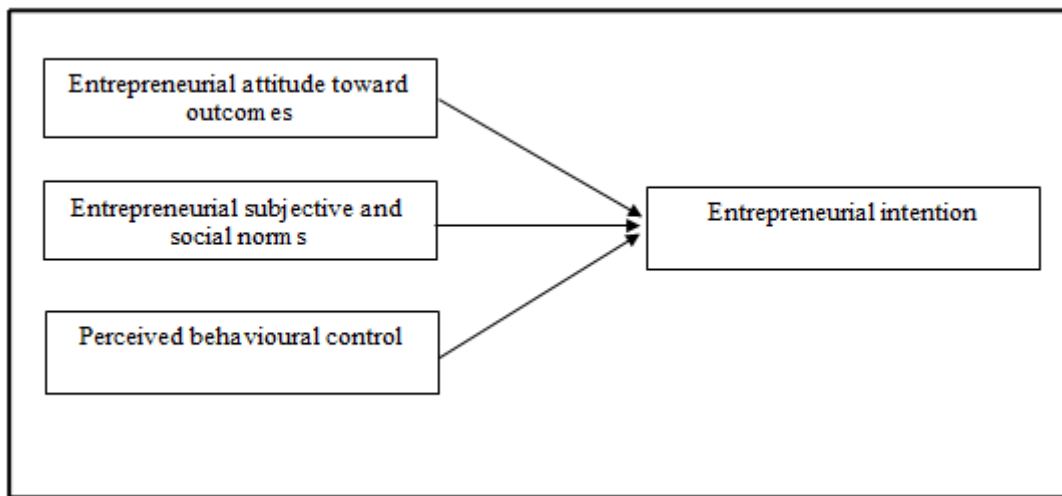
start a new business venture. Self-regulation is also discussed to assist individuals who are uncertain about their decision in whether to choose entrepreneurship as a career, as it allows them to assess their capabilities and guide themselves to complete the required entrepreneurial activities.

Theory of Planned Behaviour

Theory of Planned Behaviour (TPB) assumes that individuals are rational and that their decisions are made based on systematic use of information that is readily available to them (Yang 2013). Ajzen (1991) explains that intentions are the most accurate predictor of individual's behaviour, as their behaviour is a direct result of their intention to carry out that particular behaviour. Furthermore, it has been identified that (1) attitude toward outcomes, (2) subjective and social norms and (3) perceived behavioural control are three major factors, which are significant determinants of entrepreneurial intentions (see Figure 2) (Kautonen, Van Gelderen & Tornikoski 2013; Yang 2013).

As a result, entrepreneurship researchers hold the view that entrepreneurship is a type of planned behaviour, which in turn is based on intention to perform entrepreneurial activities associated with the venture creation process.

Figure 2: Determinants of Entrepreneurial Intention



Source: Adapted from Yang (2013, p. 373)

Human Capital Theory

Human capital is defined as the knowledge and skills that individuals gain as a result of schooling, practical training and other avenues of experience (Bae et al. 2014), and therefore individuals who possess higher levels demonstrate greater performance outcomes (Ployhart & Moliterno 2011). Formal education is one aspect of human capital that may help an individual in building their knowledge base and skills that are specific to entrepreneurship. Martin, McNally and Kay (2013) have identified a statistically significant relationship between entrepreneurship education and human capital outcomes, one of which is entrepreneurial intentions.

A number of studies have identified that human capital is an important factor in entrepreneurship; one such study was conducted by Volery et al. (2013). Specifically a study conducted by Corbett

(2007) demonstrates that an individual's existing knowledge is fundamental in the identification of an opportunity for new business ventures, as it provides a foundation for interaction with uncertain and risky experiences.

Methodology

This study is based on secondary data collected from a wide range of peer reviewed academic journal articles and books available through a variety of sources and databases. A systematic review of the literature rather than a traditional review of the literature has been conducted, through the identification and inclusion of all relevant available research. The systematic literature review conducted in this study, assists in improving the quality of the review process and outcome as well as reducing and limiting bias within this study. Therefore, the systematic review process is conducted in two stages; secondary data

collection and data synthesis, from which the conceptual framework is developed.

Discussion

The venture creation 'process model' was first developed by Stevenson, Roberts and Grousbeck (1985), which categorises entrepreneurial activities into four separate phases which are (1) searching, (2) planning, (3) marshalling and (4) implementing. These phases are discussed in the following subsection.

Phases within the Venture Creation Process Model

The first phase *searching* involves the recognition of a special opportunity and/or the development of a unique idea by the entrepreneur. Moberg et al. (2014) discuss that creativity, which is the ability of individuals to think in new ways, is particularly important during this phase as it assists individuals in the discovery of business opportunities.

The *planning* phase comprises of activities carried out by the entrepreneur such as the evaluation of the idea in order to ensure that it can be developed into a viable business; furthermore, some entrepreneurs may decide to write a formal business plan (McGee et al. 2009). Along with planning ability, Moberg et al. (2014) discuss that entrepreneurs should also develop their financial literacy, which is the ability to comprehend financial reports such as statements and budgets in order to be able to successfully perform entrepreneurial activities. Planning ability and financial literacy

are viewed as interrelated skills, which greatly contribute to the success of entrepreneurs.

The *marshalling* phase involves the entrepreneur to gather (marshal) required resources such as staff, capital and customers in order for the business to come into existence and to be able to sustain itself. The marshalling of resources is viewed as fundamental to entrepreneurship by many researchers, and is argued to be associated with high uncertainty (McGee et al. 2009). Therefore, Moberg et al. (2014) argue that one fundamental skill to develop during this phase is managing ambiguity, which is the ability to cope with uncertainty, in order to succeed at performing entrepreneurial activities.

Implementing is the final phase during which the entrepreneur attempts to grow and sustain the business through strategic planning and management of important business relationships (McGee et al. 2009).

Integrating Entrepreneurial Intention, Individual Entrepreneurial Orientation and Entrepreneurial Self-Efficacy within the Venture Creation Process Model

McGee et al. (2009) identified that the implementing dimension within the venture creation process was made up of two sub-dimensions, which included people aspects and financial aspects of implementation. Therefore, the five ESE dimensions have been identified as: (1) searching, (2) planning, (3) marshalling, (4) implementing-people and (5) implementing-financial. This confirmatory factor analysis model confirms the

multi-dimensional construct of ESE and also provides a more valid, reliable and consistent measure of ESE (McGee et al. 2009).

Kollmann, Christofor and Kuckertz (2007, p. 332) explain that at the start of the entrepreneurial process, entrepreneurs can be distinguished based on “a set of emotions, cognitions and a certain innate pattern of behaviour”. These set of entrepreneurial behaviours are triggered by entrepreneurial intention.

Furthermore, the results of the study conducted by Hui-Chen, Kuen-Hung and Chen-Yi (2014) which examined the entrepreneurial process by integrating PBT and Motivation-Opportunity-Ability theory (MOA), indicated that the effects of opportunity on entrepreneurial intentions were not present. Therefore, supporting the point that an individual who has recognised an opportunity, does not necessarily have entrepreneurial intentions. Entrepreneurial intentions are only developed when an individual decides to take part in entrepreneurial actions such as opportunity exploitation.

Opportunity Seizing Dimension

The new dimension labelled as ‘seizing’, is proposed to be integrated into the multi-dimensional ESE instrument developed by McGee et al. (2009), within the venture creation process framework (see Figure 3). Seizing refers to an individual’s decision to exploit an opportunity for which they have recognised. Opportunity exploitation reflects an entrepreneurial behaviour, for which entrepreneurship literature explains to

have been as a result of a purposeful intention to behave entrepreneurially.

Therefore, entrepreneurial intention has been positioned prior to the seizing dimension, to demonstrate the significance in difference between opportunity identification and opportunity exploitation. Individuals who have identified an opportunity may not necessarily have intentions to become entrepreneurs and therefore may not necessarily pursue the opportunity; however, individuals who have decided to exploit an opportunity have intentions to become entrepreneurs that have led them to take part in entrepreneurial actions. Therefore, the integration of the point of development in entrepreneurial intention aims to create a more thorough evaluation of the entrepreneurial process and the venture creation process, by examining individual’s intentions, which lead them to performing entrepreneurial activities.

It is important to recognise that some business opportunities are stumbled upon rather than discovered as a direct result of searching for them, usually by individuals who may not have yet consciously planned an entrepreneurial career. However, Thompson (2009) argues that even then, the exploitation of such opportunities leading to venture creation can only occur if there is a purposeful intention to act entrepreneurially. This view was initially discussed by Krueger (2007, p. 124) explaining that “behind entrepreneurial action are entrepreneurial intentions”, and furthermore, not all individuals will develop such intentions, either prior or post the discovery of a new business opportunity. Therefore, the intentionality of individu-

als wanting to become entrepreneurs is discussed as being a fundamental aspect in further understanding the development of new business ventures.

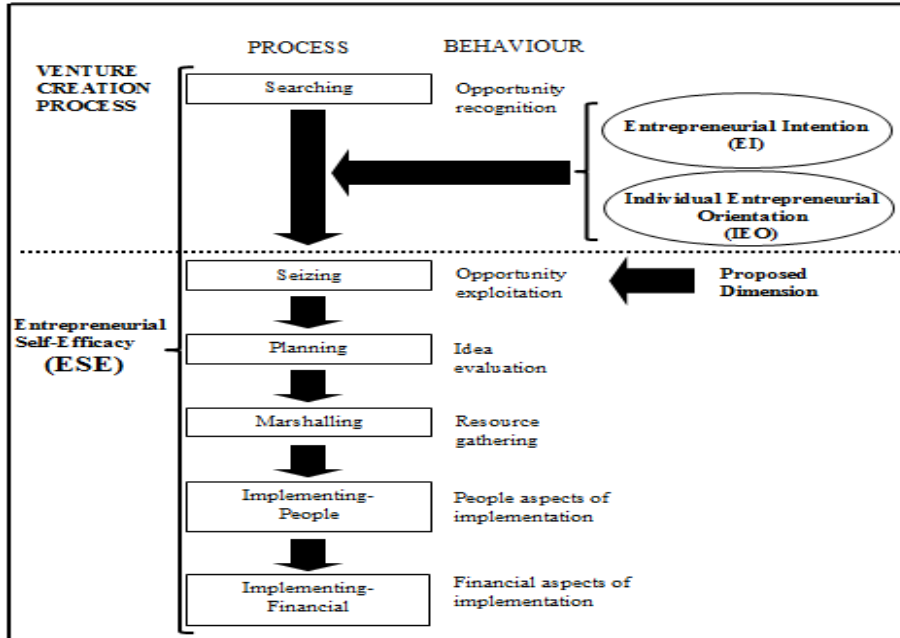
Furthermore, individuals who possess entrepreneurial intent may not ever be able to set up a new venture due to being affected by uncontrollable factors such as personal circumstances and the external environment (Thompson 2009). An opposing view from Eckhardt and Shane (2003) is that at times opportunity may result in intentions to create a new venture; therefore, if an individual recognises an opportunity, then one possible reaction would be to seize the opportunity. It is therefore important to realise that there is a significant difference between recognising an opportunity and deciding to seize an opportunity. The latter one requires the presence of entrepreneurial intentions in order to take part in entrepreneurial actions.

Covin and Lumpkin (2011) emphasise that behaviour is a fundamental element within the process of becoming an entrepreneur, and that EO is made up of sustained behavioural patterns whose presence allows for the recognition of entrepreneurship as a defining attribute. The integration of the point of development in individual entrepreneurial orientation which is also positioned prior to an individual seizing an opportunity, aims to highlight that this construct drives entrepreneurial action, which is

characterised by the five key entrepreneurial behaviour elements. Individuals who are only searching for opportunities may not yet have developed their individual entrepreneurial orientation, as they have not yet seized an opportunity, which indicates that none of the key behaviours (innovativeness, proactiveness, competitiveness, autonomy and willingness to take risks) associated with EO have yet taken place.

Hui-Chen, Kuen-Hung and Chen-Yi (2014) discuss that being able to understand how an individual becomes an entrepreneur plays a fundamental part in encouraging entrepreneurial activity. Therefore, the proposed conceptual framework identifies and recognises the importance of evaluating and integrating both entrepreneurial intention and individual entrepreneurial orientation which drive entrepreneurial actions (primary action being opportunity exploitation) in order to be able to have a greater understanding and insight of the process of becoming an entrepreneur. The proposed conceptual framework also aims to differentiate opportunity identification from opportunity exploitation, as the latter one reflects entrepreneurial behaviour. Thus, opportunity identification can be realised by non-entrepreneurs, and so this dimension on its own (without including opportunity exploitation) does not provide a sufficient overview of the venture creation process.

Figure 3: Conceptual Framework of Integrating Entrepreneurial Intention, Individual Entrepreneurial Orientation and Entrepreneurial Self-Efficacy within the Venture Creation Process Model



Source: Adapted from McGee et al. (2009, p. 981)

Conclusion

EI, IEO and ESE constructs have been developed in entrepreneurship literature in order to explain entrepreneurial behaviour, which leads to taking entrepreneurial actions. Therefore, the integration of these three constructs within the venture creation process can provide an in-depth understanding of why some individuals decide an entrepreneurial career path.

Within the venture creation process, it is also important to distinguish opportunity identification from opportunity exploitation as the latter one is identified to represent an entrepreneurial behaviour since the individual has clear intention to act entrepreneurially. In contrast, oppor-

tunity identification can be experienced by individuals who have no intention of becoming entrepreneurs, and therefore some may choose not to exploit the opportunity and let it pass by.

The proposed conceptual framework requires further testing and validation using statistical techniques, to examine the effects of entrepreneurial intention and individual entrepreneurial orientation constructs in gaining further insight in to the process of becoming an entrepreneur. The additional dimension of 'seizing' must also be further tested to validate that opportunity exploitation must be differentiated from opportunity identification in order to improve the understanding of entrepreneurial behaviour within the venture creation process.

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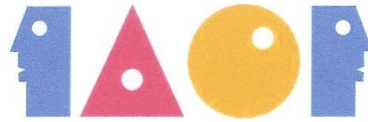
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THE RELATIONSHIP BETWEEN INTERNAL MARKETING,
EMPLOYEE WELL-BEING, AND CUSTOMER SERVICE QUALITY -
THE SERVICE INDUSTRY IN TAIWAN

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Abstract

We theorized and tested the conditions under which internal marketing is positively related to employee well-being and service quality. The mediating role of employee well-being in the relationship between internal marketing and service quality was also examined. Forty-five employees from a multinational service company, herein known as “M”, provided information about internal marketing and employee well-being. Further, 459 customers from this company provided information on service quality. Hierarchical regression results of analyses were consistent with a partial mediation model in which internal marketing predicts employee well-being, which in turn predicts service quality. Limitations of the study are discussed, together with suggestions for future research.

Key Words: Internal Marketing, Employee Well-being, Service Quality

Introduction

Service quality is crucial for organization performance and survival in rapidly changing and highly competitive environments. Furthermore, organizations need to improve their performance permanently in order to keep their competitive excellence. Certainly, the quality of an organization's human resources is key to maintaining and attracting new customers by improving organizational performance. We claim that improving the quality of human resources' performance depends on satisfying them as internal customers of the organization (Abzari & Ghujali, 2011).

According to the Directorate-General of Budget, Accounting and Statistics, Executive Yuan [DGBAS] (2012), the percentage of people engaging in the service industry is 58.56 %. Undoubtedly, in recent years, service has become a leading industry in Taiwan. In the service industry, frontline employees play a critical role in an organization's success, mainly because they are in direct contact with external customers. Accordingly, internal marketing (IM) has been emerging as an important issue. The concept of IM is a relatively new approach that has been investigated by researchers and adopted by companies in order to enhance the quality of their products and services and to achieve better performance (El Samen & Alshurideh, 2012). In internal marketing, employees play the role of internal customers in their organizations, which may enhance organizational commitment, organizational loyalty, and job satisfaction.

The objective of internal marketing is

to create an internal environment in which customer consciousness proliferates among personnel. The satisfaction of internal customers is important to the success of a service firm (Gremler, Bitner, & Evans, 1994). One of the important consequences of internal marketing is to increase the organizational commitment of employees (Tansuhaj, Randall, & McCullough, 1991). This in turn should result in increased job satisfaction, increased job performance, and lower turnover of staff (Jenkins & Thomlinson, 1992). The increasing recognition of the importance of the employees' role in the service industry has led service organizations to adopt internal marketing, thus treating their employees as internal customers (Mishra, 2010). Based on Fisk, Brown, and Bitner (1993), there are two main issues in internal marketing. First, the idea of the employee as the internal customer and second, the organizational need to satisfy the internal customer so that s/he is best prepared to serve the external customer.

In addition to internal marketing, employee well-being is another factor which cannot be neglected. There has been increasing research interest in employee well-being in western societies, but also in the Chinese context (Liu, Siu, & Shi, 2010). Employee well-being refers to the physical, mental and emotional well-being of employees and assumes that a positive evaluation of one's work experience is conducive to one's well-being (Cartwright & Cooper, 2009; Currie, 2003). Employee well-being remains fundamental to the study of work and a primary consideration for how organizations can achieve competitive advantage and sustainable and ethical work

practices (Cartwright & Holmes, 2006; Wright & Cropanzano, 2007). Notable developments linking well-being with organizational factors are positive organizational behaviour, which aims to foster positive phenomena such as hope and resilience among employees (e.g., Luthans, 2002; Luthans & Youssef, 2004, 2007). Happy workers are productive workers. Happy employees are generally healthier, perform better at work, and have better relationships, including work relationships (Lyubomirsky, King, & Diener, 2005; Page & Vella-Brodrick, 2009). Wright and Cropanzano (1997) argued that “happiness” be assessed through an employees’ sense of well-being, as measured by Berkman’s (1971) psychological well-being scale. Results supported their hypothesis. Well-being was correlated with performance. Wright and Staw (1999) have also found significant correlations between well-being and performance.

From the aforementioned, the need to examine the relationship among internal marketing, employee well-being, and service quality becomes evident. The present research investigates a multinational service company, “M”. The purpose of this paper is to examine the relationship among internal marketing, employee well-being, and service quality. In this article, we argue that internal marketing influences service quality by fostering a sense of employee well-being. Through satisfaction with internal marketing, employee well-being is enhanced and this in turn can generate higher levels of service quality.

Literature Review

Internal Marketing

Internal marketing refers to the employees who work in the organization, and when the internal market is satisfied, the whole organization will be satisfied. (Odeh & Alghadeer, 2014). The notion of the Internal Marketing appeared in the 1970’s. Berry et al. (1976; as cited in Mishra, 2010) were probably the first ones who proposed internal marketing as a way out of the problem of delivering consistently high quality of service. They recognized that because people were the most common form of service delivery, people’s actions probably had a major impact on customer acquisition, retention and migration, and thus on the definitive success of the firm. Indeed, in the heart of internal marketing, there is this concept that employees form the internal market of the organization. Therefore, we can say that the organization can satisfy its external customers by satisfying its internal customers (Gounaris, Vassilikopoulou, & Chatzipanagiotou, 2010). IM is particularly geared towards perceiving the employees of an organization as internal customers thereby contributing meaningfully to their welfare (Yusuf, Sukati, & Chin, 2014). In the marketing literature, internal marketing considers employees as customer-focused (Kale, 2007). Customer-focused internal marketing is based on the premise of satisfying all organizational employees.

Dunmore (2002) posited that a strong internal marketing strategy can be critical to achieving and sustaining competitive advantage, while being a key driver of change and enhanced performance. The successful implementation of inter-

nal marketing can lead to improved employee retention, stronger individual performance, better teamwork, and more effective overall communications (Drake, Gulman, & Roberts, 2005). Empirical results demonstrate that a significant relationship exists between internal marketing and consumer satisfaction and between internal marketing and service quality (Bansal, Mendelson, & Sharma, 2001; Ewing & Caruana, 1999). Internal marketing results in increased job satisfaction and job performance. Some believe job satisfaction is one of the determinants of overall life satisfaction (Rode, 2004). Furthermore, according to Opoku, Atuobi-Yiadom, Chong, and Abratt (2009) internal marketing is strongly related to the perceptions of internal service quality. In the reviewed literature, researchers argued that providing better service to the internal customers (Internal Service Quality) will lead to a higher quality service provided to external customers (External Service Quality) (Bouranta et al., 2005 as cited in ELSamen & Alshurideh, 2012).

Drake (2005) concluded that the company should make its employees love its brand, which will convince the customer to love it as well. Furthermore, the external marketing strategies will be improved by making internal customers and service providers feel satisfied and motivated (Tsai & Tang, 2008). Berry (1984) described IM as “viewing employees as internal customers, viewing jobs as internal products, and then endeavoring to offer internal products that satisfy the needs and wants of these internal customers while addressing the objectives of the organization”. Also, IM has been seen as a “service firm’s” ef-

fort help all members of the organization understand the corporate mission and objectives, with the training, motivation, and evaluation to achieve the desired objectives. From the above statements, the following hypotheses are formed:

Hypothesis 1. Internal marketing is positively related to service quality.

Hypothesis 2. Internal marketing is positively related to employee well-being.

Employee Well-being

The World Health Organization [WHO] (1948) defines well-being as a three-dimensional concept, composed of physical, psychological, and social aspects. Physical well-being is characterised by the absence of negative symptoms like headaches, muscular soreness, fatigue, eyesight problems, cardiovascular diseases, etc. (Danna & Griffin, 1999) as well as the presence of positive feelings such as energy and strength (Macik-Frey, Quick, & Nelson, 2007). Psychological well-being has an affective nature and refers to people’s self-described happiness, including positive states such as enthusiasm or cheerfulness, as well as negative states like depression, distress or anxiety (Warr, 1987). While physical and psychological well-being happen at the individual level, social well-being focuses on social integration (feeling part of the community), social acceptance (trusting other people) and social coherence (understanding social processes) (Keyes, 1998).

Well-being depends greatly on the

balance between the physical, emotional, intellectual and spiritual aspects of a human being (Seaward, 1994). Guest and Conway (2004) define employee well-being in terms of six key areas: a manageable workload; some personal control over the job; support from colleagues and supervisors; positive relationships at work; a reasonably clear role and a sense of control or involvement in changes at the workplace.

Ensuring an employee is not overburdened and is in control of their work is critical to employee well-being and to driving employee performance and organizational productivity. Further, as mentioned previously, internal marketing results in increased job satisfaction and job performance. A study by Wright, Cropanzano, and Bonett (2007) showed that job satisfaction did predict performance. Job satisfaction only predicted the performance of employees with high levels of well-being (measured as dispositional affect). That is, employee well-being mediates the relationship between job satisfaction and performance. As a consequence, we also postulate that employee well-being acts as a mediating role of the relationship between internal marketing and service quality. Combining all of the above, the following hypotheses are formed:

Hypothesis 3. Employee well-being is positively related to service quality.

Hypothesis 4. Employee well-being mediates the relationship between internal marketing and service quality.

Service Quality

In the “age of the customer” delivering quality service is considered an essential strategy for success and survival in today’s competitive environment (Dawkins & Reichheld, 1990; Parasuraman, Zeithaml, & Berry, 1985; Reichheld & Sasser, 1990; Zeithaml, Parasuraman, & Berry, 1990). Today, service quality (SQ) has become a principal competitive weapon in the service industry war as products can be very easily duplicated, whereas service levels cannot. Customer service quality is a crucial source of distinctive competence and often considered a key success factor in sustaining competitive advantage in service industries (Palmer, 2001). Therefore, attention to delivery of a higher level of service quality is an important strategy by which service organizations can position themselves more effectively in the marketplace.

SQ also relates to retention and satisfaction of customers, thus reducing turnover rates. It has emerged as a strategic tool to survive and thrive in the market. In the competitive market, every customer demands better services. Improving service quality will have a beneficial effect on a business’s financial and operational performance. Furthermore, the interaction between service provider and customer is the primary core of service businesses. Service involves the intimate contact between service provider and service recipient, and such contact opportunity shall definitely and greatly influence the customer’s evaluation process and focal point (Chang, Chen, & Lan, 2013).

According to the expectancy-disconfirmation paradigm that forms the basis of the SERVQUAL model, service quality is defined as the “gap” between expectation and perception (Parasuraman,

Zeithaml, & Berry, 1988). Parasuraman et al. (1988) have observed that their instrument (SERVQUAL) can be used to evaluate the relative importance of the dimensions of quality in influencing customers' overall perceptions of a service. SERVQUAL scale is comprised of a pair of twenty-two scale items, where each set taps customer expectations and perceptions respectively. It constitutes an important landmark in the service quality literature and has been applied extensively in different service settings (Brady & Cronin, 2001). The SERVQUAL includes five dimensions of service that are relevant for measuring service quality. The dimensions are tangibles (physical facilities, equipment and appearance of personnel), reliability (ability to perform the promised service dependably and accurately), responsiveness (willingness to help customers and provide prompt service), assurance (knowledge and courtesy of employees and their ability to inspire trust and confidence), and empathy (caring, individualized attention the firm provides its customers).

Over time, variants of the scale have been proposed. The "SERVPERF" scale is one such scale that was put forward by Cronin and Taylor (1992) in the early nineties. They suggested expectations were difficult to measure accurately and performance of the service was critical and more meaningful. They suggested dropping the "expectation" part of the scale and proposed instead another scale – referred to as SERVPERF scale, containing only the "perceived performance" element of the SERVQUAL scale.

From the management perspective,

identifying those qualities and behaviors that customers value and relate to good service quality has come to be recognized as a strategic tool for attaining operational efficiency and improved business performance (Blood, 1974; Goodman, 1979; Berry & Parasuraman, 1997). This is true for both the goods and the services sectors. However, the problem with management of service quality in service firms is that quality is not easily identifiable and measurable due to inherent characteristics of services which make them so distinctly different from goods. Jain and Gupta (2004) noted that different scales for measuring service quality have been advanced. An ideal service quality scale is one that is not only psychometrically sound (measuring knowledge, abilities, attitudes, and personality traits), but is also analytically robust to provide insights to managers for corrective actions in the event of quality shortfalls. From the management perspective, Goodman (1979) suggested identifying the qualities and behaviors customers link to good service. Then, appropriate training can be developed to ensure the service is delivered consistently.

Methods

Conceptual Framework of Study

In line with the literature review and the purpose of the study as described at the start of the paper and in the hypotheses, the conceptual framework of study was configured as illustrated in Figure 1. (See at the end of this article)

Participants and Procedures

This study follows a quantitative, cross-sectional research approach. Data were collected from both employees and customers of a multinational service company, M, located in northern, central, and southern parts of Taiwan. All respondents were assigned pre-coded questionnaires to facilitate the matching of the employee-customer surveys. The confidentiality and anonymity of the answers were guaranteed in both samples. Researchers were present to help employees and customers in case of difficulties filling in the questionnaires.

The questionnaires used in this study are comprised of two parts: part 1 contains questions investigating internal marketing, well-being, and service quality. Part 2 contains questions about personal profiles of the respondents. The questionnaires also described the aims and objectives of the study, data collection, potential contribution, potential use of the research, and how confidentiality would be maintained and privacy protected. A total of 50 employee questionnaires and 500 customer questionnaires were administered in July, 2012.

In the study, employees and customers were divided into several different groups. Each group consisted of one employee and ten customers s/he serves. In total, 20 employee questionnaires were distributed in northern, 15 in central, and 15 in southern Taiwan; 200 customer questionnaires were distributed in northern, 150 in central, and 150 southern Taiwan. Employees evaluated their own levels of internal marketing and well-being, and customers assessed the company's service quality.

Measures

Internal Marketing.

To assess employee's internal marketing, we used the Foreman and Money (1995) scale. In total, there were 15 items in the scale. The employees were asked to assess their belief with regard to their own levels of internal marketing (1 = "strongly disagree"; 7 = "strongly agree"). Sample items include "In our organization we go beyond training and educate employees as well" and "We use the data we gather from employees to improve their jobs, and to develop the strategy of the organization."

Employee Well-being.

To assess employee's well-being, we used the Warr (1990) scale. There were a total of 20 items in the scale. The employees were asked to assess their belief with regard to their own levels of well-being (1 = "strongly disagree"; 7 = "strongly agree"). Sample items include "I can do my job well" and "I am not very interested in my job."

Service Quality.

We measured the customer service quality using the SERVQUAL scale (Parasuraman et al., 1988). In total, 22 items referring to the company's service quality were generated. Response possibilities were presented in a Likert-type format ranging from 1 (strongly disagree) to 7 (strongly agree). Examples for the items are: "Their physical facilities should be visually appealing" and "Their employees should be well dressed and appear neat."

Control Variables

There are numerous factors influencing service quality. It is clear that organizational commitment and job satisfaction (JS) are associated variables that affect organizational outcomes such as turnover intentions (Shore & Martin, 1989), turnover (Brown, 1993; Mathieu & Zajac, 1990), absenteeism (Sagie, 1998), and work performance (Shore & Martin, 1989). The investigation by Li (2014) found organizational commitment to also be a key influence on organizational performance. Additionally, Boshoff and Tait (1996) contend that JS is an important factor in determining service quality. Thus, we included job satisfaction and organizational commitment as the two control variables in the statistical analyses.

Results

Demographic Sample Description

Out of the 50 employees and 500 customers invited to participate in the study, a total of 45 employees and 459 customers completed all sections of the survey. Incomplete questionnaires were eliminated from the study, resulting in an overall response rate of 91.8 percent. In the employee sample, a total of 61.4 percent of respondents were male and 38.6 percent were female. The age of participants from 29 years and under (45.5 percent), to 30-39 years (40.9 percent), and 40-49 years (13.6 percent). As for marital status, 30 people (68.2 percent) were unmarried, and 14 (31.8 percent) married. Organizational tenure ranged from less than one year (24.4 percent), to one to five years (60 percent), six to ten

years (11.1 percent), and ten to fifteen years (4.4 percent).

Of the customer sample, a total of 49 percent of respondents were male and 51 percent were female. The age of participants ranged from 20 years and under (14.4 percent), to 21-30 years (33.3 percent), 31-40 years (34.4 percent), 41-50 years (15.3 percent), and 51-60 years (2.6 percent). As for marital status, 238 people (51.9 percent) were unmarried, and 221 (48.1 percent) married. As to academic background, 160 people (34.9 percent) had finished high school or lower, 108 (23.5 percent) had finished junior college, 154 (33.6 percent) had a bachelor's degree, and 37 (8.1 percent) had a Master's degree or higher. Finally, another demographic variable for this study was the income/salary range. The salary measurement was divided into 5 different categories:

Above NT\$ 60,001, NT\$ 45,001-60,000, NT\$ 30,001-45,000, NT\$ 15,001-30,000, and NT\$ 15,000 or less than NT\$ 15,000.

The reason for using the income range as a demographic variable for this study was to check the relation or impact of income on the SQ of the faculty members. In this study, most of the respondents i.e. 37.5 % have a salary of NT\$ 15,001-30,000 per month and 24.4 % have the salary range NT\$ 30,001-45,000, which shows that this sector contains salary ranges from NT\$ 15,001 to NT\$ 45,000.

Descriptive Statistics

Descriptive statistics, correlation coef-

ficients and Cronbach's α for all the study variables are highlighted in Table 1. From Table 1, Pearson's correlation coefficient revealed that there is a significant correlation between constructs. This might give preliminary evidence to support the hypotheses of the study.

The relation between internal marketing and service quality was statistically significant ($\gamma = 0.81, p < 0.01$), providing some support for the notion that internal marketing results in service quality. Providing initial support for Hypothesis 2 was a positive relation between internal marketing and employee well-being ($\gamma = 0.45, p < 0.01$). In addition, providing support for Hypothesis 3 was a positive relation between employee well-being and service quality ($\gamma = 0.36, p < 0.05$). Finally, the relation between job satisfaction and service quality was statistically significant ($\gamma = 0.32, p < 0.05$), and the relation between organizational commitment and service quality was also statistically significant ($\gamma = 0.35, p < 0.05$).

Questionnaire reliability analysis was analyzed following responses received. According to reliability analysis results, Cronbach's α value is 0.77 for the internal marketing scale, 0.82 for the employee well-being scale, 0.65 for the job satisfaction scale, 0.67 for the organizational commitment scale, and 0.71 for the service quality scale, showing questionnaire reliability to be significant and effective (reliability analysis results shown in Table 1 at the end of this article).

Factor Analysis

KMO and Bartlett's test was used to measure the appropriate usage of factor analysis. According to Kaiser's research, KMO > 0.9 is marvelous to do factor analysis, KMO > 0.8 is meritorious, KMO > 0.7 is middling, KMO > 0.6 is mediocre, KMO > 0.5 is miserable, and KMO < 0.5 is unacceptable. Based on the results of KMO and Bartlett's test, this questionnaire is suitable to use factor analysis.

First, the KMO value of the internal marketing scale is 0.71. Bartlett's test of sphericity chi-square statistics is 501.73. That shows the 12 items are correlated and hence as inferred in KMO, factor analysis is appropriate for the given data set. It shows that the factor extracted accounted for 60.67 % of the variance.

Second, the KMO value of the employee well-being scale is 0.72. The chi-square value in this Bartlett spherical test is significant (446.53).

That shows the 20 items are correlated and thus as inferred in KMO, factor analysis is appropriate for the given data set. It shows that the factor extracted accounted for 68.10 % of the variance. Third, the KMO value of the job satisfaction scale equals 0.58 and Bartlett's test of sphericity chi-square statistics is 21.62. That shows the 3 items are correlated; therefore, it is suitable for factor analysis. It shows that the factor extracted accounted for 59.32 % of the variance.

Fourth, the KMO value of the organizational commitment scale equals 0.53. Bartlett's test of sphericity chi-square statistics is significant (409.58).

That shows the 14 items are correlated; consequently, it is suitable for factor analysis. It shows that the factor extracted accounted for 82.11 % of the variance. Finally, the KMO value of the service quality scale is 0.63. Bartlett's test of sphericity chi-square statistics is 131.60. That shows the 10 items are correlated and hence as inferred in KMO, factor analysis is appropriate for the given data set. It shows that the factor extracted accounted for 69.18 % of the variance.

Hypotheses Testing

Hierarchical regression results of analyses used to test the hypotheses are presented in Table 2. Model 2 of Table 2 was employed to test Hypothesis 1, which suggests that internal marketing is positively related to service quality. The results show that internal marketing has a positive effect on service quality ($\beta = 0.74$; $p < 0.001$) ($F = 46.49$; $p < 0.05$). Thus, Hypothesis 1 was supported.

We used Model 3 of Table 2 to test Hypothesis 2. The findings indicate that internal marketing is positively linked to employee well-being ($\beta = 0.40$; $p < 0.001$) ($F = 4.25$; $p < 0.05$), hence supporting Hypothesis 2. Hypothesis 3 suggests that employee well-being has a positive effect on service quality, and the results demonstrate this: ($\beta = 0.28$; $p < 0.001$) ($F = 3.95$; $p < 0.05$).

Model 5 of Table 2 was employed to test Hypothesis 4, which identified employee well-being as a mediating variable between internal marketing and service quality. As expected, there was a significant interaction ($F = 18.90$; $p <$

0.001). Therefore, Hypothesis 4 was supported. That is, employee well-being partially mediates the relationship between internal marketing and service quality. See Table 2. at the end of this article.

Conclusion

This study was conducted with the aim to see the relationship among internal marketing, employee well-being, and service quality. The findings of this study provide general support for the proposed framework. As predicted, the direct relationship between internal marketing and service quality in Hypothesis 1 was supported.

First, the findings demonstrate that there is a positive relationship between internal marketing and service quality. The results of this hypothesis are in line with previous studies which demonstrate that a significant relationship exists between internal marketing and consumer satisfaction and between internal marketing and service quality (Bansal et al., 2001; Ewing & Caruana, 1999).

Second, this study identified that internal marketing is positively related to employee well-being (as hypothesized in Hypothesis 2).

Third, the findings of Hypothesis 3 indicate that employee well-being is positively linked to service quality.

Finally, the results of Hypothesis 4 lend support to a partial mediation of employee well-being between internal marketing and service quality. These results address Wright et al.'s (2007) conceptual

claims that employee well-being mediates the relationship between job satisfaction and performance. In summary, employee well-being has a “partially” mediating effect on the relationship between internal marketing and service quality. In this regard, we extend previous research findings on employee well-being to explain the indirect portion of the influence of internal marketing on service quality.

Limitations and Suggestions for Future Research

When the current results are interpreted, several limitations of this study should be considered. The most limiting factor in this study was probably the cross-sectional design in data collection. Gathering data in this way does not allow for causal inferences to be drawn. The cross-sectional study approach compared with the longitudinal approach does not allow the examination of data collection with a higher degree of confidence (Ghadi, Fernando, & Caputi, 2013). Hence, it would be interesting if future research reproduced findings of the study using longitudinal analysis in order to draw more consistent and accurate explanations of the causal influence of the constructs, and to see whether this

hypothesized model would change over time.

Another limitation was that because this study used self-report surveys from different employees and customers, there is a chance that information provided was biased by answers that were provided. Therefore, we recommend future studies to test the hypothesized conceptual model by using different data collection methods. By doing so, we can reduce the probability of bias, where reliability can be attributed to the results of the hypothesized model.

In addition, we recommend future studies to improve our proposed conceptual framework by including additional mediators or moderators that might provide more rigour to the model. The inclusion of additional variables should help build a more comprehensive model.

Finally, convenience sampling is adopted as the sampling method in this study. Further, the study only investigates a single multinational service company in Taiwan. As a result of the sampling procedure and the geographic restriction of the study population, there are possible limitations to the generalizability of the findings.

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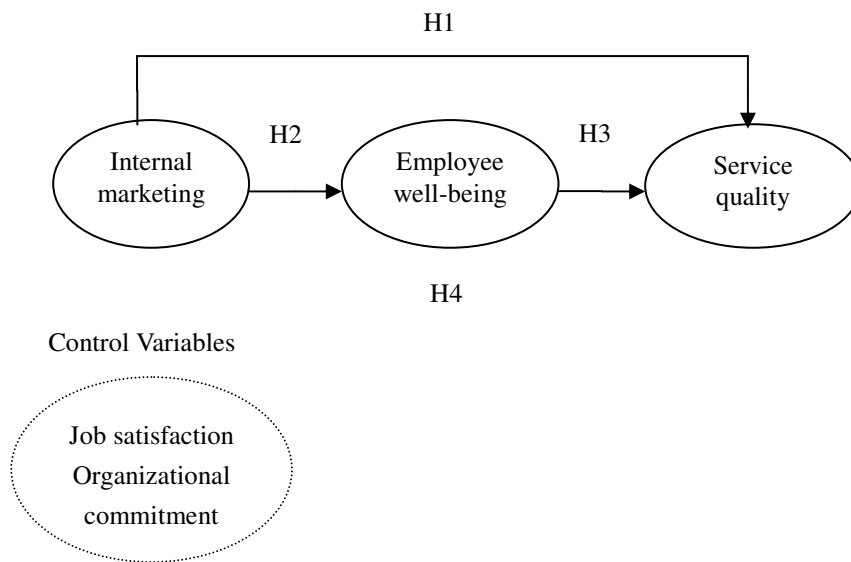


Figure 1. Conceptual Framework

Table 1. Descriptive Statistics

	Alpha	Mean	SD	1	2	3	4	5
Internal Marketing	.77	4.30	.85	1				
Employee Well-being	.82	4.81	.58	.45**	1			
Job Satisfaction	.65	4.94	.27	.43**	.12*	1		
Organizational Commitment	.67	4.58	.77	.51**	.36*	.42*	1	
Service Quality	.71	5.55	.40	.81**	.36*	.32*	.35*	1

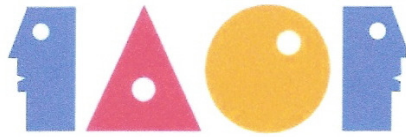
Note. * $p < .05$. ** $p < .01$.

Table 2. Results of Hierarchical Regression Analyses

		Model 1 CV → DV Service Quality	Model 2 CV+IV → DV Service Quality	Model 3 CV+IV → INV Employee Well- being	Model 4 CV+INV → DV Service Quality	Model 5 CV+IV+INV → DV Service Quality
	Job Satisfaction	.21*	.15*	.15*	.23*	.21*
CV	Organizational Commitment	.29*	.21**	.21**	.15*	.09**
IV	Internal Market- ing		.74***	.40***		.65*
INV	Employee Well- being				.28***	.32*
	R2	.18	.56	.19	.17	.66
	Δ R2		.38	.01		.10
	F value	4.49*	46.49*	4.25*	3.95*	18.90***

Note. CV = control variable; DV = dependent variable; IV = independent variable;
INV = intervening variable.

* p < .05. ** p < .01. *** p < .001.



IMPROVING SMALL BUSINESSES: CASE STUDY OF A SMALL SPECIALTY SHOP

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Abstract

This article studies typical issues small businesses encounter, focusing this study on a small specialty shop in Baltimore, Maryland. Specialty shops are classified by their narrow marketing focus; these types of businesses include clothes, toys, jewelry, and others. They can also focus on a particular type of a consumer, such as children, or people who are “big and tall.” This study identifies typical problems these types of organizations face, and suggests new strategies to address and grow such businesses.

Key Words: Specialty Shop, Small Businesses, Case Study, W. Edwards Deming, Elliott Jaques, Organizational Study

Introduction

All organizations, from small local shops with a handful of people to international conglomerates with thou-

sands of employees have problems and issues that arise and impact organizational operations. Some are solved and some are not. How organizations diagnose and address these issues can

largely determine an organization's long-term success. For small specialty shops this is especially crucial because the role boundaries between managers and subordinates can be significantly blurred. This can be true for fledgling upstart shops or mature long-running stores. While specialty shops can survive and go on, they can be plagued by a number of problems that prevent them from achieving greater success.

The problems and issues that most often plague small businesses was assessed through the study of a small specialty store in Baltimore, MD, USA. This store is a prominent example of local specialty businesses and has been active for years. The study was conducted through communication with all members of the shop staff. This was conducted with both thorough discussion and surveys. Observation and in-shop experience was also used to achieve an accurate evaluation of the store, its issues, and how they apply to other businesses around the country.

Issues

One of the largest issues is a lack of formal protocols and structure throughout all facets of the organization. These stores can also suffer from significant micromanagement by the owner-manager, which, according to the study, causes resentment and inefficiency.

Inconsistent Decision-Making

Organizations must gradually develop proper structure and protocols

overtime, and when they reach maturity should already have these set in place. When small businesses have a distinct lack of organization, it can prohibit employees from making the most optimal decisions in any particular situation. This creates the possibility of substantial interpretation and inconsistent decision-making. Decisions must often be made "on the fly" with little solid precedent to draw upon. The study found that this issue can hold specialty shops back from achieving more as the uncertainty and inconsistent decision-making periodically causes problems.

Micromanaging

At the same time, specialty shops can be inhibited by an owner's micromanaging style of leadership. This is often characterized by owners involving themselves in every detail of their employees' work. The study finds this creates a stifling atmosphere and feelings of discontent among employees who believe that the manager does not trust them to do good work. Other aspects of micromanagement are check-ins by management when out of the shop completing errands; this includes reiterating or giving additional directives. Micromanagement is detrimental to organizational success partly due to the negative environment it fosters. Autonomy and trust are important to employees, especially in a small shop where responsibilities are increased on each individual employee as the shop competes with larger businesses. In this regard, customer service and an appealing storefront are competitive advantages.

Business Impacts

The issues of micromanagement and lack of formal structure prohibit the potential growth and expansion of specialty shops. When plagued with these issues specialty stores can become trapped in perpetual quiescence, unable to move forward. This was made apparent within the study as the store, though long-running, has remained stagnant and unchanging; stuck in a dormant state with little-to-no growth or advancement. Additionally, management consultant W. Edwards Deming identified seven diseases that often afflict organizations (1988).

These are lack of constancy of purpose, emphasis on short-term profits, evaluation of performance, mobility of management, utilizing only visible figures when managing, excessive medical costs and excessive costs of liability. These diseases combine with other issues and contribute to a store's stagnation. This paper addresses the diseases of lack of constancy of purpose, emphasis on short-term profits, and using only visible figures through the study of the Baltimore shop.

Methodology

Management thinker Elliott Jaques developed a General Theory of Managerial Hierarchy (2002). Organizations can be "broken down" into eight levels that are defined by the time spans of tasks performed (Jaques, 1996, 1986, 1996, 2002), (Kleiner, 2001), (Ivanov, 2011, 2012, 2013, 2014, 2015), (Clement, 2008, 2013, 2015). As the levels progress from one

to eight, the typical tasks at each strata increase in the amount of completion time. Ideally in organizations supervisors should operate at least one strata above a direct subordinate (Jaques, 1996), (Ivanov, 2011, 2012, 2013, 2014, 2015). *Time spanning* an organization is a tool that can be used to diagnose and prognosticate an organization suffering from issues (Ivanov, 2015). This is done by studying the tasks and the individuals performing the tasks according to their respective timelines on the strata chart:





II		Owner	1 year
		Assistant Manager	4- 6 months
I		Mechanics (Repair type specialty stores)	Generally one week to a month
		Sales Associates	Day - Day

Table 1. Level Two, Baltimore Shop.

Findings

Small businesses such as "mom and pop" shops and specialty stores are usually level two operations. This includes the shop examined within the study.

Most sales associates in these stores operate at level one, consisting mostly of day-to-day tasks. Sales associates only deal with tasks on days in which they work, such as wringing up customers and providing customer service. In specialty stores that require

mechanics such as bike shops and watch/jewelry repair stores, the mechanics are also typically level one employees, and may typically deal with tasks that go beyond day-to-day. These tasks typically last anywhere from a week to two or three months, rarely stretching beyond that time horizon.

At level two would be the Assistant Manager (AM). Typical duties, in addition to normal sales tasks, take between four to six months. They include tasks such as ordering new accessories and stock as well as office supplies and planning for certain events and holidays.

Finally, the owner operates at level two as they deal with tasks that last up to a year. This includes expenses and revenues within one year.

Ideally, specialty shops should operate at a level three. The study has found that stores that only operate at level two are limited in their planning and insight of the future, however, many have the potential to reach level three with increased planning and formal structure. Level three is needed to have valuable and in-depth knowledge and insight of the future, as well as to effect change, which requires longer-time planning, such as introducing new products, marketing campaigns, and other business endeavors.

III		Owner	1.5 – 2 years
II		Assistant Manager	1 year
		Head Mechanics / Team Leads	4 – 6 months
I		Mechanics (Repair type specialty stores)	Generally one week to a month
		Sales Associates	Day - Day

Table 2. Level Three Organization.

To achieve level three, the owner will have to begin focusing primarily on the state of the organization one to two years into the future. She must relinquish responsibility of lesser tasks to subordinates and perform duties that would expand and grow the business.

Assistant Managers must also increase in duties to deal with tasks that stretch a year in advance. The owners must then either promote or hire team leads and mechanics for shops that do repair work, and to fill out the expanded timespan in level two. Leads would complete tasks that take four to six months.

Subordinate mechanics and sales associates will remain at level one and continue to do the weekly and daily activities respectively. Without the new organizational structure, this shop would not be able to grow, as it has not in the past.

Lack of Constancy of Purpose

Deming describes *lack of constancy of purpose* as the failure to look and plan ahead for the company's future (1988). Deming believed organizations needed to plan ahead and anticipate what products and services that they provide would continue to grow the business and create jobs. He writes, "It is better to protect investment by working continually toward improvement of processes and of product and service that will bring the customers back again" (1988, p. 98).

Leaders must develop a plan that would carry the organization into the future; the leader must also be consistent in the plan and remain committed. However, this does not mean the organization must behave rigidly and refuse to change or modify its goal in accordance to changing circumstances. Organizations must also be able to adapt and revise the plan, while simultaneously maintaining its core foundation. For specialty shops, the owner must look ahead and develop a plan and remain committed.

The study has shown that a major issue of small business owners is that they sometimes fail to plan significantly far ahead into the future. Owners can become too focused on minutiae and micromanaging and consequently not take the time to assess the "big picture." A number of factors such as new technology, new models of existing products, government laws, physical infrastructure and consumer trends are all possible determinants of the future of various industries. By

analyzing these factors and making logical predictions of how they may develop, owners can determine how they will affect the shop and how to proceed in each scenario. To accomplish this, owners must create constancy of purpose through an effective plan of the future and contingencies.

Specialty shop owners must develop a goal that they wish to accomplish for the next several years. They must then make a determination of what aspects of work process, products and services are most conducive to reach that goal. Owners must also attempt to predict what developments could possibly come about in the future that would have an impact on the business. By developing a constancy of purpose they can grow and expand their business in new ways. This begins by creating more protocols and structure that subordinates will be able to follow and act upon with little ambiguity. This would also lead to less micromanagement as they will be focused on higher-level tasks.

Micromanagement is caused by supervisors and subordinates operating at the same strata level doing comparable work (Ivanov, 2015). This study finds that when supervisors operate within the same strata as direct subordinates, they inevitably end up micromanaging them. As they both perform their duties, the supervisor will have his or her own way of performing the tasks and will push their subordinates to perform the same. Also, due to the sheer proximity of the work, the subordinate will not have the autonomy and independence to operate effec-

tively. Similarly to the results found in the study, in many small businesses the owner performs the same tasks that the rest of the workers do, creating the cycle of micromanagement and resentment.

Emphasis on Short-term Profits

The next disease that commonly afflicts small specialty shops is *emphasis on short-term profits*. It prevents owners from focusing on the future. Deming describes this disease as being focused on attaining a large dividend immediately as opposed to long-term (1988). The desire to boost short-term dividends can result in actions taken that can be a detriment in the future, such as cutting research, education, people, deferring material, equipment and debt to some future date, and shipping and selling low quality products that result in a negative reputation (1988). In regards to many small businesses, this disease can manifest as more of an emphasis on the short-term in general, rather than profits specifically. Many owners often focus too much on short-term matters to the detriment of long-term success. According to the study, through emphasis on the short-term, long-term sustainability is compromised.

Focusing Only on Visible Figures

Finally, the study has found that focusing only on visible figures commonly afflicts specialty stores. Deming describes this disease as involving figures and factors that are unknown or unknowable that management must still account for (1988, p. 121). In

every organization, various factors that cannot be predicted arise and effect organizational duties and success. Despite this, effective management must still anticipate unknown factors coming into “play,” even though they do not know exactly when or how. Leaders must plan with enough flexibility and contingencies that it can take advantage or make changes when these unknown factors arise. There are two types of knowledge deficits: known unknowns and unknown unknowns (Highhouse, Dalal, Salas, 2014).

Known unknowns are factors that people are aware of that they do not know. This can involve having general knowledge of a topic but not knowing a specific detail, but being aware of that lack of knowledge. Having awareness of these unknown factors, however, allows for the possibility planning for the contingencies.

Unknown unknowns on the other hand go beyond conscious awareness: “...are questions I do not even know to ask. These are pieces of information in which I am completely unaware” (Highhouse, Dalal, Salas, 2014, p. 40). Unknown unknowns are by definition unknowable, and therefore cannot be directly anticipated. However, effective leaders can build the possibility of these factors arising into their plans to allow for adaptation to unexpected situations. Visible figures are vital to organizational success as they can be clearly seen and measured, and go toward expenses such as payroll, taxes and pension funds, but invisible figures must be dealt with as well (Deming, 1988).

For owners, this would mean coming up with a plan in which he or she applies the visible figures to, but installs enough flexibility to handle unanticipated figures and factors. Commonly, small business owners tend to focus on figures that are directly in their control or are clearly visible, which sometimes leaves them and the store in precarious positions when unknown figures impact operations.

Recommendations

Despite the tenacity of these issues affecting small specialty shops, there are a number of steps that can be taken to rectify problems. Through this case study of the small specialty business in Baltimore, four recommendations have been developed that can be applied to all specialty stores across the nation. By adapting the recommendations to the specific and unique circumstances of their own individual store, owners can begin to move past these problems and work towards attaining a better future.

Recommendation 1: Strata

The first recommendation is to differentiate the staff in roles and versatility, and relinquish responsibility of tasks that subordinates can handle. This requires for owners/managers to relinquish some of their responsibility to subordinates who possess the intellectual capacity and organizational authority to handle the requisite duties.

This would alleviate micromanagement as management would not be

performing the same tasks at the same strata level as subordinates. This also frees up time for owners to focus on higher-level duties that secure business future.

Relinquishing responsibility would consequently cause the organization to rise in level as each member begins performing tasks of longer timespans, including management, which would be able to engage in tasks that are more complex. As owners begin to perform tasks at higher strata, the rest of the store would rise in proportion.

Recommendation 2: Better Planning

The second recommendation is to focus on developing plans that would provide growth and expansion to the organization one to two years in the future. If the owners rise in strata by looking further ahead, the organizations would rise in level overall to match the owner's new strata.

The focus of this increase in future planning should be on the products and services that are closely tied to the growth and expansion of the organization. The owners must assess and anticipate the growth of current products and services, as well as begin development of new products and services that can create further success for the shop. The owner must also pay attention to community and competitor advancements and changes, as these factors could significantly reverberate to the shop thereby creating a new situation for the organization.

Recommendation 3: Flexibility

Along with the new plans for the future, the owners must also build contingencies and flexibility into the plans to be able to adapt to unexpected situations. As both known and unknown invisible figures would arise, owners must be flexible enough to deal with them while simultaneously maintaining the core foundation of their plans and business goals.

If the plans laid out by the owner are too rigid, they could fail when unanticipated circumstances arise. Competent and successful owners are able to adapt to new situations, and can alter the plan enough to work around any potential obstacles.

Recommendation 4: Roles

The final recommendation is to create formal and clear roles for employees that can guide their actions and decisions. Having clearly defined roles sets up parameters the employees could work within, and eliminates a large amount of ambiguity. It also works as an indicator of precedence, which helps employees to identify the optimal decisions to make. As the study has shown, small businesses and specialty shops tend to have a more loosely defined organizational structure. Employees must be able to perform multiple tasks that may not be their primary duty.

While this is still important in these businesses, more clearly defined roles are still important to increase efficiency and avoid conflicting actions and decisions. Establishing clear protocols that employees could follow easily would result in overall better decision-making.

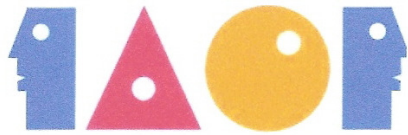
Conclusion

The issues of micromanagement and lack of protocols and structure can have a detrimental impact on the life and success of small business. While all shops have issues that are unique to their particular business, this study indicates these two problems are the most common among small business specialty shops. Through the tool of time spanning these issues can be identified.

Deming's seven diseases also often coexist with other problems and can hamper the progress of small businesses. Through the study of a prominent and long-running small specialty shop in Baltimore, MD, this paper has identified and addressed three most common problems: lack of constancy of purpose, emphasis on short-term profits and focusing only on visible figures. By diagnosing these diseases and following recommendations, specialty shops can not only flourish, but continue to grow, expand and impact their community in profound ways.

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THE RELATIONSHIP BETWEEN INTERNAL MARKETING
ORIENTATION, EMPLOYEE COMMITMENT, CHARISMATIC
LEADERSHIP AND PERFORMANCE

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Abstract

Nowadays, the economic environment is competitive, various companies are all competing for the greatest profit; but create the blue ocean market is not so easy. Therefore, in foreign, many successful businesses focus on human, usage of incentives, empowerment, and educational training to increase the employees' commitment to the organization and to improve efficiency. Enterprise is an organization of human, most of the links cannot be surpassed or replaced. In contrast, the salary is generally low in domestic enterprises. The phenomenon of employees are squeezed is not uncommon. Managers sacrifice human capital in exchange for a slight profit. Take the service industry for example, when employees are treated unfairly, how do they service and satisfy the customers? Therefore, this study takes the customer-oriented market for survey objection. From the perspective of employee, under the business through internal marketing and managers' charismatic leadership, to understand whether the employees can bring good effects to increase organizational commitment. At the same time, whether employees are able to provide a bet-

ter service to customer through organizational commitment, to improve performance and bring the greater profits for company. This study firstly confirms research variables and the framework by literature reviews, and then uses online questionnaires to collect data. Finally, we use SPSS, AMOS and SEM to test the hypotheses in this study. Under the framework for internal marketing, the results of research are as follow:

1. Internal marketing will positively affect the organizational commitment.
2. Organizational commitment will positively affect performance.
3. Charismatic leadership will enhance the effect of organizational commitment and performance.

This study finds out that when the organization provides education and training, reward system and good communication channels, employees can effectively improve organizational commitment, dedication to the organization over the long term and are willing to stay; further increase their skills and knowledge of company, to bring better performance. In addition, managers can enhance the effect of organizational commitment to performance. In other words, charismatic leader can lead and influence employees, is the cornerstone of a successful business. Finally, the expected results of this study can provide a reference of charismatic leadership to academic, and also help companies improve their performance and to maintain the competitive advantage with the right thinking.

Key Words: Internal Marketing Orientation, Organizational Commitment, Charismatic Leadership, Performance

Introduction

Research Background and Motivation

An increasingly competitive economic environment, service industries have developed numbers of strategies to gain competitive advantage. The product sales are related with many reasons and also related with sales people. They are the first line personnel and contact with customers directly. Businesses need to build relationships with customers, and the first line staffs meet their needs. The customers will refer others to the business and its products and services and would like to

keep coming back. Therefore, the high level of organizational commitment make employees have a stronger sense of belonging, are willing to share knowledge and experience, learn new skills, provide suggestions and comments, and pay more attention to improve quality and productively (Osterman, 2006). The staff with high commitment give customers the greater satisfaction and return performance to company.

And from the other perspective, the leadership style of management deeply affects the employees' performance. Charismatic leadership, defined as a person's ability to influence others based on a supernatural gift and attractive powers (Bertocci, 2009), could be effective, be-

cause one of the most important effects of charismatic leadership is that the charismatic leader is deemed as an object of identification and try to emulate his or her behavior and the employees accept the higher goals or have more confidence in their ability to contribute to the realization of the company's target (Lussier and Achua 2010).

Research Purpose

In discussing these areas of charismatic leadership, internal marketing orientation, employees' organizational commitment and performance; we try to identify knowledge gaps and suggest research questions relevant to these gaps that warrant attention. The questions of this study are following:

I. Most studies explore the relationship of internal marketing orientation, organizational commitment, and job satisfaction. Meager empirical research on internal marketing orientation has focused on outcomes at the employee level. Internal marketing orientation improves organizational commitment and job satisfaction, and does have a significant influence. However, previous researches lack of the research to performance.

II. Furthermore, managers' leadership style will affect the subordinates even the development of company. The previous researchers explore leadership widely; they are shown leadership will affect employees' organizational commitment and job satisfaction.

Therefore, this article is focusing on "Charismatic Leadership", and explores the charismatic leadership of managers

and frontline employees. According to the questions of this study, we hope to reach the following research purposes:

1. To explore the relationship between internal marketing orientation, employee commitment and performance.
2. To explore the relationship between charismatic leadership, employee commitment and performance.

Literature Review and Hypothesis

Internal Marketing Orientation and Employee Commitment

Kyriazopoulos et al. (2007) examined the internal marketing concept from the branches of Bank, and they found that internal marketing has a positive effect on organizational commitment. Moreover, Farzad et al. (2008) in their research on employees among Iranian financial service arena found that internal marketing has a positive effect on organizational commitment. Hung and Lin (2008) suggested that employees' perception in the managerial system of the internal marketing has a positive effect on the organizational commitment in Taiwan International Hotel Industries. Based on these, the following hypothesis is developed:

H1: Internal Marketing Orientation is positively related to Employee Commitment.

Employee Commitment and Performance

The relationship of organizational commitment and performance is stronger

when performance indicators are based on self-reporting than when they are examined by a supervisor or by the indicators of objective performance (Riketta, 2002). It should be noted the relationship in terms of organizational commitment and performance, many studies lean on how job performance contributes to the overall performance of the company (Shaw et al., 2003; Tourigny, Baba, Han and Wang, 2013), and including the financial perspective (Dimitriades and Papalexandris, 2011), for the reason that one can make the following hypothesis:

H2: The greater the Employees' Commitment, the greater is the Performance.

Charismatic Leadership and Employee Commitment

Charismatic leadership is delineated in different ways by many scholars, and it is depending on the type and nature of their work (Choi, 2006). Nevertheless, the illustrative mysterious nature of charismatic leaders in literature, most of the earlier scholars established consensus on the fact that charismatic leadership has extraordinary influence on the subordinates' effort, motivation and performance than any other forms of leadership (Bass et al., 2003; Choi, 2006). Many studies relating charismatic leader behaviors to performance outcomes have neglected important moderator variables and itself as moderator (Shamir and Howell, 1999). Sosik and Dinger (2007) thought that transformational and charismatic leaders with high self-monitoring ability might be more likely to identify needs, values, and preferences. In addition, with respect to their own behaviors

and attitudes, to better accommodate those values and preferences. Therefore, we hypothesize that by following:

H3a: The relationship between Employee Commitment and Performance is positively moderated by Solicitude of Charismatic Leadership.

H3b: The relationship between Employee Commitment and Performance is positively moderated by Faith and Belief of Charismatic Leadership.

H3c: The relationship between Employee Commitment and Performance is positively moderated by Innovation of Charismatic Leadership.

Orientation and Charismatic Leadership Moderators between Employee Commitment and Performance

H3d: The relationship between Employee Commitment and Performance is positively moderated by Adventure and risk-taking of Charismatic Leadership.

Conceptualizing the Model

The benefits of charismatic leadership are not simply demonstrated to incremental effects but also to more dramatic advance in employees' performance. For this reason we look at the moderating effects of charismatic leadership. The hypothesized relationships (H1-H3) are combined in the framework shown in Figure 1.

Methodology and Data Analysis

Measurement Model (Validity, Reliability and Correlation)

This study choose Amos to analyze confirmatory factor analysis (CFA) by explore each dimension of the scale. Convergent validity of the resulting scales comply with Fornell and Larcker's (1981) stipulations, e.g. all indicator loadings are significant and exceed 0.7, and the average variance extracted (AVE) by each construct exceeds 0.5. Therefore, these values are expected and indicate this study has a greater convergent validity and discriminant validity. (see Table 1 and Table 2).

Hypothesis Test

By AMOS calculating, the path coefficient in the structural model no matter between observed variables and latent variables or in latent variables appears the significant and reaches the significant standard ($p < 0.05$) in order to prove that our hypotheses in this structural model are supported (see table 3).

Moderation Effect Test

Multi-group Structural Equation Model.

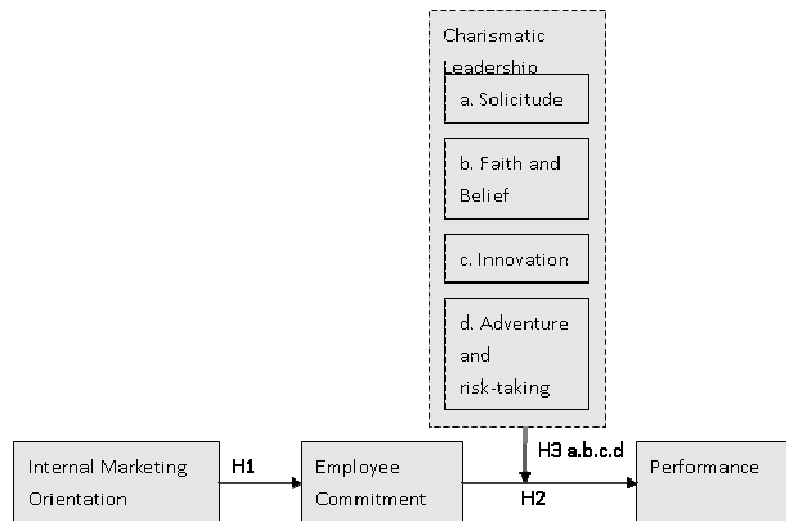


Figure 1. A Framework for the relationship of Internal Marketing

This study uses the multi-group structural equation model to examine the effects of moderator variables. When testing the moderating effects, the following three steps to confirm the presence of moderating effects:

- i. Grouping the moderator variables (high group and low group).
- ii. Validating the effectiveness of grouping.
 - a. Testing the capability of Discrimi-

nant function.

b. Using independent samples t-test.

iii. Multi-group structural equation model.

a. The model fit test of single sample.

b. The identity test of path coefficient.

According to Joreskog and Sorbom (1996), this study uses the multi-group structural equation model (AMOS) to analyze second-order model of identical concept in both high group and low group, and to test whether the model presented moderator effect. First, constructing three structural equation models (SEM) include of full sample SEM, high group SEM and low group SEM to examine the model fit test of single sample. (see table 4).

The results of high group are all greater than the results of low group (see Table 5). The moderating effects of FB, IN and AR are significant. Thus, based on moderating path analysis results, when in the “high degree of faith and belief”, the correlation of employees’ organizational commitment to performance has stronger positive effect than in the “low degree of faith and belief”. It can be seen the effects of “innovation” and “adventure and risk-taking” are same.

We can get the following inferences:

i. When the managers with high faith

and belief, have the moderating effect on employees’ organizational commitment to performance.

ii. When the managers with high innovation, have the moderating effect on employees’ organizational commitment to performance.

iii. When the managers with high adventure and risk-taking, have the moderating effect on employees’ organizational commitment to performance. The result of research hypothesis based on literature review will be described following (see Table 6).

Conclusion

Structural Model of Charismatic Leadership

The goals of this study try to know the traits of charismatic leadership such as solicitude, innovation, faith, belief, adventure and risk-taking how to impact on employees. While the managers bring those traits of charismatic leadership into management process, especially front-line employees who contact with customers directly, employees could feel the different management styles than before. According to the result of empirical study, internal marketing orientation, employees’ organizational commitment and charismatic leadership definitely increase the performance.

Table 1. Reliability and Convergent Validity

Latent variables	Observational variables	λ	SMC	CR	AVE	Cronbach's α
Internal Marketing Orientation	IM1	0.801	0.641	0.9292	0.7246	0.929
	IM2	0.823	0.677			
	IM3	0.839	0.704			
	IM4	0.896	0.802			
	IM5	0.893	0.797			
Employee Commitment	EC1	0.905	0.819	0.9601	0.8282	0.96
	EC2	0.884	0.781			
	EC3	0.967	0.935			
	EC4	0.895	0.801			
	EC5	0.897	0.804			
Charismatic Leadership	SO1	0.863	0.745	0.9483	0.7859	0.947
	SO2	0.929	0.863			
	SO3	0.835	0.698			
	SO4	0.878	0.771			
	SO5	0.924	0.853			
	FB1	0.93	0.866	0.9608	0.8307	0.961
	FB2	0.964	0.93			
	FB3	0.923	0.852			
	FB4	0.882	0.778			
	FB5	0.854	0.73			
	IN1	0.919	0.845	0.9647	0.8455	0.965
	IN2	0.925	0.856			
	IN3	0.905	0.819			
	IN4	0.905	0.818			
	IN5	0.943	0.89			
	AR1	0.896	0.802	0.9589	0.8237	0.958
	AR2	0.914	0.835			
	AR3	0.933	0.871			
	AR4	0.941	0.886			
	AR5	0.851	0.724			
Performance	P1	0.908	0.825	0.9473	0.7825	0.947
	P2	0.895	0.8			
	P3	0.877	0.769			
	P4	0.889	0.79			
	P5	0.853	0.728			

Table 2. Discriminant Validity

	CL	IM	EC	P
CL	0.85			
IM	0.835	0.91		
EC	0.799	0.88	0.906	
P	0.427	0.448	0.446	0.885

NOTE:

1. The value of the diagonal elements (the part of shadow): AVE square root
2. Off-diagonal elements: the correlations among the constructs
3. Distinguish the discriminant validity: The value of the diagonal elements should be larger than the off-diagonal element.

Table 3. Results of Hypothesis Test

Indicators	C.R.	P	Hypothesis
OC ← IM	15.34	***	Support H1
CP ← CL	1.302	*	Support H2
CP ← OC	2.979	**	Support H3

*: p< 0.05, **: P< 0.01, ***: P< 0.001

Table 4. Identical Test Results of Two Sample Path Coefficients

Model	Explanation	Chi-square value	Degree of Freedom	The difference of Chi-square value with model 1
Model 1 (SO)	Baseline Model	541.415	207	
Model 2 (SO)	Moderating Model	545.236	208	3.83
Model 1 (FB)	Baseline Model	563.821	207	
Model 2 (FB)	Moderating Model	568.85	208	5.029*
Model 1 (IN)	Baseline Model	546.766	207	
Model 2 (IN)	Moderating Model	550.609	208	3.843*
Model 1 (AR)	Baseline Model	578.81	207	
Model 2 (AR)	Moderating Model	583.751	208	4.941*

Table 5. Moderating path analysis results of high and low group

Path		OC → CP
The Estimated Value	Low Group SO	0.087
	High Group SO	0.296
	Low Group FB	0.024
	High Group FB	0.312
	Low Group IN	0.091
	High Group IN	0.279
	Low Group AR	0.061
	High Group AR	0.33

Solicitude of Charismatic Leadership may not be good

Contrary to our expectations, the solicitude of charismatic path was not significant. The nature of our data collection, in which the employees served, may help to explain this finding. The third largest sample of occupation is student, and the overall age range is young. This part of sample affected the results which are less significant. We may deduce the managers of part-time job are less solicitude or they do not care about this aspect that how managers treat them.

Managerial Implications

According to the empirical results of structural model, we provide recommends to enhance the faith and belief, increase the innovation, strengthen the spirit of adventure and risk-taking in order to raise the employees' organizational commitment and performance. In addition, managers also could increase the employees' commit

ment to the organization and their performance through the good internal marketing orientation.

Internal Marketing Orientation in Organization

Based on the data collection, we find out the employees are almost belonged to young groups and served as business, service, and student, and also set up a filtering item. In this situation, internal marketing orientation does have a significant impact on employees' organizational commitment and performance in the customer-oriented industries. An enterprise's internal marketing orientation including internal communication, human resource management initiatives, reward system, education and training make the employees more efficient. Enterprises offer the chances to education and training for employees, they can further the understanding of the companies' mission, purpose and philosophy, to put efforts in the correct direction. Besides, there are good internal communication channels in organization; link with employees, management can be the first time to understand the needs and condi-

tions of employees; so that they can focus more on their works, thus improving efficiency. Moreover, good reward system is essential conditions as a good business. Employees can compete healthy to fight for their reward, which enables companies to grow further and improve competitiveness. Finally, com-

bining with the human resource initiatives, treat the employees as the internal customer and meet their needs. They will be also on the minds of customer awareness, and better satisfy the customers' needs. That is the operational boulevard of long-term and success for businesses.

Table 6. Result of Hypothesis

Hypothesis	Result
H1: Internal Marketing Orientation is positively related to employees' Organizational Commitment.	Significant
H2: The greater the employees' Organizational Commitment, the greater is the Performance.	Significant
H3a: The relationship between employees' Organizational Commitment and Performance is positively moderated by Solicitude.	Not Significant
H3b: The relationship between employees' Organizational Commitment and Performance is positively moderated by Faith and Belief.	Significant
H3c: The relationship between employees' Organizational Commitment and Performance is positively moderated by Innovation.	Significant
H3d: The relationship between employees' Organizational Commitment and Performance is positively moderated by Adventure and risk-taking.	Significant

Charismatic Leadership in Organization

According to the research findings, most of charismatic leader traits, except solicitude, have the significant and positive moderating effect on employees' organizational commitment to performance. Earlier scholar believed charismatic leadership occurs only when the organization in crisis or in change. The economic environment is

competitive; enterprises must constantly innovate to gain competitive advantage. We think that charismatic leadership happens anywhere when the organizations are always changing. Managers, who are in charge of certain tasks, have to strengthen themselves and learn from the other good leaders to cope with changes in the organizations and better influence their employees. The managers have courage to play, confidence in the

decision-making and behavior that enable the employees recognized and trust to them. Besides, managers often are led by example, which can have a positive impact on employees and are worth learning model. Furthermore, managers should be innovative, willing to accept new areas of knowledge and skills, also lead and encourage employees to pursue new things. Last, managers have the adventurous spirit and a clear ambition, even faced with difficulties and in the unstable unpredictable environment, they often do positive thinking and able to well adapt.

Research Limitations and Further Research

The target unit of analysis was only relied on whose work contact with customers directly. Even though this

scope allowed us easily to control of inter-organizational and inter-industry differences, there still are limitations for our ability to apply these findings to other industries. Secondly, there haven't had the mature scales of charismatic leadership from the prior research; furthermore, the structural model in our study built by ourselves might not have enough perceived credibility for further research. These limitations notwithstanding, there are important further research directions deriving from our research that could divide from charismatic leadership of managers' side in detail. As facing the macro environment changing, managers must have the ability to adapt to change. The future research can use the depth interviews to access managers to understand the effect of internal marketing orientation and charismatic leadership in that company.

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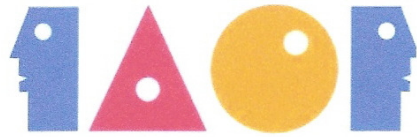
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IDENTIFYING SYSTEMIC DEFECTS IN THE ROLES OF NURSES AT
A HOSPITAL IN THE UNITED STATES: EXPLORING POSSIBLE REA-
SONS WHY NURSES COULD BE UNDEREMPLOYED
AND NOT EXCITED ABOUT WORK

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Abstract

This small study was conducted in a hospital in Baltimore, Maryland, USA. The scholars collected evidence about problems nurses experience. The study found issues in the system of management. One of the systemic issues is the use of *Clinical Health Ladder*. The clinical health ladder is a system that determines nurses' pay. It places them into categories. However, the clinical health ladder does not accurately reflect the nurses' performance, capabilities, or fair pay. Fixing the clinical ladder system may improve the management system, and possibly eliminate some frictions in the workplace.

Key Words: clinical health ladder, management, work performance, wage gap, defects, management system, organizational behavior, nursing, hospitals

Introduction

This study was conducted in the Behavioral Health Unit at a local hospital in Baltimore, Maryland, USA. This hospital was founded more than 100 years ago as a teaching community hospital in Baltimore. It provides a full range of healthcare to more than 120,000 patients each year. The hospital employs 1,200 staff members, and has 128-licensed acute care beds, 80-licensed chronic care beds, and receives \$220 million annual revenue.

The Behavioral Health Unit consists of a team of psychiatrists, nurses, patient care technicians, and social workers working together to care for and treat patients. During the study, we collected evidence regarding possible work issues, as reported by nurses working in the Behavioral Health Unit. These problems, currently unaddressed by the management team, span the clinical health ladder to work performance and quality of care delivered to patients, as well as to the wage gap among nurses at varying clinical levels.

The Clinical Health Ladder

The Clinical Health Ladder is a system that categorizes the nurses into five distinct levels (see table I in the end of the article). Fundamentally, it determines pay. Table I (end of the article) depicts the Clinical Ladder for Registered Nurses and the requirements expected of nurses at each clinical level.

Each year during annual evaluations, managers evaluate the nurses' performance and submit petitions for the

nurses to advance through the clinical ladder, if qualified.

Clinical Health Ladder Problems

In analyzing the survey data collected, we noticed that there are problems. One of those defective systems identified through the survey was the *Clinical Health Ladder* used by the hospital.

The clinical ladder does not accurately reflect nurses' performance and capabilities. As a result, nurses feel they are not fairly paid. Identifying defects in the clinical ladder may better define a nurse's role to enable management to recognize good performance and commitment, and thus, pay fairly for work.

The Study

During the study of nurses and their roles within the Behavioral Health Unit, many nurses reported that the Clinical Ladder does not accurately categorize nurses into the appropriate levels based on performance and expertise.

During the study, we discovered that many nurses were not performing their duties and meeting job expectations based on their RN level on the clinical ladder (Registered Nurse). Most nurses in the Behavioral Health Unit were Clinical Level II Nurses. Another discovery was that once nurses have achieved Level II, they were not interested in advancing to higher levels on the clinical ladder. In fact, many nurses reported they were not interested in taking on leadership roles in the unit.

The Survey

The study surveyed five nurses. The survey questions focused on:

- obtaining information about the nurses' perceptions of their level of competence;
- RN ladder level;
- whether they were informed of the requirements and expectations for each clinical ladder level;
- how many of those requirements they have met;
- whether management has helped and encouraged them to advance from one level to another.

Table II (end of the article) lists the survey questions and the data collected in the survey. The purpose for the survey was to study the clinical ladder system in the hospital.

Findings and discovery

The five nurses who participated in the survey were a good representation of the other nurses' profiles. According to Table III, Nurses 1, 3, and 4 have had over ten to twenty years of experience, and all three have achieved Clinical RN Level II. The two nurses who have had over twenty years of nursing experience do not participate in more hospital committees and educational hours than nurses who have less than ten years of experience. Nurse 2 has had four years of experience and she is more actively involved in hospital committees and educational hours than her peers; she also has a lower pay rate. Nurse 5, who

has only been working on the unit for three months, already has assumed the role of orienting new nurses and is currently being trained to help as the unit trainer when the hospital converts to a new electronic system.

The survey illuminated a gap between the Clinical Ladder's descriptions of nurses' roles and actual work. The Clinical Ladder provides a general description of the nurse's role and expectation at each level, but does not clearly define the nurse's tasks. As a result, nurses are not clear about their specific duties outside of providing proper patient care within their scope of nursing on a daily basis. The nurse's lack of clarity on their specific duties is an indication of ineffective management. Jaques (1996, 2002), Ivanov (2011, 2012, 2013, 2014, 2015), Clement (2008, 2015), and others identify that it is necessary to specify and articulate tasks for an effective organizational system. Deming (1994, 1996) argues that manager must understand and convey to the people the meaning of the system. The manager is also responsible for helping people see themselves as components in a system. When people clearly understand their roles and tasks, they are able to see themselves as essential components within the system. Thus, they will work hard to optimize their skills and abilities for the benefit of the system (Deming, 1994) (Ivanov, 2015). Further factual findings from the survey and proposed recommendations are summarized in Table IV.

Issues

One key problem is that the Clinical Ladder does not accurately reflect nurses' capabilities, performance, and competence. It appears to be merely a guide the hospital uses to justify a nurse's pay rate and salary. True performance, however, cannot be measured by the number of committees in which the nurse is involved, the number of educational hours they have completed a month, or whether they have obtained certain certifications. Deming (1994, 1996), Jaques (1996, 2002), Ivanov (2015) all point out that employee performance is a function of the management system. The study finds that having a ranking system only makes people work for the sake of working and not for the actual benefit of the patients.

The second issue discovered is that nurses have not been paid fairly. Table III shows the disparities in both work performance and pay among the five nurses. In short, nurses with more nursing experience are paid more, while nurses with less experience and more extracurricular activities are being paid less. True performance should not be based off the assumption that a nurse with many years of experience is deemed a more competent or seasoned nurse, while a nurse with only one or four years is considered a novice or advanced beginner. Recently, one nurse with more than twenty years of nursing experience was fired for poor documentation on patients. In this case, that nurse's twenty years of experience did not benefit her work performance. On the other hand, Nurse 2 with four years of experience is known to be very thor-

ough and detailed in her documentation.

The third and last issue deals with an ineffective management team. The management team has placed nurses into slots during the annual performance evaluations (outstanding, excellent, satisfactory, etc...). Deming (1994) writes this method of rewarding people is very destructive and causes humiliation, fear, self-defense, competition, and eliminates the intrinsic motivation, self-esteem, and job of working. As seen in the data collected from this study, the manager does not recognize unfair pay disparities and does not confront nurses who receive higher pay yet do not meet job expectations. The unit is not managed as a system, and important components of the system are being neglected and unaddressed.

Supporting evidence

Supporting evidence of defects within the Clinical Ladder and with management comes through a survey of the nurses.

Nurses in Clinical Level II report they do not understand or know what other roles and tasks are required of them according to the Clinical Ladder aside from performing their regular nursing duties during their twelve-hour shifts. Nurses who have been working for over ten years report a lack of interest in advancing through the Clinical Ladder because of the leadership roles associated with higher levels.

Nurses who make between \$80-100k (USD) per year admit that some of the younger nurses do more work on the

unit than they do. These nurses admit that previous managers expected them to join committees as part of their Clinical Ladder expectations, however, the managers never followed up and checked whether or not they were actively participating in committees. The older nurses also acknowledge the fact that younger nurses are getting paid far less than they are and the younger nurses tend to work harder and take on more tasks.

Under these circumstances, it is not surprising to discover two cohorts of nurses: one where nurses feel underpaid and overworked, and the other, where nurses are overpaid and underworked.

Recommendations

In light of these issues, three proposed recommendations have been developed:

- 1) Clearly and specifically define nurses' roles, tasks and length of tasks within each Clinical Level (Ivanov, 2015).
- 2) Pay based on actual work, not the number of years of experience the nurse has.
- 3) Abolish annual performance evaluations (Deming, 1994).
- 4) Manage the unit by genuinely getting to know the nurses and diligently

observing how they perform and work. Reward and recognize superior performance, their care and commitment.

- 5) Manage the entire unit and the hospital as a system.

Problems within organizations typically rise from ineffective management. Deming (1994) writes the key to having an effective organization is to teach people how to work together as a system. What every organization needs is cooperation and transformation to a new style of management.

Conducting this study in the hospital, we discovered that many of the problems nurses face stem from mismanagement of people and misunderstanding of the system. If management could redefine the Clinical Ladder system, pay and reward fairly, a transformation in performance, work ethics, and intrinsic motivation would be evident.

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TABLE I: NURSING CLINICAL LADDER

Clinical Ladder	Description and Minimum Requirements
RN Level I- Novice	New graduate or RN with little to no previous nursing experience. He/she is in unit orientation with a preceptor to learn the knowledge and skills needed to practice on the unit within the hospital. After working one year full-time, the Level I RN advances to Level II RN.
RN Level II- Advanced Beginner	Level II RN is involved in one or more committees at the hospital and seeks educational programs or certification for clinical development based on their specific interests.
RN Level III- Competent	Level III RN has developed the clinical and technical skills that will enable them to expand their role on their unit as a mentor and resource for staff and patients. They actively participate on hospital committees and introduce new practices to their peers on the unit. Continuing education hours are required on a monthly basis.
RN Level IV- Proficient	Level IV RN has at least two years of experience and has obtained certification in at least one area of expertise. The Level IV RN is in a leadership role in their department. Level IV RN also has the capabilities to act as the assistant manager on the unit. Hospital committee and educational involvement should be ongoing.
RN Level V- Expert	Level V RN is the highest level on the Clinical Ladder. This RN has at least three years' experience as an RN with education requirement of a BSN or higher and has obtained at least one certification in the area of expertise. Level V RN has expanded his/her role beyond the expectations of direct patient care and is active in the community. They teach and present evidence based practices and participate in shared governance committees.

TABLE II: SURVEY QUESTIONS

Survey Question	Data/Information to be extracted
1) How long have you been a nurse? How many years have you worked as a nurse on the Behavioral Health Unit?	-This tells how experienced the nurse is
2) What is your RN level on the Clinical Ladder?	-Knowing their clinical level determines whether the nurse is being paid correctly and working up to the expectations of their given

	clinical level
3) Are you involved in other educational activities on the unit or hospital besides working as a regular floor nurse on the unit?	-An honest answer will provide information on whether the nurse is being underemployed -Gives information on whether nurses are meeting their job expectations based on their clinical ladder
4) Has the unit manager ever discussed your clinical ladder and expectations with you during your annual evaluation? Has the manager encouraged you to participate in committees and educational hours, or encouraged you to be certified in Psychiatry?	-Gives information on whether management has been effective in helping their employees advance in the clinical ladder and help them work to their fullest potential
5) Have you ever been mandated to assume a role that you were not trained for?	-Because our unit is often short-staffed, and a quick turnover in newly hired employees, often times the new staff members are stuck with assuming leadership roles they have not been trained to do (ex. performing Charge Nurse duties). -Gives information on the defects on management and how nurses are not properly categorized in their clinical levels. Management is not thoroughly evaluating their staff to determine what roles they can and should assume

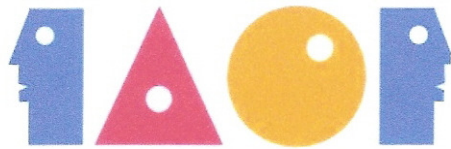
TABLE III: DATA COLLECTED FROM SURVEY

Nurse	Clinical Level	Experience (in years)	Roles and Extracurricular Activities	Mandated Roles	Salary
1	II	20+	One hospital committee (not regular attendee of meetings); Charge nurse, orient new nurses	Mandated to work overtime	\$60-80k
2	II	4	Two hospital committee (makes the unit schedule every month); charge nurse, orient new nurses, educator, trainer for new hospital system	Mandated to be Charge nurse without receiving formal training; mandated to work overtime	\$40-60k
3	II	20+	No committees, charge nurse, orient new nurses	Mandated to work overtime	\$80-100k
4	II	10	One hospital committee, charge nurse, orient new nurses	Mandated to work overtime	\$60-80k

5	I	< 1	Orient new nurse, trainer for new hospital system	Mandated to orient new nurse even though employee has been employed for less than 3 months	\$40-60k
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TABLE IV: FACTUAL FINDINGS OF PRESENT PRACTICE & PROPOSED RECOMMENDATIONS

Present Practice	Strategic Recommendations
Ranking nurses using the Clinical Ladder; nurses at the bottom get paid less while doing very similar work as those paid at a higher level; those with a higher level due to experience does not necessarily meet all expectations of their given level	Clarify the roles of a nurse in each given Clinical Level. Clearly define a nurse's task for each clinical level.
Promotion and pay is based on clinical levels	Pay based on performance, not clinical level. Understand factors that determine highest level of work which are inherent capabilities, skills/knowledge/experience and how much the person values the work.
Manager performs an annual evaluation however, they do not seem to help nurses on the unit meet their clinical level expectations nor do they help nurses advance to the next level	Abolish annual performance evaluations, manage the unit by genuinely getting to know the nurses and observe how they perform and work [2]. Management must be active in making physical arrangements for informal dialogue between people regardless of level of position; management should encourage continual learning and advancement [1].
Use Clinical ladder as a means for differentiating nurses from one another	Encourage and focus on cooperation on problems between people, divisions. This will bring more job in work and a greater reward for everyone
Management does not encourage teamwork. Nurses with many years of experience should be mentoring younger, newer nurses. Currently, the older nurses have "retired" on the unit and refuse to involve themselves as mentors and resources on the unit for staff and patients.	The manager should convey to the nurses how the work of the entire group supports the unit's goals and objectives. Help them see themselves as components in the system.



EXPLORING THE INFLUENCE OF TEA BEVERAGE HEALTH
CLAIMS ON BRAND EVALUATION AND PURCHASE INTENTION

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Abstract

With the rise in consumers' health awareness, products with the concept of health have been greatly favored by Chinese consumers. In the whole beverage market, the growth of the tea beverage, especially the 'functional tea beverage with the concept of weight loss', is most obvious. Therefore, health claims have been one of the trends for tea beverage development in Chinese Marketplace. The aim of this study is to find the influences of health claim and brand awareness on brand evaluation and consumer's purchase intention. Results revealed that high brand awareness will stimulate consumers to generate a more positive perceived opinion of the products that involve health claims and engender a higher purchase intention.

Key Words: health claim, brand awareness, brand evaluation, purchase intention, functional tea beverage

Introduction

With the rise in consumers' health awareness, manufacturers have launched a variety of goods. Almost all of these goods triggered topics and created sales success as long as they were combined with a health concept. From the tomato juice that drove the tide of the health concept to the beverage with the 'weight-loss concept', they all emphasized 'weight-loss' and 'health maintenance'. In this tide, the growth of the tea beverage was the most distinct, thus giving rise to the fact that functional tea beverages sprang up like mushrooms in the beverage market and increased the scale of the entire tea beverage market.

Due to the increasingly fierce competition in the functional tea beverage market, manufacturers all desire to make health claims, in order to improve sales through packaging or using advertisements to claim the utility of their products. However, according to Taiwanese health food laws, if the food has not been examined by the Department of Health and granted a license, manufacturers cannot take the liberty of labeling or advertising it as 'health food' or claiming that it has the benefits of health food. In this respect, obtaining the national authentication for health food is also an important way of winning the share of the functional tea beverage market. Hence, the current study expects to investigate the impact of health claims on consumers' purchase intentions as well as the types of business opportunities that have been created.

If manufacturers are able to provide enough product information (health

claims), can consumers' processing this kind of information after exert influence on perceived quality, perceived value and purchase intention? While previous studies took high price and high involvement as the research objects, this study expects to examine the functional tea beverage that is a relatively low price and has low involvement.

This study took health claims as the independent variable for brand evaluation and consumers' purchase intentions. Then, it took brand awareness as the moderating variable to explore the influence on brand evaluation and purchase intention. Consequently, the objectives of the current study were as follows:

1. To understand what the influence of health claims on brand evaluation and purchase intention will be if there exists or does not exist such claims.
2. To investigate whether there will be any differences in the influence of health claims on brand evaluation and purchase intention due to the different levels of brand awareness.
3. To proffer suggestions based on the research results so as to provide reference for manufacturers' marketing strategies and plans.

Literature Review

Health claim

In general, health claims appear in the packaging or advertisement of health food. They are marked by the designs and characteristics of health food

standards in line with national certification. The purpose is to claim their health effects. The so-called 'health food' refers to the kind of food that has health benefits and is marked or advertised as having these benefits. Health benefits mean that health food can improve one's health, reduce the risks from diseases, and have benefits that are based on scientific evidence. They do not belong to the medical benefits that can cure and correct human diseases. According to the Taiwanese health food laws, with no permission of the law, food cannot be marked or advertised as a health food. That is, if the food were not certified as a health food, manufacturers should not claim the health benefits through packaging or advertisement (Ministry of Health and Welfare, 2012). Health claims in this study refers to the instructions on health benefits that manufacturers mark on the packaging indicating that the product is conducive to consumers.

Brand evaluation

Lin et al. (2009) pointed out brand evaluation as consumers' emotion and cognition of the promoted brand, including brand preference, quality cognition and reference price. Moreover, according to Aaker's (1996) definition, brand evaluation incorporates consumers' attitude, perceived value and purchase intention.

Keller (1993) argued that consumers' purchase intention depends on their perceived value of the product. Therefore, when consumers hold a higher quality evaluation of the product, they tend to have a higher perceived

value. Moreover, the level of perceived value lies in the perceived quality or perceived benefit relative to the perceived sacrifice that consumers must make, between which consumers have to make a trade-off. After generating perceived value, consumers will further engender purchase intention, and their purchase intention often relies on the benefit and value acquired by their perception (Zeithaml, 1988; Dodds et al., 1991; Grewal et al., 1998). Raghurir and Kim (1999) studied the influence of price promotion on brand evaluation and defined the latter as consumers' perception of product quality. Furthermore, Aaker (1996) defined brand evaluation as consumers' internal reference price, perceived quality and perceived value of the product.

Purchase intention

Purchase intention refers to the possibility of consumers being willing to purchase the product (Dodds et al., 1991). Zeithaml (1988), Dodds et al. (1991), and Grwal et al. (1998) all believed that after generating perceived value, consumers will further engender a purchase intention, and that purchase intention is often decided by the benefit and value acquired by their perception. Engel, Blackwell and Miniard (1984) argued that purchase activities are a mental, decision-making process. In their study of consumers' reactions to advertising messages, Shen and Chen (2007) showed that the message transmitted by an advertisement will influence consumer purchase intentions. Hence, purchase intention can be assessed by the consumers' willingness to purchase advertised goods or to shop in

a store. Consumers may even make efforts to search for this product and make an assessment. In previous studies, many scholars have verified the fact that different promotion methods have a significant influence on purchase intention (Kopalle and Lehmann, 2006; Chen et al., 1998).

Brand awareness

Aaker (1996) deemed that brand awareness is the main factor that consumers take into account when evaluating products. Hoyer and Brown's (1990) study demonstrated that while assessing and selecting products, consumers take brand awareness as the prior reason for consideration among different product categories. Keller (1993) stated that brand awareness is related to the strength of consumers' memory link. This link reflects consumers' ability to confirm the degree of brand difference, namely, the stronger brand links or traces on consumers' memory. Aaker (1996) also thought that brand awareness could influence consumers' perception and attitude, as well as drive brand selection and brand loyalty. Brand awareness, when given the category of a particular product, is the ability to arouse a certain impression from consumers' memory in a rather accurate way. The stronger the ability is, the higher the brand awareness is. In a similar vein, Macdonald and Sharp (2000) indicated that brand awareness plays an important role in consumers' decision-making. Heilman et al. (2000) also showed that as consumers become more familiar with the brand, they will enhance their brand preference, thus affecting their decision-making.

Methodology and Hypothesis Development

The present study expected to examine the effects of health claims made by manufacturers, that is, the influence on consumers' brand evaluation and purchase intention in different situations (involving health claims and involving no health claims). Health claims usually appear in the packaging and advertisement of health food. They are marked by the designs and characteristics of health food standards in line with national certification. Aaker (1991) defined the consumers' perceived quality of brand as the cognition of the overall quality of a particular brand-name product, the cognition relative to the overall quality of other brand-name products for specific purposes, or the subjective satisfaction of the overall quality of a particular brand-name product or service relative to other brands for specific purposes (Aaker, 1991). Bhuian (1997) considered perceived quality as 'consumers' judgment and evaluation based on the uniformity of product specifications or the superiority attached to product functions. Calfee and Pappalardo (1991) maintained that health claims drive consumers to pay more attention to a healthy diet (Calfee and Pappalardo, 1991). In addition, some scholars believed that health claims are enough to form expectation for a product on the part of consumers. Therefore, this study proposed the following hypothesis:

H1a: With health claims, consumers have a higher perceived quality

Zeithaml (1988) found that product selection is generally decided by the trade-off between 'offering' or 'receiving', following consumers' cognition of the product. This trade-off is deemed as an overall utility evaluation, the effect of which is perceived value. For consumers, faced with the possibility and uncertainty of the health claim made for the benefits of health food, the claim is a product property that delivers positive messages. This may enhance consumers' feeling of gaining profits, improve the utility evaluation of the product and then promote perceived value. Hence, the study proposed the following hypothesis:

H1b: With health claims, consumers have a higher perceived value

Consumers might have knowledge of the relationship between diet and disease and will show a preference for the product, the packaging of which uses general sentences to show that the product is 'healthy' (Andrews et al., 1998). Health claims explaining the relationship between nutrients and diseases will make consumers think the product is more healthy and nutritious, increase their knowledge about the correlation between diet and disease, and lead to a higher preference and purchase intention for the product (Calfee and Pappalardo, 1991). In this respect, the study put forward the following hypothesis:

H2: With health claims, consumers have a higher purchase intention

Mazursky and Jacoby's (1986) study manifested that brand name is often used as a clue to perceived quality. Brand awareness is regarded as the ex-

ternal clue for consumers to evaluate perceived value, and famous brands will be listed in the purchase plan for assessment (Aaker, 1991). Moreover, the results of Monroe's (1990) research project showed that the more famous the brand is, the higher consumers' perceived quality of the product is. Thus, it can be seen that brand awareness plays a critical role in consumers' decision-making. According to Dodds et al. (1991), there exists a positive relationship between brand awareness and consumers' perception. Monroe and Krishnan (1985) indicated that when consumers have a higher perceived quality of the product, their perceived value of the product will increase as well, and that high perceived value will, in turn, promote purchase intention. In practice, the better known the brand is, the higher consumers' perceived quality is. As a result, for consumers, the proposed health claims are more convincing, their perceived value is relatively high, and they will generate a higher purchase intention. For this reason, the current study brought forth the following hypotheses:

H3a: Compared with lower brand awareness, high brand awareness will enhance consumers' perceived quality brought by health claims.

H3b: Compared with lower brand awareness, high brand awareness will increase consumers' perceived value brought by health claims.

H3c: Compared with lower brand awareness, high brand awareness will strengthen consumers' purchase intention brought by health claims.

Experimental design

This study adopted the method of experimental design and used a 2×2 experimental set. The independent variable was health claims (with or without) and the study verified its main effects and interactive effects. The moderating variable was brand awareness (high or low), whereas the dependent variables were consumers' brand evaluation and purchase intention. 'Functional tea beverage with the concept of weight-loss' was the product under test, and the principal consumer groups were students and office workers. The method employed in the questionnaire testing was letting the subjects answer different questionnaires in a random way. That is, randomly assigning the subjects to each experimental set in order to reduce the influence of other interference factors on the experiment. The study included one pre-test and one formal experiment. The pre-test was aimed at singling out the brand of 'functional tea beverage with the concept of weight-loss' that consumers considered as having high awareness and low awareness.

Data collection

The study adopted the method of convenience sampling and the subjects were students and office workers. There were 300 valid questionnaires (89%). It can be found from the data that most of the subjects had drunk the beverage (89%). Female subjects accounted for the majority (53.3%). The age of the subjects mostly ranged from 26 to 35 (37%). Most of them had university-level educational experience (53.3%). The manufacturing industry was the ma-

ior profession and personal disposable income ranged from 10,001 to 30,000 (NTD). Most of the subjects purchased such a beverage once a week (33%).

Analysis of reliability and validity

The Cronbach's α value for perceived quality was 0.920; the Cronbach's α value for perceived value was 0.903; and the Cronbach's α value for purchase intention was 0.955. The scale has varied considerably within an acceptable range of reliability. The internal validity index of this study, the experimental results showed that the internal validity index of the three dependent variables was 0.9592 for perceived quality, 0.9502 for perceived value and 0.9772 for purchase intention, respectively, all of which were greater than 0.9. Therefore, the research results were valid.

Results

The influence of health claims on perceived quality

Health claims had a significant impact on perceived quality ($F=23.223$, $p \text{ value} < 0.001$). During the examination of variance, a higher perceived quality (5.06 ± 0.95) was derived when there were health claims, and a lower perceived quality (4.56 ± 0.84) was yielded when there was not. Consequently, perceived quality with health claims was significantly higher than perceived quality without health claim. Hence, the H1a hypothesis was proven to be true.

The influence of health claims on perceived value

Health claims exerted an obvious influence on perceived value ($F=12.317$, p value= 0.001). During the examination of variance, a higher perceived value (4.53 ± 0.92) was achieved when there were health claims, but a lower perceived value (4.16 ± 0.92) was generated when there was not. Therefore, perceived value with health claims was notably higher than the one without health claims. Therefore, hypothesis H1b was proven to be true.

The influence of health claims on purchase intention

Health claims had a significant influence on purchase intention ($F=8.047$, p value= 0.005). During the examination of variance, a higher purchase intention (4.53 ± 1.28) appeared when there were health claims, whereas a lower one (4.11 ± 1.32) showed when there was no health claim. As a result, purchase intention was apparently higher when health claims were involved. Consequently, hypothesis H2 was proven to be true.

The influence of brand awareness on perceived quality

The interaction effect of health claims and brand awareness produced a significant impact on perceived quality due to the obvious examination results of the model ($F=6.720$, p value= 0.010), thus the interaction effect was further discussed. When the brand awareness was high, products with health claims (5.62 ± 0.67) boasted a higher perceived quality ($F=40.218$, $p<0.001$) than lower health claims (4.89 ± 0.74). Nevertheless, if brand awareness was low, there was

no significant impact on perceived quality ($F=3.908$, $p=0.05$), whether health claims existed or not. Thus, hypothesis H3a was confirmed to be true. Compared with lower brand awareness, higher brand awareness would enhance a customer's perceived quality brought by health claims.

The influence of brand awareness on perceived value

The interaction effect of health claim and brand awareness had no significant impact on perceived value ($F=2.567$, $p=0.110$). Therefore, hypothesis H3b was invalid. Compared with lower brand awareness, higher brand awareness would enhance a customer's perceived value triggered by health claims.

The influence of brand awareness on purchase intention

The interaction effect of health claim and brand awareness exerted a significant influence on purchase intention because of the obvious examination results of the model ($F=4.497$, p value= 0.035). Consequently, the interaction effect was further discussed. When the brand awareness was high, those products with health claims (5.11 ± 1.09) enjoyed a higher purchase intention ($F=13.485$, $p<0.001$) than those with no health claims (4.38 ± 1.32). Nevertheless, if brand awareness was low, there was no distinct difference between purchase intention with health claims and those with no health claims ($F=0.392$, $p=0.532$). Hence, hypothesis H3c was proven to be true. Compared with lower brand awareness, higher brand awareness would enhance customer purchase

intentions brought by health claims.

Discussion and Conclusion

The current empirical study found that health claims indeed influenced participants' perceived quality, perceived value and purchase intention. In addition, brands with different degrees of awareness also affected participants' perceived quality and purchase intention whether health claims are involved or not.

The research findings showed that health claims would bring a higher perception of quality. Thus, the current study confirmed that by means of health claims, 'functional tea beverage with the concept of weight-loss' would arouse consumers' expectations and make them pay more attention to health. This, in turn, improved their recognition of overall product quality. Therefore, this finding explains why the manufacturers have the right strategy of spending a lot of time and resources applying for health food certification and then spending a large budget for advertisements.

The study also found that health claims would bring a higher perception of value. Therefore, this study verified that, through health claims, 'functional tea beverage with the concept of weight-loss' provided positive information about the product for consumers. This would enhance their feeling of gaining profits and would improve their evaluation of product functions. This promoted their perceived value and willingness to pay more for the product.

The research indicated that health

claims would trigger higher purchase intentions. Thus, this study testified that through the health claim, 'functional tea beverage with the concept of weight-loss' consumers' preferences and beneficial feelings would be aroused, which would then enhance their desire to purchase the product.

The research revealed that high brand awareness would help improve consumers' perceived quality enhanced by health claims. The main reason was that consumers had related knowledge about and were familiar with high-profile products. As a result, when facing different products with same health claims, most consumers had a positive quality evaluation towards famous products, feeling that the quality of these products would be guaranteed.

The study discovered that higher or lower brand awareness would not affect consumers' perceived value enhanced by health claims. For this reason, the hypothesis of the moderating effect of brand awareness in this study was not tenable. Nevertheless, brand awareness tended to exert a direct impact on value perception, which resulted in consumers' higher value perception of famous brands over common brands. Consequently, it can be concluded that consumers' perceived value was primarily influenced by two main variables, namely, health claims and brand awareness.

According to the research findings, the consumers' perceived value evaluation of health claims was not affected by brand awareness. Thus, this moderating effect was not obvious, probably because

consumers' feeling of gaining benefits came from the effect of product property instead of brand, or because the price of 'functional tea beverage with the concept of weight-loss' was relatively low. Brand awareness was far from significantly affecting perceived value whether there was a health claim or not.

The research indicated that high brand awareness would strengthen consumers' intention to purchase products induced by health claims. To extend hypothesis 3b, if consumers had a strong intention to purchase products without clearly feeling the perceived value of a famous brand brought by health claims, they may be influenced by the positive quality evaluation engendered by high brand awareness.

The implications of marketing practice.

1. Manufacturers can enhance consumers' brand awareness and purchase intention through health claims. Compared with health food, despite the low price of functional tea beverages, consumers still hold a high value on health claims, which can increase their knowledge about products and expectation for product performance. Currently, almost all of the functional tea beverage producers are actively applying for national health food certification. From the above research, it can be seen that the manufacturers' strategy is right: with health food certification, they can launch health claims, which could strengthen consumers' intention to purchase their products. However, it is noteworthy for manufacturers that when there is a wide choice of products with health food certification, the form and appeal of health claims will

become critically important.

When health certification is not prevailing, manufacturers only need to get national health food certification for the sake of making health claims to attract consumers. However, food with health certification is widespread and consumers' health awareness is now surging. Manufacturers should not just rely on getting national health food certification. They should further advertise the certified functions (making it difficult to form body fat or maintaining gastrointestinal health) and performances (one bottle for each day to see the effect) in order to achieve the effects produced by health claims.

Although health claims can improve consumers' brand evaluation and purchase intention for products, they will make consumers doubt their effects and lower their purchase intention if the claimed function and performance are not true or exaggerated. As a result, although manufacturers can resort to health claims to promote their products, they have to pay close attention to the product function itself.

2. Manufacturers can strengthen perceived quality and purchase intention enhanced by brand awareness. When consumers are confronted with a wide range of products with health claims, they tend to find it difficult to make choices. In this situation, brand awareness becomes one of the important factors for reference. For this reason, apart from carrying out health claims, manufacturers should also focus on enhancing their brand profile, i.e. strengthening their brand operation. The raising of

brand awareness needs considerable marketing resources (such as TV advertisements, a spokesperson or conducting promotional activities), which drives many manufacturers away. However, if the professional health image of products can be promoted and established through brand awareness, this will make a big difference among different products with health certifications.

The current study adopted an experimental design for the sake of a rigorous research method. The research scope and methods were designed to suit the research environment which, as a

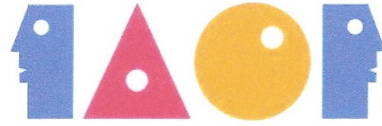
result, would restrict the research results to be explained as a whole or generalization. In addition, this study only chose 'tea beverages with the concept of weight-loss' as the product in question. It may lack extrinsic validity because of consumers' different levels of knowledge of the product. If the research results were applied to other products, the same conclusion may not be reached. The results cannot be generally applied. As for suggestions for further research, other products or categories can be studied. Meanwhile, external reference prices or involvement level could be taken into consideration.

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WHEN BIG DATA GETS SMALL

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Abstract

This paper will seek to characterize the relationship between big data and small data. This is an exploratory research project. It will seek to synthesize the literature on big data, as well as the emerging literature on small data, and identify the connections between them. Key questions include what is the relationship between big and small data, how does big data become small data, and when is there a reciprocal relationship as small data is aggregated into big data?

Keywords: big data, small data

Introduction

These days, due to the development of technology, we can have various kinds of personal tools such as smart-phone, tablet or laptop. This phenomenon is quite different from ten or twenty years ago and because of this, there is a large number of information generated by individuals today. As the scale of data increased in an incredible rate, the term “big data” comes after it. In recent years, big data plays a significant role in the digital world. The current rhetoric is around Big Data, but is that only kind of data? It's easy to infer that big data is interesting because data at smaller scales is uninteresting, unimportant, or a solved problem. This paper challenges that implicit claim by looking at small data, and how it relates to big data. We're arguing against big data, but more that the concept of big data is often a matter of perspective. And there are perspectives that are better described in other terms. In this paper we are interested in the small data perspective. Sometimes these connect. Sometimes they do not. So we

want to elaborate on the small data perspective, especially in relation to big data. For example, Google uses big data for language translation. Where previous approaches relied on the structure of language, Google's big data approach uses statistical analysis. This has led to the most robust machine translation system in the world (Mayer-Schonberger & Cukier, 2013).

Big data, however, often becomes small data. Where the translation of English to Chinese relies on an enormous corpus, and statistical analysis, the end result is not more big data, but small data — the translated text. Or consider how Bing Travel (formerly Fare Cast) predicts airfares through statistical analysis from historical ticket price data. This is a classic example of the power of big data. Yet the result, and the real value, is a small piece of data that indicates if the price for a particular flight are likely to increase, or fall, by how much, and the confidence in that prediction. For big data to have value, in this example, it needs to become small data.

There has been growing awareness that small data has value. There are cases where data has more value when it works at enormous scale, but this does not mean that at smaller scales data is less valuable. Small data is often central to our everyday experience of the digital world (Boyd & Crawford, 2012; Fast, 2013; Pollock, 2013). Furthermore, small data often makes big data possible. Consider again the example of airfare prediction. If the historical ticket price data was not collected and stored, we could not create the prediction out of thin air. Big data problems are often condensed into small data problems. Moreover, small data becomes an essential part of extracting value from big data.

In this paper we are interested in how to conceptualize the relationship between big data and small data. We specifically wish to challenge what is implicit in these terms: that data can be considered on a single dimension of scale, and that we can create value through dramatic increases in scale. Left

unexplored, one could easily assume that small data has little value, or that it would have more value if the same data was dramatically amplified. In the rush to embrace big data, one might assume that small data is unimportant, uninteresting, or for lesser problems. But as we will show, this is not necessarily true. Although the power of big data is enjoying increasingly broad support, there is in fact a great deal of diversity in the relationship between big and small data. If the term big data is to retain meaningful use, we need to disentangle and evaluate these relationships.

Background

What is Big Data?

The now classic definition of big data comes from a 2001 Gartner report called “3D data management: Controlling data volume, velocity and variety” (Douglas, 2001). The report proposed the “three Vs” of big data: Volume, Velocity, Variety. Volume refers to the amount of data, velocity to how rapidly

data is produced, and variety to diversity of the data formats. In 2012, Gartner expanded the concept to include a fourth V, Veracity, which refers to issues of trust and uncertainty with regards to data and the outcome of analysis of the data (Gartner, 2012).

While the Gartner definition is widely cited, it is far from the only definition of Big Data. Microsoft, for example, defines it this way: “Big data is the term increasingly used to describe the process of applying serious computing power — the latest in machine learning and artificial intelligence to seriously massive and often highly complex sets of information” (“The Big Bang,” 2013). In contrast, Oracle described the value of big data as being generated from traditional relational database coupled with new sources of unstructured data (*Oracle white paper*, 2012).

In the sciences, where large data sets are the norm, big data has referred to data sets so large that analysis requires supercomputers. However, many

data sets that used to require supercomputers may now be analyzed on workstation-class machines, or even cheaply available desktop hardware (Manovich, 2011). What constitutes “big” in “big data” is a moving target.

In sum, there is no singular definition of big data. Obviously, what people mean by big data stems largely from the size of the dataset. But that is not the only characteristic that distinguishes big data as something distinct and valuable. The concept of big data also involves the relationship between datasets, the complexity of these relationships, the rate at which the data changes, and the technological capacity to process it in a timely fashion. Big data, and big data technologies, provide new opportunities to create value from data at an unprecedented breadth and depth and scale (Lazer et al. 2009).

What is Small Data?

Small data, as a distinct term, is a concept that has emerged in reaction to

big data. A central idea is that the value generated from data may, in many cases, depend on the nature of the data, not from its size: “Size in itself doesn't matter – what matters is having the data, of whatever size, that helps us solve a problem or address the question we have” (Pollock, 2013).

As with big data, there is no widely agreed-upon definition of small data. One view is that small data is a sub-set of big data (Atomic Tower, 2013). But this reinforces the notion that big data is defined entirely by size, which as we have shown, is not the case. Stefaan Verhulst, Chief of Research at the Markle Foundation, has argued that “more data collection doesn't mean more knowledge. It actually means much more confusion, false positives and so on. The challenge is for data holders to become more constrained in what they collect (*the promise and peril of big data*, p.14).” The argument is neither for nor against big data, but rather that all problems should be framed in relation to obtaining the right data for the problem.

This may necessitate incomprehensibly large data sets, but not all problems would benefit from this. There are many situations where data at a smaller scale is preferred. As he argued, “People quite often fail to understand the data points that they actually need, and so they just collect everything or just embrace Big Data. In many cases, less is actually more—if data holders can find a way to know what they need to know or what data points they need to have (the promise and peril of big data, p.23).

There are at least two other arguments in favor of small data (small data group, 2012). One is that is simpler and better suited to individual, everyday problems. *Now include an example for individual consumer products.* A second argument is that small data is content-driven, highly accurate answers and explanations. There are a lot of applications we can use to calculate the distance while we are running. They collect our speed, record the distance and range, then they are able to generate a valuable report includes our average speed, total

distance, calories, and pace per mile. We can evaluate ourselves with the historical data. All the data were collected on purpose, so there is no unnecessary data. The data was collected and applied back to individuals only, so it also can be referred as customized data.

The idea of small data, and arguments in favor of this approach, are not intended to downplay or dismiss the power of big data. Rather, they aim to raise awareness about the value of small data in an era of big data hype. Moreover, for many situations, small data may be good enough, if not preferable.

Relating Big and Small

Analyzing big data or small data both involve collecting and analyzing data sets. Small data aims at collecting particular data set, and delivers value based on this data. Big data focuses on aggregating multiple data sets, analyze them, and look for meaningful patterns. These data sets are not randomly chosen. It focuses on knowing the audience,

looking for patterns, and be able to applied to the task at hand. The analysis of big data can be understood as, essentially, a small data problem. The only difference is finding the “hidden value”. For instance, consider this description of small data:

“Small data connects people with timely, meaningful insights (derived from big data and/or “local” sources), organized and packaged – often visually – to be accessible, understandable, and actionable for everyday tasks. (small data group, 2013)”.

The key “action” words here are connect, organize, and package. Without these actions, data is just a bunch of digital signals. These actions indicate the ways that small data relates to big data. Small data set is a component big data’s potential power. But that power depends on the ability to make connections, to organize the data in meaningful ways, and to package the analysis into a form that is understandable.

The difference between big and small data can be several things: the size of database, the scale of data, the amount of relevant data, or is there any patterns we can find between these data. Greenberg (2013) describe the difference this way: “The last mile of big data is where the value is created, opinions are formed, insights are shared, and actions are made”. In other words, big data is not independent of small data. At the same time, small data can be made more valuable by aggregating it into massive data collections. There is in many cases a mutual, even co-dependent relationship between big and small data. One does not exist without the other.

However, for data to be valuable does not necessarily need to be big. As Greenberg argues (2013) there are many reasons why small data, in the sense of a small volume of data, is sufficient for a given problem and may even be preferred. These reasons include lower hardware requirements, easier access, and better suited to many consumer applications, among others.

Models Relating Big and Small Data

Big data is composed of small data pieces joined together. Many elements of small data are aggregated to create big data collections. The relationship between big data and small data is not simply a matter of scale. There are also elements of collecting, aggregating, integrating, merging, and bringing together disparate yet related information components. There is no simple, universal, and objective way of conceptualizing the relationship between these two concepts, especially one based purely on scale (i.e., big vs. small). The relationship becomes more complex when we consider how the data is analyzed, explored, and used to solve specific problems. Consequently, there are several possible ways in which the relationship between big and small data might be understood. We present three models, drawn from the literature on big data and small data, that provide different views on how these two concepts are related.

Model A: Subset + Extract.

In this model, small data is conceptualized as a subset of big data. Small data is extracted from a larger dataset. This is how big data creates value: not from itself, but from a subset. In this sense then, there is no value in big data per se, only from small data. There is an example of the value generated from big data (Big Data, 2013), “Just as data can be used many times for the same purpose, more importantly, it can be harnessed for multiple purposes as well. This point is important as we try to understand how much information will be worth to us in the era of big data.”

One of the famous examples in this model of how Walmart uses the analysis of its data sets can be found in *Big Data* by Viktor Mayer-Schönberger and Kenneth Cukier. According to the authors, Walmart, recording every purchase by every customer for future analysis, noticed that when there was a hurricane warning the Walmart stores in the affected area would increase the sales of Kellogg’s Pop-Tarts. Store managers were told to place the Pop-Tarts near the

entrance during hurricane season. The result was a high increase in sales that no one could have guessed if it wasn’t thanks to big data analysis. We’ve seen some of this potential already, as when Walmart searched its database of old sales receipts and spotted the lucrative correlation between hurricanes and Pop-tarts sales.

As we can see, the data shifted from primary uses (historical transaction for reference) to secondary uses (figure out customer’s behavior pattern). One data generates two different kinds value, but it is still the same data. The context in which data is used and interpreted changes the value that can be created from it. There are massive of information stored in Walmart’s cloud (big data), it could be stocking database, human resources database, or online checkout system. We can consider this transaction database as a subset of big data, where the value is generated from. Big data might create an opportunity to discover new possibility, but the true value still comes from its subset, the

small data.

We extract the dataset we need and generate value from it. Every input on Internet could be referred as a dataset of big data. This input does not necessary need to be a word base key-in data. it could be anything-the using behavior among the web, the patterns of searching, or even the music broadcasting on the online streaming application.

Airfare Prediction

The other example is airfare prediction service. It based on analyzing the historical airfare data, and then cross-refer to other related information to generate the result. The data analyzed here might be transaction record, which used to only functioned as a reference data. In this case, the transaction data shift from its original purpose to the second purpose (from reference data to prediction). As shown in Figure 1, it clearly shows the airfare trend for 90 days, and generates a prediction with a confidence percentage.

Search Engine

We can also consider the whole database of search engine as a big data. There are massive of information stored on the Internet. We use keywords as a filter to filter out the information we do not need, and demonstrate only the information we request. In this case, the result page could be considered as the subset of big data.

For the search engine to function it requires big data, and the more data it has the better the results. At the same time, to fulfill an individual information need one requires only an extremely small subset of what is contained in the search system. That information need cannot be met by the entire database, only by users providing query terms from which they extract potentially relevant information. At the macro level, search engines depend on big data. At the micro-level, the level of individual user needs, the problem shifts to one of extracting a subset. That is, a problem of small data.

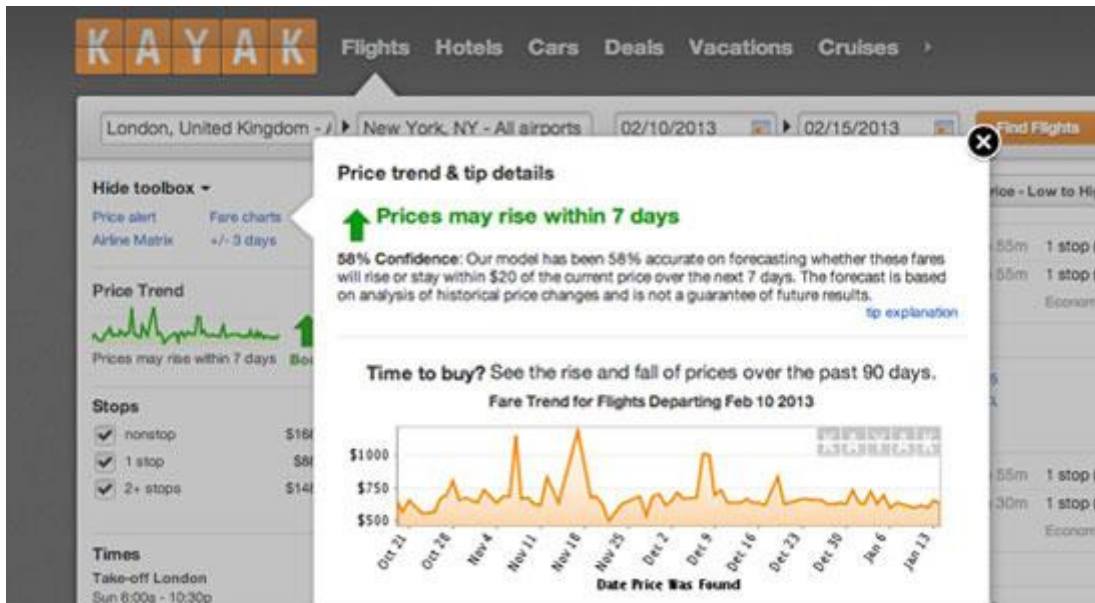


Figure 1. Airfare predicting service

Model A Summary

In this model, small data and big data share the same database. The database could be extremely large. Delivering the value by keep filtering out the unnecessary data.

Advantage: One database could fulfill several tasks; able to handle heavy task computing.

Disadvantage: Required heavy task computing ability; higher specification hardware required.

Model B: Customize Data Set

In this model, small data exists independent of big data. Small data is one concept and big data is a second concept. While both are about data, they are fundamentally different. As an analogy, cats and elephants are both mammals, but we think of them as dramati-

cally different kinds of animals. Similarly, in this model, the distinguishing features of small data are dramatically different from big data. Although both small data and big data are clearly data, just as cats and elephants are clearly mammals, they are just as clearly different kinds of data and therefore must be conceptualized as distinct and independent.

If small data is independent of big data, then it must create value solely in terms of the data it contains and not how it relates to other data. This narrows the scope of small data. Small data focus on collecting particular data set of individuals, and the value could be benefit back to individuals instantly. The scale of data size collected would be smaller in this model, so it takes less time to analyze and be able to provide quick response to individuals. Since it is a customize data set, the main purpose is to give feedback back to individuals, so it is not necessary to be an open data set. In fact, all the sensors could be referred as small data devices.

The idea here is that small data is completely separate from big data. Small data is collected and can be converted into some useful, actionable information. A lot of these involve creating products to be used by individuals. Where analog products provided some useful function, the digital version provides an enhanced functionality because it can collect data, often in real-time, and use computation to create some additional value. These examples are often small objects that rely on sensors to measure something and convert into more useful information. Quite a few of these are about health and individual performance: heart monitors, blood pressure, the running sock, the Happy fork, pill containers. These are often special-purpose devices (or they could be apps).

Tire-Pressure Monitoring

The tire-pressure monitoring system (TPMS) collects data about the tire pressure in each tire, in real-time. This is achieved with sensors in the tires that send data back to the car's Electronic

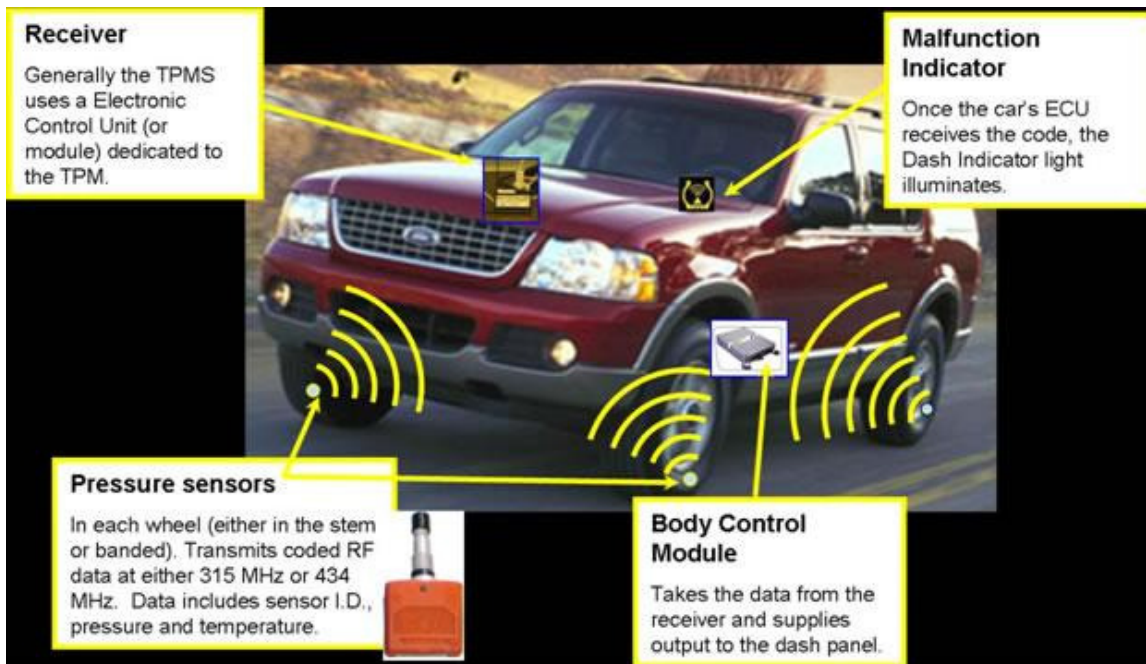


Figure 2. Tire-Pressure Monitoring System

Control Unit (ECU). The data is specific to a particular vehicle. It can be used to give drivers accurate information about the condition of the tire pressure and alert them to sudden changes or problems. Data from one vehicle is irrelevant for others vehicle -- it is about a particular car and particular tires.

textile sensors, therefore, it monitors all the movement during running or walking. There are a lot of data could be recorded, like speed, angle, path of movement, and pressure. It helps user to identify injury-prone running style and delivers a real-time feedback.

Model B Summary

Sensor Socks

The other example is motion-tracking socks. The sock is infused with

In this model, we only target on collecting particular data, so the scale of data is relatively small. And also because

of the scale of data is smaller, therefore, it is able to provide a real-time feedback.

Advantage: Due to smaller scale, the data would be easier to manage; deliver real-time feedback; do not require heavy task computing.

Disadvantage: Could not afford heavy task computing; effect on individuals only.

Model C: Hybrid of Model A & B

In this model, small data and big data work co-dependently. This model is a hybrid of model A & B, which the value generated by matching the data we created to big data. In fact, not everyone have the access to big data. Some companies restrict their data or sell the privilege of access for a fee. Some companies provide partial their data to match customer's need then exchange for profit. In this model, the value can not be generated from big data only (Model A). It has to match the data collected by individuals (Model B) to discover the potential

value, and the value delivered to both sides (individuals & big data holder).

This is also the most attractive reason that makes big data became so popular these days. It provides the possibility to uncover the potential value and the hidden relationship among several individual data, which might be nearly impossible in traditional database.

In the previous example, I mentioned about the sensor socks, it could also generate other values in this model. For example, there are a lot of different kinds of data collected through sensor socks, they could be the movement of ankle, the pressure on the nerve, or even the variation of body temperature. Shoes companies can use these data to manufacture new shoes that provide better support. The medical and health care institute can also use these data to advise people how to avoid some movement that might cause illness to our legs. In the past, the research samples they used were limited, so the result may not be that accurate.

The original value is created for individual users, which is based on small data, but it derived from big data. You can't get the small data value without the big data. They are co-dependent on each other. As we can see, model A & B generate value from different perspectives. This kind of value is directly generated from raw data. In model C, we integrate the value we derived from model A & B with the original database to uncover the potential value. This model is widely used in online advertising industry. They track our browsing history to determine what kind of advertisement popped out in the web page can reach its maximum beneficial result.

Amazon Example

For example, when we login to amazon.com and try to look for an earpod. We browsed several items but could not found the ideal one. If we go back to the main page of Amazon, we will notice there is a section listed full of earpod that near our price range or the function you were looking for. They even send you email if there is some new

coming items in this category. Amazon tracks their customers' shopping patterns, collecting the data we have created during our visit, and make a response to it. The longer we stayed, the more items we clicked, means the more data were collected, so that the recommendations would be more approach to what we were looking for. The data is both big and small at the same time. That is, the small data is relevant to a particular user and their information needs. But each user interaction adds is tracked by the system, which is used to build up the big data system, which in turn will improve the small data experience.

Model C Summary

In this model, the database keeps growing by aggregating newer customized data sets. Due to this fact, the results generated are more accurate and up to date.

Advantage: value delivered to both individuals and big data holders; use customized data to generate value.

Disadvantage: limited access to big data.

Discussion & Summary

The purpose of this paper is not to argue that big data and small data are distinct concepts, but to explore the relationship between them. The central idea here is that some people are starting to talk about small data, and personal data, and there is a natural tendency to position them as distinct concepts. But we point out that the big data literature by itself already contains ideas of small data. The current discourse aims to promote the idea of big data, and the value it can create, as though small data is something that has already been solved, creates lesser value, or is secondary when compared to what big data can do. Yet as we have shown, the relationship between big data and small data is much more complex than this.

First, although the current trend is to embrace the power of big data, we still have to consider the ROI. Every model targets different audience and has

different requirements. To the smaller scale company or which data scale is smaller, the benefits might not be seen obviously, but the investment could be considerable.

Second, when we look back to those examples, we can found out that some of them were already in used before the term "big data" showed up, which means that some of the concepts are the same compared between with / without big data. In fact, we do not need to adopt big data but we can still delivered the same benefits in some cases.

Third, the analyst matters. We generate value from data, but data does not generate value itself. Which data should be picked, what data should be integrated, or what data should be collected, are all managed by the analyst. Before we adopting big/small data approach, the analyst is the key position of the whole processes.

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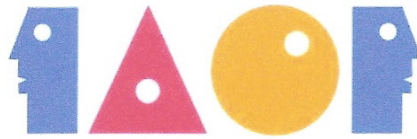
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A DEA MODEL INCORPORATING THE OVERALL INTEGRAL
AND SELF-EVALUATION COMMON WEIGHT

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Abstract

To improve the discrimination power of data envelopment analysis efficiency evaluation, the goal of this study is to establish a common weight model that emphasizes integrity and the self-evaluation of Charnes, Cooper, and Rhodes (CCR) efficiency values. In this study, the difference between the CCR efficiency values and common weight efficiency values was adopted as the objective and was set as the elasticity adjustment value between the weighted sums of output and input for each decision making unit. Furthermore, two examples from the literature were implemented. The results show that the correlation coefficients between the efficiency values of the common weight model of this study and those of the self-evaluation CCR model were considerably high. These results demonstrated that the proposed common weight model could obtain a common weight and implied abundant information on self-evaluation CCR efficiency values.

Keywords: data envelopment analysis, discrimination power, common weight model, CCR model

Introduction

Data envelopment analysis (DEA) was proposed by Charnes, Cooper, and Rhodes (1978). DEA is a nonparametric method that requires no prior knowledge of the production function to evaluate the relative efficiency of a group of decision making units (DMUs) with similar properties and several input and output variables. This relative efficiency is measured according to the ratio of the DMUs' weighted sums of output and weighted sums of input. The principal characteristic of the DEA efficiency evaluation model is that it can produce the most favorable weight value based on the efficiency evaluation for each DMU. In other words, the efficiency evaluated for each DMU by using the Charnes, Cooper, and Rhodes (CCR) efficiency evaluation model is the maximal efficiency value under identical conditions.

The efficiency evaluation model was rewritten from the fractional programming model of Charnes, Cooper, and Rhodes (1978) into a linear programming model. The efficiency value of the desired DMUs can be evaluated using the CCR model. However, the efficiency values evaluated using the CCR model often produce multiple "efficient units" (efficiency value is equal to 1), causing the discrimination power of the efficiency evaluation to become unapparent.

Numerous scholars have begun to consider common weights when evaluating the efficiency values of each DMU. The characteristic of the com-

mon weight model is that the same weight is used for each DMU. Thus, the probability of identical efficiency values greatly decreases when an identical evaluation standard is applied to all DMUs. The concept of common weights was proposed by Cook, Roll, and Kazakov (1989). Subsequently, Roll, Cook, and Golany (1991) evaluated the common weight for each variable and minimized the distance between the upper and lower limits for each weight. The common weight of Ganley and Gubbin (1992) applied the sum of the maximal efficiency ratio as the rating difference between the DMUs. Sinuany-Stern et al. (1994) used linear discriminant analysis to categorize DMUs as efficient or inefficient and used the results as a basis for common weight evaluation. Assuming that each DMU was equally critical, Liu and Peng (2004a) proposed the common weights analysis (CWA) model to evaluate the common weight of all variables. Liu and Peng (2008) further proposed the super CWA model, which evaluated the common weight of all variables under the assumption that the ratings of all DMUs are identical. Kao and Hung (2005) proposed the Compromise Weights model and applied it to financial performance evaluation based on identical DMUs. In addition, Hadad et al. (2008) provided suggestions on a common weight efficiency evaluation model. Their paper proposed the super-efficiency data envelopment analysis (SDEA) efficiency evaluation model, which is based on maximizing the difference between the weighted sum of output and input (S_j) for each DMU. Bao (2008) proposed the common

weight model by adopting the difference between the weighted sum of output and input as the smallest objective. Bao, Tsai, and Tsai (2012) proposed the common compromise weight, a special characteristic of which is that it considers a compromise of every DMU variable. All of the aforementioned common weight methods have dissimilar meanings for management; however, most of the described common weight models consider integrity but disregard the efficiency of every DMU. Therefore, this study established an efficiency evaluation model that combines the self-evaluation and common weight concepts.

Common weights are adopted to evaluate the efficiency value of each DMU from an integral perspective of these DMUs. Thus, the efficiency value evaluated using the common weights should be less than those evaluated using the CCR model, if the conditions are identical. This study applied this property as the foundation for establishing the common weight model.

The remainder of this paper is organized as follows: First discusses an input-oriented CCR efficiency evaluation model; Secondly presents the Integral and Self-Evaluation Common Weight (ISCW) model established in this study; and Third presents a comparison of the results of implementing the common weight model of this study with the CCR efficiency values reported in Hadad et al. (2008) and Azizi et al. (2007). Finally, concludes this paper.

CCR—Input-Oriented Efficiency Evaluation Model

According to Farrell's (1957) efficiency measurement concept, Charnes, Cooper, and Rhodes (1978) proposed an efficiency evaluation model based on multiple inputs and outputs. This method was named DEA; however, the efficiency evaluation models of that time were generally called CCR models. The efficiency value obtained using the CCR model can be termed technical efficiency and emphasizes the hypothesis of fixed returns to scale. In other words, for every investment increment, the output increases by the same amount. The calculation content is as follows: For the DMUs with n properties in common, each DMU has m inputs and s outputs. To evaluate the performance of DMU k , considering the position of each DMU, the maximization of the DMU output compared with the fixed input is emphasized; this is the input-orientation of the CCR model. The mathematical programming equation is as follows:

$$\begin{aligned}
 \text{Max } \theta_k &= \frac{\sum_{r=1}^s u_{rk} y_{rk}}{\sum_{i=1}^m v_{ik} x_{ik}} \\
 \text{s.t. } &\frac{\sum_{r=1}^s u_{rj} y_{rj}}{\sum_{i=1}^m v_{ij} x_{ij}} \leq 1, j=1,2,\dots,n. \\
 &u_{rk}, v_{ik} \geq \varepsilon > 0 \quad r=1,\dots,s, \quad i=1,\dots,m
 \end{aligned} \tag{1}$$

where

- ✓ θ_k : relative efficiency of DMU k ,
- ✓ $k = 1, 2, \dots, n$.
- ✓ u_{rk} : weight value of output r of DMU k .

- ✓ v_{ik} : weight value of input i of DMU k .
- ✓ y_{rk} : output r of DMU k .
- ✓ x_{ik} : input i of DMU k .
- ✓ y_{rj} : output r of DMU j .
- ✓ x_{ij} : input i of DMU j .
- ✓ ε : minimal positive real number;
- ✓ $\varepsilon = 10^{-4}$ or $\varepsilon = 10^{-6}$ is often used.

This model limits the ratio of the weighted sum of the outputs divided by the weighted sum of the inputs to 1 or less, and the weight value is regarded as an unknown. When the relative efficiency of DMU $_k$ is calculated, the weight is set to a specific number to maximize the relative efficiency value, h_k , of DMU $_k$. When the efficiency value of DMU $_k$ is equal to 1, DMU $_k$ is classed as relatively efficient, and when the value is less than 1, it is classed as relatively inefficient.

Because the objective function and constraint of the aforementioned mathematical programming equation are fractions, they are difficult to calculate and have an infinite number of solutions. Therefore, the denominator of the objective function in Equation (1) is set to 1, thus converting the equation into a linear equation (Charnes et al., 1978):

$$\begin{aligned}
 \text{Max. } \theta_k &= \sum_{r=1}^s u_{rk} y_{rk} \\
 \text{s.t. } \quad &\sum_{i=1}^m v_{ik} x_{ik} = 1 \\
 &\sum_{r=1}^s u_{rj} y_{rj} - \sum_{i=1}^m v_{ij} x_{ij} \leq 0, j=1, 2, \dots, n \\
 &u_{rk}, v_{ik} \geq \varepsilon \quad r=1, \dots, s, \quad i=1, \dots, m
 \end{aligned} \tag{2}$$

The Proposed Combined Self-Evaluation Common Weight Model

The model proposed in this study is a combined self-evaluation CCR model and common weight model called the ISCW model. A theory is presented in this section to facilitate describing the characteristics of the ISCW model.

An evaluation of the efficiency values of all DMUs by using the CCR model revealed that all of the variable weight values of all DMUs were dissimilar. When Equation (2) is used n times for n DMUs, the following efficiency evaluation result is obtained:

$$\begin{aligned}
 \frac{\sum_{r=1}^s u_{rj} y_{rj}}{\sum_{i=1}^m v_{ij} x_{ij}} &= \theta_j \quad \text{or} \\
 \sum_{r=1}^s u_{rj} y_{rj} &= \theta_j \left(\sum_{i=1}^m v_{ij} x_{ij} \right) \\
 &, \quad j = 1, \dots, n
 \end{aligned} \tag{3}$$

In Equation (3), the evaluated values of u_{rj} , v_{ij} , and θ_j differ for each DMU. To attempt to maintain the efficiency values evaluated using the original CCR model as well as the ISCW model, the right-side value must be reduced to attain the common solution for n equations. By adding δ_j to the right side of the equation, n equations can be obtained under the condition of common weight:

$$\begin{aligned}
 \sum_{r=1}^s u_r y_{rj} &= \theta_j \left(\sum_{i=1}^m v_i x_{ij} \right) + \delta_j \\
 j &= 1, \dots, n
 \end{aligned} \tag{4}$$

To obtain efficiency values as close

as possible to those evaluated using the original CCR model, the objective

function can be set to $\min \sum_{k=1}^n \delta_j$.

Furthermore, to avoid the meaningless solution of an output equaling 0, the u_r and v_i restriction Equations (7) and (8) from Hadad et al. (2008) were adopted. Thus, the ISCW can be expressed using Equations (5) to (8):

$$\min \sum_{j=1}^n \delta_j \quad (5)$$

$$\text{s.t. } \sum_{r=1}^s u_r y_{rj} = \theta_j \left(\sum_{i=1}^m v_i x_{ij} \right) + \delta_j \quad (6)$$

$j = 1, \dots, n$

$$u_r \geq \frac{1}{(m+s) \max \{y_{rj}\}}, r = 1, \dots, s \quad (7)$$

$$v_i \geq \frac{1}{(m+s) \max \{x_{ij}\}}, i = 1, \dots, m \quad (8)$$

Example Illustrations

➤ Example 1:

To illustrate the application of Equations (5) to (8), Hadad et al. (2008) was used as a literature example. This example comprises 24 DMUs with two input variables (x_1 and x_2) and three output variables (y_1 , y_2 , and y_3). First, the lower limit restrictions for u_r and v_i were substituted into Equations (7) and (8). The lower limit values of $u_1 > 0.0000024$,

$u_2 > 0.00000056$, $u_3 > 0.0000041$, $v_1 > 0.0002$, and $v_2 > 0.002$ were first sought. Subsequently, the data in Table 1 were substituted into Equation (2) to obtain the CCR efficiency values. The results are presented in Table 1.

By substituting the CCR efficiency value θ of each DMU into Equations (5) and (8), the common ISCW weights can be obtained:

✓	$u_1 = 0.5510530E-05$
✓	$u_2 = 0.5600000E-06$
✓	$u_3 = 0.4100000E-05$
✓	$v_1 = 0.8964996E-03$
✓	$v_2 = 0.2000000E-02$

This study's ISCW efficiency values were obtained by first separately multiplying these common weights with the output variables and input variables of each DMU and then dividing the two products. The CCR θ efficiency values, SDEA efficiency values of Hadad et al. (2008), and this study's ISCW efficiency values are listed in Table 2.

The correlation coefficients among the three aforementioned types of efficiency value were calculated. The correlation coefficient between ISCW θ and CCR θ was 0.930236 and that between ISCW θ and SDEA θ reached 0.997245. This example indicated the stability of this study's ISCW model Table 3.

Table 1. Data and CCR Efficiency Values from Hadad et al. (2008).

DMU	input x_1	input x_2	output y_1	output y_2	output y_3	CCR θ
1	675	72	53017	220017	16535	0.7510
2	148	12	24127	35748	905	1.0000
3	193	8	16116	62865	465	0.7400
4	366	16	32411	124478	1483	0.7784
5	448	40	33577	145554	9433	0.7570
6	108	4	11056	37252	1398	0.9648
7	415	38	33492	131009	5753	0.7154
8	618	70	49631	226015	23849	0.9098
9	215	23	24239	85459	7265	1.0000
10	499	17	54379	225010	2765	1.0000
11	394	14	32234	129435	1393	0.7384
12	535	75	51688	189197	9403	0.7935
13	403	23	32030	153140	6435	0.8664
14	207	32	24631	96605	5069	1.0000
15	639	55	56016	213304	7416	0.7588
16	949	71	71766	304311	28735	0.8052
17	321	15	32358	110128	1193	0.8369
18	858	40	68113	287528	48391	1.0000
19	315	10	22136	91151	3763	0.7942
20	378	26	31661	155705	2726	0.8844
21	984	100	72187	323055	18932	0.7317
22	984	76	82527	354925	21532	0.8390
23	911	46	75698	306468	24056	0.8532
24	618	30	58338	230186	9647	0.8867

➤ Example 2:

Azizi et al. (2007) was adopted as an example. This example comprised 10 DMUs, two input variables, and one output variable. The data are presented in Table 4.

The CCR efficiency values of each DMU were obtained and then substituted into Equations (5) to (8); thus, the common weights of the proposed method were derived:

- ✓ $u = 0.6206317$
- ✓ $v_1 = 0.3333$
- ✓ $v_2 = 0.4836538$

Table 2. The CCR θ , SDEA, and ISCW Efficiency Values

DMU	CCR θ	SDEA θ	ISCW θ
1	0.7510	0.6983	0.68538
2	1.	1	0.98043
3	0.7400	0.7247	0.72487
4	0.7784	0.7680	0.76681
5	0.7570	0.6925	0.68188
6	0.9648	0.9123	0.90256
7	0.7154	0.6740	0.66653
8	0.9098	0.7887	0.76894
9	1.	0.9475	0.92664
10	1.	1	1
11	0.7384	0.7360	0.73590
12	0.7935	0.7117	0.70178
13	0.8664	0.7890	0.78320
14	1.	0.8814	0.86916
15	0.7588	0.7181	0.71169
16	0.8052	0.7655	0.74821
17	0.8369	0.8275	0.8245
18	1.	1	0.96358
19	0.7942	0.6963	0.69020
20	0.8844	0.7649	0.76573
21	0.7317	0.6587	0.64977
22	0.8390	0.7875	0.77624
23	0.8532	0.8453	0.82942
24	0.8867	0.8782	0.86961

Table 3. The CCR θ , SDEA, and ISCW correlation coefficient

	CCR θ	SDEA θ	ISCW θ
CCR θ	1		
SDEA θ	0.93469	1	
ISCW θ	0.930236	0.997245	1

Table 4. Ten DMUs, Two Input Variables, and One Output Variable.

DMU	input I_1	input I_2	output O_1
1	0.49317	0.96654	0.89555
2	0.48369	0.98980	0.84530
3	0.34632	0.97640	0.95473
4	0.54484	0.95277	1.00000
5	0.69094	0.92339	0.83291
6	1.00000	0.95390	0.99482
7	0.57672	1.00000	0.93614
8	0.43292	0.84319	0.94335
9	0.44820	0.98153	0.48875
10	0.83123	0.95258	0.83413

Table 5. The ISCW θ and CCR θ Values of Example 2.

DMU	CCRθ	ISCWθ
1	0.83028	0.829522
2	0.82493	0.773079
3	1	0.950822
4	0.92073	0.911041
5	0.74797	0.720152
6	0.78542	0.732667
7	0.81909	0.810629
8	1	1
9	0.46609	0.458329
10	0.69342	0.661695

The common weights were multiplied with the output variables and input variables of each DMU, and the two products were divided to obtain the efficiency values of the common weight model. The CCR θ and ISCW θ values are listed in Table 5.

The correlation coefficient between this study's ISCW θ values and the CCR θ values reached 0.990656. This example revealed the stability of the proposed ISCW model.

Conclusion

This study designed a model that emphasizes self-evaluation and common weights, called the ISCW model. The efficiency evaluation results of the ISCW model are as follows:

The common weight values for all DMUs could be obtained, and the correlation coefficients between the efficiency values of the common weights and those

evaluated using the CCR model were extremely high compared with two studies from the literature. The result shows that the ISCW model could perform evaluation by using common properties as well as maintaining the properties of the CCR model efficiency evaluation.

In the two examples, using the ISCW efficiency values generated only one efficient DMU, indicating a significantly higher discrimination power than those of both the original CCR model efficiency evaluation and SDEA model efficiency evaluation.

According to this examination, the ISCW model succeeded in emphasizing integrity and self-evaluation of CCR efficiency values in a common weight model as they bring new and strong evidence that proves this innovation DEA mode (ISCW). The future study can be used to aid in the multiple same size of the organization, to identify the most efficient by unit.

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EXPLORATION OF MEDIATING MODELS BETWEEN SPIRITUAL
LEADERSHIP AND ORGANIZATIONAL CITIZENSHIP BEHAVIOR:
THE IMPORTANCE OF ORGANIZATION BASED SELF-ESTEEM
IN SERVICE INDUSTRIES

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Abstract

The aim of this research is to study the content of the construct of "spiritual leadership", to identify its role in organization management, to empirically validate its influence on organizational citizenship behavior, and to explore the plausibility of promising mediating mechanisms for this construct. The process of spiritual leadership to influence organizational citizenship behavior (OCB) through the mediation of organization based self-esteem (OBSE) was investigated in service industries. Samples were 239 for retailing service industries. We were found to be mediated by OBSE and to impact OCB.

Key Word: Spiritual Leadership, Organization Based Self-Esteem (OBSE),
Organizational Citizenship Behavior (OCB)

Introduction

Spiritual values/practices are demonstrated significant in creating human cognitional, behavioral, and attitudinal change (Chen & Li, 2013; Chen, Chen, & Li, 2012; Chen, Yang, & Li, 2012). Fry's pioneering work is inspiring and serves as the basis for future leadership research. As a new research model, the spiritual leadership theory needs more empirical research, Spiritual leadership (SL) as a value - oriented new leadership theory and leadership study. (Avolio, Walumbwa, & Weber, 2009; Chen & Li, 2013). Avolio et al (2009) suggest that determining the causal mechanisms that link leadership to outcomes will be a priority for future leadership studies. Rego and Cunha (2008) pointed out that OCBs are usually associated with organizational effectiveness. This may be because the staff is a well-organized citizens, it involves not only the interaction active and serious with customers, but also create an atmosphere, to promote their goals toward higher productivity and quality of service and other positive behavior. Podsakoff & MacKenzie (1997) study found the positive relationship between OCB and service performance. Service industries have long valued OCB in enhancing service quality (Schneider & Bowen, 1999).

The leadership process to influence employee OCB has been discussed by many scholars (MacKenzie, Podsakoff, & Rich, 2001). Spiritual leadership theory rooted in the integration of vision, hope / faith, love in portraying an effective leader of the inherent intrinsic model (Chen & Li, 2013). The concept through leaders value, attitudes and be-

haviors to encourage followers to achieve a sense of spiritual survival through calling and membership (Fry, Vitucci, & Cedillo, 2005, Fry, Hannah, Noel, & Walumbwa, 2011, Fry, & Wigglesworth, 2013). Pierce, Gardner, Cummings, & Dunham (1989) introduced the OBSE concept and defined it as the degree to which an individual believes him/herself to be capable, significant and worthy as an organization member. OBSE indicates the quality of the employee-organization relationship (Chen, Aryee, & Lee, 2005; Nasrin, A, & Ghazal, H. 2013). According to researchers, an individual's motivation is significantly related to organizational citizenship behavior (Tang & Ibrahim, 1998)

Although workplace spirituality is important to service industries, there are few empirical studies in this domain (Dent, Higgins, & Wharff, 2005). Important research questions including the relationships between spiritual leadership and organizational outcomes of service industries require further exploration. It is the purpose of this study to investigate the process of spiritual leadership, its mediating mechanisms, and the influence on plausible organizational outcomes. Moreover, the applicability of the spiritual leadership process of service industries is also examined.

Research Framework and Hypotheses

Spiritual leadership and OCB

Spiritual leaders are deemed as transformational leaders in stimulating their subordinates's internal motivations

so that employees are highly motivated to conduct citizenship behavior (Gagne & Deci, 2005; Fry, 2003). Ahmadi and Khoddami (2010) studied the “spirituality” and “OCB”. The result showed that the citizenship behavior and spirituality had a positive relationship. Beikzad et al. (2010) studied the effectiveness of workplace spirituality on organizational citizenship behavior of employees result of this study showed that workplace spirituality impact on citizenship behavior of the ministry of education employees in five areas of Tabriz city. In line with these theories and research findings, this study hypothesized that:

H1: There is a positive relationship between spiritual leadership and OCB.

Spiritual Leadership and OBSE

Leadership theories indicate that leadership influences individual’s self-esteem. Leadership is proven to bear impact in the following process: dyadic interaction, group and interpersonal relationship in the organization, and leadership affects people’s identity, value and self-esteem (Cremer et al., 2005; Chen, et. al 2012). Pierce & Gardner (2004) created the term organization - based self-esteem (OBSE) and defined it as the individual perception on self - competence and value in organizations. If employees believe that themselves are important, meaningful, effectual, and worthwhile in the organizations, they will show a higher level of self-esteem in their perception (Chen, et. al 2012).

According to Fry (2003), while individuals internalize organizational

value and vision into their own value systems, they will conform to organizational goals. As organizational goals are accomplished, individuals feel satisfied in their internal self-esteem. Therefore, this research hypothesized that:

H2: There is a positive relationship between Spiritual leadership and BSE.

Mediators in Spiritual Leadership Pierce & Gardner (2004) point that organizational members with high OBSE believe that they are important, meaningful, effectual, and worthwhile to the organization (Pan, Qin, & Gao, 2014). OBSE has been well addressed in the literature and was empirically reported to be an important predictor of OCB by many researchers (e.g. Pierce & Gardner, 2004; Twigg, Fuller, & Hester, 2008). OBSE is a determining factor of employees’ work motivation, work attitude, work behavior, work performance and organizational performance (Pierce & Gardner, 2004; Pan, Qin, & Gao, 2014), and a mediator between leader – follower relationships (Aryee, Budhwar, & Tan, 2003). Thus, to include self-esteem as a follower's mediating mechanism in the SL process is reasonable (Chen & Li, 2013). Therefore, the study hypothesized: The mediating effect of self esteem (OBSE) between OCB and its antecedents such as trust and transformational leadership has also been reported (Twigg et al., 2008).

H3: Spiritual leadership will positively affect employees’ OCB through the mediation of OBSE.

Figure 1. shows the research framework of this study.

Research Design

Sample

Convenience sampling was adopted by this study. 300 copies of

questionnaire and stamped self - addressed envelopes were distributed to participants who are willing to take part in this study. Participants were assured of anonymity in the cover letter attached with the questionnaires. To ensure confidentiality, respondents were

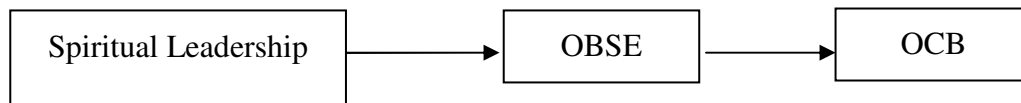


Figure 1. Research Framework

instructed to seal completed questionnaires in the self-addressed envelopes and mail delivery to the researchers (Chen, Wang, Chang, & Hu, 2008). There were 239 samples were collected from service industry in Taiwan. Questionnaires with excessive missing data were disqualified.

Measures

Spiritual leadership.

The 26-item spiritual leadership scale by Fry, Vitucci & Cedill (2005) was adopted in the survey. Cronbach's α coefficient for the constructs was 0. 91.

Self-esteem.

The Organization-Based Self-Esteem (OBSE) by Pierce & Gardner (2004) was utilized in this study. OBSE was a 10-item. Cronbach's α coefficient for the constructs was 0. 94.

Organizational citizenship behavior.

The "Chinese Organizational Citizenship Behavior Questionnaire" by Farh, Earley & Lin (1997) was adopted. This study used the 4 items pertaining to the dimension "altruism toward others" as a direct measure of OCB. Cronbach's α coefficient for the constructs was 0. 92.

Results

Correlations among research variables

In Table 1, the relevant inter - correlations between variables were all positively significant ($p \leq . 01$).

Regression for estimating paths and mediating effects

To examine the mediating role of OBSE, the following three conditions need to be met to support the mediating role recommended by Baron and Kenny

(1986). First, independent variable significantly relate on dependent variable. Second, independent variable should significantly relate to the mediating variable. Finally, the mediating variable significantly relate on dependent variable. These three conditions are meet and then

mediating variables added to the model, the mediation effect can be confirmed under the condition that the significant effect of the independent variable on the dependent variable becomes insignificant (Chen, & Setyabudi, 2011). Following Baron and Kenny's

Table 1. Reliability, means, standard deviations and correlations

Variables	Cronbach's α	Mean s. d.	1	2	3
spiritual leadership	0.91	3.59 .72	1		
OBSE	0.94	3.90 .66	.49 (**)	1	
OCB	0.92	4.14 .53	.47 (**)	.58 (**)	1

note: * $P \leq 0.05$ ** $P \leq 0.01$ *** $P \leq 0.001$

suggestion, according to Table 1., the first is to test the direct effect of spiritual leadership and OCB. The results indicate that spiritual leadership has a significantly positive on OCB ($r = .47, p < .05$), The second step is to test the effect of spiritual leadership on the OBSE, respectively. The result indicates that spiritual leadership has a significantly positive effect on OBSE ($r = .49, p < .05$), Based on these results, H1 is supported. The third step is to test the effect of the OBSE on OCB. The results demonstrate that OBSE have significantly positive effects on OCB ($r = .58, p < .05$) Thus, H2 were supported.

To test the mediating effect of OBSE, spiritual leadership and OBSE were simultaneously regressed on OCB. The results demonstrate that the effect of

spiritual leadership on OBSE become the effect of reducing forecast (model 4), thus yielding partially support for H3.

Discussion

Chen and Yang (2012) evaluated the influence of spiritual leadership on organizational citizenship behavior. OCB has been widely addressed in management research mainly during the past decade, with some studies being carried out in the services sector (Ackfeldt & Wong, 2006; Cohen & Avrahami, 2006; Rego, & Cunha, 2008). Our study established that when the leaders having spiritual leadership has a positive influence on the employees and their respective intrinsic meaning to their work.

Self-concept is found to be the

major mediator between spiritual leadership and OCB (Chen et. al., 2012). And OCB is believed to be related to intrinsic work motivation (Gagne & Deci, 2005). Tang and Ibrahim (1998) reported significant relationships found between intrinsic motivation and organizational citizenship behavior. It is reasonable to

anticipate that an employee's sources of motivation will share common variation with the organizational citizenship behaviors he or she displays. This study suggests difference or modification to Fry's original model, by highlighting the importance of inner-self spiritual factors, over and above the contribution of the

Table 2. Hierarchical regression analyses of *spiritual leadership* and *based self-esteem (OBSE)* on *OCB*

Variable	OCB			
	Model 1	Model 2	Model 3	Model 4
	β	β	β	β
Control variable				
Gender	.17	.17	.07	.09
Educational level	-.15*	-.08	-.05	-.03
Tenure	.16	.08	.12	.06
Independent variable				
spiritual leadership		.38***		.18***
Meditation variable				
OBSE			.54***	.49***
R ²	.13***	.26***	.40***	.46***
F	10.16	18.35	33.88	32.91
ΔR^2	.13***	.13***	.27***	.18***
F change	10.16	34.05	91.82	65.34

note: * $P \leq 0.05$ ** $P \leq 0.01$ *** $P \leq 0.001$

two follower's survival factors identified by (Fry et al., 2005; Chen et. al., 2012).

Spiritual leadership can effectively improve body (physical), mind (logic and rational thinking), heart (emo-

tion and feelings) and spirit, a more holistic leadership style that has gradually gained attention from enterprises. This study provided evidence for the importance of self concepts for employees, and leaders should actively create an envi-

ronment which promotes employees' self-related psychological perceptions to achieve a more effective leadership.

Suggestion for Future Study and Limitations

Our findings suggest that examining the mediator through which various leadership behaviors influence the work behavior of subordinates is worthwhile. However, this study has some limitations the performances were measured by self-report may inflate the relationship among research variables. Chen & Li (2013) suggest objective measures rather than subjective measures will increase the explaining efficacy of the spiritual leadership impact or effective-

ness. In addition, The study refers to the individual-level study but the organization has a lot of interactive cross-level different various levels to influence leadership effectiveness requires further investigation and future research may need to investigate.

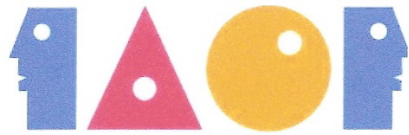
Other organizational outcomes should also be study. Future research is needed to investigate into others organizational phenomena and processes. there are other important organizational behaviors that were also related to spiritual leadership, for instance, workplace deviant behavior, well-being, organizational commitments, work satisfaction, psychological contract etc.

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DEVELOPING A FRAMEWORK FOR POLITICAL PARTY FINANCE
MONITORING AND ENFORCEMENT: A CASE STUDY OF
THE INDEPENDENT NATIONAL ELECTORAL
COMMISSION (INEC), NIGERIA

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Abstract

The aim of this study is to develop an effectual, controlled, and implementable political finance monitoring and enforcement framework, in consultation with key stakeholders, so that Independent National Electoral Commission (INEC) will be able to deliver on its statutory mandate to the Nigerian people. It is envisaged that when such a framework is appropriately enforced, transparency will be enhanced in the management of political party finances, and the use of state resources to fund political party activities, will be greatly minimized. This state of affairs will help restore the confidence of the citizens in their democratic institutions. This study was achieved through the review of existing legal framework for monitoring and enforcing political finance regulations, with a view to identifying gaps, and suggesting appropriate amendments. Moreover, to develop a structured framework for party finance monitoring, this study used the concept of project life cycle in project management which involve the following stages; initiation, planning, execution, monitoring & controlling, and closeout to deliver an efficacious research outcome. The outcome of this study was a success as it developed a generic project management based political party finance regulation and enforcement framework, incorporating effective stakeholders' engagement and management.

Keywords: Political Finance, Legal And Regulatory Framework, Project Management Lifecycle, Stakeholder Engagement And Management, And Organizational Influences.

Introduction

The rationale for monitoring political party financing is to ensure that state resources are not diverted to fund political activities to the detriment of developmental activities, and restoration of the people's confidence in their democratic institutions. Van Biezen (2003) cited several instances of scandals in relation to political party finances in the countries making up the European Union (EU), and determined that urgent action needed to be taken to restore the confidence of the populace in democratic institutions. Kostadinova (2007) determined that the absence of strict set of laws, monitoring and enforcement mechanisms for political party finances, in Bulgaria, damaged the reputations of political parties. Both section 225 of the Nigerian constitution (1999) and section 78-102 of the electoral act (2010) empowered the Independent National Electoral Commission (INEC) to regulate and monitor the sources and application of funds of political parties, in order to accomplish the above objectives.

However, enacting regulations in respect of monitoring political party finances does not resolve the issues, rather the major drawbacks are in getting the stakeholders to comply, and ensuring that the penalties are appropriately enforced. The stakeholders in the political process include, but not limited to, party officials and trustees, political

party members, the electoral management body (EMB) like INEC, financial regulatory authorities (national banking regulatory authority, like Central Bank of Nigeria CBN), multilateral institutions promoting democratic practices and ensuring that democratic cultures are entrenched in nascent democracies (International Federation of Electoral Systems- IFES), International Institute for Democratic Electoral Assistance- International IDEA) & United Nations Development Program- UNDP), etc., and all eligible voters. Probably, Russia has one of the most regulated political party financing regimes, but they are not appropriately enforced, leading to continued diversion of state resources to finance political party activities, thereby giving parties with representation at the Duma (Russian parliament) and connections to the Kremlin (Executive), access to more funding, and undue advantage (Hutcheson, 2012).

Political Finance

The International Federation of Electoral Systems (IFES), Training in Detection and Enforcement (TIDE) published a handbook on 'Enforcing Political Finance Laws', which defined political finance to encompass campaign finance and party finance (NDI, 2005). It further informed us that campaign finance has to do with expenditures related to electioneering campaigns, while

party finance relates to 'non-campaign financial or in-kind donations to political parties, organizations and associations, and expenditures made by these groups'. We are well aware that political parties play a significant role in our democratic culture, especially during electioneering campaigns all over the world, and there are significant difficulties in separating electioneering campaign expenditures of political parties and related organizations, from those expended for routine administration of the parties. It may therefore be safe to regard or equate party funds as political finance.

The handbook specifically identified broader perceptions of political finance to include; funding for other associated or related organizations, who, although distinct from the parties, were established to further the interests of parties, expenditures incurred while lobbying, costs associated with media coverage and other communications that advance political party ideas, expenses on legal proceedings relevant to political parties, and third party or 'independent' expenditures. Article 6 of the common rules against political corruption in the funding of political parties and electioneering specifically included funding to 'independent' bodies associated with political parties as part of political finance (Council of Europe, 2003). In order to have a wider perspective of the issues involved, the term 'political finance' is defined in its widest form to include; monies expended on electioneering campaigns, expenditures on maintenance & running of party offices, carrying out political enlightenment campaigns, voter registration, researches on policy formu-

lation, and other routine party expenses. Others include expenditures on foundations/associations and other business entities that propagate party objectives, political lobbying, media visibility and access, as well as, funding litigations.

Legal & Regulatory Frameworks for Political Party Finance

Ettinghausen (2006) identified 6 principles of political finance regulation. These include; transparency in the sources of the funds obtained, establishment of lower and higher limits on electioneering expenditures, making sure donations from trade unions and corporate entities have unambiguous approval of members and stakeholders, stipulating preference for small donations from wide segments of the society against large contributions from few individuals/organizations, ensuring that participation in the political process is from a broad spectrum of the citizenry, and establishing stringent requirements for accessing public funds. With the plethora of scandals associated with political finance, it has become incumbent on serious minded sovereignties to enact adequate, comprehensive, and effective legal and regulatory frameworks to monitor political finance. Yes, the public hates the idea of paying for political campaigns through general taxation, but if not through taxation, then there is a window of opportunity for corruption or conflict of interest. And on that topic, do you draw any distinction between actual corruption and "appearance of potential conflict of interest" which seems to be more of an issue in my country?

The United Nations Convention Against Corruption- UNCAC (2004) compels member states to make concerted efforts in enhancing transparency of electioneering campaign and political party financing. The basis of sound political finance legal and regulatory framework is appropriate and timely disclosure of candidates' and political party returns in respect of their incomes and expenditures. Regulations for control of money in politics may require expenditure limits, prohibition of income from certain sources, and offering state funding for political party activities, however, these regulations will not function effectively without appropriate disclosure requirements and legislations.

The Financing of Political Parties & Election Campaigns, Transparency International Position Paper 1/2005, on Standards of Political Funding & Favors, and 2/2005 on Political Finance Regulations: Bridging the Enforcement Gap, as well as the South African Development Community (SADC) Parliamentary Forum Norms and Standards for Elections in the SADC Region have proffered far reaching recommendations on effective disclosure tenets that will achieve transparency in political finance.

Pinto-Duschinsky (2002) reviewed legal and regulatory frameworks for political party financing in 105 countries, classifying them into those that have state funding, have disclosure requirements, and provision of free media airtime, which are essential factors for review in curbing political finance corruption. The results showed that all the countries had disclosure requirements;

about 60% had some form of state subsidies, while about 80% provided free airtime. The point being made here is that neither existence of political finance regulations, state funding, nor provision of free airtime will conclusively resolve the issue of political finance corruption. The author's suggestions to tackle the issue, include; the need for multilateral organizations (like World Bank & International Monetary Fund) to bring their might into the fight against political finance corruption, moving away from reforming only legal and regulatory frameworks, to concentration on proper enforcement of existing legislations, as overestimated reliance on civil society organizations has not reduced the problem, and the involvement of stakeholders, especially politicians in the search for a resolution of this endemic problem.

Ohman, (2012) brought a refreshingly different perspective to the issue of political finance regulations, by taking a worldwide view, and studying it as a variable influenced by three autonomous factors; namely, the electoral system in operation in the jurisdiction, the age/depth of democracy, and perception of corruption within the political system. This research study relied on the database on electoral and political finance regulations developed by the International Institute for Democratic Electoral Assistance (IDEA) in 2012. The database had three classifications of independent variables; electoral systems, proportional representation, majority/plurality, and a mixture of these two systems. This inquiry viewed the level of political development as proportional to

the age of democracy, and perception of corruption as directly related to the level of corruption in political finance. The summary of the findings was that there was a significant relationship between the electoral system in operation and presence of political finance regulations, but the relationship between the other independent variables and political finance regulations could not be definitely tied. As the author acknowledged, this is an exploratory work, and there is need for further inquiry which will take multi-dimensional view of the subject of discourse.

Efficacy of Political Finance Regulatory and Enforcement Frameworks

There is no gain in saying that a strict and appropriate disclosure, reporting, regulatory and enforcement requirements are necessary adjunct of a good multi-party democratic system. Ashiagbor (2005) underscored the overarching need for reform in regulatory and enforcement practices in African countries. His inquiry was conducted under the Africa Political Party Finance Initiative (APFFI) program funded by United Kingdom Department for International Development (DFID) and the National Democratic Institute (NDI). The *raison d'être* are the general public perception that political funding in Africa is not overtly transparent, while the major driver for participation in the political process is for personal and other pecuniary interests. This inquiry took the view that there needs to be greater constructive engagement with all stakeholders in the political process, so as to

achieve their 'buy-in', in order to establish the need to reforms, and that the debate should not be limited to regarding public funding as a panacea for all the problems bedeviling political regulations in various jurisdictions in Africa. In Malaysia, political parties are allowed to own businesses, but with poor legal and regulatory framework, incapacitation of the monitoring authorities, and money based factionalism of political parties, and inequality in access to funds persist, Gomez (2012) has made a case for comprehensive legal and regulatory reforms in that jurisdiction.

Kostadinova (2007) reviewed fund raising efforts and activities of political parties, inclusive of public funding, as well as the make-up of the resultant incomes and expenditures in post-communist Bulgaria. This gave rise to the stratification of political parties into three tiers of unequal resource strengths, thus confirming the earlier position that state funding will not give rise to equality of parties. The author confirmed that in the absence of strict and effective financial guidelines and regulations for reporting and disclosures (transparency), as well as, appropriate enforcement mechanisms, the perception of political parties as representatives of a nation state's communal interest will be seriously eroded as a result of inadequacy of reporting guidelines and enforcement (Ashiagbor, 2005, Kostadinova, 2007, & Aluaigbe, 2009).

While the need for political finance reform has been established, it should be noted that there is no universal set of regulations that can be applicable in all

jurisdictions. Each country should take cognizance of peculiarities within the country in arriving at a regulatory framework that will be suitable for its jurisdiction. Scarrow (2007) elaborated on this point with comparison of the effect of tax legislation in Germany and Canada. In the 1950s, Germany introduced tax legislation stopping corporate organizations from writing off donations to parties as part of their operational expenses, and this resulted in a big drop in large donations for parties from companies. On the other hand, during the 1970s, Canada introduced munificent tax incentives for small donors to political parties. This resulted in large inflows for the political parties, as well as, wider interest and participation in the electoral and democratic process by the citizenry. As with most issues, there may not be universally acceptable and efficacious political finance regimes that can be applied across jurisdictions, only trade-offs that take cognizance of socio-economic and cultural imperatives of individual countries.

Project Management Perspectives

Sanghera (2010, p.5) defined project management as the practice of using information, expertise, and apparatuses to appropriately, run a temporary, unique and complex undertaking from initiation to completion, with the objective of accomplishing the project needs, through requisite processes (Initiation, Planning, Execution, Monitoring & Controlling, and Closing). Nicholas & Steyn (2008, p.xxxi) has a simpler definition, defining project management as 'a systems ap-

proach to management', while a system is a grouping of components interrelating in a synchronized manner. Wysocki (2009, p.7) is of the opinion that a project is an inimitable, multifaceted, and related set of activities with a common aspiration or objective, which need to be accomplished within an estimate, and according to a predetermined set of specifications. Nicholas & Steyn (2008, p.32) posited that a project is a system of people, apparatuses, resources, and amenities, structured and administered to accomplish a common objective. Systems approach or thinking relates to the ability to view a complex phenomenon, with components fitting methodically into a single whole. Furthermore, stakeholder engagement and management, as a project management concept, will greatly assist in arriving at an efficacious monitoring and enforcement framework, which the PMBOK (2008, p.243) informed us can be accomplished through effective project communications management.

Project Management Lifecycle

Weidman (2004) attributed the earliest idea about project management lifecycle to the Chinese philosopher, Confucius, who stated over 2500 years ago, that 'In all things, success depends upon previous preparation – and without such preparation there is sure to be failure'. Various authors have proffered slightly different versions of the model, culminating in what Archibald and Di Filippo (2012) said about 'The Six-Phase Comprehensive Project Life Cycle Model', which includes a project nurturing or

feasibility, and post project evaluation and realization phases. The PMBOK (2008, p.15) described a project life cycle as an aggregation of chronological and at times, overlying project segments, whose nomenclature and stages are determined by the organization and control requirements of entities involved in undertaking the project (performing organization), the project itself and the area of its application. The basic characteristics of project life cycle is that it should have definable commencement and closing stages, planning and organizing phases, and project execution segment, while having adequate monitoring and controlling processes through the entire life of the project, in order to ensure that the quality of requisite deliverables are achieved.

Organizational Influences on Project Management

PMBOK (2008, p.27) informed us that the cultures, styles, structures, knowledge bases inherent in a performing organization, will impact on the entity's ability to accomplish project objectives. Organizational cultures and styles are composed of the enterprise's vision, values, norms, policies, processes, methodologies, perceptions of authority and how it cascades with the entity, as well as, understanding of work ethics and sensitivities. The organizational structure refers to how a performing organization is configured and managed to accomplish set goals. Organizational processes and procedures, as well as, the corporate knowledge bases are generally referred to as 'organizational process assets' (PMBOK, 2008, p.32). From the forego-

ing, it is essential that organizational cultures, values, structures, and process assets are fully understood and internalized by employees in order to achieve project objectives. Employment of these project management concepts in the quest to develop an appropriate framework for monitoring and enforcement of political finance regulations, will add new vistas to this area of study.

Stakeholders Engagement and Management

PMBOK (2008) informed us that stakeholders are those individuals or groups of individuals and entities keenly engaged in the implementation of projects, whose interests could be impacted positively or harmfully by the accomplishment of such projects. Different stakeholders will likely have varying degrees of influence on projects, the project outcomes, and the project team members. As earlier articulated, stakeholders in the democratic political process (within which regulating, monitoring, and enforcing party finances laws falls within) include; the citizenry in any jurisdiction, elected party officials and trustees, members of political parties, the electoral management body (EMB) like INEC, financial regulatory authorities (national banking regulatory authority, like Central Bank of Nigeria CBN), multilateral institutions promoting democratic practices (International Federation of Electoral Systems-IFES), International Institute for Democratic Electoral Assistance-International IDEA) & United Nations Development Program-UNDP), and all eligible voters, etc. Olander & Landin (2008) determined

that project managers must effectively communicate and establish interactive forums with stakeholders, where issues regarding the benefits and possible harmful effects of projects, so as to avoid 'not in my backyard(NIMBY) syndrome. Finally, the authors posited that an effective external stakeholder management communication system must be characterized by openness, trustworthiness, cooperativeness, respectfulness, and be exhaustively informative.

Conceptual Framework

According to Mossman (1962), a 'conceptual framework' was referred to as a configuration of thoughts comprising elements and parts that are amalgamated into a structured format, which will provide a defined roadmap for the resolution of identified challenges. In respect of regulation and enforcement of political finance regulations, the literature review above, has clearly articulated the multi-dimensional nature of regulation and enforcement of political finance, therefore, determining a feasible and appropriate framework for the resolution of this quandary is likely to entail investigating the issue from a multidisciplinary dimension. This conceptual framework will focus on determining and documenting the existing legal and regulatory framework for monitoring and enforcing political finance regulation, used by INEC in evaluating the efficacy of such legal and regulatory structure in order to identify gaps, proffering suggestions on how to fill in such gaps, testing the developed framework for operational effectiveness, and suggesting

informed areas for future research.

Methodology

This study reviewed the existing frameworks, identifying and documenting the shortcomings observed, in the legal and regulatory regime, and the internal processes of the election management body (EMB), followed by a critical review of the INEC's external interactions and relationships, especially as it affects the apex financial regulatory authority, and key stakeholders (political parties & their members). Furthermore, a critical assessment of the project life cycle model (project management process groups) was conducted to determine the suitability of utilizing its principles as well as, any other project management techniques to engender a comprehensive and efficient framework for political finance in the country. Finally, the framework developed will be tested within the INEC structure to determine its efficiency.

The stakeholders in the regulation and enforcement of political finance in Nigeria that was identified in this research can be classified into 4 broad groups, namely:

- Governmental institutions charged with regulating electoral and financial activities in the country (Independent National Electoral Commission - INEC, and Central Bank of Nigeria - CBN)
- Multilateral organizations promoting democratic practices worldwide (International Federation of Electoral Systems - IFES, International Institute for Democratic Electoral Assistance - Inter-

national IDEA, United Nations Development Program - UNDP, etc.

- Political party officials, trustees, members, sympathizers, consultants, etc.
- Eligible voters and the citizenry - Specifically, the primary data collected in this research study include;
- Detailed information relating to the existing contemporary legal and regulatory framework for political finance in Nigeria,
- The efficacy current legal and regulatory stipulations,
- Requisite information relating to the existence or otherwise of appropriate inter organizational linkages between INEC, political parties, multilateral agencies (promoting democratic practices) and CBN, which will enable the commission trace and follow sources of political parties' finances, and
- Specific reforms identified in the existing framework which will enable INEC achieve 'buy in' of the stakeholders in political finance, thereby, enhancing voluntary compliance.

Results

This research effort was hindered due to lack of consistent data for the finances of political parties in the last 10 years, which was the target initially set for this study. Painstaking effort was employed while going through the archives of INEC, and this yielded two sets of relatively consistent data relating to the 2007 and 2011 elections. The total expenditures (both campaign & administrative) of all political parties in Nigeria for the years of 2005, 2006, & 2007, as well as, 2010, 2010, & 2012, were ob-

tained and formed the bases of determination of the needs and essence of this research effort.

Table 1. (See at the end of this article) shows the total expenditures of different political parties in Nigeria, obtained from their individual audited financial statements. Table 2. shows the total expenditures of the parties obtained from their consolidated financial statements, prepared by INEC's external auditors.

Analysis from the Figure 1. shows that there is sudden increase in the political parties' expenditure for the 2007 and 2011 which were election years. From the tables, it is evident that expenditures during the years preceding an election year doubles, and quadruples in the election year as approximately the total sum of ₦7.5billion was spent by the political parties in the years 2005 to 2007, and about the sum of ₦15.5billion was spent in the years 2010 to 2011, despite the missing data for the year 2008 and 2009. From the foregoing, it is evident that political finance constitute a substantial portion of the national income, and keeps growing, hence instituting a framework that appropriately monitors and ensures adequate enforcement of political finance is very important, given that such a regime will ensure that funds available to the nation, for developmental purposes, are not diverted to fund political activities. However, the issue of reforming the existing legal and regulatory regime, which was the core aim of this study, does not fall within the ambit of the powers of this researcher, hence this inquiry is not in a position to

conclude on the nature and timing of the reforms that will be implemented. This researcher study (as commissioner in INEC) has made its suggestions on reforming the legal and regulatory frame-

work, as a stakeholder, to the law making body (NASS). Therefore, the proposed framework is based on the existing legal and regulatory regime.

Table 1. Total Expenditures of Political Parties (2010 - 2012)

S/N	Names of Political Parties	Acronym	2010(₦)	2011(₦)	2012(₦)	Totals(₦)
1	Accord	A	685	15,538	844	17,067
2	Action Alliance	AA		26,968		26,968
3	Advanced Congress of Democrats	ACD		32,691	3,849	36,540
4	Action Congress of Nigeria	CAN	95,293	464,670	166,728	726,691
5	Allied Congress Party of Nigeria	ACPN	21,614	151,237	10,322	183,173
6	Alliance for Democracy	AD	8,855	12,778	9,186	30,819
7	African Democratic Congress	ADC	5,257			5,257
8	African Liberation Party	ALP	50,267	500,271	10,851	561,389
9	All Nigeria Peoples Party	ANPP	370,490	913,914	234,350	1,518,754
10	All Progressive Grand Alliance	APGA	114,563	280,102	38,157	432,822
11	Action Party of Nigeria	APN	2,303	0	0	2,303
12	African Political System	APS	50,641	542,643	34,282	627,566

13	African Renaissance Party	ARP	2,464	11,675		14,139
14	Better Nigeria Progressive Party	BNPP	8,330	33,289	6,779	48,398
15	Change Advocacy Party	CAP	24,844	50,844		75,688
S/N	Names of Political Parties	Acronym	2010(₦)	2011(₦)	2012(₦)	Totals(₦)
16	Congress for Democratic Change	CDC	18,397	49,206	8,173	75,776
17	Congress for Progressive Change	CPC	268,673	363,570	84,390	716,633
18	Community Party of Nigeria	CPN	2,586	6,093	1,437	10,116
19	Citizens Popular Party	CPP	8,608	19,561	6,335	34,504
20*	Democratic Alternative	DA				0
21	Democratic Front for Peoples Federation	DFPF	22,014	24,200		46,214
22	Democratic People's Alliance	DPA	4,544	2,950		7,494
23	Democratic People's Party	DPP	51,371	5,767	8,079	65,217
24	Freedom Party of Nigeria	FPN	7,096			7,096
25	Fresh Democratic Party	FDP	9,920	88,477		98,397
26	Hope Democratic Party	HDP	16,207	22,357	18,476	57,040
27	Justice Party	JP	4,725	6,189	4,861	15,775
28	Kowa Party	KP	128,503	22,608	10,509	161,620

29	Liberal Democratic Party	LDP	8,902	4,276	0	13,178
30	Labour Party	LP	86,712	132,868	53,144	272,724
31	Movement for Democracy & Justice	MDJ	6,551	4,430	4,235	15,216
32*	Masses Movement of Nigeria	MMN				0
S/N	Names of Political Parties	Acronym	2010(₦)	2011(₦)	2012(₦)	Totals(₦)
33	Mega Progressive Peoples Party	MPPP	101,634	160,420	0	262,054
34	Movement for Rest. & Defense of Democracy	MRDD	7,194	19,670	1,227	28,091
35	National Action Council	NAC				0
36	Nigeria Advance Party	NAP	5,314	7,630	16,594	29,538
37	National Conscience Party	NCP	4,994	2,236	8,694	15,924
38	New Democrats	ND	5,312	7,019		12,331
39*	National Democratic Liberty Party	NDLP				0
40	National Democratic Party	NDP	55,324	63,724	24,524	143,572
41*	Nigeria Elements Progressive Party	NEPP				0
42	National Majority Democratic Party	NMDP	9,865	6,443	6,554	22,862
43	New Nigeria Peoples Party	NNPP	11,128	9,527		20,655
44*	Nigeria People's Congress	NPC				0
45	National Movement Progressive Party	NMPP	28,432	30,975	1,851	61,258

46	National Reformation Party	NRP	7,907	0	0	7,907
47	National Solidarity Democratic Party	NSDP	7,093	22,497	0	29,590
48	National Transformation Party	NTP	11,041	62,629	13,635	87,305
49	National Unity Party	NUP	9,077			9,077
50	Progressive Action Congress	PAC	7,827	11,202	489	19,518
S/N	Names of Political Parties	Acronym	2010(₦)	2011(₦)	2012(₦)	Totals(₦)
51	People for Democratic Change	PDC	6,000	7,936	2,188	16,124
52	Peoples Democratic Party	PDP	3,032,093	4,352,210	1,361,544	8,745,847
53	Peoples Mandate Party	PMP	23,973	8,220	5,874	38,067
54	Progressive People's Alliance	PPA	96,462	265,213	265,213	626,888
55	Peoples Party of Nigeria	PPN	18,024	76,908	5,585	100,517
56	Peoples Progressive Party	PPP	5,551	2,916	3,780	12,247
57	Peoples Redemption Party	PRP	7,785	16,585	5,613	29,983
58	Peoples Salvation Party	PSP		56,650	6,731	63,381
59	Republican Party of Nigeria	RPN	11,950	9,549	1,423	22,922
60	Social Democratic Mega Party	SDMP	9,139	72,122		81,261
61	United Democratic Party	UDP	4,819	4,402	1,803	11,024
62	United National Party for Development	UNPD	27,265	0	45,450	72,715

63	United Nigeria Peoples Party	UNPP	7,143	1,450,000		1,457,143
			4,922,761	10,515,855	2,493,759	17,932,375

Table 2. Consolidated Expenditures of Political Parties (2005 - 2007)

			2005 (₦)	2006 (₦)	2007 (₦)	Totals (₦)
1	Consolidated Financial Statements	All Parties	1,055,927	2,273,896	4,077,711	7,407,534

Project Management Based Political Finance Regulation & Enforcement Framework

The generic steps, as shown in figure 2 below, which is involved in using the project management principles to develop the regulation and enforcement of political finance laws, are as follows;

- A.** Conception of the project management approaches/processes to resolve the problems of diversion of state resources, lack of confidence by the populace on the political institutions, and overbearing influence of a few wealthy individuals on policy direction of nation states.
- B.** Definition and articulation of the key deliverables or results that will enable INEC meet its statutory mandate, to the satisfaction of the stakeholders.

- C.** Identification of key stakeholders in the regulation and enforcement of political finance laws, their relevance and influence.

The first 3 steps above roughly correspond to the Initiating (Scoping) Process Group. PMI (2008) informed us that the major activities involved in this process group are (a) developing a project charter, and (b) Identification of key project stakeholders, as well as, determining a management strategy. A project charter is a document that formally authorizes the initiation of the project, identifying the requirements that will satisfy the stakeholders, using standard project management templates of Requirements Breakdown Structure (RBS) and Conditions of Satisfaction (COS).

- D.** Identifying and establishing the administrative structure to undertake the regulation and enforcement of political finance laws.

- E.** Identification of key legal and regulatory provisions in both the 1999 constitution and the electoral act 2010 as amended, relating to regulation and enforcement of political finance laws.

The two steps above approximate to the Planning Process Group. Under this process group, the key project management activities will include; requirements collection, scope definition, prescription and description of activities involved, sequencing of these activities, and development of the activities schedule. These processes will result in the development of a Work Breakdown Structure (WBS), which is a hierarchical representation of work efforts that must be accomplished to produce the deliverables that meet the stakeholders expectations. From this WBS, the human resources (labor) requirement for the project will be established, a cost schedule will be extracted, and a project budget developed. Finally, the quality expectations, the risk management and response plan, communications plan, and procurement plan will be established. The output of this process group, encompassing all the activities detailed above, is the Project Management Plan (PMP).

- F.** Instituting and implementing processes and activities to trace and follow through the financial resources accruing to the parties as well as, the expenditures thereof.

Having initiated and planned the project, the next stage is to launch or execute the activities and tasks stipulated in the PMP. This is the Launching or

Executing Process Group. The key activities and tasks will include acquisition of the project execution team, establishment of the team operating rules, team development, direction and management, quality control and assurance procedures, constructive stakeholders engagement and management, and conducting project procurements.

- G.** Controlling and Monitoring the above processes and activities to ensure that they deliver timely efficacious outcomes for the project stakeholders.

The above step falls under the Monitoring and Controlling Process Group. This process group is unique, in that commences at the start or initiation of the project and runs through other process groups till the project is closed out. The key tasks and activities include; institution of integrated change control, monitoring and controlling project work, undertake project status meetings, tracking the project progress, using Gantt Chart to determine scope creep and schedule problems, performance of earned value analysis (EVA) to determine the progress of the project budget, undertaking costs control, performance of quality assurance, monitoring risks and instituting response mechanisms, maintaining issues logs and documenting resolution strategy and processes, as well as, administration of project procurements.

- H.** Collation of the results of the above processes and activities, identification of culprits, and application of recommended sanc-

tions stipulated in the contemporary legal and regulatory framework.

This is the Project Closeout Process Group. The project closeout process involves developing a project closeout strategy, verifying that the stipulated deliverables are of the scope and quality to meet stakeholders expectations, ensuring appropriate and adequate documentation of all the project activities, as well as, approved changes, performance of closure of all procurements, conducting post implementation reviews, to resolve any outstanding issues, documenting lessons learned during implementation for use during future election cycles. At the end of an election cycle, it is standard practice to organize a debriefing sessions, where the field operatives, supervisory staff, and policy makers gather to share knowledge and experiences.

Conclusion & Recommendations

The key intention of this inquiry was to develop a pragmatic, structured, enforceable and effective framework for regulation and enforcement of political finance laws, in order to resolve the erosion of the confidence of the citizenry in their democratic institutions, which could be manifested in voter apathy, and public perception of the politicians as frivolous spenders; and the overbearing influence by few wealthy donors on the country's developmental initiatives and policy direction, which undermine the developmental efforts of the country. It was apparent that deploying the project management life cycle process groups,

as well as, proactive stakeholders management, would go a long way in eliciting enforceable political finance framework.

This research is of the considered opinion that the process of instituting a pragmatic framework to effectively monitor and enforce political finance laws, will go through the project lifecycle phases of Initiation, Planning, Executing, Monitoring and Controlling, as well as, Closeout, within which is embedded a proactive stakeholders management and engagement strategy.

At the initiation phase, the scope of political monitoring and enforcement is determined, and the processes and activities to be undertaken were documented, as well as, the objectives of such procedures, followed by the planning phase which involves the determination and establishment of requisite administrative structures, like the field operatives, supervisory roles and managers that will provide policy direction. All these activities will be detailed and documented, as an output, similar to the project management plan (PMP), incorporating work breakdown structure (WBS). The execution phase starts with the political parties submitting their annual financial statements, as well as statement of campaign expenditures. These documents are sent to the field operatives, (in this instance, these are INEC nominated firms of chartered or forensic accountants), who will analyze and identify key sources of funding as well as, major expenditures

The monitoring and controlling phase spans through the other 4 process

groups. These are processes and activities that ensure that political finance monitoring and enforcement are performed within the set timelines and budgetary provisions. The supervisory level staff will leverage on the periodic reporting templates enunciated in the PMP to determine those tasks and activities that can be accomplished within the scheduled timelines and budgets, and those that will require remedial actions in order to provide desired deliverables, as per the project schedule. The closeout phase involves the implementing the closeout strategies specified in the PMP, including but not limited to, verifying that set deliverables are accomplished, and are of the scope and quality to meet and satisfy stakeholders, expectations, documenting and archiving all processes

and activities, including integrated change control, performing post implementation audit, and documenting lessons learned for use during future election cycles. Specifically, all the field results are collated, and compared with the statutory disclosure requirements, eligibility or otherwise of the sources of funding, and deviance from expenditure caps. Based on the results from the above, culprits are identified, and specified legal fines and punishment are applied. At the end of an election cycle, the field operatives, the supervisors and the policy makers, are brought together, to review the activities, internalize lessons learnt, and devise strategies to deliver efficacious outcomes for future election cycles.

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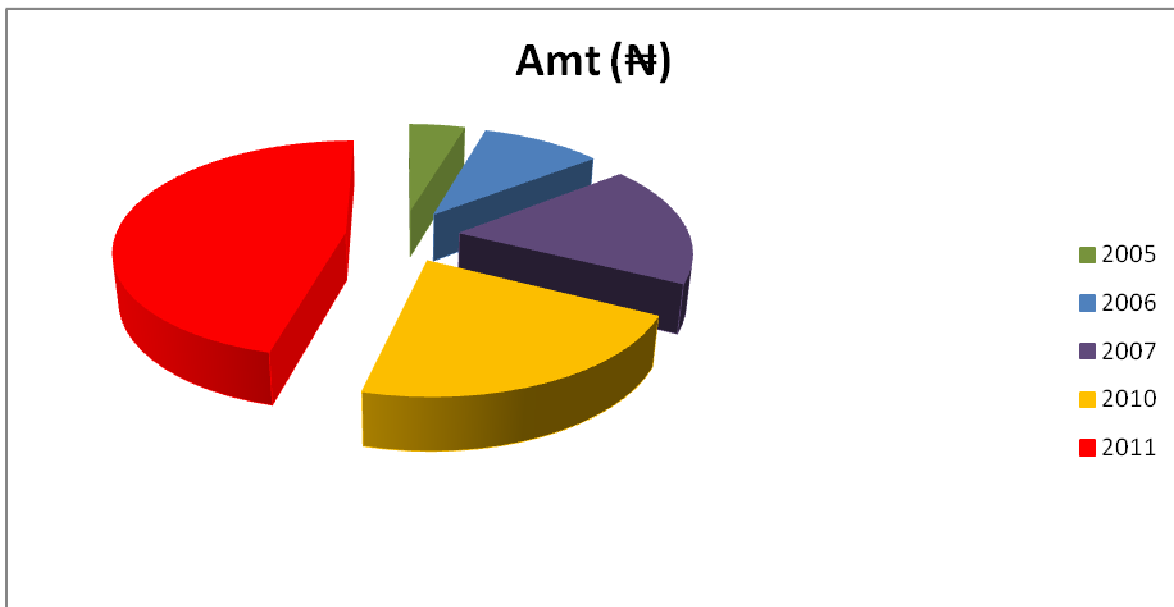


Figure 1. Total Expenditure of political parties (2005 to 2011)

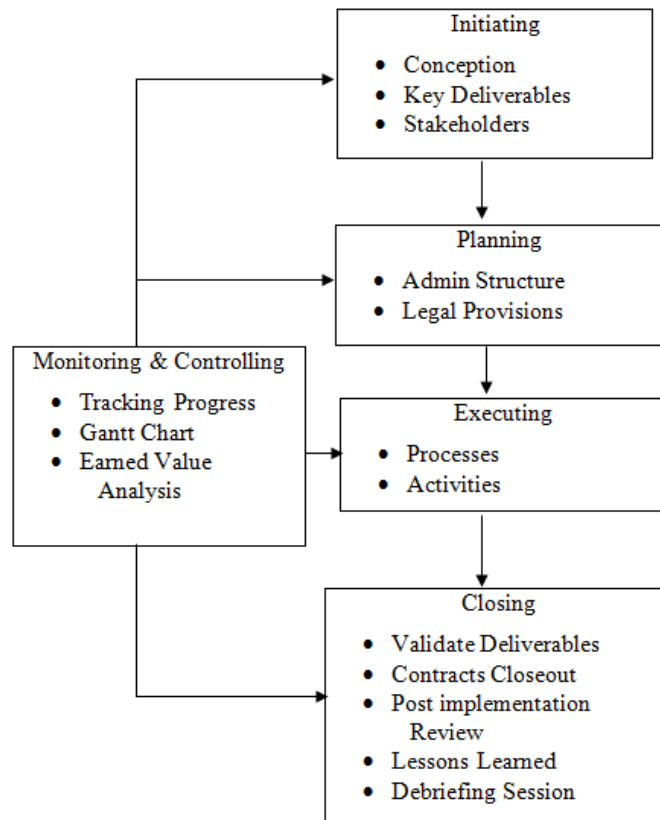


Figure 2. Flowchart of Project Management Based Political Finance Regulation & Enforcement Framework.

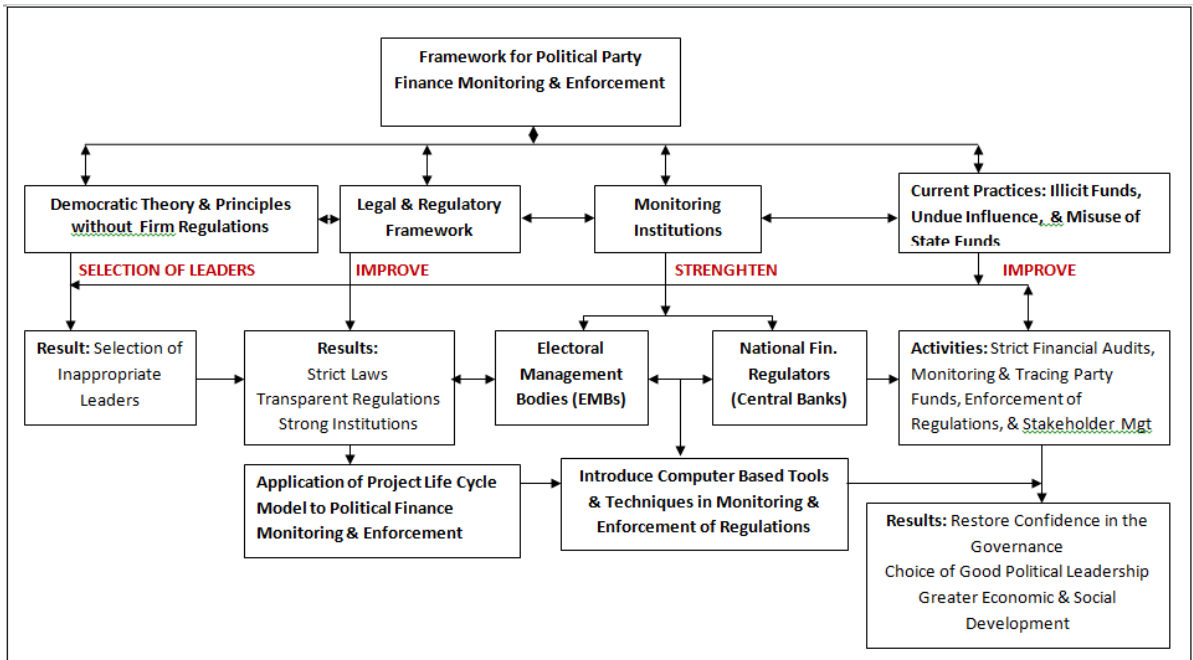
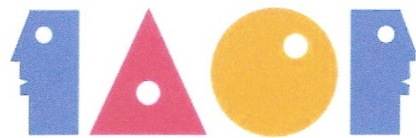


Figure 3. The graphical map of the framework for the political party finance monitoring and enforcement.



WHOSE AESTHETICS WORLD? EXPLORATION OF AESTHETICS
CULTIVATION FROM THE CHILDREN'S OUTDOOR PLAYGROUND
EXPERIENTIAL VALUE PERSPECTIVE

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Abstract

Outdoor is the extension for children's indoor learning; therefore, playground serving as the children's exploration for aesthetics awareness is so important for children's growth and learning. However, most children's outdoor playground is planned under the adults' aesthetics perspective, ignoring children's needs in receiving experiential value. The article expounds on the interrelationship between children's playground experiential value and aesthetics education. With the discussion in the dilemma in the development of outdoor playground, the further practical suggestions are offered for related playground designers and early childhood education educators.

Key Words: Experiential Value, Aesthetics, Outdoor Playground

Introduction

"Playing games is the children's most proper behaviors, and toys are like their angels", once the writer Lu Hsun wrote in the article *Kite*. Then, he opposed against his younger brother to play kite, because it is what belongs to bad kids. It was until Lu Hsin happened to read a foreign book recounting the children's development that he suddenly understood how importantly games mean to a little kid. For children, games play an important role, because they have something to do with a positively participating process, which requires the kids to integrate and employ their physical and psychological functions to interact with the external world and their peers, and therefore leads to growth and generates learning motivation (Alcock, Cullen, & St George, 2008).

For children's games, in addition to the indoor space as the proper playing ground (Tappe, Glanz, Sallis, Zhou, Saelens, 2013), the outdoor also matters in respect with the children's development. As Vestad (2010) proposed, outdoor learning is the extension of indoors, and the outdoor games as well as playing environment familiarize the children with nature and the world sur-

rounding them. In other words, the outdoor playground is crucial to the children's developing process, corresponding to Petra and Linn's (2007) perspective that the outdoor playground provides the learning opportunities different from those in the indoor environment. At this point, actually, children's outdoor playground originated quite early; as Young Ching Fen (2009) indicated, the US government passed the legislation in 1887 to encourage the small parks with playing facilities. For example, in 1912, the summer program of Virginia University, the school arranged a six-week program of "General Introduction of Teachers' Setting up Playground Facility in the Backyard". Here, the so-called "playground facility" includes the sand pit, balance beam, high jump, seesaw, slide, swing, pirate ship, and ring. Up to now, children's outdoor playground planning has become even more diversified; and on the other side, the environmental aesthetic concept has also taken root in the facility planning gradually. For instance, in 2014, Public Works Bureau of Kaohsiung City Government planned 5 children's playground around the Art Museum with considerations of the museum's characteristics. By design change, it turned the famous artists' drawings to the landscape change on

grassland, the smooth curving path, interesting facility shape, and distinct natural green environment of the four seasons, all make the citizens experience the five senses (Wood & Hall, 2011)--sense of vision, hearing, smelling, touching, and motion, and make the citizens get close to nature and experience the aesthetics of life (Ko & Chou, 2014; Young, 2008). Such developing trend also complies with the rapid transformation in the society and the trends and challenges that makes fast progress. In the future, the demanded talents must be characterized with the modern citizen's qualities of both local care and global vision. As for artistic and aesthetic cultivation, it will be implemented only through shaping the solid artistic and aesthetic education system meeting the involving parties' need (Teacher Education and Artistic Education Division, 2011).

Nevertheless, since children's outdoor playground us based on enlightening individual kid's aesthetic awareness and experience (Wyver, Tranter, Naughton, Little, Sandseter, & Bundy, 2010), it should be established by the kid's experience values, including consumer return on investment, aesthetics (Veitch, Bagley, Ball, & Salmon, 2006), interest (Taylor, Fernando,

Bauman, Williamson, Craig, & Redman, 2011), and sense of goodness (Varga, 2009). It is a pity that most children's outdoor playgrounds were constructed by the playground planner's thought. As per Jien Ming-Fong's (2006) perspective, most of the professional designers' direction of planning a playground is from their angle of adults' aesthetics (Bohman-Kalaja, 2007; Deen, 2011), beauty, fun, and playfulness. Or they are directed by either their cognition of their children's game, or the adult's viewpoint towards the kid's demand. However, it is unlikely for the designers to possess knowledge of all disciplines, and such deficiency will lead to a fact that the playground fails to reflect the user's need (Davison & Lawson, 2006). Therefore, this research will focuses on the children's experience values obtained from the outdoor playground. Besides, it further probes into association between playground and aesthetics. Lastly, we will point out the difficulties of development and planning of the children's outdoor playground in order to propose suggestions for the related units.

The Experiential Value From The Children's Outdoor Playground

The educator Dewey once said, "education is life, and life involves the endless reconstruction and transformation of experience." Regarding such viewpoint, suppose the children want to obtain experiences, they have to experience from the practical activities (Singer, Golinkoff, & Hirsh-Pasek, 2006). For example, when the kid wants to know a house, it is not about teaching the kid how to design a house, instead, it relates to guiding him or her to pile up the house/building from the sand pit for practice and experience the process for vivid impression (Altman, 2012; Dunton, Kawabata, Intille, Wolch, & Pentz, 2012). Then, it is included into experiences, forming the philosophy of Dewey's learning from doing. It is indeed valuable, especially, value is the most abstract yet also most enduring faith in cognition system. For a long time, concept of experience value is mostly used in studies on consumer's behaviors (Verhagen, Feldberg, Hooff, Meents & Merikivi, 2011; Jina, Line & Goh, 2013). Mathwick, Malhotra, and Rigdon (2001) told us that the so-called experience values include the following four types:

1. Consumer return on investment: finance, time, behavior involvement, and potential profit psychological resources

based on economic effectiveness and efficiency.

2. Service excellence: Consumers' self-orientated reaction of market service and marketing ability. Correlation of service excellence and service quality can be measured by performance, because quality is the basis of measuring service excellence.

3. Aesthetics: To reflect the overall sensation of entity, art, shows, or design. The visual attraction combines design, environmental coordination, and the inner aesthetics, including visual attraction and recreation as the foundation of measurement.

4. Playfulness: To reflect the consumers' inner happiness in participating in activities, generating inner experience of escaping from the restriction of the real world (Sandberg, Lillvist, Sheridan, & Williams, 2012). Generally, it contains the imaginary element and measurement based on play and escaping from the reality.

Applying the above-mentioned experience values to children's outdoor playground, it is found that consumers' return on investment signifies children's obtaining pleasure from the

playground, or the overall playing facility is valuable. In respect with service excellence, it indicates that the diversified kind of the facility service at the playground is satisfactory. Finally, aesthetics represents that the color and shape of the facility at the playground are coordinative with each other, while playfulness means the children try to play different kinds of facilities, or they play single facility exclusively, showing that it is fun playing at the playground.

To view such experience values, it is concluded that the experience obtained from the playground arouses children's happiness and playfulness in process of game. Once such elements disappear, the game will stop and fail to continue anymore.

Implication Of Children's Aesthetics Education

Aesthetics has always been existing in human life in a very skillful way. For children, so-called beauty may be a warm learning classroom, or an outdoor space that allows the kids to play freely (Eberle, 2014; Veitch, Salmon, & Ball, 2007). Through sensation of shape, image, and vision, kids see and feel everything in their surrounding environment.

Pitifully, in Taiwan, cultivation of children's aesthetics are still in the developing stage. As Chen Po-chang and Lu Mei-Guei exclaimed, the ultimate goal of education lies in "becoming an adult" by means of "science" and "art". The highest level of education is "skillfulness" without limitation on merely "effectiveness". Presently, in the case of simplifying "service excellence" into "performance and responsibilities", the "skillfulness" and "beauty" in art are often ignored. With concern of the importance of aesthetic education, the Ministry of Education started to promote the Five-year Project (2014-2017) in the long-term plan in 2013, with focus on the beautiful Taiwan, aesthetic education to begin in one's childhood, and life-time learning of beauty and power. In that project, it also mentioned that children's education is the key to enlighten the kids' aesthetics and root-taking of art, and the foundation of power and beauty is consolidated by enlightening every kid's aesthetic awareness, where we learn how it is important to develop aesthetic education. Like Tse Pei-Jen (2010) pointed out, children's aesthetic education puts an emphasis on the beautiful people and things the children contact in life, all touch their heart and presenting the pleasure in their mind. In other words,

children comprehend beauty from daily experience that is regarded as an art piece for the kids to admire and appreciate. On the other hand, since beauty takes root in the harmonious and orderly proportion, it can be implemented from the children's daily life experience that relying on the teacher's enlightenment and guidance. From the perspective of development, kids are born as an explorer of beauty. In daily life, they often exert their sharp sensation to explore and know the external world (Ergler, Kearns, & Witten, 2013). And, through sense of vision, sense of motion, and the emotions, children interact actively with nature or social environment, experience the subtle sensation, and accumulate their own aesthetic experiences (Lin Mei-Jin, 2012).

To sum up, children's aesthetic education emphasizes on integration of the kid's creative activities and daily life experiences in order to present their own experience for melting with daily life afterwards.

Children's Outdoor Playground Experience Value And Aesthetics Education

According to the above mentioned, it is learned that in addition to indoor learning space, the outdoor play-

ing space also plays a vital role in children's aesthetic learning. Relative studies have indicated the correlation between outdoor playing space and aesthetic learning (Lackney, 2000). For example, Huang Shiu-shang indicated the importance of game, holding that aesthetic education can be integrated into the courses of each discipline in educational method field. In "Children's Game", it concentrates on that aesthetic and game have common characteristics, such as life stylization, autonomy (Ko & Chou, 2014), internal motivation (Lofdahl, 2006), positive affection (Large, Beheshti, Tabatabaei & Nesset, 2009), free choice (Kolb & Kolb, 2010), process-centered (Lester & Maudsley, 2007) instead of outcome centered (Evans, 1984; Farris & Sen Gupta, 2013). Consequently, in regard of aesthetic education guidance, it has to be subjective to the nature of game. In games, the kids are like a learner who explores actively, which corresponds to the goal of the aesthetic ability-- exploration and awareness. Besides, some relative studies have tried to discuss from the angle of children's playground. As Yang Ching-fen set the children's game theory as the foundation, she pointed out the close relationship between game and individual growth, including physiological regula-

tion, emotional outlet, pursuit of stimulation, cognitive development, and social learning.

Therefore, it is learned that the playground plays an important role in children's cultivation of aesthetics. In modern kindergarten, it is very crucial for the principal and teachers to identify the diversified game devices and facility, although the focus is still on outdoor game facility aims to provide an outlet for the kids' excessive energy and raise the gross motor development. Only a few principals consider the diversified game device and facility is beneficial to outlet the kid's emotion, improve interaction among the peers, and cultivation of human relationship. Therefore, the correlative relationship between game behavior and playground is as follows: the modern playground can arouse cognition and social game behaviors to a higher extent than the conventional playground does. In comparison to the conventional playground, it is more likely that game behaviors may develop into social game behaviors.

The Developing Dilemma Of Children's Outdoor Playground

As a kind of living style, game is

the activity that the children engage in the outdoor playground. The large spaces provide opportunities for children to use their whole body to explore, plan and to implement these plans without limitations on noise and activity. However, even if children's outdoor playground plays an extremely important role in their growing process, development of children's outdoor playground in Taiwan is stuck in certain dilemma currently. For example, Wu Zong-chin (2013) signified the issues in children's outdoor playground: most children's playing space is crowded and some are not complete enough; most playgrounds lack convenience, creativity, and diversity. In addition, generally speaking, the students' environmental perception capability is poor in regard of the close building planning method. Through the game methods, Chang Guan-yi (2002) had the kids to explore the campus space, and she found the following issues: (1) In scale, that the kids are the subject on campus is ignored; (2) the design of path is regarded as a passing route without providing chances for the kids to interact; (3) low interaction between the school and the neighboring communities, and a lack of penetration and energy; (4) the campus crowded with artificial facilities lacks of baptism of nature. From

the relative studies listed above, it is learned that presently, development of the children's outdoor playground mostly focus on providing a complete and safe game space to the kids, and have them actively explore their interactive relationship with others through the playing environment.

Suggestions For Children's Outdoor Playgrounds

By means of different game facilities, children not only perceive everything in the surrounding environment through their body, but also accumulate their aesthetic experiences. Therefore, in the future, in regard of planning game playground, people should move towards the direction of diversity and high quality, and this paper also proposed several suggestions as follows:

1. To plan the dynamic routes in the playground carefully: To melt the concept of high gain, maintain the game facilities and environmental safety, and, the most importantly, to reasonably plan the dynamic routes, including static and dynamic game facility areas to prevent from usage conflict.
2. To combine the kids' orientation, and be child-centered: Since there are ex-

plicit hardware regulation that is definite and easy to comply with, so most playgrounds meet the related safety requirement. However, when it comes to the software capability of safety and security management, the general public poor always have poor knowledge in game facility safety. As a result, many parents consider that as long as the number of game facilities is raised, and the game activity space is enough, everything will be okay. We suggest that in the future, in designing children's outdoor playgrounds, it should be child-centered and include the kids' orientation into consideration, so that we may obtain the playgrounds suitable to the children.

3. To integrate the aesthetic design: Aesthetic design provides diversified child experiences. By bathing in the situation of artistic or aesthetic design, the children's overall sensation will be raised. Through inter-influence on the environment and inner aesthetics, we can provide the child's experience of playing games.

4. Enhance Playfulness: Playfulness corresponds with the inner pleasure sensed from doing activities. It involves element of imagination, can be measured on basis of play, and generating

inner experiences. Therefore, we suggest the parents play with the kids through the playground construction and facilities, while throw away the bondage of the real world and create the common subject between the child and the parents.

5. To establish the retrospection feedback mechanism: When the children take part in outdoor playground activities, the often concentrate is on the behavior. We strongly recommend the children's parents to accompany their kids to play together, to be involved in receiving the aesthetic experience from their playing outdoor playground materials with their children, and then further, to integrate the existing experience in order to be able to discuss their current game playing situation and

make them obtain additional enlightenment in addition to playing games.

6. To deliver spirit of outdoor education: Children are always curious about the external world. It is suggested that the natural materials are integrated into design, such as replacing the hard ground space with more grassland, or plant flowers, grass, and trees surrounding the playground. Such process is embodiment of the spirit of outdoor education. That is, by providing natural environment experience, the children's desire for learning will be triggered, and the diversified learning value of aesthetic will be enhanced. Finally, they can achieve the situation that everything can serve as teacher, and every place can serve as a learning space.

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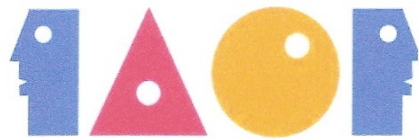
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MOBILE TECHNOLOGY ADOPTED IN HOTEL SALES

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Abstract

Mobile technology has advanced rapidly and significantly, and has shown great promise and potential for hotel use. However, the previous research studies have focused mainly on what the impact of mobile technology on hotels is. The way how mobile technology impacts hotel is still under-explored. This study examines the strategic impact of mobile technology on hotels by studying a modern fashionable hotel using the value-focused thinking (VFT) approach. Accordingly, six fundamental objectives are found to contribute to the overall objective of maximizing the hotel's benefits of using mobile technology, including 'increase efficiency', 'increase effectiveness', 'provide better customer service', 'maximize company image', 'maximize employee satisfaction' and 'minimize cost'. In addition, a means-ends objective network developed by this study to depict how hotel strategies can be achieved via the use of mobile technology and serve as a conceptual foundation for future research in the area.

Keywords: Mobile Technology, Value-Focused Thinking (VFT), Hotel

Introduction

Over the last decade, mobile technology has been becoming a tendency of information technology (IT) and gained importance and popularity in organizations (Gayeski, 2002). By extending computing and the Internet into the wireless medium, mobile technology allows users to have anytime, anywhere access to information and applications, which provides greater flexibility in communication, collaboration, and information sharing. The emergence of mobile technology is expected to drastically affect a number of industries and to impact their strategic management (Barnes, 2002). Therefore, this new phenomenon needs to be better understood and warrants more research. However, the previous researches have focused mainly on what the impact of mobile technology on organizations is. The way how mobile technology impacts organization is still under-explored. In fact, to explore the impact of a specific resource, the 'how' approach is more appropriate than the 'what' approach in assessing company performance (Ray et al., 2004). This is because a resource changes the processes in an organization, which in turn changes its competi-

tive potential. Therefore, the 'how' approach provides a deeper and more insightful understanding of how a resource helps an organization gain strategic advantages. Accordingly, this study fills the void by examining the application of mobile technology in a hotel that has realized the importance of mobile technology and has equipped its sales personnel with wireless Tablet PCs.

Literature Review

Mobile technology can be broadly described as technology, comprising software, hardware and communications specifically associated with mobility (Guardini et al. 2000). In other words, a form of technology that is not fixed and is capable of being portable. Typical and popular materializations of the hardware include palmtop and mobile telephones, with more sophisticated devices integrating and combining functionality. The term mobility is closely related to ubiquitous computing (Siau et al., 2003), and nomadic computing (Lyytinen and Yoo, 2002). Siau and Shen (2003) introduced the term ubiquitous computing and argued that in order to become ubiquitous, computers need to be more seamlessly integrated into the use envi-

ronments and into people's everyday lives. Perry et al. (2001) discussed the technical challenges of and solutions for nomadic computing. Their expression of the "anytime and anywhere" computing became to manifest the essence of mobility - independence of time and place. By the same token, Lyytinen and Yoo (2002) postulate mobility, digital convergence and mass scale as the three main drivers of nomadic information environment. In this environment, services will come to users whenever and wherever needed, through multiple devices at different sites, and on the move. The combination of mobile technology allows access to networks and resources in a manner previously associated with fixed location computing, and led to the flexibility of exploring and adopting new ways of working to achieve corporate goals and objectives.

Users of mobile technology can have access to the Internet and mobile applications whenever the need arises, such as when 'traveling, wandering, and visiting' (Sarker and Wells, 2003). Therefore, mobile technology can result in efficiency and productivity as users can make better use of their time and attend to business and social obligations in real-time (Sarker and Wells, 2003; Jarvenpaa et al., 2003). Given these fac-

tors, mobile technology has becoming an accepted part of the technology and information systems infrastructure within organizations. Examples of applications of mobile technology in organizations include mobile access to company Intranet (Nah et al., 2005), mobile brokerage services (Looney et al., 2004), mobile payment and banking services (Herzberg, 2003; Mallat et al., 2004), and electronic procurement application systems based on WAP using mobile phones and laptops (Gebauer and Shaw, 2004).

Few research studies have been conducted to assess the strategic impact of mobile technology in hotel industry. This research is a step toward this direction to fill the gap. It presents the results of a case study that identifies the values of mobile technology in a hotel and how mobile technology can have strategic impact and implications in the hotel industry.

Methodology

Case Study Research

A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between

the phenomenon and context are not clearly evident' (Yin, 1994). As the aim of this research is to study the strategic impact of mobile technology applied in the hotel industry where few studies exist, case study approach is well-suited for this research. Case study allows the researchers to understand the nature and complexity of the process that is taking place and answer the 'how' and 'why' questions. Hence, it is an appropriate methodology for this research. Interviews are an essential source of case study information (Yin, 1994). To identify the values of mobile applications, this research conducted interviews based Keeney's value focused thinking (VFT) approach.

Value-Focused Thinking

The value-focused thinking (VFT) approach was developed by Keeney in 1992. VFT fundamentally involves deciding what is important and how to achieve it. It provides a systematic approach for articulating and organizing values, which leads to a more complete set of alternative solutions and a clearer understanding of how each alternative contributes to the achievement of objectives (Keeney, 1992).

Value are made explicit by the iden-

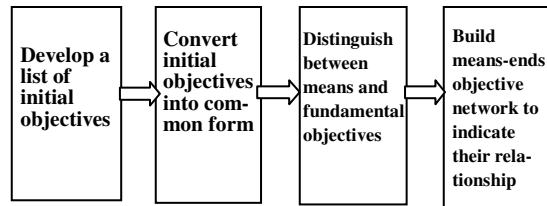
tification of objectives, which are statements about what one desires to achieve. There are two kinds of objectives: fundamental and means. Fundamental objectives, as the name implies, refer to the objectives underlying the essential reasons for the problems/situation on hand. Means objectives are those whose attainment will help achieve fundamental objectives (Keeney, 1992).

VFT focuses on identifying the fundamental values the decision maker cares about in a certain decision context and determining how the fundamental values can be achieved through a hierarchical structure, that is, linkages between the fundamental values and means to achieve these values. The goal of VFT is to identify a means-ends objective network, which not only depicts the fundamental objectives and means objectives, but also the relationships between the objectives.

Model of value-focused thinking

Many decision makers think that it is crucial to list all objectives, but they are not specific about how to do it or how to use the objectives to guide the thinking. Value-focused thinking provides a model to do it (Keeney, 1992). As shown in Figure 1., first, develop a list

Figure 1. Model of Value-Focused Thinking



of initial objectives, second, convert initial objectives into common form, third, distinguish between means and fundamental objectives, fourth, build means-ends objective network to indicate their relationship.

1. Develop a list of initial objectives.

This step begins by asking the subjects questions about the values of mobile technology in relation to their job and hotel strategy. Such questions include: “What are the benefits of using mobile technology in your job?” “How does mobile technology help to achieve your hotel strategy?” The responses provide a list of potential objectives and a basis for further probing. Several techniques that can help stimulate the identification of possible objectives include: “wish list”, “problems and shortcomings”, “alternatives” and “consequences”.

2. Convert initial objectives into common form.

The initial list of objectives will come in many forms. For example, make customers happy with our service, able to do job quicker. It is more suitable to develop some consistency in these expressions. This is done by converting each item into a corresponding objective. An objective consists of a decisions context, an object, and a direction of preference that one wants to strive toward. For example, if one states that “Using mobile technology, I can provide better services to our customers.” This objective can be converted to “Maximize customer service.” “able to do job quicker” listed above becomes “Maximize efficiency.”

3. Distinguish between means and fundamental objectives.

After collecting the list of objectives, this step distinguishes between fundamental objectives and means objectives. To separate means objectives from fundamental objectives, the “why is that important (WITI)?” test can be

given to these objectives to ascertain whether they are means objectives or fundamental objectives. There are basically two possible type of responses. One answer is that the objective is one of the essential reasons for interest in the situation. Such an objective is a fundamental objective. The other response is that the objective is important because of its implications for achieving some other objective. In this case, it is a means objective.

4. Build means-ends objective network to indicate their relationship.

The final step in the VFT approach is to build the means-ends objectives network. This network provides a model of the specific interrelationships among the means objectives and their relationships to fundamental objectives.

Hotel Background

The hotel that we studied is a innovative and fashionable hotel and the main clients of this hotel are high technological companies. There are 22 sales representatives in sales division of this hotel. They work closely and interact regularly with customers, persuade them to stay in their hotel, collect feedback from customers regarding their products,

promote their products and provide customer service. This hotel is also very 'customer-oriented' (as is also reflected in its mission statement - to provide authentic hospitality by making a difference in the lives of the people we touch every day). Therefore, providing excellent services to customers is an important component of the hotel's strategy.

Before the hotel introduced Tablet PCs and deployed them among the sales force, the sales representatives had to carry heavy paper documents with them during their visits to customers. The hotel used to print sales manuals and product catalogs on a periodic basis, provide hardcopies of product updates whenever there was a change. Also, in the past, sales representatives did not have access to computers or the Internet while visiting customers. As such, they had to wait until they were back at their offices or homes before sending follow-up emails to customers, updating customers' records, and sending out customers' product requests.

To enhance the efficiency of sales representatives and to provide better services to customers, the hotel adopted mobile technology in the sales division in March, 2010. Every sales representative is now equipped with a Tablet PC to

support their daily activities. The sales representatives now carry Tablet PCs with them to the customers' sites instead of bulky paper documents as in the past. Now, the sales representatives in this hotel are mobile - meaning that they spend most of their working hours traveling (between their hotel and customers). The main reason for the hotel to adopt Tablet PCs is to gain strategic advantages over its competitors. This hotel is, therefore, an excellent site for studying the strategic impact of mobile technology in hospitality industry.

Data collection

Using the VFT approach, 16 sales representatives were interviewed regarding their use of mobile technology to support both their jobs and hotel strategies. The sample size was determined by the 'point of saturation', which is a standard stopping rule for qualitative research. Each interview lasted about 50–60 min. The interviews were audio-recorded and notes were taken by the researcher during each interview.

Research Results

The means and ends objectives were derived from the transcripts of each interview. These objectives derived from

the transcripts were converted into a common form containing 78 means objectives and 11 candidate fundamental objectives. After carefully reviewed: the final set of objectives includes 25 means objectives and 6 fundamental objectives, and are shown in Table 1. and Table 2. The means-ends relationships between the objectives were derived based on the subjects' responses to the "Why Is That Important?" test. The means-ends objectives network is depicted in Figure 2.

Discussions and Implications

The overall objective for mobile applications is to maximize the overall benefits to the hotel. We identified six fundamental objectives in this study - maximize efficiency, maximize effectiveness, maximize customer service, maximize company image, maximize employee satisfaction, and minimize cost. According to our subjects, these objectives are the fundamental reasons and main drivers for rolling out Tablet PCs to the sales personnel in the hotel.

Maximize efficiency and maximize effectiveness are the main reasons for deploying mobile technology to hotel sales representatives. With the help of Tablet PCs, sales representatives are able to have access to hotel product

Table 1. Fundamental Objectives

Fundamental objectives	Evidence from interviews
Maximize efficiency	<ul style="list-style-type: none"> ● Sales representatives can do their job quicker. ● Sales representatives can get most of their daily job done while their visiting customers.
Maximize effectiveness	<ul style="list-style-type: none"> ● Tablet PC enables sales representatives do their job better. ● Tablet PC can improve the quality of product demonstration.
Maximize customer service	<ul style="list-style-type: none"> ● Equipped with Tablet PC, sales representatives can search for hotel information easily and answer queries on the spot. ● Sales representatives can be more responsive to customers in answering their questions.
Maximize company image	<ul style="list-style-type: none"> ● The use of Tablet PC enable the sales representatives to be more knowledgeable and enhances their professional image. ● Using Tablet PC shows that this hotel is really leading and cutting edge.
Maximize employee satisfaction	<ul style="list-style-type: none"> ● Equipped with Tablet PC, sales representatives can reduce their overall workload while getting the same amount of work done. ● Sales representatives are less likely to bring work home with them, thus increasing their overall quality of life.
Minimize cost	<ul style="list-style-type: none"> ● Hotel can reduce cost of printing paper document. ● Hotel can save cost in distributing sales manuals and hotel catalogs.

information through the Internet. They can check or search for information easily at the customers' sites and provide quicker responses to customers' queries and submit customers' requests on the spot. In addition, equipped with Tablet PCs, sales representatives are able to deal with their daily tasks (such as sending e-mails to customers) between appointments and scheduled activities, and during any slack or dead time. In this way, their work efficiency and effectiveness are significantly improved.

The other fundamental objective identified is maximize customer service. Equipped with Tablet PCs, sales representatives are able to have access to sales manuals and product catalogs

through the Internet whenever the need arises. They can check or search for hotel information such as room rate and available rooms easily at the customers' sites and answer queries on the spot. When customers request for room or hotel products, they can make reservations and confirm reservations with customers on the spot, which helps to reduce the time taken for customers to receive the answer. The sales representatives can also send follow-up emails to customers using their Tablet PCs during the slack time between appointments or visits. Therefore, the sales representatives can be more responsive to customers in answering their questions, processing their requests, and following up with customers. These enable them to provide better customer service.

Figure 2. The means-ends objectives network

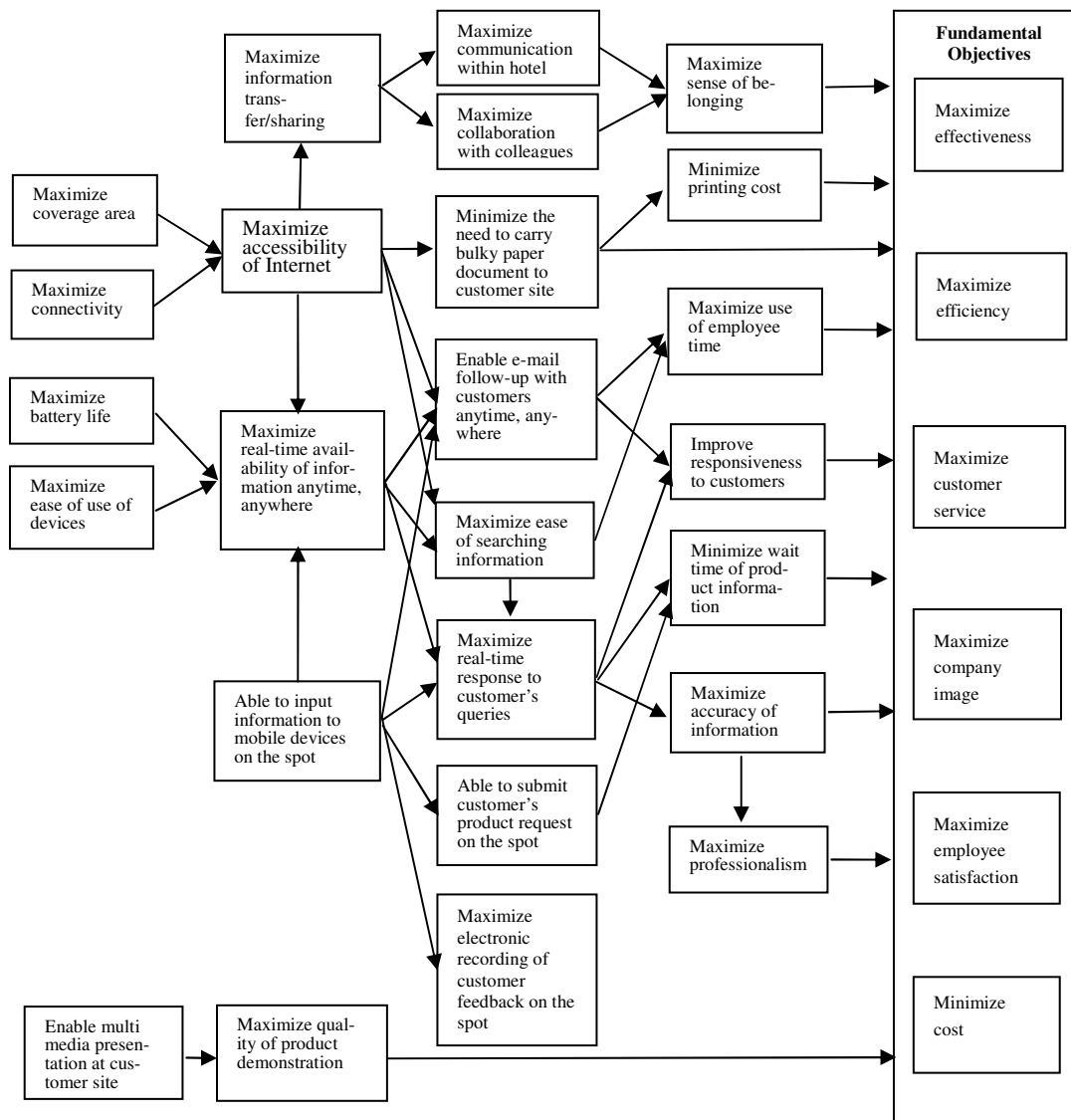


Table 2. Means Objectives

Means objectives	Evidence from interviews	Means objectives	Evidence from interviews
Maximize coverage area	<ul style="list-style-type: none"> ● It is important to increase coverage area of mobile service. ● It would be nice that wireless connection is available everywhere. 	Enable e-mail follow-up with customers anytime, anywhere	<ul style="list-style-type: none"> ● Sales representatives can do follow-up with customers whenever they have some time while doing sales call. ● Sales representatives can send emails to customers during the waiting time for another appointment.
Maximize connectivity	<ul style="list-style-type: none"> ● I would like to have constant signals to ensure reception. ● Stable connection is important. 	Maximize ease of searching information	<ul style="list-style-type: none"> ● It is easier to search for product information via Tablet PC. ● Sales representatives can use Tablet PC to search for hotel electric catalog and hotel information.
Maximize battery life	<ul style="list-style-type: none"> ● I always bring extra batteries with me to increase operating duration of Tablet PC. ● It is necessary to increase length of uninterrupted. 	Maximize real-time response to customer's queries	<ul style="list-style-type: none"> ● When customers have questions about our products, sales representatives can answer these questions quickly via Tablet PC. ● Because information is readily available and easy to search, sales representatives can respond to customers' queries almost real-time.
Maximize ease of use of devices	<ul style="list-style-type: none"> ● Ensure mobile devices are simple to use. ● Ensure mobile devices are user-friendly. 	Able to submit customer's product request on the spot	<ul style="list-style-type: none"> ● Sales representatives can make reservations on the spot and submit it electronically using the Tablet PC. ● When customers have special request, sales representatives can submit the requests right away in front of the customer.
Enable multi-media presentation at customer site	<ul style="list-style-type: none"> ● Sales representatives can show PowerPoint slides, audio, and video using Tablet PC. ● Sales representatives can do multi-media presentation to customers. 	Maximize electronic recording of customer feedback on the spot	<ul style="list-style-type: none"> ● Sales representatives can record customers' feedback about hotel products or services during their visiting customers using my Tablet PC. ● Sales representatives can take notes, or even audio-record the customers' opinions and feedbacks.
Maximize information transfer/sharing	<ul style="list-style-type: none"> ● Easier to transfer files to colleagues. ● It is easier to share information among colleagues. 	Maximize sense of belonging	<ul style="list-style-type: none"> ● Using Tablet PC makes sales representatives feel that they are in the team. They can connected with their colleagues anytime. ● Tablet PC makes sales representatives feel that they are not alone. They can talk to others and get help from them.
Maximize accessibility of Internet	<ul style="list-style-type: none"> ● Able to use Tablet PC at anytime, anywhere. ● Able to use Tablet PC on the move. 	Minimize printing cost	<ul style="list-style-type: none"> ● By making everything electronic, hotel can save on the printing cost. ● Company can inform sales representatives about product changes without sending paper documents.
Maximize real-time availability of information anytime, anywhere	<ul style="list-style-type: none"> ● Sales representatives can provide product information whenever they need it. ● Sales representatives can have hotel catalogs with them when they carry their Tablet PC. 	Maximize use of employee time	<ul style="list-style-type: none"> ● Tablet PC can help sales representatives use their time better when they are doing sales call. ● Sales representatives can send follow-up emails to customers while doing sales call which turns idle time into working time.
Able to input information to mobile devices on the spot	<ul style="list-style-type: none"> ● Tablet PC allows sales representatives to take notes during conversation with customers and save it as a file. ● Sales representatives can type the notes or reminder into the Tablet PC while in customers' offices. 	Improve responsiveness to customers	<ul style="list-style-type: none"> ● After using Tablet PC, sales representatives respond to customers more quickly. ● Sales representatives have been more responsive to customers with the help of Tablet PC.
Maximize quality of product demonstration	<ul style="list-style-type: none"> ● With the multimedia features of Tablet PC, Sales representatives can demonstrate to customers hotel new products better. ● Sales representatives can show customers the video that accompanies the product. 	Minimize wait time of product information	<ul style="list-style-type: none"> ● By submitting customers' reservations on the spot, they can get the answer quicker. ● There is less wait time for customers to get the product confirmation.
Maximize communication within hotel	<ul style="list-style-type: none"> ● Communication with colleagues is more convenient after using Tablet PC. ● Communication speed within hotel is improved through Tablet PC. 	Maximize accuracy of information	<ul style="list-style-type: none"> ● Using Tablet PC can ensure correctness of information. ● Tablet PC can maintain up-to date information.
Maximize collaboration with colleagues	<ul style="list-style-type: none"> ● Sales representatives can do brainstorming using Tablet PC. ● Sales representatives can help each other to solve some problems through Tablet PC. 	Maximize professionalism	<ul style="list-style-type: none"> ● With the help of Tablet PC, customers feel that sales representatives are more professional in this hotel. ● By using Tablet PC, sales representatives are perceived by customers to be more capable and knowledgeable.
Minimize the need to carry bulky paper document to customer site	<ul style="list-style-type: none"> ● It is paperless to use Tablet PC. ● Sales representatives used to carry catalogs to customers' office but all the information is in Tablet PC now. 		

Another fundamental objective is maximize company image. As the main clients of this hotel are high technological companies, the sales representatives feel that using Tablet PCs help them appear more confident and knowledgeable. The use of this new, cutting edge technology by sales representatives showcases the hotel's ability and willingness to be 'innovative' and at the 'cutting edge' in sharing and disseminating knowledge among salespersons, and in supporting better communication with customers. Also, the use of Tablet PCs has enabled the sales representatives to be more knowledgeable about the products and enhances their professional image, which in turn improves the image of the hotel.

According to the subjects, the fundamental objective, maximize employee satisfaction, is one of the main drivers of the hotel's decision to deploy this new technology. The sales representatives are more satisfied with their job as the use of mobile technology not only eliminates the need to carry heavy paper documents as part of their job, but also helps to streamline the process involved in sales and marketing, and enables the sales representatives to have most of the work done while interacting with customers rather than at the end of the work

day. Thus, they are less likely to bring work home with them, and increase their overall quality of life. In addition, the mobile technology enables them to utilize their time better and reduce 'slack' or 'dead' time, and helps to create a sense of belonging to a hotel by enabling them to communicate and collaborate with their colleagues more easily and readily. Hence, employee satisfaction has significantly increased. Minimize cost has been identified as another fundamental objective in using mobile technology. This fundamental objective can be achieved through cost saving in printing and distributing paper documents such as sales manuals and product catalogs.

The means objectives derived from this study as well as the relationships between them illustrate how the fundamental objectives can be achieved. The means objectives not only include features or functions of mobile technology, but they also suggest possible applications for sales management in hotel.

Among all the means objectives, accessibility and real-time availability of information anytime, anywhere were emphasized by almost all interviewees. Accessibility is a key requirement for wireless applications: being able to use

them anytime, anywhere, and while on the move are important criteria. The main duty of sales representatives is to visit clients. They need mobile and wireless devices to provide them with access to information whenever the need arises and regardless of location. Without these basic requirements, mobile applications would not be working to the hotel. In addition, these two objectives are the means to achieve a number of other objectives.

The subjects we interviewed also highlighted the unique features or functions provided by mobile technology that have made mobile applications valuable. These features/functions include accuracy of information, real-time response to customer's queries, ease of searching information, collaboration with colleagues, quality of product demonstration, and multi-media presentation. These are the means that lead to the rest of the objectives in the means-ends objective network.

Conclusion

Mobile technology has advanced rapidly and significantly, and has shown great promise and potential for hotel use. As demonstrated in this study, mobile technology can be used as a strategic

tool in hotels. This study examines the strategic impact of mobile technology on hotels by studying a modern fashionable hotel using the VFT approach. The use of the qualitative approach provides us with deep insights on the strategic implications of using mobile technology to support sales and marketing in this hotel. In this case study, six fundamental objectives are found to contribute to the overall objective of maximizing the hotel's benefits of using mobile technology. The main drives for the hotel to adopt mobile technology are to 'increase efficiency', 'increase effectiveness' and 'provide better customer service', which are three key dimensions of competitive advantages. In this hotel, mobile technology has been adopted and applied in the hotel as a strategic tool to achieve competitive advantages.

One of the major contributions of this study is the development of a means-ends objective network that depicts how fundamental objectives can be achieved through means objectives, that is, how hotel strategies can be achieved via the use of mobile technology. The relationships between means objectives and fundamental objectives demonstrate how mobile technology strategically impacts the hotel.

In addition, a means-ends objective network that can serve as a conceptual foundation for future research in the area. For researchers, this network presents a framework and model for understanding and explaining the strategic implications of mobile technology in

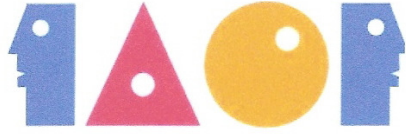
hotels. For practitioners, the means-ends objective network presents a ‘roadmap’ that can help them achieve hotel strategies and gain competitive advantage when adopting and implementing mobile technology.

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EXPLORING EMPLOYEES' PERCEPTION OF BIOMETRIC TECHNOLOGY ADOPTION IN HOTELS

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Abstract

Biometric technology is quickly becoming a principal method of identification in today's fast-paced networked and security-conscious society. However, adoption of new technology is considered successful when employees embrace and use it effectively. The purpose of this study was to explore perceptions and acceptance of biometric technology by employees in hotels: trying to find out about the knowledge base available about biometrics among hotel employees. This study apply technology acceptance model (TAM) to conduct this research. The results indicated that 77% of employees are ready to adopt biometric systems in hotels, especially if they are perceived as useful.

Keywords: Biometric Technology, Technology Acceptance Model (TAM), Hotel

Introduction

The use of technology in the hospi-

tality industry is driven by the need to improve and refine customer service (Nyheim et al., 2004), improve opera-

tional efficiency (Siguaw et al., 2000), increase revenue and lower overall costs (Wang and Qualls, 2007). Consequently, the hospitality industry is apt to adopt and incorporate new technologies to ameliorate existing business process. One relatively new technological advance that has gained prominence and use in recent years is biometric technologies. The history of biometrics in the hotel industry is relatively short, but it is generally agreed that biometric systems could add value to guests' hotel stay experiences (Murphy & Rottet, 2009), as they are viewed as superior to traditional identification and access technologies. For hotels, biometric systems appear to be promising, as they can reduce costs and fraud, and increase accuracy in transaction processing, while offering users security and convenience (Ives, Du, Etter, & Welch, 2005). Despite the potential benefits that the technology has to offer, acceptance and adoption of technology by employees and front line employees of hotels is essential for the success of implementation. Understanding why individuals accept or reject information technology innovation has proved to be one of the most challenging issues in information technology research. Thus, this study examines perceptions and acceptance of biometric technology by employees in

hotels and formulates recommendations for the hotel industry about the potential use of biometric systems in hotels.

Literature Review

Biometrics Technology

Biometrics is the technology of identifying individuals or authenticating identity using distinctive physical or behavioral patterns (Jackson, 2009). Biometric systems require two operational dimensions: (a) enrollment, in which biometric data are obtained and linked with a person's identity and (b) authentication or recognition, in which new biometric data are compared with the stored data (Langenderfer & Linnhoff, 2005).

With biometrics, data from a fingerprint, for example, are collected and transmitted to a computer to processes to identify a match within the stored database, allow access to an area, and document the entry time of a given individual. This information can be printed or retrieved at a later time to determine all those who accessed the area in question. An inventory of biometric systems includes fingerprinting, face and voice recognition, hand geometry, handwriting pattern recognition, and iris and retinal

scanning (Ives et al., 2005). This data is accurate, convenient, and cannot be stolen or replicated because it is unique to only one subject (Koltzsch, 2007). Thus, they are considered more reliable than the traditional recognition and identification systems (Jain, 2007).

The wide spread application of biometrics in personal identification of consumer goods such as portable computers has led to \$3 billion in sales in 2012 (Intellectual Security, 2014). Biometrics has also been applied in airports, by airlines, and check-out points of sales and has proven effective, convenient, and time saving (Jones, et. al 2007). These point to the increased acceptance and trust of this technology by consumers. However, adoption of new technology is considered successful when employees embrace and use it effectively (Lee, Kim, Rhee, & Trimi, 2006). The literature review revealed a gap in studies on biometrics acceptance by employees, yet employees are a major part of the equation when trying to implement such technology. Adoption of new technology is considered successful when employees embrace and use it effectively (Lee, Kim, Rhee, & Trimi, 2006). Therefore, the purpose of this study was to explore perceptions and acceptance of biometric technology by employees in hotels: try-

ing to find out the factors that influence employees' attitudes and intentions to use biometric systems in hotels.

Research Model and Hypotheses

Generally, technology adoption has been a major topic for many scholars because of its importance in understanding technology diffusion (Oh, Kim, Lee, Shim, & Park, 2009). In this context, many research models attempt to understand technology acceptance. The theory of reasoned action (TRA), popularized by Fishbein and Ajzen (1975), suggested that subjective norm (beliefs, norm beliefs, and motivation to comply) and belief and evaluation influence attitudes towards technology, which in turn affects behavioral intention to use, translated into actions (Fishbein & Ajzen, 1975). Ajzen (1991) developed the TPB, which was an extension of the TRA, and included the perceived behavior control under the influence of interior and exterior control factors.

TAM, a well respected model used to understand human behavior and attitudes towards technology, focused on modeling how users come to accept and see technology and many of them being variants derived from the same class of attitudinal/behavioral factors relating to

how and when they will use technology (Davis, 1989, p. 282). TAM reduced the beliefs in the TRA to two important beliefs; perceived ease of use and perceived usefulness (Bruner & Kumar, 2005). In TAM, behavior is affected by intention to use which is a result of attitudes towards use of technology. Attitudes towards the use of technology are affected by perceived ease of use and perceived usefulness. Thus, the TAM proposes a direct belief–attitude–intention relationship (Oh, Kim, Lee, Shim, & Park, 2009). The literature on technology adoption recognizes various extensions of TAM to fit various technological contexts (Schepers & Wetzels, 2007), as some scholars argue that TAM, despite its broad validation, needs to be extended in order to provide a more comprehensive understanding of technology adoption. In an effort to understand what else drives users' adoption of technologies, Agarwal and Prasad (1998) using Rogers's (1983) diffusion of innovation framework, posited that the most immediate influences on an individual's cognitive assessment of information technology are represented by factors unique to the individual. Rogers found that individuals who are highly innovative are active seekers of new ideas, can cope with higher levels of uncertainty, and develop more positive in-

tentions toward acceptance. Agarwal and Prasad (1999) viewed personal innovativeness as expressing the risk taking propensity that certain individuals possess, and defined it as an individual's willingness to try out a new technology (Midgley & Dowling, 1978). Thus, in an effort to increase the model's explanatory power. The TAM has been extended in this study by adding a new hypothesized relationship between perceived innovativeness toward technology and perceived ease of use. Based on the literatures, the conceptual model is represented in Figure 1 and the following hypotheses are proposed:

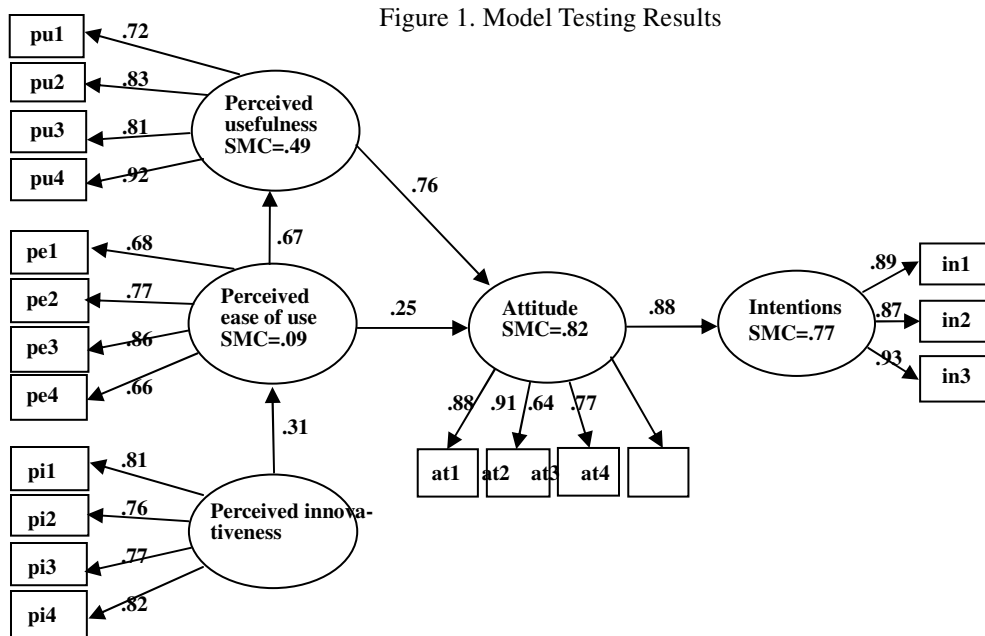
Hypothesis 1: Employee perception of usefulness will positively influence their attitudes toward using biometric systems in hotels.

Hypothesis 2: Employee perception of ease of use will positively influence their attitudes toward using biometric systems in hotels.

Hypothesis 3: Employee perception of ease of use will positively influence their perceived usefulness of biometric systems in hotels.

Hypothesis 4: Employees' attitudes will positively influence their intentions to use biometric systems in hotels.

Hypothesis 5: Employees' perceived innovativeness toward information technology will positively influence perceived ease of use of biometric systems in hotels.



Methodology

A questionnaire was designed according to the literature on TAM to measure the acceptance of biometric systems in hotels. To measure perceived usefulness, the questionnaire included four items, measuring the extent to which biometric systems in hotels would enhance employees' working efficiency, and allow employees to do things better (Lopez-Nicolas et al., 2008). The questionnaire for perceived ease of use in-

cluded four items, measuring the extent to which learning to use biometric systems in hotels would be easy (Lopez-Nicolas et al., 2008), and would not require a lot of mental effort. To measure attitudes toward biometric systems in hotels, the scale include three items to measure that using biometric systems in hotels would be wise-foolish (Ahn et al., 2007); beneficial-not beneficial (Y. Lee & Kozar, 2008). The scale for intentions to use biometric systems in hotels included three items, measuring that the

respondents intend to use biometric systems in the future, whether it would be one of their favorite technologies to use (Im, Kim, & Han, 2008). The scale for perceived innovativeness toward information technology was adapted from the existing literature on domain-specific innovativeness (Lu et al., 2008, Walczuch et al., 2007). It included four items measuring the extent to which the respondents were among the first to try out new technologies, liked to experiment with the new technologies, and liked to keep up with the latest technological developments in their areas of interest (Walczuch et al., 2007). All items above have been anchored in 5 points, with values ranging from 1= strongly disagree to 5= strongly agree. This survey was conducted with employees and managers of five-star hotels in Taiwan during a period of 12 months. A number of 768 respondents completed the survey. After removing the records containing heavily missing values, a total of 621 responses remained in the analysis.

Results

Structural equation modeling (SEM) was used to analyze this research model. Fitting the model to the sample resulted in a chi-square value of 277.11

($p < .001$), with 147 degrees of freedom, and a normed- χ^2 of 1.88. Furthermore, the model had a GFI value of .85, an AGFI value of .81, a NFI value of .90, an IFI value of .94, a TLI value of .93, and a RMSEA value of .07. All the fit measures exceeded their suggested values, and thus, it was concluded that the model fit was good.

The examination of convergent validity requires scrutiny of factor loadings and squared multiple correlations (SMCs) of the measurement items [27]. All factor loadings had values between .64 and .93 on their underlying constructs and were significant ($p < .001$). In addition, the SMCs were calculated for all items (Table 1).

All items had SMC values greater than the suggested value of .4 (Bollen, 1989). On the other hand, according to Fornell and Larcker (1981), discriminated validity is established if, for any two constructs, A and B, the average variance extracted (AVE) for A and the AVE for B exceed the squared correlation between A and B. The inter-construct correlations were calculated based on the averaged scales for these constructs, that is, items pertaining to each underlying construct were averaged. In this case, all AVE scores, rang-

ing from .63 to .83, were greater than the suggested cut-off value of .5 (Fornell & Larcker, 1981; Table 2). Furthermore, the AVE scores for any two constructs were greater than their corresponding squared interconstruct correlations (Fornell & Larcker, 1981). In addition, the composite construct reliabilities (CCRs) were calculated for all constructs (Table 1). The composite reliability is a meas-

ure that depicts the extent to which a number of items indicate a common construct (Hair et al., 1998). In this study, all CCR values were greater than the acceptable level of .7 (Hair et al., 1998). Therefore, the conditions for convergent and discriminant validity were met for all constructs.

Table 1. Confirmatory Factor Analysis

Constructs and Items	Item Loadings	Squared Multiple Correlations (SMC)	Composite Construct Reliabilities (CCR)
Perceived usefulness			.912
pu1	.72	.51	
pu2	.83	.71	
Pu3	.81	.66	
Pu4	.92	.86	
Perceived ease of use			.816
pe1	.68	.45	
pe2	.77	.55	
pe3	.86	.73	
pe4	.66	.41	
Perceived innovativeness			.853
pi1	.81	.62	
pi2	.76	.52	
pi3	.77	.64	
pi4	.82	.68	
Attitudes			.878
at1	.88	.76	
at2	.91	.85	
at3	.64	.42	
at4	.77	.56	
Intentions			.923
in1	.89	.76	
in2	.87	.82	
in3	.93	.86	

Table 2. Convergent and Discriminated Validity

	A	B	C	D	E
A Perceived usefulness	.83				
B Perceived ease of use	.41	.76			
C Perceived innovativeness	.03	.04	.63		
D Attitudes	.51	.38	.07	.68	
E Intentions	.61	.36	.05	.56	.72

Significance of the path loadings provided results for hypothesis testing. Perceived usefulness ($\beta=.76$, $p<.001$) was a significant predictor of attitudes, thus providing support for Hypothesis 1. In hotels, employees' use of biometric systems that are perceived as useful are likely to lead to the development of positive attitudes toward using biometric systems. Perceived ease of use ($\beta=.25$, $p<.01$) had a significant direct impact on attitudes toward using biometric systems in hotels, providing support for Hypothesis 2. In hotel settings, users who perceive biometric systems as easy to use are likely to develop positive attitudes toward using biometric systems. As indicated by the SMCs, perceived usefulness and ease of use together explained 82% of the variability in attitudes toward biometric systems in hotels.

Hotel employees will develop positive attitudes toward using biometric systems if such systems are perceived as useful and easy to use. The path coefficients of the two predictors of attitudes indicated that perceived usefulness was a stronger predictor of attitudes than was perceived ease of use.

Employees' attitudes toward use of biometric systems in hotels seem to be

more strongly influenced by perceptions of usefulness than by perceptions of effort-free use. Furthermore, perceived ease of use was a significant predictor of perceived usefulness ($\beta=.67$, $p<.001$), explaining 49% of the variability in perceived usefulness, and thus, providing support for Hypothesis 3. The easier to use a biometric system is perceived to be by hotel guests, the more likely it is that they find it useful. On the other hand, attitudes toward use of biometric systems explained approximately 77% in the variability of intentions to use biometric systems in hotels ($\beta=.88$, $p<.001$), thus providing support for Hypothesis 4. This result suggests that guests who develop positive attitudes toward the use of biometric systems in hotels are likely to use these systems.

Although explaining only 9% of variability in perceived ease of use, perceived innovativeness ($\beta=.31$, $p<.01$) was found to be a significant predictor of ease of use, thus supporting Hypothesis 5. A fit seems to exist between employees inclined toward technology and their perceptions of ease of use of biometric systems. That is, for employees with a general inclination toward technology, biometric systems would eventually seem easier to use than it would be for employees not inclined toward technol-

ogy. As expected, all the hypotheses were supported providing empirical validation of this variant of TAM, which can be used to examine employees' intentions to use biometric systems in the hotel industry.

Conclusions

The purpose of this study was to determine the manner in which employees' perceptions of usefulness and ease of use affected their attitudes toward and intentions to use biometric systems in hotels. As the results indicated, the strongest predictor of attitudes was perceived usefulness. Accordingly, biometric systems should provide evidence of superiority relative to the alternative systems. As biometric systems become increasingly available, hotels might explain potential benefits to employees in an effort to stir their curiosity about these systems. This approach might stimulate employees' cognitions related to system performance. In turn, this may trigger exploratory use, which is believed to impact perceived usefulness, with a direct impact on attitudes and intentions to use (Saeed & Abdinnour-Helm, 2008).

To increase usefulness, hotels could pursue the integration of biometric sys-

tems with other information systems. In that sense, a number of advantages can be foreseen, especially in terms of increasing efficiency, accuracy and cost saving. Firstly, a fully integrated system that allows employees to use the same biometrics at multiple properties would definitely increase working efficiency. Furthermore, an integration of biometrics into other systems that employees have already adopted would eventually result in an easier adoption of the biometric component, as their perceptions of usefulness may transfer from the existing to the new parts of the integrated system.

Although another factor, perceived ease of use, was not a strong predictor of attitudes, it strongly impacted perceived usefulness. It means that employees who learn easily how to use biometric systems also may see more clearly their benefits in performing tasks.

Thus, once hotels offer biometric systems, they need to convince employees about the convenience and usefulness of such systems. As perceived ease of use was a weaker predictor of attitudes than was perceived usefulness, hotels need to implement biometric systems that are high in ease of use. At the same time, they must emphasize that

such systems would eventually optimize their interactions with a hotel.

Perceived innovativeness toward technology was found to be a strong predictor of perceived ease of use. This seems to suggest that innovative people, who have a natural inclination toward technology and are willing to take risks, would easily learn how to use such systems, and in turn, their beliefs about system usefulness may strengthen. However, this might be a challenging task for hotels as it is difficult to distinguish and classify employees based on their innovativeness. One way in which hotels can move a step closer to identifying the most innovative employees is to examine their previous behavior in terms of technology adoption and usage. This may provide substantial hints into em-

ployees' perceived innovativeness toward information technologies.

Overall, a large percentage (77%) of the variability in intentions to adopt biometric systems in hotels was explained by its predictors, indicating that this extended variant of TAM is an appropriate theoretical framework to examine employees' intentions to use biometric systems in hotels. In hotel employees, perceived innovativeness had a significant impact on perceived ease of use. In turn perceived usefulness and ease of use had significant impacts on attitudes toward using biometric systems, and further, on intentions to use biometric systems in hotels. Thus, it can be concluded that, in spite of their limited use by hotels, biometric systems are ready to be adopted by employees.

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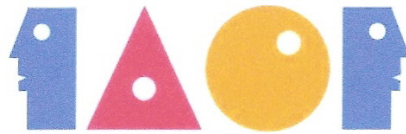
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THE EQUIVALENCE RELATIONSHIP OF TWO COMMON WEIGHTS MODELS IN DATA ENVELOPMENT ANALYSIS

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Abstract

The present study primarily aimed to distinguish efficient and inefficient units among decision-making units (DMUs) by measuring their efficiency through data envelopment analysis. Therefore, numerous studies have attempted to evaluate the efficiency scores of “efficient” DMUs. Previous scholars have evaluated the efficiency scores of DMUs by using “common weights” to effectively enhance identification. Among the various common weights models, the model proposed by Bao (2008) is more simple and practical. To verify the practicality of this model, this study developed a theorem to verify the equivalence relationship between the common weights model proposed by Bao (2008) and that developed by Alinezhad et al. (2009). This was the central objective of the present study. Subsequently, a case study was conducted by using the sample data presented by Karsak and Ahiska (2005). The findings showed that the calculated results of the two models were identical. The common weights model proposed by Alinezhad et al. (2009) can only be applied to process a single input variable. However, the linear common weights model proposed by Bao (2008) can be applied to solve problems with multiple input variables, expanding the application scope.

Key Words: Data envelopment analysis, common weights, equivalence relationship

Introduction

Data envelopment analysis (DEA) originated in economic theories. Previously, the majority of scholars estimated production possibility curves by using preset production functions to evaluate the productivity of various organizations. Farrell (1957) adopted a mathematical programming approach and substituted the commonly used “preset production functions” with “non-preset production functions” to determine efficient frontier curves. Thereafter, Farrell (1957) then used these curves to evaluate the technology and price efficiency of various decision making units (DMUs). However, the model proposed by Farrell (1957) could only evaluate the efficiency of a single output and was incapable of concurrently evaluating the efficiency of multiple outputs, limiting its scope of application. Subsequently, Charnes, Cooper, and Rhodes (1978) referenced Farrell’s efficiency measurement method and developed an efficiency evaluation approach that could measure multiple inputs and multiple outputs under a fixed return. This approach was referred to as data envelopment analysis (DEA). The model that was used to measure the efficiency of fixed returns to scale was termed the CCR model.

The efficient and inefficient units among DMUs can be distinguished by measuring their efficiency through DEA. However, any external interference during the evaluation process may affect the evaluation results. The problem of sensitivity has often caused the overvaluation of “efficient” DMUs in efficiency evaluation cases. This is the primary cause of “inefficient” evaluations. Therefore, numerous studies have attempted to evaluate the effi-

ciency scores of “efficient” DMUs through extensive investigations.

“Inefficient” evaluations mentioned in the preceding paragraph are often attributed to unrestricted variable weight, a problem commonly perceived by academic researchers. Thannassoulis (1988) as well as Wong and Beasley (1990) asserted that unrestricted variable weight often causes DMUs to manifest efficiency scores that exceed their actual performance. Without appropriate restriction, DEA efficiency evaluations often produce DMUs with an efficiency score of “1.” These results are the primary cause of “no significant” evaluation effectiveness.

Common DEA models for evaluating the efficiency of various DMUs maintain that the “weight” estimations generated by the models most benefit the DMU efficiency evaluations. Therefore, these models often produce several “efficient” units, reducing the accuracy of the evaluations. To enhance identification accuracy, many scholars began evaluating the efficiency scores of DMUs by using “common weights.” A feature of this model is that the same weight is used for the efficiency evaluation of all DMUs. In other words, under a mutual evaluation standard for all DMUs, the occurrence of similar efficiency scores is greatly reduced.

The concept of common weights was first introduced by Cook, Roll, and Kazakov in 1989. Cook et al. (1991) aimed to minimize the distance between the upper and lower limits of various weights to evaluate the common weights of different variables. Moreover, Roll et al. (1991) adopted common weights to evaluate the efficiency scores of DMUs and their near-

est targets. Ganley and Gubbin (1992) developed common weights by using the sum of maximum efficiency ratios to distinguish the classes of various DMUs. Furthermore, Sinuany-Stern (1994) employed linear discriminant analysis as the basis for common weights evaluation to distinguish between efficient and inefficient DMUs. Additionally, Sinuany-Stern (1998) employed common weights and developed a novel method, Discriminant Data Envelopment Analysis of Ratios (DR/DEA), to determine the optimal ranking of DMUs. Liu and Peng (2004a) proposed the Common Weights Analysis (CWA) Model by assuming that DMUs are all equally crucial and used this model to evaluate the common weights of different variables. Thereafter, Liu and Peng (2004b) proposed the Super CWA Model by assuming that the ranks of all DMUs are the same and used this model to evaluate the common weights of different variables. Kao and Hung (2005) developed the Compromised Weights Model to evaluate the financial performance of DMUs under a common standard. Bao et al. (2012) introduced the concept of common weights compromise, which accounts for the compromise of each DMU variable. The aforementioned common weights methods have different degrees of managerial implication. However, most of the aforementioned common weights models (excluding the model proposed by Bao et al. (2012)) are based on overall standards and fail to evaluate the efficiency of individual DMUs. In response to this problem, many scholars began researching efficiency evaluation models focusing on common weights. Makui et al. (2008) contended that the weight scores for variables evaluated by the CCR model differ significantly from the weight scores for the variables of different DMUs, demon-

strating an irrational phenomenon, which prompted Makui et al. to propose a common weights approach. Thereafter, Makui et al. (2008) and Yang et al. (2010) further measured common weights by using multiobjective programs. Amirteimoori et al. (2009) developed a "three-stage approach" to evaluate common weights in order to more effectively rank the efficiency scores of various DMUs. Kao (2010) asserted that the evaluation outcomes of the CCR model differ from one another. Therefore, Kao proposed the concept of "absolute distance" to evaluate common weights. However, this approach required linear programming to identify a model solution, thus increasing the difficulty of solving problems.

"Common weights" efficiency evaluations not only reinforce identification, they are also more effective for evaluating the overall efficiency of DMUs. Thus, Bao (2010) proposed the common weights model, and Bao et al. (2012) adopted DEA compromised weights to examine common weights. Among the various common weights models, the model proposed by Bao (2008) is the most simple and practical. This model simplifies the solution determination process without compromising rationality. Notably, the present study found that the model proposed by Bao (2008) manifests an equivalence association with the common weights model proposed by Karsak and Ahiska (2005). In other words, the present study verified through empirical analysis that, even though the external forms of the two models are distinct, the characteristics of and results obtained from the two models are similar. This study primarily aimed to verify that the common weights model proposed by Bao (2008) manifests an equiva-

lence association with that proposed by Alinezhad et al. (2009).

In Section 2, we individually introduce the common weights models proposed by Bao (2008) and Alinezhad et al. (2009). In Section 3, a theorem is proposed to verify the equivalence relationship of the two models. Section 4 presents a case study by using the example data proposed by Karsak and Ahiska (2005) to verify the rationality of the proposed theorem. Finally, a conclusion is presented in Section 5.

The Common Weights Models of Bao (2008) and Alinezhad et al. (2009)

- The Common Weights Models of Bao (2008)

Bao's model is presented as follows:

$$\begin{aligned} \text{Min } & \sum s_j \\ \text{s.t. } & \sum u_r y_{rj} - vx_j + s_j = 0 \\ & u_r \geq \varepsilon, r=1, \dots, s \\ & v \geq \varepsilon, j=1, \dots, n \end{aligned} \quad (1)$$

Where x represents the only input variable, v represents the weight setting of x , u_r represents the weights of the various output variables (y_r), and $r=1, \dots, s$.

- The Common Weights Models of Alinezhad et al. (2009)

Alinezhad et al. (2009) proposed the minimax efficiency model to measure common weights. The model is expressed as follows:

$$\begin{aligned} \text{Min } & M \\ \text{St. } & M \geq d_j, j=1, \dots, n \\ & \frac{\sum_{r=1}^s u_r y_{rj}}{x_j} + d_j = 1 \dots \dots \dots (2) \\ & u_r \geq \varepsilon, r=1, \dots, s \\ & d_j \geq 0, j=1, \dots, n \end{aligned}$$

Where x is the only permitted input variable, and u_r represents the weights of y_r . This study employed (1) to analyze the common weights efficiency evaluation model of (2), verifying that (2) manifested an equivalence relationship with (1).

Prior to theorem verification, this study developed Lemma 1 to serve as an explanation for the verification of (1).

- Lemma 1:

When (1) is applied to process the input and output variables of various DMUs, and when the variables are multiplied by k ($k \neq 0$), the latter slack variables obtained using (1) are k -times the former slack variables, and the various weight scores remain unchanged.

Proof:

When the input and output variables of the various DMUs are multiplied by k ($k \neq 0$), let $y_{rj}' = k * y_{rj}$ and $x_j' = k * x_j$. Subsequently, (1) becomes (3)

$$\begin{aligned} \text{Min } & \sum s_j' \\ \text{s.t. } & \sum u_r' y_{rj}' - v' x_j' + s_j' = 0 \\ & \dots \dots u_r' \geq \varepsilon, r=1, \dots, s \dots \dots \dots (3) \\ & \dots \dots v' \geq \varepsilon, j=1, \dots, n \end{aligned}$$

The constraint of (3) can be expressed as $k * (\sum u_r y_{rj} - vx_j + s_j) = 0$. This suggests that $s_j' = k * s_j$ and that the scores of u_r and v remain unchanged. Thus, Lemma 1 is

verified.

➤ Theorem 1:

The common weights model of Alinezhad et al. (2009) ((2)) manifests an equivalence relationship with (1).

Proof:

In (1), the input variables (x_j) can be categorized into the following two conditions:

- ✓ $x_j \geq 1; j = 1, \dots, n;$
- ✓ $0 \leq x_j \leq 1; j = 1, \dots, n$ for specific DMUs. The two conditions are discussed separately.

- ✓ $x_j \geq 1; j = 1, \dots, n;$

For (1), let $s_j^* = s_j/v$, $u_r^* = u_r/v$. Subsequently, (1) can be rewritten as follows:

$$\begin{aligned} \text{Min} &= \sum s_j^* \\ \text{s.t.} & \sum u_r^* y_{rj} - x_j + s_j^* = 0 \\ u_r^* & \geq \varepsilon, r=1, \dots, s \end{aligned} \quad (4)$$

Let $M = \sum s_j^*$, $x_j * d_j = s_j^*$. Inevitably, $\sum s_j \geq s_j^*/x_j$ establishes ($x_j \geq 1$). Thus, $M \geq d_j$ in (2) is established.

If the first constraint of (4) is $\sum u_r y_{rj} - x_j + s_j^* = 0$, then (4) can be rewritten as follows:

$$\begin{aligned} \sum u_r y_{rj} - x_j + x_j d_j &= 0 \text{ or} \\ \sum u_r y_{rj} / x_j + d_j &= 1, \text{ which is the second constraint of (2).} \end{aligned}$$

- ✓ $0 \leq x_j \leq 1; j = 1, \dots, n.$

Therefore, under similar constraint conditions, (2) determines $\min M = \sum s_j^*$, thus confirming that the common weights models of (1) and (2) equal.

When $x_j \leq 1$, the constraint

$\sum s_j^* \geq s_j^*/x_j$ is not necessarily established. According to Lemma 1, when multiplying x_j by constant k to obtain $kx_j \geq 1$ and multiplying y_{rj} by constant k , the u_r of (2) remain unchanged, suggesting that the sum of the output weights of the various DMUs and the efficiency ratio of the input variable multiplied by weight remain unchanged. At this point, the various constraint conditions can be satisfied, verifying that the common weights model of (2) is similar to that of (1), which is proposed in the present study.

Case Verification

To verify that (1) manifests an equivalence relationship with (2), this study referenced the example data of Karzak and Ahiska (2005).

➤ Example :

Assuming that a total of 12 DMUs are processed, each with one input and four output variables, the data can be tabulated as follows.

This study incorporated the data compiled in Table 1 into (1) to obtain the various u_r scores and evaluate the efficiency values of the various DMUs. The results are identical to those obtained using (2), which is the minimax efficiency model proposed by Alinezhad et al. (2009).

Conclusion

Many studies have focused on investigating DEA common weights models. These models differ from one another and are developed according to different arguments. The common weights model proposed by Bao (2008) is the most simple

and practical of the common weights models. Although this model is simple, this study verified that this model ((1)) manifests an equivalence relationship with the common weights model proposed by Alinezhad et al. (2009; (2)), presenting an additional theoretical basis to support this model.

However, any external interference during the evaluation may affect the original evaluation results. Although, Alinezhad et al. (2009) the minimax efficiency model

((2)) manifested an equivalence relationship with the common weights model ((1)) proposed in the present study, the minimax efficiency model can only process a single input variable, which is a limitation of this model. Nevertheless, expanding (1) by referencing the study by Bao (2015), which established a model that could process multiple input variables, enables the mentioned limitation to be eliminated. This finding serves as a contribution of the present study.

Table 1. Input and output of 12 DMUs

DMU	X	y1	y2	y3	y4
1	100000	0.995	85	1.7	3
2	75000	0.933	45	2.5	3.6
3	56250	0.875	18	5	2.2
4	28125	0.409	16	1.7	1.5
5	46875	0.818	20	5	1.1
6	78125	0.664	60	2.5	1.35
7	87500	0.880	90	2	1.4
8	56250	0.633	10	8	2.5
9	56250	0.653	25	4	2.5
10	87500	0.747	100	2	2.5
11	68750	0.880	100	4	1.5
12	43750	0.633	70	5	3

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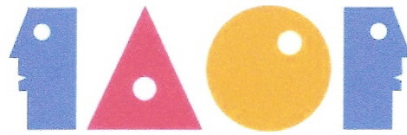
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THERE IS SOIL & THERE IS WEALTH: FACTORS INFLUENCING
URBAN CITIZENS TO PURCHASE FARMLAND
AND FARMHOUSES IN TAIWAN

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Abstract

More and more studies have found that only a few of people who purchase farmland and build farmhouses are actually farmers. More and more urban citizens go to rural area to purchase farmland and build farmhouses mainly for the purpose of investment and increase of values in Taiwan. Nevertheless, related agencies in the government have never conducted any investigation or research on this phenomenon. Therefore, this research plans to explore factors of urban citizens' farmland purchasing and farmhouse building in rural area based on theory of planned behavior. This research also collected 750 effective questionnaires from municipalities including Taipei City, Taichung City and Kaohsiung City for analysis. Research result indicates that: urban citizens will have more willingness to purchase farmland in a certain area as long as they expect the value of farmland will increase. As a result, attitude is the strongest factor influencing survey candidates' willingness to purchase farmland and build farmhouses. Before land purchasing and farmhouse building, survey candidates will first seek opinions from their most trusted and closest people. Next, they will rely on information technology. Land agents are the last resort they will take. In the meantime, survey candidates are confident of their capability over related expenses to purchase land and build farmhouses in rural area. Based on survey result from urban citizens' land purchasing and farmhouse building in rural area, this research also provides suggestions to related competent authorities for reference purpose.

Key words: Farmland, Farmhouse, The Theory of Planned Behavior

Introduction

Previously, Taiwan imposed stricter control measures over utilization and transfer on farm land such as farmland transfer was limited to owner-cultivators only. This has created sharp contrasts between farmland market and urban real estate market. However, after the modification of Agriculture Development Act (hereinafter referred to as "Agriculture Act") in 2000, there are huge changes on farm land utilization policy in Taiwan. These changes include easing of farmland free transaction, easing of limits over arable land division, conditional building of agriculture facilities or farmhouses, energize farmland leasing, efficient utilization system as well as reasonable and orderly releasing of farmland (Lin, 2006).

After the modification of Agriculture Act, farmland free transaction spirit has brought market mechanism back to farmland market. This is extremely important to the price and quantity information of market mechanism. However, with respect to social phenomenon incurred after the passing of Agriculture Act, Chen (2004) pointed out that it is already an inarguable fact that people living in farmhouses are not all farmers. Living functions provided by farmhouses are same as the ones provided by resident houses. With this, the Department of Urban & Housing, Council for Economic Planning & Development, Executive Yuan (2004) is also considering the possibility to position farmland as a low density and high quality resident community. These messages indicate that difference among farmland, construction land, farmhouse and condo have become blurred gradually. They even become mar-

kets which compete with each other. In addition to be utilized for living, Article 7 of Management Guidelines for Recreational Agriculture Assistance also stipulates that farmhouse are allowed to be used for home stay facilities under certain conditions and increases residence and business needs in addition to farmland's original production function. All these factors have enhanced the willingness to purchase land and build farmhouse in rural area for those who are rich and has spare time to do so.

In addition to aforementioned easing on farmland transaction limits after the passing of Agriculture Act, rural villages are also facing problems of aging population, young generation's outward migration as well as rural community's gradual urbanization. These have indirectly boosted even more farmers' selling of their own land. Furthermore, there is a trend in Taiwan that urban citizens relocate to rural area to purchase land, build farmhouse, travel for leisure purpose or lead a rural life which is different from retirement life. Reason for such phenomenon is because citizens in urban area have more disposal income and time to purchase land in rural area. Additionally, most rural areas in Taiwan still maintain good natural landscape and living in rural village will allow people to enjoy a life different from the fast speed urban life. Population in rural area is relatively smaller and both water and air are relatively cleaner. Besides, Taiwan has excellent highway networks and related roads connecting urban areas and rural areas and it only takes about an hour to go from rural area to urban area. All these factors combined have enhanced urban citizens' willingness to consider land

purchasing and farmhouse building in rural area.

Materials and Methods

Ajzen's Theory of Planned Behavior

During the past decade, Theory of Planned Behavior (“TPB”) has been utilized in analyzing psychology theories of human and behavior research both in the U.S. and Taiwan (Wang et al., 2013; Lai et al., 2013; Chen & Tsai, 2012; Lin & Yang, 2005; Chu & Chiu, 2003; Armitage & Conner, 2001) (Figure 1) . TPB was presented by Ajzen (1991) . This theory contends that an individual’s behavior is mainly determined by his/her behavioral

intention (“BI”) which is then mainly influenced by Attitude Toward Behavior (“AT”) , Subjective Norm (“SN”) and Perceived Behavioral Control (“PBC”). Ajzen considered that Behavior Intention (“BI”) is a perception activity which reflects an individual’s willingness and conscious plans to be engaged in certain behavior. It is an indicator for behavior prediction. BI is determined by Attitude Toward the Behavior (“AT”) and Subjective Norm (“SN”) . In addition to these, TPB also takes an individual’s Perceived Behavioral Control (“PBC”) into consideration.

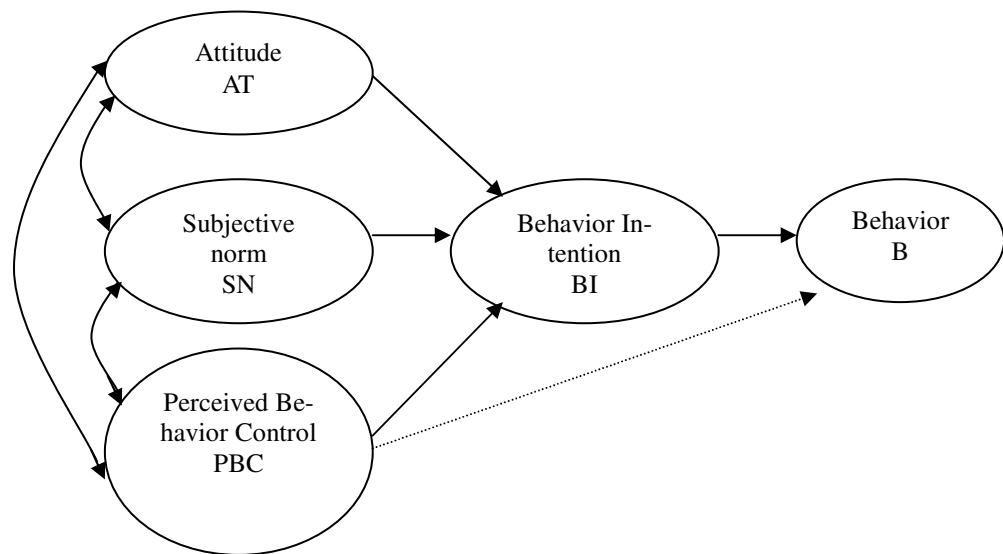


Figure 1. The Theory of Planned Behavior

TPB further illustrates that attitude, SN and PBC are all based on beliefs. “Behavior Belief” is the basis for attitude. It is an individual’s perception over relationship between behavior (e.g., purchase of

land and building of farmhouse in a rural area) and consequences of behavior (e.g., recreational life to be enjoyed after the purchasing of land and building of farmhouse). “Normative Belief” is the basis for

SN. It is an individual's perception on other people's expectation over his/her behavior (e.g., should or should not purchase land and build a farmhouse in a rural area). "Control Belief" is the basis for PBC. It is an individual's perception over resources and opportunities of which he/she can have a control (e.g., resources and capabilities to purchase farmland and build a farmhouse). Furthermore, structures for attitude and SN can be demonstrated in formats as follows:

Format 1: direct proportional relationship between AT and Σb_{ie} ;

Format 2: direct proportional relationship between SN and Σb_{jm} ;

Format 3: direct proportional relationship between PBC and Σc_{jp} .

In format 1, b_i means an individual's perception (subjective probabilities) over "behavior B leads to i th consequence" which is "Behavior Belief"; e_i is an individual's assessment over i th consequence and n means the sum of those beliefs. This means that if an individual believes that certain behavior can bring him/her multiple positive consequences, then his/her attitude towards conducting such behavior will become stronger. In format 2, b_j is the normative belief over the j th important person whom he/she takes as a referent. That is, it is an individual's extent towards conducting behavior B based on the j th person's consent or objection; m_j means the motive to comply with the j th person. In other words, if an individual thinks that an important group supports him/her to conduct certain behavior and he/she is also willing to listen to those people's opinion, then he/she will have a higher willingness

to conduct such behavior. In format 3, c_j means control belief. It is an individual's belief over "already in control of resources and opportunities to conduct certain behavior" and the belief regarding "which obstacles will be encountered by such behavior"; p_i is perceived power which means subjective assessment on the control capability over these resources, opportunities and obstacles. For instance, the more resources (e.g., economic capability) an individual has to purchase land in a rural area and the fewer obstacles (e.g., through introduction from good friends or relatives) encountered, then he/she will have a higher degree of thinking that he/she has a control over such behavior and he/she is more likely to go to a rural area to purchase land and build a farmhouse

Research Design

After reviewing the literature concerning purchasing land and houses, the researcher found that there are four studies strongly related to this study: Huang (2003) investigated the farmland owners' motives to purchase farmhouses in the urban planning area through interviews, Huang et al. (2007) explored the consumers' willingness to purchase and rent land and build houses by the fuzzy analytic hierarchy process, Liao & Zhou (2011) examined factors involved in the process of investing the real estate in Kaohsiung City by the fuzzy analytic hierarchy process, and Pan (2011) explored factors involved in the decision making process of purchasing houses through the questionnaire survey. Based on the factors used in these four studies and the researcher's personal experiences, this study categorizes the possible factors influencing farmland purchas-

ing and farmhouse building into attitude, subjective norm, and perceived behavioral control (Figure 2).

Since attitude is a general term, involving personal preferences, values, experiences, judgments, knowledge and emotions (Hartmann & Apaolaza-Ibanez, 2009), urban residents' preference to land is categorized into attitude in this study. That is, questions concerning attitude in this study include urban residents' psychological factors and their preferences to land.

As for questions concerning land preference, the study designs related survey questions involving land area, completeness of the land, surrounding natural conditions, land fertility, land value expectancy, significant development projects in the neighborhood, living functions, transportation, distance to the downtown, obnoxious facilities in the neighborhood on the basis of King (1976), Hite (1996), Weng (1992), Zhing (1997), Hsu (2000), Wu (2001), Huang (2003) and Wei (2013).

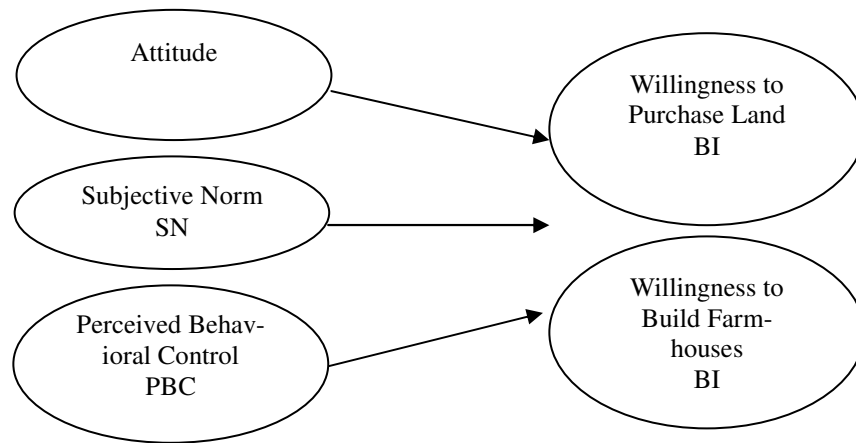


Figure 2. Research Design of the Study

In relation to psychological factors, the study designed related survey questions involving the relation between one's economic condition and farmland purchasing and farmhouse building, traditional concept that where there is soil there is wealth, personal preference to farming in the country, personal preference to the slow-paced life in the country, personal preference to the natural environment in the country, more free hours for farming in the country

after retirement, growing up in the country in the childhood, personal preference to living in the country according to Ajzen's definition of attitude, Bearden & Teel (1993), Zeithaml et al. (1996), Engel et al. (1995), and Zhuang et al. (2000).

Since subjective norm involves which important opinion groups influence the general public and how well the public follows their suggestions to purchase farm-

land and build farmhouses, the study examines definitions of significant opinion groups used in Norton (1987), Slovic (1988), Ravi (1999), Dodd et al. (1991), Boyd et al. (1972), Kotler (1991), and Cai (1997) and defines “significant opinion groups” as land agents, family members, relatives and friends, online advertisements, commercials and flyers and later surveys how well the urban residents follow the significant opinion groups.

About perceived behavioral control, the information and capital which the urban residents can exercise are two main concerns in this study. Moreover, based on Bearden & Teel (1993), Zeithaml et al. (2006), Engel et al. (1984), and Zhuang & Zhao (2000), the study designs survey questions involving whether urban residents can have sufficient information about farmland to make decisions, whether urban residents have local acquaintances to get better prices, how much is their loanable fund, whether they have enough capital to buy farmland or build farmhouses.

In relation to the willingness to purchase farmland and build farmhouses, the study employs Ajzen’s definition of willingness, together with Dodd et al. (1991) and Morwitz & Schmittlein (1992), to design survey questions involving willingness to purchase farmland in the country within six months, willingness to purchase farmland in the country within one year, willingness to build farmhouses in the country within six months and willingness to build farmhouses in the country within one year.

To explore the background of the participants, the study designs questions in-

volving gender, age, educational background, residency, monthly income, purpose of farmland purchase.

The hypotheses of this study are as follows:

- (1) *Urban residents’ attitude will influence their willingness to buy farmland and build farmhouses.*
- (2) *Urban residents’ subjective norm will influence their willingness to buy farmland and build farmhouses.*
- (3) *Urban residents’ perceived behavioral control will influence their willingness to buy farmland and build farmhouses.*

Participants

To examine the real station of urban residents’ farmland purchasing and farmhouse building in the country, the researcher asked interviewers who lived in Taipei City, Taichung City, and Kaohsiung City to distribute questionnaires. Before the distribution of questionnaires, the interviewers would ask the participants whether they were willing to purchase farmland and build farmhouses in the country. The interviews were conducted only with the participants who were about to purchase farmland and build farmhouses in the country.

270 valid questionnaires were gathered in Taipei City, 230 in Taichung City, and 250 in Kaohsiung City. The questionnaires were distributed from July 1st to August 30th, 2014 and there were 750 valid questionnaires in total.

Results

Analysis of Participants' Background

In this study, 500 participants were male (53%) while 350 participants were female (47%). There is no significant difference of gender in this study. As for age, there were 120 participants aged from 31 to 40 (16%), 185 participants aged from 41 to 50 (25%), 215 participants aged from 51 to 60 (29%) and the rest aged above 61 (30%). As to educational background, 251 participants owned bachelor's degree (33%), 158 owned college degree (21%), 152 owned high school diploma or vocational school diploma, and 189 owned master's degree or above (25%). Concerning monthly income, 228 participants had a monthly income of 50,001-80,000 NTD (30%), 189 participants had a monthly income of 30,001-50,000 NTD (25%), 175 participants had a monthly income below 30,000 NTD (23%), and 158 participants had a monthly income of above 80,000 NTD (21%). Regarding the purpose of purchasing farmland, 224 participants answered they purchased the farmland for farming (30%), 162 participants answered they would build farmhouses on it for their own residency (22%), and 152 answered for the increased value (20%), 120 answered for building farmhouses (16%), and 92 answered they would rent the farmland they purchased to other people (12%). It is clear that the main purposes of purchasing farmland in the country are farming work, building farmhouses and any possible added values.

Analysis of Descriptive Statistics

1. Analysis of Descriptive Statistics on Attitude

The top six questions which most participants agreed with are (1) land value expectancy will influence my preference to the land ($M = 4.11$, $SD = .61$)¹, (2) completeness of the land shape will influence my preference to the land ($M = 4.07$, $SD = .52$), (3) significant development projects in the neighborhood will influence my preference to the land ($M = 3.98$, $SD = .45$), (4) surrounding natural conditions will influence my preference to the land ($M = 3.92$, $SD = .39$), and (5) obnoxious facilities in the neighborhood such as cemeteries will influence my preference to the land ($M = 3.87$, $SD = .49$) and I like to do farming work in the country ($M = 3.87$, $SD = .55$).

2. Analysis of Descriptive Statistics on Subjective Norm

The top five questions which most participants agreed with are (1) my family members' opinions will influence whether I decide to purchase farmland or build farmhouses in the country ($M = 3.99$, $SD = .55$), (2) I will ask my family members' for their opinions before I go purchasing farmland and building farmhouses in the country ($M = 3.92$, $SD = .49$), (3) my relatives' and friends' opinions will influence whether I decide to purchase farmland and build farmhouses in the country ($M = 3.78$, $SD = .61$), (4) online information will influence whether I decide to purchase farmland or build farmhouses in the country ($M = 3.58$, $SD = .62$), and (5) land agents' opinions will influence whether I decide to

¹ M = Mean; SD= standard Deviation

purchase farmland or build farmhouses in the country ($M = 3.57$, $SD = .39$).

3. Analysis of Descriptive Statistics on Perceived Behavioral Control

The top three questions that most participants agreed with are (1) I can afford the expenses for purchasing farmland and building farmhouses ($M = 3.81$, $SD = .47$), (2) I have sufficient capital to afford the expenses of farmland purchasing and farmhouse building ($M = 3.77$, $SD = .50$), and (3) I have local acquaintances to get better prices ($M = 3.72$, $SD = .50$).

4. Analysis of Descriptive Statistics on Willingness to Purchase Farmland

Based on the data analysis, it is found that participants are willing to purchase farmland within six months ($M = 3.92$, $SD = .58$), participants are willing to purchase farmland within one years ($M = 3.99$, $SD = .61$), participants are willing to build farmhouses within six months ($M = 4.02$, $SD = .68$), and participants are willing to build farmhouses within one year ($M = 3.95$, $SD = .41$). The findings suggest that, within 6 months or within one year, participants are willing to and even agree to purchase farmland and build farmhouses ($M = 4.00$). It is clear that the participants in this study are highly willing to purchase farmland and build farmhouses in the country.

Linear Structural Equation Model

To examine whether the model in the study fit the participants' opinions, this study illustrated key examination items and thresholds as Table 1. It is evident that

all the examination items were good, which reflects that the model in this study match the participants' opinions. The research model used in this study not only matches the hypotheses in the related theories but also reflects urban residents' actual opinions of farmland purchasing and farmhouse building in the country.

Based on the analysis of results of the linear structural equation model, the top three influential factors that strongly affect the participants to purchase farmland in the country are attitude ($\beta = .501$), subjective norm ($\beta = .438$), and perceived behavioral control ($\beta = .331$). Similarly, the top three influential factors that affect the participants to build farmhouses in the country are attitude ($\beta = .430$), subjective norm ($\beta = .398$), and the perceived behavioral control ($\beta = .229$).

Discussion and Suggestions

Discussion

1. Attitude is the strongest factor affecting the respondents to purchase farmland or build a farmhouse.

Through a linear structural equation model, the research discovered that attitude has the strongest impact to the respondents when they considered purchasing farmland or building a farmhouse in the countryside. Similarly, Wei discovered in her research (2013) that transportation construction, farmland area, and switching policies were the main factors affecting farmhouse trades in Puli Township between 1996-2011, which is similar to the attitude of land preference studied in this research.

Table 1. Table of the Thresholds of the Linear Structural Equation Model

Model-fit Evaluation	Model in this study		
	Thresholds	Fit Measures	Remarks
Absolute Fit Indexes			
Likelihood-Ratio χ^2	$p \geq .05$	81.03***	Good
GFI	$\geq .90$	.910	Good
AGFI	$\geq .90$	.903	Good
RMSEA	$\leq .08$	.078	Good
RMR	$\leq .05$	.035	Good
Incremental Fit Indexes			
NFI	$\geq .90$	.912	Good
RFI	$\geq .90$	.932	Good
IFI	$\geq .90$	.923	Good
CFI	$\geq .90$	.920	Good
Parsimonious Fit Indexes			
PGFI	$\geq .50$	.772	Good
PCFI	$\geq .50$	.780	Good
Likelihood-Ratio χ^2/df	≤ 3	2.02	Good

Additionally, if the respondents also have psychological factors towards land, such as the traditional Chinese concept of “where there is soil there is wealth” and that the countryside is suitable for leisure and living, the attitude will easily become an important impact factor to purchase farmland or build a farmhouse. It indicates that the respondents are very concerned about relative

issues of land, especially the expected appreciation for the land value when purchasing land in the countryside.

It also means that urban citizens have a higher willingness to purchase farmland with appreciation potential. This discovery is in accord with the discovery of Wu (2000) and Huang (2003) too, in which farmland has been re-

garded as an asset rather than the factor of production, and the appreciation and investment are most farmland owners' anticipation. This discovery is also similar to the result regarding respondents' background data. These show that the respondents' main purpose, after buying land in the countryside, is to farm, build a farmhouse, and then wait for the appreciation. Therefore, the respondents naturally paid considerable attention in land characteristics of the attitude topic.

2. Before buying land for building a farmhouse, the respondents consulted the people they trusted the most.

In the case of buying land for building a farmhouse in the countryside, the respondents cared for their family's opinions the most, then relatives and friends, Internet information, and land brokers, respectively. As for not trusting or relying upon the land broker's suggestions or information, many respondents were concerned about brokers making the maximum price difference for their own benefit, which meant most respondents worried about information asymmetry or a bad deal when purchasing land in the countryside through a broker. They doubted the land-related issues introduced by any broker, so they would rather ask for relatives' or friends' assistance, search the land's information online, or visit the place and talk to the locals in-person a couple of times, in order to learn about the land and its surroundings. This shows that in regard to purchasing land in countryside, the respondents first ask for the opinions from their most trusted friends or family, and secondly, rely upon information tech-

nology. They don't use a land broker unless they have to.

3. The respondents are confident of being able to afford the expenses for purchasing farmland and building a farmhouse in the countryside.

From perceptual control to behavioral control, the first three topics the respondents agree with are, sequentially, "I can afford the expenses for purchasing farmland and building a farmhouse", "I have enough capital to pay the expenses for purchasing farmland and building a farmhouse", and "I know someone there who can help me get a better price". This means that the parts that the respondents feel the most confident with in terms of purchasing land and building a farmhouse in the countryside are that they can afford the related expenses of purchasing land and building a farmhouse, they have enough funds, and they know some local people to get a favorable price. Additionally, this research also discovered that the respondents scored lower in the topic of "My loanable capital amount can afford the related expenses of purchasing farmland and building a farmhouse". This also means that these respondents tend to purchase land and build a farmhouse with their cash instead of getting loans in regards to purchasing land and building a farmhouse in the countryside.

Suggestions

The research for this study shows that most of the respondents think that purchasing farmland in the countryside and building a farmhouse is a good

thing; respondents also think that if their closest friends or relatives agree or encourage them to purchase land in the countryside, the respondents would subjectively think that it is easy to do so. Moreover, if someone a respondent knows can search for local land prices and for relevant information with the help of technology, once they hear the land value could appreciate in a certain place, they will purchase land and build a farmhouse when they have sufficient funds.

The study also found that in spite of people thinking purchasing farmland and constructing farmhouses is an easy and good thing (for the reason that generally people think where there is soil, there is wealth), people do not have much knowledge about post-purchase land planning. They would probably only say they would use the land for farming, building farmhouses, or would even do nothing but wait for the land value to appreciate. This kind of response gives rise to various concerns. Those respondents are not farmers; they are not familiar with the farming business, and they lack guidance and assistance from the local government, district office, Farmer's Association, and other farmers, which may result in pesticide abuse or other actions harmful to the land. As for farmhouse construction, it is a complex operation, including the readjustment of land, complying with the Building Act, and even discharging waste water from the farmhouses. However, only a few people already have answers to those questions, while others say they will just ask the land broker. Those waiting for the land to appreciate can be interpreted

as leaving the land fallow and unused. While more and more people do so in the countryside, it will aggregate the issue of fallow land in Taiwan. These three phenomena are the last thing the researcher expects to see. Therefore, the researcher is wondering if there is a way to transform this farmland purchasing trend to benefit agricultural development and land use. Therefore, some suggestions are proposed below:

Local responsible institution (the agriculture department or peasant association of village, town or district) should provide the related information about farmland utilization (including being engaged in farming and building a farmhouse). It is suggested that local competent authorities, including agricultural departments and the Farmer's Association, should proactively contact landlords who have just purchased farmland to explore their motivations and provide proper information based on their desires. The information can be conducted in small brochures or flyers to acquaint them quickly with relevant farmland regulations and avoid violations due to lack of information.

Local agricultural association should build the partner relationship with land owners. The study indicates that most respondents would like to use the purchased farmland for farming; hence, it is suggested that the local Agricultural Extension Department, the Supply and Marketing Department, and the Credit Department of the local Farmers' Association should all actively contact landowners to understand their plans for farming and provide relevant informa-

tion about farming concepts (Agricultural Extension Department), channels for purchasing farming equipment (Supply and Marketing Department) and even financing options (Credit Department). This would not only promote communication and relationships between the Farmer's Association and the "freshmen" farmers and assist them with selling and marketing their agricultural products through systematic trainings and seminars, but also promote the overall local agricultural industry and economic development, as well as correct attitudes toward land use.

The county and city government should pay attention to the corresponding topics derived from people purchasing land and building a farmhouse in the countryside. In the past, county and city governments used to hold a passive attitude toward farmland purchasing and

farmhouse construction; consequently, the current derived issues trouble local government immensely, especially when the trend of farmland purchasing and farmhouse construction in the countryside becomes more and more popular. Many new entrants to the farming business actually have little knowledge about land use, agricultural development, and ecological protection, leading to wastes of resources and inefficiency. It is recommended that local government pay attention to relevant issues and distribute manpower and budgets to enhance promotion by the government or district farmers associations, or through conducting seminars and distributing flyers for more landowners to become familiar with appropriate uses of land. In addition, these measures allow new landowners to adapt to local life and reduce conflicts between new and local residents.

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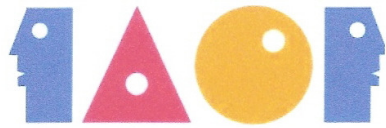
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THERMOSOLUTAL CONVECTION IN INCLINED RECTANGULAR
ENCLOSURE $AR = 1$) WITH DOUBLE VERTICAL OPENING
PARTITIONS AND SIMULATE ANALYZE RESEARCH

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Abstract

This study attempts to explore the status of thermosolutal natural convection in Inclined rectangular box which Double divided plates are placed in the right and left of the interior of the box. The fixed buoyancy ratio (N value) , the flow field displayed due to the arrangement of plate, the temperature of the liquid inside the box and the varieties of density are included as the objectives of this study. A rectangular box made of copper and acrylic sheets with Horizontal an aspect ratio of 1 is used as the experimental apparatus of this study; the divided plates are placed in the right and left of the interior of the box. Working solution is copper sulphate solution. The temperature gradient is maintained from two different tanks of constant temperature. The density gradient is made by using

electrochemical methods, namely the use of electrolysis to form different density boundary layer near copper sheet. As to flow fields for the box we Using CFD analysis software to simulate the flow field to numerical model, In addition, to understand the flow structure, measure and observe flow field temperature and mass transfer rates. In this study, the scope of the dimensionless parameters as follows: $Ar=1$, $Ap=0.6625$, $Pr=7\sim 8$, $Sc=1700\sim 2500$, $N=10.69$, $Gr, t)=4.5\times 10^6$, $Gr, m=4.8\times 10^7$.

Key Words: Heat-Insulated Plate, Thermosolutal Convection, Double Vertical Opening Ratio

Nomenclature:

Ap	opening ratio $(H-h)/H$
Ar	aspect ratio (H/W)
D	coefficient of expansion (cm^2/sec)
Gr, t	temperature based Grashof number $(g\beta\Delta TH^3/v^2)$
Gr, m	concentration based Grashof Number $(g\bar{\beta}\Delta C H^3/v^2)$
H	height of enclosure (cm)
K_m	mass transfer coefficient
L	length of enclosure (cm)
Le	Lewis Number $(Sc/Pr=\alpha/D)$
N	buoyancy ratio $(\bar{\beta}\Delta C/\beta\Delta T)$
Pr	Prandtl Number (ν/α)
Sc	Schmidt Number (ν/D)
Sh	Sherwood Number $(K_m\times H/D)$
Th	hot temperature ($^{\circ}C$)
Tc	cold temperature ($^{\circ}C$)
W	enclosures width (cm)
g	acceleration due to gravity (cm/sec^2)
h	partition to the enclosure distance (cm)
t	partition thickness (cm)

x, y, z dimension coordinates
 X, Y, Z dimensionless coordinates
 $X = x/W, Y = y/H, Z = z/L$

Greek symbols:

α thermal diffusivity (cm^2/sec)
 β coefficient of thermal expansion of fluid ($-\left(\frac{1}{\rho}\right)\left(\frac{\partial\rho}{\partial T}\right)_c$)
 $\bar{\beta}$ coefficient of concentration expansion of fluid ($\left(\frac{1}{\rho}\right)\left(\frac{\partial\rho}{\partial C}\right)_T$)
 ν kinematic viscosity (cm^2/sec)

Introduction

As to the cause of natural convection phenomenon we discuss by using quantifying Grashof Number, $Gr = \beta \nabla T g L^3 \rho^2 / \mu^2$. Generally speaking $Gr/Re^2 > 16$ means flow field is mainly influenced by the effect of natural convection and if $0.3 > Gr/Re^2$ means flow field is more affected by the force of the flow, so the number of Gr and Re parameters are the main analysis factors to consider in the affect of flow field. Study of natural convection in an enclosed area not only to discuss "heat" natural convection, but the "mass" part is also very important. In "Heat and mass" observational study of natural convection, Nansteel and Greif (1981), (1984) found that partition in closed-type box can generate recirculation zone to lower heat transfer effect. Bejan et al. (1983) used water as the working fluid to have experimental

study on natural convection of partition's density of space. He pointed out that opening has a great effect on heat transfer and flow pattern. D. A. Olson (1990) observed on the closed interval with or without partitions and heat transfer phenomena between partitions and compared the different velocity of flow field's velocity and temperature field. The results found in the closed interval with partitions, the thermal transfer rate is 10% to 15% lower than the thermal transfer rate without partition. Also the partition will improve the secondary flow near the partition. As to "Mass" part's electrochemical system application in the studies of thermosolutal natural convection Wang (1983) used Tobia's (1953) electrochemical method. In a closed-type rectangular container established the horizontal temperature and density gradients of cooperating case and opposing case experiments to understand during the

crystal dissociation growth process the heat and mass transfer phenomena. The experimental results showed that the flow pattern was multi-layer. Lin et al. (1993) used numerical method to study liquid mixture's transient inverse heat and mass convection in closed-type square chamber and found as increase with time, quality of buoyancy gradually caused formation of the loop and compress the loop formed by thermal buoyancy to the intermediate area, and finally formed of multi-layer. Wu's (1989) experiments point out that the layered backflow between the upper and lower layer will thicken as time goes by. Thickening rate is in direct proportion to buoyancy ratio. In this study, we placed at top left half 2/1 and right half bottom 2/1 place in rectangular box a copper sheet with different temperatures to study the thermosolutal natural convection experimental aspects under density in a temperature gradient.

Research Method

Experimental Device

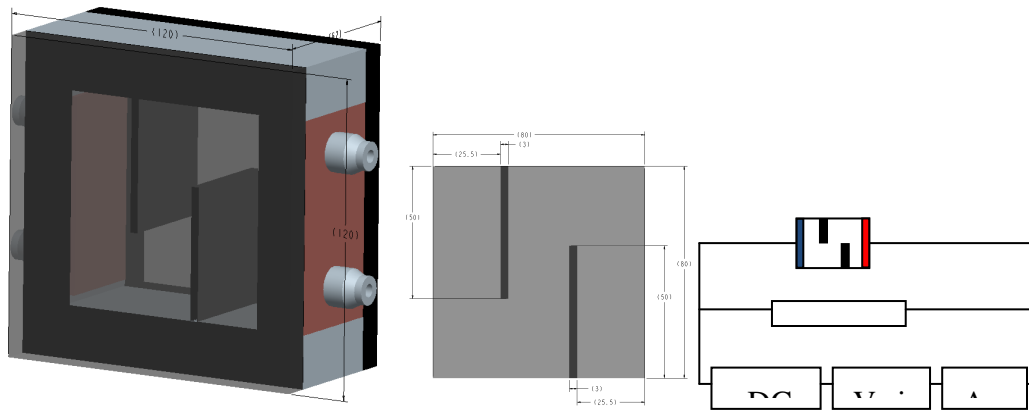
The dimensions of the closed rectangular enclosure used in these experiments The size and circuit diagram are disclosed are shown in Figure 1. As shown in the diagram, the enclosure contains two vertical copper sheets, one across the whole of one side of the enclosure and the other across whole of

the other side of the enclosure. Each of the copper sheets has an acrylic sheet backing it and has a channel for flow of water from a constant temperature water bath, in order to maintain each of the copper sheets at a constant temperature. Two protruding horizontal acrylic plates create a longitudinal slot for the convective flow to go through. In addition to their use to maintain a temperature gradient, the copper sheets are used as electrodes to drive mass flow as described below. The clear acrylic front and back sheets of the enclosure are used as a window to observe the fluid flow field.

CFD (Computational Fluid Dynamics) numerical simulation procedure

The procedure of numerical simulation of fluid flow using CFD is described as follows:

(1) The origin of this numerical simulation is to construct a mathematical model reflecting the nature of engineering problems or physical problems: specifically, to establish the differential equation and corresponding definitive conditions for the various physical quantities that reflect the problems. The basic governing equation of fluid usually contains mass, a momentum energy conservation equation, and the corresponding boundary conditions and initial conditions.



L	W	D	Ar(rectangular enclosure)	Ar(Partitions)	Ap (Partitions)
120	120	62	1	16.667	0.375

Figure 1. Illustration Of Test Cell Dimensions And Electric Circuit For These Experiments

(2) Determine a high efficiency and high accuracy calculation method: to establish a numerical discretization method for the governing equation, e. g. finite difference method, finite element method, finite volume method, etc. This calculation method contains the discretization and computation of differential equation, as well as establishment of coordinates and processing of boundary conditions.

(3) Programming and calculation: including computational grid division, setting of initial and boundary conditions, and setting of control parameters. The computed problem is complex, for example, the Navier-Stokes equation is a complex nonlinear equation. The numerical solution method is not absolutely perfect in theory; therefore, it

shall be validated by experiment.

(4) Display of result: generally displayed in charts, such as the vector and isoline distribution of the velocity and temperature fields, as well as the distribution of other high-order physical quantities.

Results and Discussion

Numerical analysis result of flow field In order to observe the characteristics of this experiment, the paper is divided into the distribution of temperature, the distribution of velocity, vector field etc., flow patterns in discussion: Before the numerical analysis, the state grid status is as Figure 2.

(1) The distribution of temperature.

From Figure 3 we can see the top left side receives stable output heat source of 35°C (T_H); so heat plate's (upper left side) top has obvious thermal stratified phenomenon. Cool plate (lower right side) is affected from gravity, and the cold fluid will be affected by the characteristics of gravity pulling downward movement and form

two different upper and lower temperature depositions. Figure 3 shows the temperature distribution and the maximal temperature (max) occurred in the heat plate's edge then decreased with the right side of X axis. Temperature's lowest point (min) is at the lower edge of the cool plate and then increased

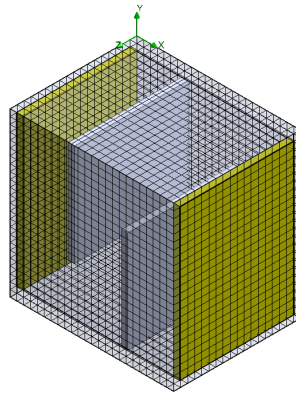


Figure 2. Experimental Grid Used For Measurements

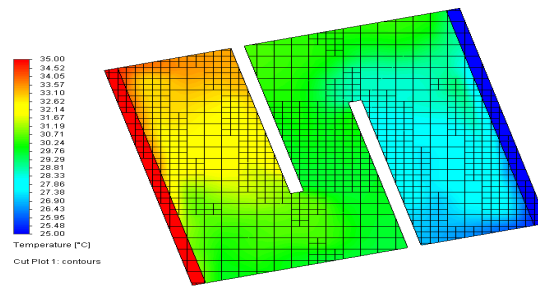


Figure 3. Temperature Distribution In The Flow Field

with the left side of X-axis. The thermal stratified phenomenon and the cold stratified effect make the temperatures change significantly at the $X = 0.5 \sim Y = 0.5$.

(2) The distribution of velocity.

From Figure 4 we learn the reason for the velocity distribution in the heat plate's (upper left side) top is slower than bottom is mainly due to the hot and light fluid temperature accumulated on the top. When it comes to the heat plate (upper left side) of the mid-

dle place, we can see clearly the speed flow phenomenon. Because hot fluid fleeing on cool plate's (lower right side) top making cool plate's (lower right side) speed at the bottom is faster than the top. We can see from the table the distribution of velocity in the flow field maximum velocity is 2.103×10^{-4} (m/s).

(3) Vector distribution.

From Figure 5 vector diagram, the heat plate's (upper left side) fluid move upward and reach the roof. At this time because some of the hot and light up fluid reach at the top of the roof and along the gravity move lower; but the cool plate (lower right side) is the cold and heavy fluid which is mainly affected by the downward flow of gravity to form a cold stratified phenomenon. Some fluid with lower density will pass the right partition and

move along the partition upward, thus completing a cycle, as Figure 5 showed.

(4) Analysis on Mass Transfer Rate.

The value of Gr, m is fixed to examine the relation of Sh, the Sh is higher in forward flow filed than in backward flow field. The result can be seen in Figure 6. The main reason is that when the heat and mass exist in a forward field, the temperature differences between the two plates will increase, thus making the rising of the temperature of the fluid while changing the overall convection effect of the fluid. When the mass transfer is added, it will promote the movement of mass transferring and affect the mass transfer rate, and thus the Sh will be determined according to the structure of flow field and the amount of limit current.

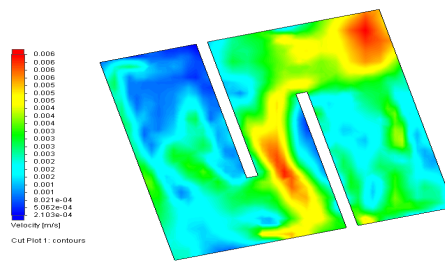


Figure 4. The Distribution Of Velocity In The Flow Field

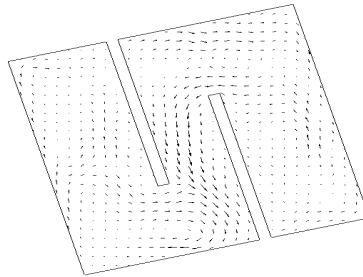


Figure 5. The Distribution Of Vector In The Flow Field

Conclusions

According to previous experimental results we can reach the following conclusions.

1. The type of flow field:

A closed-type rectangular box containing the left and right divided

plates. In an experiment, partition placed at the 2/1 heights in the box. Heat or cool accumulations is formed at the upper and lower divided plate. After the mass transfer is added, the occurrence of the accumulation of the boundary layer of high-density or low-density mass and the resolution of density surface can still be anticipated.

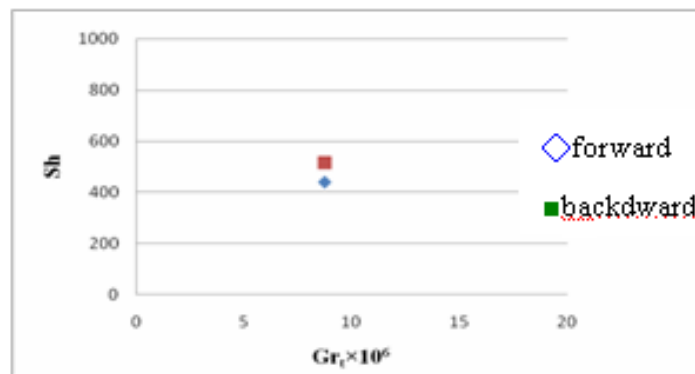


Figure 6. Sherwood Number For Forward And Backward Thermosolutal Flow

2. The distribution of temperature:

When the pure temperature gradient maintains at a stable condition, except for heat and cool accumulations,

the temperature distribution increases with y increases. In experiment; observe the effect of time on the temperature can be found both in upper the par-

titions and lower partition areas, the temperature rises as time goes by.

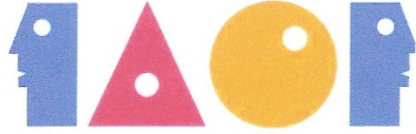
3. Analysis of mass transfer rate:

The value of Gr, m is fixed to examine the relationship of Sh with Gr, t. Regardless of location such partitions, Sh will be as Gr, t increases. When the fixed-Gr, t and Gr, m to ob-

serve Sh's relationship with forward and backward fields, the forward Thermosolutal flow field's Sh is higher than backward Thermosolutal flow field. If to experiment fixed Gr, m to observe the relationship between Sh and partition location and found the upper partition's Sh is greater than Sh under the partition.

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A STUDY ON CONSUMERS' ATTITUDE TOWARDS BRAND IMAGE, ATHLETES' ENDORSEMENT, AND PURCHASE INTENTION

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Abstract

This study mainly investigated the correlation among consumers' attitude towards brand image, athletes' endorsement, and purchase intention as well as their influences, and investigated the influences of consumers' attitude towards brand image and athletes' endorsement on purchase intention. This study used questionnaire survey to enroll consumers participating in sports and leisure activities as the subjects. This study formally distributed 800 questionnaires. After 77 invalid questionnaires were excluded, there were a total of 723 valid questionnaires, with a return rate of 90.38%.

The research results showed that, consumers' attitude towards brand image indeed has a positive influence on purchase intention; athletes' endorsement has a positive influence on purchase intention; brand image has an intervening effect on purchase intention through the path of athletes' endorsement. Therefore, athletes' endorsement has an intervening effect on path affected by brand image. Based on the above, enterprises build specific brand image, and the brand image as perceived and associated by consumers has positive influence on their purchase intention. Consequently, designing unique brand image, creating product properties with a high sense of value, improving product value, using professional endorsement, and improving consumers' brand identity certainly can help improve enterprises' sustainable operation and competitiveness.

Key Words: Athletes' Endorsement, Brand Image, Purchase Intention, SEM, Taiwan

Introduction

With the coming of era of economic development and commercialization, sports have gradually formed an industry (Yu, 2011). Sports and leisure industry has been changed by current lifestyle, and the development of sports and leisure industry has also led to the prosperous development of sports brands. The development of commodities, ornamentation, and experiences is closely related to sports products. Therefore, products have been constantly created to better meet the needs of consumers. In addition, brand image has also been built and connected with fashion brands to create another new world for sports and leisure industry to increase the desire to purchase of consumers in sports and leisure industry (Chang, Chen & Liu, 2012).

In the 21st century, the era of pursuit of image, to improve product value to attract consumers, both the functionality of products and the evolution of spiritual aspect of consumers should be taken into account. In the era of pursuit of image, in addition to basic functions and aesthetic needs of products, consumers also pursue the sensory image of products and intend to satisfy certain spiritual needs through

the messages created by products (Pink, 2008). In addition, the overall sense of design of sporting goods has been increasingly intense, bright colors and creative designs tend to amaze people. Products and unique trademarks where bold colors are used and fashion and creativity are integrated enable consumers not to purchase products for needs, but for popularity, creativity, and fashion (Chang, Chen & Liu, 2012). The design of brand image should include the concepts developed from different purposes and ideas. The successful building of a brand image is never accidental. In addition to a good brand, a convincing endorser, and a product with great functionality, there is also a need for good brand image. Through brand image, consumers' self-pleasure and self-identity can be created (Brown, 2009; Lee & Ho, 2011).

In a competitive consumer market, consumers are willing to line up and wait for whole day to purchase a fashionable pair of limited edition of famous brand sneakers or desire for products endorsed by sports stars. Such an upsurge is the charm of sports marketing (Ying, Lin & Hsu, 2014). According to the report of Advertising Magazine in 2000, about 10% of annual TV commercial expenditure in the

US is paid to celebrities, such as well-known athletes, movie stars, and singers (Chou et al., 2008). In Taiwan, as domestic players have shown outstanding performances in foreign teams or international competitions, advertisers have begun to endorse them (Wu, 2013). For instance, Well-known NBA player Lin is the spokesperson of Adidas in Taiwan. Wang Chien-Ming, the Taiwanese baseball pitcher in the US, is the spokesperson of Acer, Ford and McDonald's. Tennis player Lu Yen-Hsun officially endorses Taiwan Beer. In such advertising, there is athlete endorsement in order to more effectively control the advertising effect. Therefore, there is an urgent need to investigate how brand image achieve the effect desired by enterprises through athletes' endorsement.

If enterprises can provide consumers with pleasant consumer experience and enable them to form unique brand association (Kimpakon & Tocquer, 2009), it is helpful to build brand image with identity. In this way, consumers' purchase intention (Low & Lamb, 2000; Romaniuk & Sharp, 2003) can be increased, their consumer risks can be decreased (Loudon & Bitta, 1988), and their satisfaction and loyalty can be enhanced (Fredericks & Slater, 1998; Abdullah, Nasser, & Husain, 2000; Lin & Siao, 2012). Based on the

said research background and motivations, this study enrolled consumers participated in sports and leisure activities as the research subjects to investigate the correlation among brand image, athletes' endorsement, and purchase intention.

Literature Review

Brand Image

Haug (2010) indicated that, consumers can easily recognize products, evaluate product quality, reduce the perceived risks of purpose, and confirm the differential perception and satisfaction obtained from brands through the brand image of products. Amazing product designs will attract consumers' and strengthen the image they perceive. Successful design of brand image can transform what consumers view as ordinary or boring into amazing or pleasant experience, which can help products become focus (Lindgreen & Vanhamme, 2003; Ludden, Schifferstein, & Hekkert, 2008).

Image design can enrich the energy of people's life. Empathy and full understanding of people's experiential feeling can create opportunities of active exploration and product design experiencing for consumers. Consumers' sense of pleasure and satisfaction can be enhanced

through image (Brown, 2009).

Based on the above, this study suggests that, brand image is the building of unique image for subject matter through identity design and differentiated design. In addition, visual transfer effect, product feature description, brand perception, belief, and ideas can be used to win consumers' recognition and preference.

Athletes' Endorsement

McCracken (1989) indicated that, advertising endorsers use their own reputation to express the benefits of use by consumers and present them through advertising activities. When consumers learn of messages from advertisements, they will determine product image based on the image of advertising endorser. Such transfer of image of endorsers is what advertisers care about. O'Gainn, Allen & Semenik (2000) and Wang, Hsieh & Chen (2002) indicated, respectively, that celebrities, experts, and consumers are the most common advertising endorsers. Schiffman and Kanuk (2004) divided advertising endorsers into 5 major categories: celebrities, experts, general public, senior managers, and symbols. Celebrities refer to famous people in society, especially movie stars, TV celebrities, popular entertainers, and sports idols.

In terms of the dimensions of advertising endorsers, Ohanim (1991) and Chanthika (2003) indicated, respectively, that three dimensions – attractiveness, reliability, and profession can be measured. Shane (2005) suggested that the dimensions are reliability, profession, and preference. Lei and Sung (2009) divided endorsers into five dimensions: profession, reputation, attractiveness, reliability, and exposure rate. Ho and Lee (2010) suggested that three dimensions, attractiveness, reliability, and profession, can be measured. Based on the above, this study suggests that, athletes' endorsement is to use and present athletes' reputation, reliability, and attractiveness through advertisement. When consumers learn of messages from advertisement, they determine the image of product based on that of advertising endorsers.

Purchase Intention

Purchase intention refers to the possibility for consumers to attempt to purchase a product (Dodds, Monroe, & Grewal, 1991), as well as their behavioral tendency developed after they receive advertising message. When the value perceived by consumers is higher, their purchase intention will also be higher. Monroe (1990) suggested that, purchase intention originates from perceived value.

When consumers face actual prices, they will associate price with product quality. In other words, consumers assess whether product quality is worth of the price based on actual price.

Assael (1992) argued that, purchase intention is composed of purchase tendency. When the value of a product perceived by consumers is higher, their intention to purchase it is higher. Kimery & McCord (2002) suggested that, consumers' actual purchase behavior is usually assumed based on their purchase intention. Purchase intention is the possibility, willingness, and chance for consumers to purchase a product. Moreover, purchase intention is associated with the life cycle and value of a product (Tsai, Chang & Liao, 2008). Once consumers develop purchase intention and behavior and their needs are satisfied, they will further develop repurchase behavior and behavior of recommending others to purchase. Pan (2010) and Chung, Lin, and Lin (2012) indicated that purchase intention can be used to measure customers' level of transformation into purchase behavior towards a certain product, and can be used as an index for predicting consumers' purchase decision-making. The higher the purchase intention is, the higher the chance of purchase is.

Based on the above, purchase intention is the possibility for consumers to purchase a product, and can be divided into personal factors, psychological factors, and social factors. Psychological factors are most direct, suggesting that consumers' information processing process is also a psychological process (Junyeon & Surinder, 2008).

Inference of Hypotheses

Correlation Brand Image and Purchase Intention

Kotler (2002) indicated that consumers' purchase decision-making is affected by consumers' brand choice. Lin and Siao (2012) pointed out that consumers tend to make a purchase decision (Low & Lamb, 2000) and reduce consumer risks (Loudon & Bitta, 1988), according to the perceived brand image, which can positively improve purchase intention (Romaniuk & Sharp, 2003). Better brand image of enterprises will lead to consumers' higher purchase intention (Cretua & Brodieb, 2007; Keller, 2001), as well as create more profits for enterprises (Faircloth, Capella, & Alford, 2001). Schiffman and Kanuk (2007) suggested that consumers will choose products according to brand image. When brand market is more competitive, consumers are more likely to

make a purchase decision according to the image and faith in product properties. If the consistency between consumers' perceived symbolic image of a product and their self-image is higher, consumers' product preference and purchase intention will be affected (Elliott, 1997; Mehta, 1999). Yea (2013) indicated that, enterprises that are able to create brand image advantages are able to create subsequent purchase intention. Based on the above, this study proposed research hypothesis 1:

H1: Brand image has a significantly positive influence on purchase intention.

Correlation among Brand Image, Athletes' Endorsement and Purchase Intention

Brand also plays a very important role in consumers' purchase decision-making process because high brand image presents that there is a certain level of product quality. If the brand image is low or there is no brand, consumers may not be confident of a product (Luo, Ho, Chiu & Huang, 2013). Kamins (1990) suggested that when spokespersons match the products, endorsement effect would be the most significant. Solomon, Ashmore and Longo (1992) and Lynch and Schuler (1994) indicated the importance of match-up between spokespersons and products by match-up hypothesis. The study by

Luo, et al. (2013) mentioned that, brand image is consumers' opinion, feeling, and attitude towards a brand. Brand image is the complex of consumers' personality traits and attitude, as well as the association of psychological meaning and feeling. Brand image will determine consumers' feeling about a brand and affect their choice. Brian, Sarah, and Randi (2006) suggested that match between spokespersons and types of products are important for consumers' positive attitude. Brand image positively influences consumers' perception and the positive effect would influence customers' satisfaction (Sung & Yang, 2008). Positive brand image would reduce consumers' perceived risk of purchase (Batra & Homer, 2004). Therefore, consumers' cognition of brand image of products will influence their evaluation and selection of products, and further affect purchase intention (Hsieh, Pan & Setiono, 2004). Lei and Sung (2009) suggested that the starts, with high reputation and charm, would draw consumers' attention by advertising endorsement. In addition, athletes' endorsement can improve consumers' purchase intention. This study proposed the following hypotheses according to relevant literature and analyses mentioned above:

H2: Athletes' endorsement has a significantly positive influence on purchase intention.

H3: Brand image will affect purchase intention through the intervening effect of athletes' endorsement.

Methodology

Research Structure

The research structure is mainly to investigate the correlation among consumers' brand image, athletes' endorsement, and purchase intention. According to the research purpose and the investigations and analyses on relevant studies, the three variables in this study are: "brand image," "athletes' endorsement," and "purchase intention," respectively. The research structure is as in Figure 1.

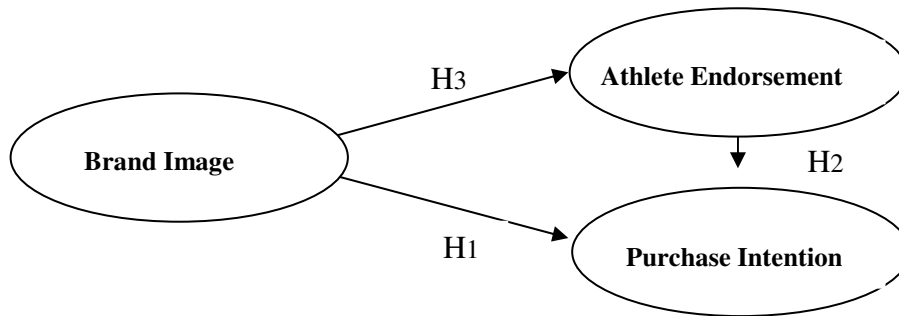


Figure 1. Research theoretical model

Measurement of Research Variables

This study analyzed a total of 3 variables, and the measurement of each variable is explained as follows:

1) "Brand image" variable: this study mainly referred to the scale developed by Park, Jaworski, and Macinnis (1986) to develop the research scale. The research scale includes 3 dimensions: functional image, symbolic image, and experiential

image. A total of 10 items were used for measuring consumers' brand image.

2) "Athletes' endorsement" variable: this study mainly referred to factors of reliability source of advertising endorsers proposed by Ohanian (1991) to measure consumers' recognition for athletes' endorsement. A total of 8 items were used to measure athletes' endorsement.

3) "Purchase intention" variable: this

study mainly referred to the scale developed by Zeithaml(1988), Dodds, Monroe, & Grewal (1991), and Grewal, Krishnan, Baker, & Borin, (1998) to used single dimension and a total of 5 items to measure consumers' purchase intention.

A 5-point Likert scale (ranging from “strongly agree” (5 points) to “strongly disagree” (1 point) was applied to the measurement of each item. The scores were consumers' quantized values of brand image, athletes' endorsement, and purchase intention.

Research Scope and Sampling

This study enrolled consumers participating in sports and leisure activities as the research subjects, and used convenience sampling to conduct the questionnaire survey. To ensure that the reliability of the questionnaire is good, this study enrolled consumers participating in sports and leisure activities in the northern, central, and southern Taiwan. Originally, this study distributed questionnaires to 800 subjects. After the invalid questionnaires were excluded, there were 723 valid questionnaires, with a valid return rate of 90.37%. Bagozzi and Yi (1988) indicated that, at least 150 samples should be returned to obtain a better analysis result. If the return rate is 70%, 800 formal ques-

tionnaires should be distributed. Therefore, the sample size as required by statistical analysis was met.

Reliability Analysis on the Pre-test Questionnaire

For the collection of data on subjects with pre-test questionnaire, this study distributed pre-test questionnaires to the consumers participating in sports and leisure activities in the central Taiwan on March 14 and 15, 2015. A total of 40 pre-test questionnaires were returned. Reliability coefficient Cronbach's α was used to measure the consistency of questionnaire items of “brand image,” “athletes' endorsement,” and “purchase intention.” After the reliability analysis, Cronbach's α of brand image was 0.89, that of athletes' endorsement was 0.86, and that of purchase intention was 0.92. Nunnally (1978) suggested that, when Cronbach's $\alpha > 0.7$, the reliability is high.

Therefore, according to the reliability analysis on the pretest questionnaire, the assessment results showed that the reliability coefficient of all of the research variables was > 0.7 . Moreover, all of the said scales were developed based on the theoretical foundations of relevant studies. Therefore, the content validity was good.

Results

Descriptions on Sample Structure

The analysis results of the data of demographic variables are as follows: the age of the subjects was mainly “31~40 years old” (312 subjects; 43.15%), followed by “21~30 years old” (226 subjects; 31.26%). The area where the subjects received interviews was mainly “central Taiwan” (286 subjects; 39.56%), followed by “northern Taiwan” (172 subjects; 23.79%). The educational background of most of the subjects was “university” (223 subjects; 30.84%), followed by “junior college” (174 subjects; 24.0%). For occupation, most of the subjects worked in “service industry” (201 subjects; 27.80%), followed by “technology industry” (165 subjects; 22.82%) and “teaching” (125 subjects; 17.29%). The personal monthly income of most of the subjects was “NT\$ 20,000-30,000” (189 subjects; 26.14%), followed by “more than NT\$ 50,000” (158 subjects; 21.85%).

Reliability and Validity Analysis

This study mainly used “structural equation model (SEM) analysis method. To confirm the relationship between various dimension and various items, this study performed confirmatory analysis on

all the dimensions: “brand image,” “athletes’ endorsement,” and “purchase intention.” Fornell and Larcker (1981) suggested that composite reliability (CR) >0.6 and average variance extracted (AVE) >0.5 represent that the convergent validity and reliability of questionnaire of research variables are good. Moreover, this study used reliability coefficient Cronbach’s α to measure the consistency of questionnaire items of “brand image,” “athletes’ endorsement,” and “purchase intention.” After the reliability analysis, Cronbach’s α of A1-A4 of brand image dimension was 0.86, that of A5-A8 was 0.83, and that of A9-A10 was 0.78. Cronbach’s α of B1-B4 of athletes’ endorsement dimension was 0.90 and that of B5-B8 was 0.85. Cronbach’s α of purchase intention was 0.89. Nunnally (1978) suggested that Cronbach’s $\alpha >0.7$ is high reliability.

Hatcher (1994) suggested that, if the confidence interval formed by covariate and standard error of dimensions does not include 1, the discriminant validity of dimensions is good. The analysis results are explained as follows.

The convergent validity and reliability analysis table of the scale on brand image showed that, all of the fully standardized factor loadings in the scale were $>.5$, and the items all reached significance.

Table 1. The Factor Loadings, Average Variance Extracted and Composite Reliability of Brand Image

Variable	item	Factor Loading	C.R.	AVE
Brand Image	A1	.794*	.875	.672
	A2	.742*		
	A3	.885*		
	A4	.832*	.901	.686
	A5	.823*		
	A6	.882*		
	A7	.821*		
	A8	.863*	.913	.836
	A9	.910*		
	A10	.923*		

* : $p < .05$

$\chi^2/df=3.688$; $RMR=.020$; $GFI=.931$; $AGFI=.872$; $NFI=.932$; $CFI=.918$; $RMSEA=.100$

CR was 0.742-0.923, and AVE was 0.672-0.836, suggesting that the convergent validity and reliability of the scale on brand image were good. Moreover, the analysis results of discriminant validity of potential constructs showed that, the covariate and standard error among various items of brand image was 0.242-0.456, so the discriminant validity was good, meeting the requirement proposed by Hatcher (1994), as shown in Table 1. According to the said analysis results, various dimensions of this study were calculated using

weighted arithmetic mean of factor loadings of various items.

The convergent validity and reliability analysis table of the scale on athletes' endorsement showed that, all of the fully standardized factor loadings in the scale were $>.5$, and the items all reached significance. CR was 0.887-0.903, and AVE was 0.623-0.821, suggesting that the convergent validity and reliability of the scale on athletes' endorsement were good. Moreover, the analysis results of discrimi-

nant validity of potential constructs showed that, the covariate and standard error among various items of athletes' endorsement was 0.202-0.456, so the discriminant validity was good, meeting the requirement proposed by Hatcher (1994),

as shown in Table 2. According to the said analysis results, various dimensions of this study were calculated using weighted arithmetic mean of factor loadings of various items.

Table 2. The Factor Loadings, Average Variance Extracted and Composite Reliability of Athlete Endorsement

Variable	item	Factor Loading	C.R.	AVE	
Athlete Endorsement	Attractive	B1	.821*	.903	.734
		B2	.789*		
		B3	.797*		
		B4	.810*		
	Experience	B5	.826*	.878	.623
		B6	.832*		
		B7	.719*		
		B8	.623*		

*: p < .05
 $\chi^2/df=2.892$; RMR=.032 ; GFI=.976 ; AGFI=.964 ; NFI=.976 ; CFI=.962 ; RMSEA=.053

Sample Estimation and Model Figure of SEM

According to the suggestions from Anderson and Gerbing (1988) on two-step approach, after using CFA to measure the goodness of fit of the assessment model, this study performed analyses according

to the cause-and-effect model.

1) Assessment on Goodness of Fit of Structural Model

This study analyzed the structural correlation model based on the research theme and research structure. The goodness of fit

indices of the overall measurement model was $\chi^2/df=1.755$; RMR=.032; GFI=.896; AGFI=.862; NFI=.912; CFI=.956; RMSEA=.045, reaching the acceptable level of fit. As shown in Figure 2, all the goodness of fit indices all conformed to

the standard values. As a whole, the goodness of fit of the structural correlation model was good. The data and content of sample estimation of the models (SEM) of brand image, athletes' endorsement, and purchase intention are shown in Figure 2.

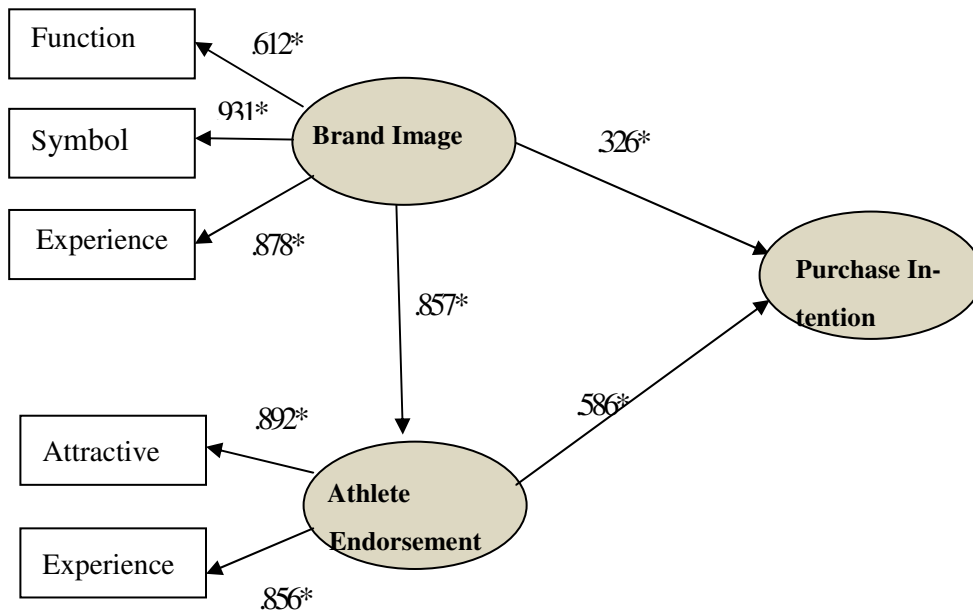


Figure 2. Final model on relationship among Brand image, Athlete Endorsement, and Purchase intention

*: $p < .05$

2) AMOS Empirical Analysis Results of the Research Hypotheses

The analysis results of Figure 2 showed that, the regression coefficient between brand image and purchase intention was 0.326, $p < .05$, reaching significance. In other words, H1 was supported. The re-

sults showed that, the better the brand image is, the higher the consumers' purchase intention for product is. For athletes' endorsement, the regression coefficient between athletes' endorsement and purchase intention was 0.586, $p < .05$, reaching the significance. In other words, H2 was supported. The results showed that, the more

positive the image of athletes' endorsement is, the higher the consumers' purchase intention is. This study further tested the intervening effect of various variables.

According to the argument proposed by Lao (2008), when the direct effect between variables is smaller than indirect effect, the intervening variable is influential and should be valued. According to the data of Figure 2, the effect value of brand image on purchase intention was .326. However, through the path of athletes' endorsement (regression coefficient = .857) to purchase intention (regression coefficient = .586), the indirect effect value was $.857 \times .586 = .502 > .326$. Therefore, athletes' endorsement has an intervening effect on the influence of brand image on purchase intention.

3) Influences of Brand Image, Athletes' Endorsement, and Purchase Intention

For the influences of brand image, athletes' endorsement, and purchase intention, as shown in Figure 2, the data obtained from sample estimation of scale on correlation among brand image, athletes' endorsement, and purchase intention and SEM showed that, brand image has a positive influence on purchase intention (.326, $p < .05$); brand image has a positive influ-

ence on athletes' endorsement (.857, $p < .05$); athletes' endorsement has a positive influence on purchase intention (.586, $p < .05$). In terms of the 3 factors of brand image, consumers participating in sports and leisure activities attached the highest importance to "brand symbol (.931)." In terms of the 2 factors of athletes' endorsement, consumers participating in sports and leisure activities attached the highest importance to "attractiveness of athletes (.892, $p < .05$)."

Conclusions and Suggestions

Conclusions

The main purpose of this study is to understand the correlation between consumers' attitude towards brand image and purchase intention. During the research process, this study also analyzed the intervening effect of athletes' endorsement. The investigations on the data analysis results and the conclusions are as follows:

The research results showed that, consumers' attitude towards brand image indeed has a positive influence on purchase intention. The direct effect of brand image on purchase intention is .326 ($p < .05$). Athletes' endorsement has a positive influence on purchase intention. The direct effect of athletes' endorsement on purchase inten-

tion is .586($p < .05$). Brand image has an intervening effect on purchase intention through the path of athletes' endorsement. The effect value is $.857 \times .586 = .502 > .326$. Therefore, athletes' endorsement has an intervening effect on the influence of brand image on purchase intention.

The results of various factors of brand image showed that, the reflective effect of "brand symbol" is the best, followed by "brand experience" and "brand functionality," suggesting that consumers hope to improve their self-image and other consumers' affirmation through the symbol of brand itself. Besides, experiential value brought to consumers by brand in the past can improve their value and status, as well as improve their interpersonal relationship and self-achievement in the society. Therefore, consumers participating in sports and leisure activities attach importance to strengthening their sense of identity

In the dimension of athletes' endorsement, the reflective effect of "attractiveness of athletes" is the best, followed by "experience." Consumers recognize a product and assess product quality through the connection as symbolized by athletes. They yearn to have the same sports performance and achievement as the athletes endorsing the product do. In

addition, the performance and experience of athletes in competitions improve their product identity.

Managerial Implications

For the managerial implications, this study proposed the following explanations.

Uncovering the Importance of Brand Image in Marketing

In the extremely competitive and ever-changing environment, successful brand image can become a weapon of enterprise competition, as well as create competitive advantage for enterprises (Aaker, 1996). Therefore, enterprises constantly develop various marketing strategies and tactics to improve their market share and competitive status. Brand image indeed affects consumers' purchase intention. In addition to image advantage of enterprises, brand image is also an important factor for enterprises to win competitive advantage (Aaker, 1996). Good brand image can increase the chance for a product to successfully enter a market and further improve its market share, enhance enterprise marketing, increase consumers' favorable impression on product, and increase enterprise's profit opportunities. Improving consumers' brand identity, creating brand,

and building brand image are basic requirements. Enterprises should improve their own brand image first to enable consumers to chance their perceived brand value and further develop brand identity. Besides, it is necessary to build enterprises' own brand image. The brand image as perceived and associated by consumers has a positive influence on their purchase intention. In the extremely competitive current sporting goods market, many sports products share similar functions. Therefore, enterprises of sports products have to understand consumers' real thoughts and needs and build strong brand image. Brand image with distinctive features can separate enterprises' own products with other competitive brands (Hsieh, Pan, & Setiono, 2004).

Choosing Athletes' Endorsement Carefully

According to the research results, this study found that it is very important to choose right endorsers carefully in advertising because endorsers directly represent the brands. The research results showed that, after athletes' endorsement, if endorsers' influence on consumers' purchase intention is higher than that of brand image itself, it is advised to carefully take into account endorsers' own attractiveness and experiences first when choosing endorsers because different endorsers will

create different effects for different markets and products. Therefore, enterprises hope that the benefits created by endorsers can be more significant. In addition, endorsers can also significantly improve enterprises' brand image. The integration of enterprises' brands with events or activities preferred by consumers enables consumers to naturally get used to enterprises' brands.

Suggestions and Research Limitations

Suggestions

This study used quantitative approaches to investigate three areas, the northern, central, and southern Taiwan. Future studies are advised to extend the investigations to different areas to better understand the differences in brand image, athletes' endorsement, and purchase intention of consumers of all ages, as well as further expand the research subjects to those in Asia or other consumer markets around the world to understand the differences in consumers in different areas.

Research Limitations

For research subjects of questionnaire survey, this study used convenience sampling. Therefore, demographic variables were not equally distributed. Future

studies are advised to use stratified sampling. Secondly, the consumers completed the questionnaires on their own. During the completion of questionnaires, the subjects might be affected by environment, emotions, attitude, perceived subjectivity

or external factors, and thus did not complete the questionnaires authentically. This study only investigated consumers in specific areas. Therefore, the results may not be extended to participants in other areas.

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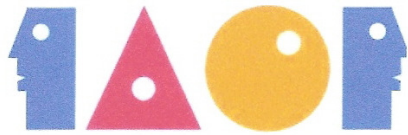
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THE DEBATES OF PAY-FOR-PERFORMANCE ABOUT QUALITY OF HEALTH CARE

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Abstract

Pay-for-performance and public reporting of hospital quality data are important strategies to improve the quality of health care. This study applies bibliometrics to analyse the field of quality in health care through data mining. The citation data are 132,968 citations of 2000 articles published in SSCI and SCI journals on the quality in health care from 2004 to 2013. We adopted the bibliometric analysis to find out the quantity of hot papers and important authors. Then, we adopted social network analysis to identify important issues. Finally, qualitative literature review was performed and we found the solution of pay-for-performance. The advantage of pay-for-performance is to provide incentives for health-care workers. The disadvantage of pay-for-performance is "gaming the system". The solution is that the ethic issues must be addressed in the implementation of pay-for-performance. We combine quantitative bibliometrics and qualitative literature reviews to find out the important articles and social networks about quality of health care. After data mining, we provide the solution for the problem of pay-for-performance.

Key Words: Social Network, Data Mining, Bibliometrics, Pay-For-Performance, Quality, Health Care

Introduction

Health care professionals tried to define quality of health care provided by practitioners and received by patients. Experts have struggled for decades to

develop a concise, meaningful, and universally applicable definition. One of the most widely cited recent definitions, developed by the Institute of Medicine in 1990, considers the quality of the composition of the "degree to which health services for individuals and populations

increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (Blumenthal, 1996).

Improving healthcare quality includes many methods. Pay-for-performance (P4P) and public reporting (PR) of hospital quality data have become two strategies to improve the quality in health care. P4P programs are to strengthen the business case for quality improvement by rewarding excellence and reversing what have been described as perverse financial incentives (Lindenauer et al., 2007). PR stimulate the interest of quality on the part of physicians and hospital leaders, perhaps by their professionalism. Public reporting of performance also has its challenges (Mitchell, Gardner, & McGregor, 2012). Luxford revealed that measurement of quality has traditionally focused on access issues and clinical care process through waiting times and disease specific indicators or overall mortality. Inclusion of specific safety measures, such as ‘never events’, is a more recent addition (Luxford, 2012). Short-term relative reductions in mortality of patients linked to financial incentives in hospitals participating in a pay-for-performance program in England were not maintained in long-term.(Kristensen et al., 2014). Pay for performance is a term for initiatives about improving the quality, efficiency, and overall value of healthcare. P4P provide financial incentives to hospitals and physicians to achieve optimal outcomes for patients.

Bibliometric analysis of articles were generally accepted. Wagstaff took a bibliometric tour of the last forty years

of health economics. They use "meta-data" from EconLit database, supplemented by data from Google Scholar citations , and to report the development of health economics (Wagstaff & Culyer, 2012). A social networking is the person that everyone is a collection of some of the sub-set of familiar people. This network can be represented as a set of points joined by the line. Humans can build a social network of companies, firms, schools, universities, and other communities throughout the world (Newman, 2001). A famous early empirical study of the structure of social networks, conducted by Stanley Milgram (Milgram, 1967). Milgram focused on the social network of people. We used co-citation analysis method to draw a virtual social network among researchers.

We used co-citation analysis method to draw a virtual social network among researchers in the field of healthcare quality. After bibliometric analysis, we found several hot topics in many healthcare quality papers, including quality assessment, pay-for-performance (P4P), mental health quality, health care quality, physician payment , clinical guidelines, health questionnaire and patient safety. We chose P4P subjectively for study. Pay-for-performance (P4P) was adopted to improve the quality of health care, but some debates about P4P existed. Therefore, this study found the hot topics and depicted social networks of quality in health care. Finally, we explore the advantages and disadvantages of P4P and provide solution for it.

Methods

In this study, well-recognized high-quality database of SCI and SSCI were adopted. First, we used the bibliometric analysis to find out the quantity of hot papers, hot authors and hot key words. Second, we adopted social network analysis to identify popular issues that were interesting for many researchers. Finally, critical qualitative literature review was performed. The aim of this study is to provide virtual social networks of quality in health care to understand the relationship of authors.

Bibliometrics can be a powerful research methodology for the understanding the epistemology of a field as it has evolved by providing a historical timeline. Bibliometrics with quantitative analysis can be applied to analyze the citation data for a large number of articles citation data. On this basis, the authors explored the citation analysis of quality in health care between 2004 and 2013. We searched the terms “health care” and “quality” in journals listed in the Social Sciences Citation Index (SSCI) and the Science Citation Index (SCI). We selected the top-ranking 1,000 papers (times-cited ranking, highly-cited ranking) in each five-year period (2004–2008, 2009–2013). Finally, we analyzed 132,968 citations of 2,000 articles published in SSCI and SCI journals in the quality in health care field in the period 2004–2013.

We tried to define a "Virtual" social networks. One paper cited two different authors in the same time was called the "co-citation". There were some relationship between these two dif-

ferent authors. Virtual social networks meant these two authors even without contacting with the other one, but they did similar research in the field, so these two authors could produce a link in the virtual social network. Citation and co-citation analysis is the main method for this study. The collected data were analyzed and systematized by sorting, screening, summing, sub-totalling, and ranking. The data were run by the UCINET software (Borgatti, Everett, & Freeman, 2002). The networks were mapped to describe the knowledge distribution and "author factions" in the field of quality in health care.

Results

A timeline was developed as outcomes of the analysis of the 132,968 citations of 2,000 articles published in SSCI and SCI journals in the quality in health care field from year 2004 to year 2013. Detailed data include 65,691 citations of 1,000 articles from year 2004 to year 2008, and 67,277 citations of 1,000 articles (times-cited ranking, highly-cited ranking) from year 2009 to year 2013.

Timeline by Citation Analysis

We analysed 132,968 citations of 1,000 articles (times-cited ranking) published in SSCI and SCI journals in the quality in health care field from year 2009 to year 2013 (five-year interval). Table 1 shows some highly cited articles, arranged to show the historical timeline of quality in health care. The most influential article is the highly-

Table. 1. Timeline of Quality in Health Care Articles (citations from SSCI and SCI articles, 2009–2013)

Year	Frequency /times cited	B/J*	Author	Article			
1983	20	J	zigmond as	1983	acta psychiat scand	v67	p361
1986	25	J	dersimonian r	1986	control clin trials	v7	p177
1992	32	J	ware je	1992	med care	v30	p473
1996	17	B	gold mr	1996	cost effectiveness h		
1996	24	J	ware je	1996	med care	v34	p220
1997	17	J	egger m	1997	brit med j	v315	p629
1999	26	J	moher d	1999	lancet	v354	p1896
2001	13	J	altman dg	2001	brit med j	v323	p224
2001	15	J	harris rp	2001	am j prev med	v20	p21
2001	16	J	altman dg	2001	ann intern med	v134	p663
2001	19	J	kroenke k	2001	j gen intern med	v16	p606
2001	41	B	institute of medicine	2001	cross qual chasm new		
2002	20	J	higgins jpt	2002	stat med	v21	p1539
2003	23	J	higgins jpt	2003	brit med j	v327	p557
2003	35	J	mcglynn ea	2003	new engl j med	v348	p2635
2005	15	J	starfield b	2005	milbank q	v83	p457
2005	17	J	garg ax	2005	jama-j am med assoc	v293	p1223
2006	17	J	pronovost p	2006	new engl j med	v355	p2725
2006	20	J	chaudhry b	2006	ann intern med	v144	p742
2007	12	J	moher d	2007	plos med	v4	p447
2008	17	J	desroches cm	2008	new engl j med	v359	p50
2008	22	J	guyatt gh	2008	brit med j	v336	p924
2008	29	B	higgins jpt	2008	cochrane hdb systema		
2009	9	J	reid rj	2009	am j manag care	v15	pe71
2010	5	J	temel js	2010	new engl j med	v363	p733
2010	5	J	owens dk	2010	j clin epidemiol	v63	p513

*: B/J: B:Book, J:Journal

cited article (high frequency/times cited).

Co-citation Analysis

One paper cited two different authors in the same time was called the "co-citation". There were some relationships between these two different authors. Some authors were too new to have an impact on the literature. Based on the citations in the selected journals, the highly-cited scholars were identified, then a co-citation matrix was built and a virtual social network was drawn. The virtual social network of authors describes the correlations among different scholars. In doing so, we followed the procedures recommended by White and Griffith (Garfield & Merton, 1979). The first five-year virtual social network diagram (Figure 1) for 2004–2008 was different from the second diagram (Figure 2) for 2009–2013.

Virtual social network analysis techniques were used to plot the relationships in the co-citation matrix. We identified the strongest links and the core areas of the authors. Figure 1 and Figure 2 show the research themes of authors in quality in health care studies. Different shapes of the nodes would appear after performing a "faction study" of these authors (Wang, McLee, & Kuo, 2011). This method seeks to group elements in a network based on the sharing of common links to each other. The few scholars in Figure 1 and 2 with the most links (co-citation) are the important persons in quality in health care research. There were heavy and dense links, the core authors pointed out advantageous position

in quality in health care research, and their publications and researches hinted the future research trend.

While the diagrams in Figure 1 and Figure 2 provide a clear picture, their foci are only on the core areas. The important authors are in the core of the network. Figure 1 represents the first five-year interval, and Figure 2 represents the next five-year interval. We compared the cores of both networks and found the paradigm shift of authors between the two periods. Between 2004 and 2008, Wagner, Katon, Moher, Simon, Guyatt, Kroenke, and Egger were located at the core of the network. From 2009 to 2013, however, Jha, Oxman, O'Connor, Fisher, Altman and Chou appeared in the core of network along with Moher and Egger. The paradigm shift of quality in health care revealed Jha, Oxman, O'Connor, Fisher, Altman and Chou joined the evolving trend of this field. After reviewing the literatures, we found Jha and Fisher had more opinions about the systemic quality of health care and the others focused on mental health or physical illness.

When authors are grouped together, there are common elements between the grouped authors. According to this analysis, the closeness of these authors revealed their similar perception perceived by citers (Wang et al., 2011). We adopted factor analysis to distinguish the groups of authors between different faction. The co-citation correlation matrix was factor-analysed with Varimax Rotation, a commonly used procedure that attempts to fit (or load) the maximum number of

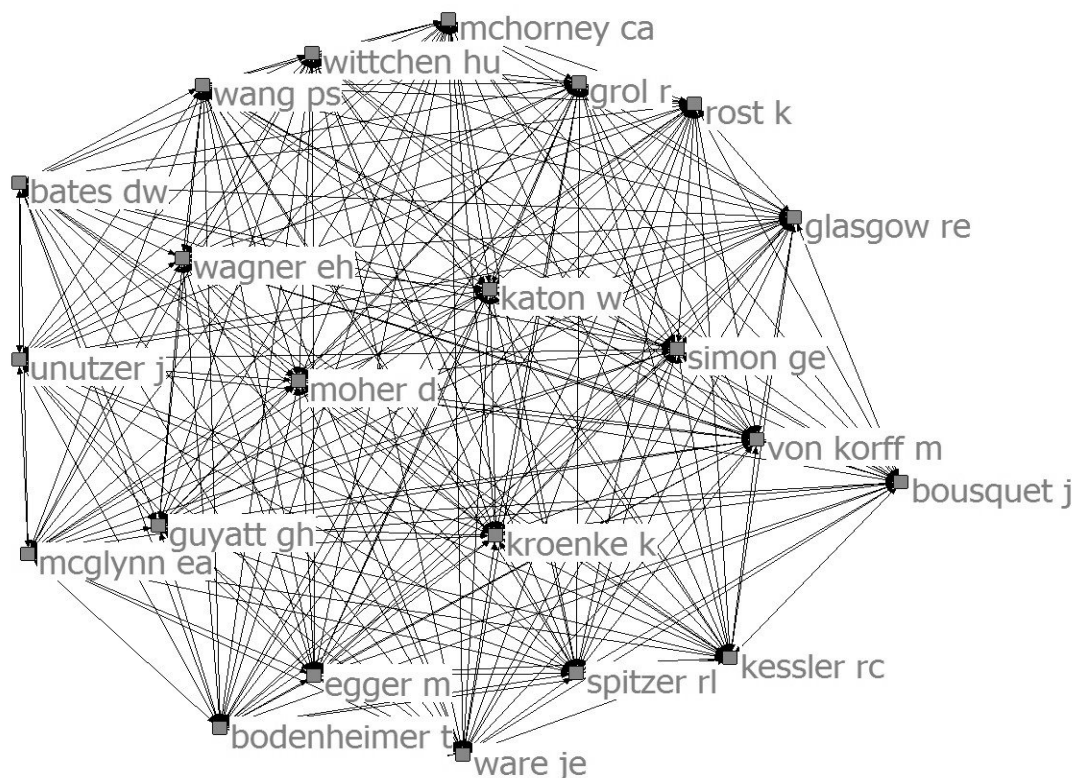


Figure. 1. Key research themes of authors in quality in health care (2004–2008): virtual social network diagram

authors on the minimum number of factors (McCain, 1990).

Studies on quality in health care also clustered on different research themes between 2009 and 2013; together they explained over 79.5% of the variance in the correlation matrix of the five years, as diagrammed in Figure 2. Table 2. lists the eight most important factors along with the authors that had a factor loading of at least 0.5. We also tentatively assigned names to the factors on the basis of our own interpretation of the authors with high associated loadings.

Our interpretation of the analysis results is that quality in health care research at this stage is composed of 8 subfields: quality assessment, pay-for-performance (P4P), mental health quality, health care quality, physician payment, clinical guidelines, health questionnaire and patient safety. We made no attempt to interpret the remaining factors due to their small eigenvalues. For the second five years (2009-2013), Figure 2 and Table 2 clearly indicate that the important authors in quality in health care studies between 2009 and 2013 also clustered together.

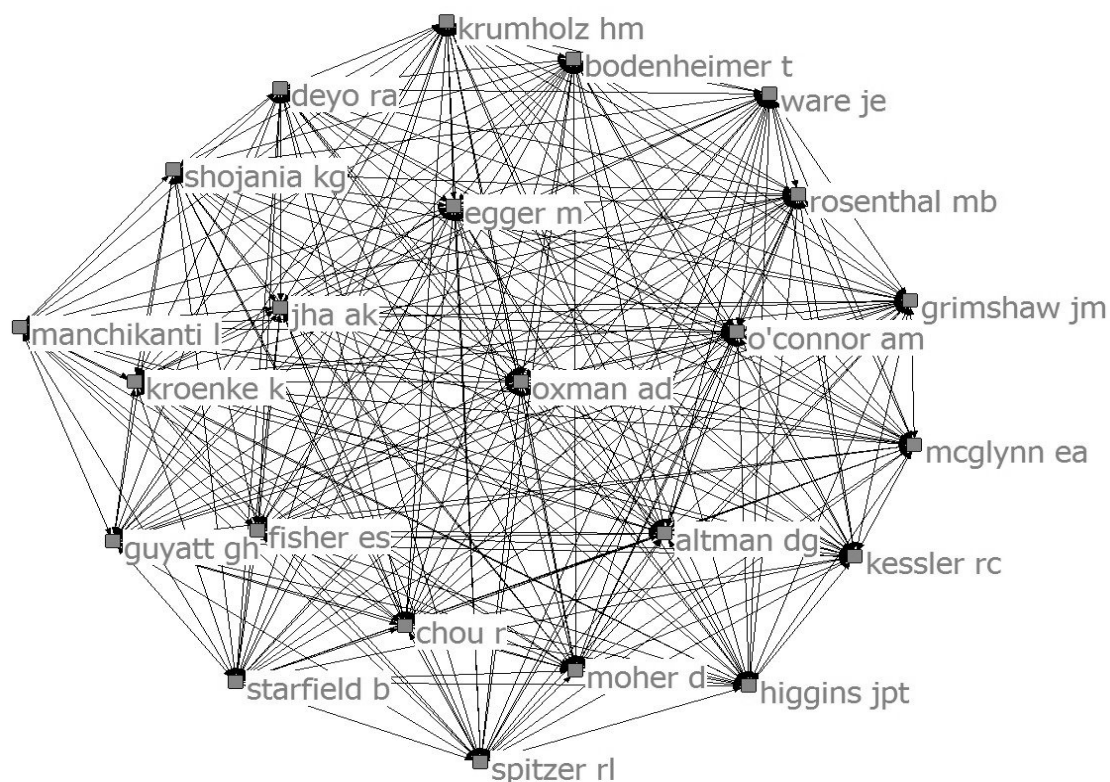


Figure. 2. Key research themes of authors in quality in health care (2009–2013): virtual social network diagram

Discussion

This study is to analyze the citation data of quality in health care of various papers, and identify the same themes of various researchers, and find hot topics to be discussed in qualitative method. We adopted bibliometric methods to generate quantitative data, then identify important issues of quality in health care through subjective judgement. Finally, we adopted qualitative literature review to explore these important issues. This is a mixed method of quantification and qualitative research. The qualitative literature review of highly cited papers provokes critical

thinking of about quality in health care. After co-citation analysis were performed, the virtual social network appeared. The factor analysis revealed several factions of researchers. When the patients pay attention to the healthcare quality, we focus on P4P and development of healthcare quality. The timeline of citation analysis reveals the development and implications of quality in health care.

In 2006, Doran et al. reveals that English family practices attained high levels of achievement in the first year of the new P4P contract in the United Kingdom. (Doran et al., 2006).

Table 2. Author Factor Loadings of factor analysis, 2009–2013

		Name of group			Name of group
factor1	variance	Quality assessment	factor2	variance	Pay-for-performance
Altman DG	0.859		Rosenthal MB	0.86	
Oxman AD	0.785		Starfield B	0.847	
Higgins JPT	0.718		Jha AK	0.694	
Egger M	0.701				
Moher D	0.697				
factor3	variance	Mental health quality	factor4	variance	Health care quality
Kroenke K	0.974		Chou R	0.823	
Kessler RC	0.917		Fisher ES	0.66	
			Manchikanti L	0.626	
factor5	variance	Physician payment	factor6	variance	Clinical guidelines
Deyo RA	0.938		Grimshaw JM	0.883	
Manchikanti L	0.656		Guyatt GH	0.872	
			O'Connor AM	0.594	
factor7	variance	Health questionnaire	factor8	variance	Patient safety
Spitzer RL	0.945		Shojania KG	0.79	
Ware JE	0.821		Mcglynn EA	0.699	
			Krumholz HM	0.541	
			Bodenheimer T	0.515	
			O'Connor AM	0.5	

Rosenthal et al. revealed that findings related to selection, gaming, and other forms of unintended consequences reminded us that P4P programs need to be carefully designed to improve the welfare (Rosenthal & Frank, 2006). In 2007, Campbell et al. revealed that financial incentives are most likely to affect the performance of professional

conduct, and is an effective means for employees were rewarded (Campbell et al., 2007). In 2014, Fourie et al. focused on the impact of diagnosis-related groups (DRGs) on health care delivery. Reforms of the health care system should be assessed for their impact, including the impact on ethics-related factors (Fourie, Biller-Andorno, & Wild,

2014).

Debates of pay-for-performance in literature reviews

In 2006, Petersen et al. revealed that continuously monitoring of incentive programs is critical to determine the effectiveness of financial incentives and their possible unintended effects on quality of care (Petersen, Woodard, Urech, Daw, & Sookanan, 2006). In 2007, Lindenauer focused on that P4P hospitals showed greater improvement in all composite measures of quality, including measures of care for heart failure, acute myocardial infarction, and pneumonia and a composite of 10 measures (Lindenauer et al., 2007).

"Teaching to the test" is an educational practice where curriculum is focused on preparing students for a test. Casalino et al. described ways in which P4P and public reporting programs (PR) may increase disparities, such as reduction in income for physicians in poor minority communities and "Teaching to the test" might disproportionately affect minorities. P4P and PR could induce doctors to focus their time and attention (consciously or unconsciously) on types of care that are being measured, to the damage of non-measured areas that could be equally or more important. This "teaching to the test," which has been found in other industries, may harmfully affect minorities. Only well-designed program is likely to lead both to improved quality and reduction of disparities for health care (Casalino et al., 2007). In 2012, Jha et al. found no evidence that the largest hospital-based P4P program led to a decrease in 30-day

mortality (Jha, Joynt, Orav, & Epstein, 2012). The above comments of authors revealed the shortcomings of P4P.

The financial incentives will change the physician's behavior. In 2011, Jha et al. found that the "worst" hospitals were generally small public or for-profit institutions providing care for elderly black patients. As the "best" hospitals—typically non-profit institutions (Jha, Orav, & Epstein, 2011). Fisher et al. revealed that the traditional model of fee-for-service models will almost certainly see continued cuts in payment rates, which will make physicians' and other providers' work even more difficult if they remain under this payment model (Fisher, McClellan, & Safran, 2011). In 2012, Woolhandler et al. revealed that intensive coding is one common technique to embellish diagnoses to maximize payment under per case, and makes patients seem sicker on paper. Under US Medicare's DRG (diagnosis related groups) hospital payment system, recoding a diagnosis as "aspiration pneumonia with acute on chronic systolic heart failure" rather than simply "pneumonia with chronic heart failure" triples the payment. Woolhandler et al. are worried that P4P may not work simply because it changes the mentality needed for good doctoring (Woolhandler, Ariely, & Himmelstein, 2012).

Limitations and future research directions

The citations used in this study are the voting behavior measurements of authors. But the citations are of old articles. Citation analysis can find the previous paradigm and paradigm shift, but

some authors are too new to be cited. We cannot therefore identify the future important authors, but we can follow the research trend.

Conclusion

We combine quantitative bibliometrics and qualitative literature reviews to find out the important articles about quality of health care, and realize the relationship with other hot topics in this field. We subjectively chose pay-for-performance as hot topics in the field of healthcare quality after co-citation analysis. Traditional strategies to stimulate improvement of medical quality include regulation, measurement of performance and subsequent feedback, and marketplace competition. After our interpretation of the results of citation analysis (the period 2004–2013), and compared the paradigm shift of authors in different 5-year period, we found that P4P was the controversial topics. Some scholars agreed with P4P could improve

the quality in health care. But, some scholars didn't agree with that. There were some weak points about P4P, such as reduction in income for physicians in poor minority communities. Hospitals and physicians would have the behavior of "gaming the system" about P4P. Gaming the system is manipulation of the rules designed to govern a given system in an attempt to gain an advantage over other users. P4P have yielded mixed results. Then, serious concerns have been raised about the impact of P4P on poorer and disadvantaged populations.

The patients always need high-quality health care, but the national budget is not enough to support that. So, P4P, global budget and DRG were developed. The government must implement the P4P program carefully and recheck it's effect regularly. When applying P4P to improve the quality, we must focused on ethic issue to arouse the conscience of health care providers to avoid some unintended consequences.

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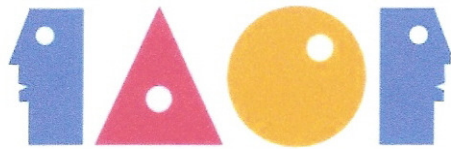
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STUDENT ENTREPRENEURSHIP: A RESEARCH AGENDA

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Abstract

The purpose of this paper is to define the term “Studentpreneur” and stimulate research in the field of Student Entrepreneurship. A research agenda is proposed to further the knowledge of Student Entrepreneurship. The paper identifies Student Entrepreneurship as an emerging phenomenon that provides a dual opportunity. The first is the opportunity to zoom in on one category of entrepreneurs and observe if the traditional theories developed in the “meta category” of entrepreneurs apply to this subcategory; for example, Traits, Psychological tests and Dynamic Capabilities, in a goal to legitimate them further. The second opportunity is to study Studentpreneurs as an exemplary case. Two themes are suggested for the research agenda linked to the latter opportunity: Identity Construction and management of Multiple Identity.

Key Words: Entrepreneurship Research, Entrepreneurship, Student Entrepreneur, Studentpreneur, Dynamic Capabilities, Traits, Multiple Identity, Identity Formation, Psychological Testing.

Introduction

The task of the research program “Global Entrepreneurship Monitor” (GEM) is to evaluate each year the level of entrepreneurial activity for each

country. The Global Entrepreneurship Monitor (2013), which includes data of sixty-nine countries, posits that “one-third of the differences in economic growth among nations may be due to differences in entrepreneurial activity”.

For this reason educational entities, the community, and government have identified entrepreneurs as fundamental in the development of new ventures (Hisrich, Langan-Fox, & Grant, 2007). Universities are now are tasked with promoting regional development and economic growth (Rothaermel, Agung, & Jiang, 2007). They are now providing entrepreneurship education and offering incubator facilities, becoming more and more “entrepreneurial universities” (Politis, Winborg, & Dahlstrand, 2011; Rasmussen & Sørheim, 2006).

In contemporary times, uncertainty about economic stability has been rising. As a result, students are “now faced with a wider variety of employment options, the probability of ending up with a diversity of jobs, more responsibility at work and more stress” (Henry, Hill, & Leitch, 2005), which makes entrepreneurship a more appealing option for future graduates. Entrepreneurship skills provide students with more flexibility in choosing their career. They know that starting their own business at any point in their life is still an option due to economic crisis, downsizing or other events. This is also confirmed by the literature on Youth Entrepreneurship, of which Student Entrepreneurship is a part. As Henderson and Robertson put it, “young people are likely to experience a portfolio career consisting of periods of paid employment, non-work, and self-employment” (2000). Additionally, according to the latest report from the Kauffman Foundation (2013), it is a global phenomenon: “Among young people, the word has gone out that those without self-starting skills may be at a permanent disadvantage.”

The impact on the global economy of previous successful students who started their business while at university, or shortly after, is well known. Larry Page and Sergey Brin met at Stanford and started Google as a research project for their graduate studies (Vise, 2008) and now have over 53,000 employees (Google Inc., 2014). Bill Gates (Wallace & Erickson, 1993), Steve Jobs (Isaacson, 2011), Michael Dell (Dell & Fredman, 1999), and Mark Zuckerberg (Yadav, 2006) all started their businesses in their dorms before dropping out. The companies they created now employ almost 350,000 people and reach many more, with over 1.3 billion active users for Facebook alone (Statistica, 2014). More recently, students who started their business at university have not felt the need to drop out like Matt Mullenweg who created Wordpress while at the University of Houston. Other examples include Shawn Fanning with Napster and Steve Huffman and Alexis Ohanian with Reddit (Tart, 2011). Despite the success of those students who started their business at university, there has been a lack of research on them as student entrepreneurs (Politis et al., 2011).

The authors of this study lead the development of a research agenda on Student Entrepreneurship with the main question: Who are those students who decide to go down the path of entrepreneurship? This question then leads to: How can we further the understanding of Student Entrepreneurship? To reach this goal, the methodology undertaken uses a two-step approach. The first step involves a systematic search of the key words “student entrepreneur” and “student entrepreneurship” in the large vol-

ume of management literature and also in the literature on entrepreneurship. Then the articles are filtered to keep only the ones where the definition of student entrepreneur and student entrepreneurship are aligned with this research. Due to a paucity of results, the second step consists of a research of student entrepreneurship on much wider range of journals and following the snowballing technique (following citations and authors in relevant articles).

We define “Studentpreneurs” and identify Student Entrepreneurship as an emerging phenomenon and then show that while the intentions of students to become Entrepreneurs have been studied, how they practice Entrepreneurship has not. It is then postulated that the study of the phenomenon of Student Entrepreneurship is a dual opportunity. The first is the opportunity to zoom in on one category of entrepreneurs and examine if the traditional theories developed on the “meta category” of entrepreneurs apply to this subcategory, namely Traits, Psychological tests and Dynamic Capabilities. The second opportunity is to study Studentpreneurs as an exemplary case, with incredible examples (Michael Dell, Bill Gate or Mark Zuckerberg) and extraordinary conditions (educational environment and the low cost of starting a business, for instance). Two themes are suggested for the research agenda that are linked to the latter opportunity: Identity Construction and management of Multiple Identity.

Definition of Entrepreneur and Entrepreneurship

The first definition of the term Entrepreneur was provided by Cantillon in 1755. Entrepreneurs, or “undertakers” in a literal translation, are “gens a gages incertains” (Cantillon), which in modern English translates to: “someone who assumes the risk and may legitimately appropriate any profits” (Bruyat & Julien, 2001). For Schumpeter (1951), an entrepreneur is an innovator who introduces new services, products or technology. These very wide definitions are constantly being updated.

The definition of Entrepreneurship for this study is formulated from the practitioner view of Tjan, Harrington and Hsieh (2012) and the academic view of Bruyat and Julien (2001). For the former, Entrepreneurship refers to the first-stage of the founding of a business and connotes the classic Silicon Valley notion of a start-up and the innovative spirit required to launch one (Tjan et al., 2012). For the latter, Entrepreneurship is seen as a process of change for the venture and the entrepreneur: “while Entrepreneurship is to do with a process of change, emergence and the creation of new value, it is also a process of change and creation for the entrepreneur” (2001).

From Student Entrepreneur to Studentpreneur

Entrepreneurs are defined in a multitude of ways in the literature. The same is true for Student Entrepreneurs but the definitions are significantly less specific. They see themselves as “dream merchants” Purewal (2001) or they “build emerging businesses rather than

extending and defending existing businesses” (Baghai, Coley, & White, 2000). A broader definition contends: “He isn’t only interested in building businesses. He’s also the political science major who starts a political organization, using it as a platform to connect thinkers from other disciplines” (Torenberg, 2012). They can also be the students using “classrooms and labs as platforms, resources, and subsidies to construct marketable products, processes, or services” (Mars, Slaughter, & Rhoades, 2008). They are sometimes defined as “academic entrepreneurs” however most of the research on academic entrepreneurship focus on faculty members having entrepreneurial activities, not on the students (Bercovitz & Feldman, 2008). Even though there has been significant research on academic entrepreneurship, academics being entrepreneurs is a moderately marginal phenomenon when compared to “the large number of student entrepreneurs who are educated and fostered in the university context, and who often continue to develop their new firm in interaction with the university after graduation” (Politis et al., 2011).

This study departs from much of the previous work by exploring the Student Entrepreneur, not just as a student attending entrepreneurial classes, but as conducting a business on/near campus while simultaneously attending formal university award courses. To refine further the definition of the phenomenon of Student Entrepreneurs, the business has to be innovative (not a reproduction of a traditional business) and at least at the incubator/start-up stage (generating revenue). As a consequence, the definition of Student Entrepreneur for this re-

search agenda is as follow: The Student Entrepreneur is an individual attending award classes at university and conducting innovative and revenue generating entrepreneurial activities.

After further exposure to conferences on Entrepreneurship, the authors have come to the conclusion that even if the definition is altered and shared, the general understanding of a “Student Entrepreneur” remains as a student enrolled in an Entrepreneurship course. For this reason, the new term “Studentpreneur” is used to clearly depart from that general understanding. Definition of Studentpreneur for this research agenda: the Studentpreneur is an individual attending award classes at university and conducting innovative revenue generating entrepreneurial activities.

Student Entrepreneurship is an Emerging Phenomenon

The paucity of results of the systematic search of terms relevant to student entrepreneurship demonstrates that it is not an established and well research phenomenon at the top level of the management literature. The key words used for the systematic search are: "student entrepreneur*", "college age entrepreneur*", "undergraduate entrepreneur*", "student start-up*" and "student startup*". This systematic search was performed using the database SCOPUS. Forty-two of the top academic journals in Entrepreneurship, Management, and Organisation Studies were selected for the scope with no limit regarding the year of publication. These journals are ranked either A* or A in the 2013 Australian Business Deans Council (ABDC)

journal quality list. Only 14 journal articles meet the research criteria. Eleven focus on the intentions of students to become entrepreneurs. Another one treats of the role of entrepreneurship clubs and societies in entrepreneurial learning but does not mention students running a business (Pittaway, Rodriguez-Falcon, Aiyegbayo, & King, 2011). Finally, only two focus on Studentpreneurs as we define it in this research agenda. The first one is a narrative of a team of academics and students in setting up a business, “Envirofit International”, published in *Entrepreneurship Theory & Practice* (Hudnut & DeTienne, 2010). The second one, “Student Entrepreneur: Resource Logic & Effectual Reasoning” (Politis et al., 2011) is a response to the call for research for comparative studies studying if student entrepreneurs are different to other kinds of entrepreneurs. One of its main finding (see quote below) is that student entrepreneurs are a different group of entrepreneurs, at least in the use of resources. It is a significant starting point for this research agenda.

Relatively little is known about young adult views on Entrepreneurship. The work that has been undertaken tends to focus on the specific factors which influence someone to start a business rather than Entrepreneurship as a career choice.” These words from 2000 by Henderson and Robertson show that the research has not been focusing on youth embracing entrepreneurship. However, a set of new studies demonstrates that it is a growing area, even an “emerging phenomenon” (Mars et al., 2008). The latter authors even define a category of Student Entrepreneurs very closely to Studentpreneurs: the State Sponsored Stu-

dent Entrepreneurs. Their reasoning is that entrepreneurial students take more and more advantage of university resources such as specialised professors, spaces such as incubators, patent and copyright protections provided by the university and sometimes their classroom learning. They are also “utilising the entrepreneurial environments of their universities to access markets with the products, processes, and services they have created” (Mars, 2006).

Another reason for the emergence of Student Entrepreneurship can be seen in the fact that Entrepreneurship education is now mainstream (Politis et al., 2011). The Kauffman Foundation in 2008 reported that it was “one of the fastest growing subjects in today’s undergraduate curricula”. According to the same report, the number of Entrepreneurship courses in the U.S. rose from 250 in 1985 to 5,000 in 2008 with over 9,000 faculty members teaching it. This is the result of high-level investment in Entrepreneurship education. For instance, in 2006 the Kauffman Institute selected nine U.S. universities to receive \$25.5 million to assimilate entrepreneurship into all areas of research and study. The result of such a boost in Entrepreneurship education explains partially the surge in Student Entrepreneurship, making this phenomenon an important area for further study.

How Have Studentpreneurs Been Studied? Intentions vs. Practice

In the entrepreneurship literature, the closest area to studies on Studentpreneurs are studies on self-employment

and/or entrepreneurial intentions of students after they graduate. The reasoning for this is psychologists see the appraisal of intentions as the closest way to predict behaviour (Ajzen, 1991). A significant amount of the studies on behavioural intentions (McStay, 2008) have been conducted by psychologists, and more specifically cognitive psychologists (Ajzen, 1991; Fishbein & Ajzen, 1975; Searle, 1983), which demonstrates the need for a cross-disciplinary literature review. For some researchers self-employment intentions and entrepreneurial intentions are synonyms (Souitaris, Zerbinati, & Al-Laham, 2007; Walter, Parboteeah, & Walter, 2011). For others, entrepreneurial intentions relate specifically to high growth start-ups (Krueger 1993 in Walter 2011) whereas self-employment includes all types of entrepreneurship (Walter et al., 2011). In any case, both types of studies focus on the prediction of student behaviour. The classical theory of planned behaviour has largely been used in entrepreneurship research (D. A. Shepherd & DeTienne, 2005; Souitaris et al., 2007). Being identified as the fundamental element for understating the process of setting up a startup is the reason for such a focus on entrepreneurial intentions. In such research two streams of study have been privileged “personal characteristics” or “traits”, and how contextual factors affect the intentions to become an entrepreneurs (Lüthje & Franke, 2003). Important findings come from such research. Walter et al. (2011) demonstrate that “the university setting can directly affect the likelihood that students identify and exploit opportunities, and thus their self-employment intentions”. This leads Walter et al. (2011) to the conclu-

sion that the more the university exhibits “characteristics conducive to entrepreneurship”, the more it will influence their students toward intentions of becoming an entrepreneur.

However, typically, studies on intentions do not focus on students who already run a business but on larger samples of students attending (or not in some cases) entrepreneurship classes. As a result, the findings of such studies may or may not apply to Studentpreneurs; further research is required to validate this hypothesis or otherwise. The most common limitation of behavioural intention studies applied to entrepreneurship, as noted by Walter et al. (2011), is that the “predictive validity of intention” has been demonstrated in a general context only (Armitage & Conner 2001 in Walter 2011). The logical conclusion is that even if the students have the intentions of self-employment or starting a high growth business, they may or may not act on their intentions (Bhave 1994 in Walter 2011). Indeed, what happens to the students with such intentions when the reality of living expenses, lifestyle and work-life balance settles in after graduation? How many graduates who said they wanted to become an entrepreneur realise they are not made for the frugal life of an entrepreneur? Typical first time entrepreneurs cut all their spending to invest everything in their venture. There are countless stories of young entrepreneurs sleeping on their friends’ couch and using multiple credit cards while building a business (Stanford University's Entrepreneurship Corner Podcast (2015).

Self-employment and entrepreneurial

intentions studies have important findings. However, the literature on students practising entrepreneurship is limited and further research is required to investigate if such findings can be applied to Studentpreneurs.

Zooming in on Studentpreneurs: Can Classical Theories be Applied to this Sub Category of Entrepreneurship?

Can Psychological Approach of Traits and Attributes theories be applied to Studentpreneurs?

Thirty years of academic research has been conducted on the psychological traits of becoming an entrepreneur. The locus of control and high Need for Achievement, or NACH, (Begley & Boyd, 1988; Essers & Benschop, 2007; Hornaday & Aboud, 1971; McClelland, 1965; Schmitt-Rodermund, 2004) are now widely recognised as traits of entrepreneurs and are commonly used in Entrepreneurship studies as noted by Davidsson in the latest ACE research vignette (2013). Caveats need to be taken into account as other researchers have demonstrated no significant results for the Need for Achievement (Hansemark, 2003).

Risk taking propensity is one of the main recognised traits of an entrepreneur (Kets de Vries, 1985; Nicolaou, Shane, Cherkas, & Spector, 2008; Schmitt-Rodermund, 2004; Stewart Jr, Watson, Carland, & Carland, 1999; Stewart Jr & Roth, 2001), but there is no agreement on the level of risk: moderate, calculated or simply a gut feeling. In addition to the uncertainty of the level of risk, Tjan, Harrington and Hsieh (2012)

note that the line between risk takers and risks tolerators is blurry. It is one of the seven most researched psychological traits in entrepreneurship among need for achievement, need for power, need for affiliation, internal locus of control, desire for autonomy, and tolerance of uncertainty.

Less studied is the fact that a significant numbers of entrepreneurs go through ups and downs (Kets de Vries, 1985). Common as well in the practitioner literature, but rarer in the academic, is the notion of following a dream for which some archetypical entrepreneurs such as Bill Gates and Mark Zuckerberg are ready to sacrifice their Harvard degree (Tjan et al., 2012). Other traits are less studied: creative entrepreneurs demonstrate great degrees of energy (Kets de Vries, 1985; Schmitt-Rodermund, 2004), a high level of perseverance (Brockhaus & Horwitz, 1986) and imagination (Essers & Benschop, 2007), coupled with an aversion for “repetitive, routine” activities. Also, luck or serendipity is studied only by a few academics. However, in more common terms, it is about “making your own luck happen” (Tjan et al., 2012 p. 251). Entrepreneurs build themselves a network of people and opportunities and they are ready to leverage them when an opportunity arise.

The least researched traits, according to Kets de Vries (1985), is that “entrepreneurs somehow know how to lead an organisation and give it momentum.” They infuse a great enthusiasm in start-up organisations. Their leadership capability derives from their “seductiveness, gamesmanship, or charisma” (Kets de Vries, 1985; Pink, 2009). They use

their passion to transform their purpose into reality that others follow (Stewart, 1996; Tjan et al., 2012). Schmitt-Rodermund emphasises autonomy (2004) while Kets de Vries adds that entrepreneurs have a difficult time in working for someone else (1985), which a later psychological approach by Stuart seems to corroborate (Stewart, 1996).

It is to be noted that several researchers are trying to discourage research in the area of traits of Entrepreneurship (Gatewood, Shaver, & Gartner, 1995), since no study proves at the 100% level the link between these traits and becoming an Entrepreneur. However, this review of the traditional area of traits and attributes of entrepreneurs shows that there has been a variety of research undertaken. Further research is required to study if the psychological approach of traits applies to the category of Studentpreneurs.

Can Psychological Testing Approach be Applied to Studentpreneurs?

Even though the traits mentioned previously are contested, they constitute a starting point in the identification of entrepreneurs. The next logical step to predict Entrepreneurship is the use of psychological tests. Attempts at testing for Entrepreneurship go back as far as 1965 (McClelland), leveraging the previous traits and characteristics identified. There are several issues that arise in applying psychological tests to entrepreneurs as Caird (1993) encapsulates. The first issue is that the population of entrepreneurs is heterogeneous. They differ widely by the type of business they are

running, their motivation, their use of technology, and the list goes on. It naturally links to the second issue that there are a multitude of definitions of entrepreneurs along with the various characteristics with which they are labelled. The latter, according to Caird, justifies why some tests look at the traits and characteristics while others focus on “the nature of the entrepreneurs”.

Throughout the existing Entrepreneurship literature is the knowledge of different types of people (Jung 1965; Meyer & Meyer 1980; Keirse 1998). A series of tests and instruments exist to test for personality traits (Myers-Briggs Type Indicator, DISC, Enneagram, and StrengthFinders). If existing tests relate to generic types of people, only a paucity of tests (Abraham 2011) for types of entrepreneurs appear to exist in spite of “the fact that Entrepreneurship is affected by numerous factors” (Kalkan & Kaygusuz 2012).

One of the earliest tests on the nature of the entrepreneur is Edwards' Personal Preference Schedule (Edwards 1954). This personality test requires the respondent to rank needs. Edwards demonstrates that entrepreneurs have a "high Need for Achievement, autonomy, change and a low need for affiliation". However, as demonstrated by Watkins, results can be manipulated by changing the content and the range of the needs (1976).

Another personality test is McClelland's use of the Thematic Apperception Test (TAT) for measuring NACH, power and affiliation. He designed a specific setting (or set of pic-

tures) of the TAT to assess these traits (1965). He found that entrepreneurs have "high NACH, high needs for power and low affiliation needs". However further studies, such as Roberts (1989), showed that the results varied according to the type of entrepreneur.

Comparative studies have demonstrated different results with different types of entrepreneurs, but there seems to be a commonality on thinking and intuition (Roberts 1989). If existing tests relate to generic types of people, only a paucity of tests (Abraham 2011) for types of entrepreneurs appear to exist in spite of "the fact that Entrepreneurship is affected by numerous factors"(Kalkan & Kaygusuz 2012).

In any of the tests mentioned, young entrepreneurs or student entrepreneurs have never been mentioned. There is an opportunity to study if these tests, standalone or in any configuration, could be used to test for student entrepreneurship. If so, student entrepreneurs could be identified not only at university but also potentially prior to choosing a university; that is, while in high school.

Can Dynamic Capability Theories be applied to Studentpreneurs?

Dynamic capabilities are typically labelled as an elusive concept or an abstract "black box" (Pavlou & El Sawy 2011, p. 239). Dynamic capabilities are a basis for competitive advantage (Lawton & Rajwani 2011; Sirmon et al. 2010) and are at the heart of an organisation's competences (Zahra et al. 2006). Dynamic capabilities include making key decisions to help the growth of the start-

up. Entrepreneurs evolve in an inconstant and unstable environment and they need to be able to adapt to changes very quickly. The literature shows that when executives perform dynamic capability they are able to efficiently improve resource productivity and competitiveness (Chiou 2011; Adeniran & Johnston 2012) and create market differentiation (Fang et al. 2010; Lee 2008; Lee et al. 2011; Helfat & Peteraf 2003). In his seminal article on dynamic capability, Teece (1997) focuses the research at a firm level by defining dynamic capability as "the firm's ability to integrate, build, and reconfigure internal and external competences to address a rapidly changing environment". Other literature now focuses on dynamic capabilities at the individual level, such as the identification of personality traits of entrepreneurs (Dollingers 2003) or the interpretation of the influence of social backgrounds on business decisions (Ucbasaran et al., 2001; Chang, 2012). The personality traits are defined as "the ability to renew, augment, and adapt competencies over time" (Marcus & Anderson 2006, p. 19). We believe that students are conscious that they do not have to master all the skills to build and run a business. As a consequence, they are more flexible and they are not as emotionally attached to their venture as are seasoned entrepreneurs. They can change their business model quickly. Moreover, dynamic capability can be acquired (Mulders et al. 2010). Studentpreneurs, who know their business knowledge is limited, know where to find help. They ask their professors, they attend presentations from professionals from the industry and meet up with them at the end. Finally, they talk to their

peers. They are skilled at maximising serendipity. They have mastered the art of networking. However, there is no study that shows that Studentpreneurs already demonstrate dynamic capabilities.

From the literature, three sets of capabilities (at the individual level) that make up the components of dynamic capability have the potential to be applied to Studentpreneurs. The first model, from Kindstrom (2012) comprises Sensing Capabilities, Learning Capability, Integrating Capability, and Coordinating Capability. Agarwal and Selen (2009) combine five capabilities: Entrepreneurial Alertness, Customer Engagement, Collaborative Agility, Collaborative Innovative Agility, and Collaborative Organisational Learning. Finally, Chang (2012) identifies four capabilities specifically applicable to IT entrepreneurs: "Market-oriented Sensitivity, Ability to Absorb Knowledge, Social-networking capability and the integrative ability to communicate and negotiate". There is an opportunity to see if Dynamic Capabilities can be identified on the category of Studentpreneur and by doing so further the understanding of the phenomenon of Student Entrepreneurship. The second opportunity is to study Studentpreneurs as an exemplary case, with incredible examples and extraordinary conditions. Two themes are suggested for the research agenda: Identity Construction and management of Multiple Identity.

Studentpreneurs To Be Studied As An Exemplary Case

Identity Construction in Student Entrepreneurship Requires Further Research

Research in identity construction is a highly debated topic, but academics agree on one thing: identity is not simply the personality of the individual but is constructed via interactions between "the individual, society, and culture" (Down & Warren 2008). The mainstream literature on Entrepreneurship rarely mentions identity (Essers & Benschop 2007). However, in the area of identity construction in Entrepreneurship there is a growing interest in treating it as part of the entrepreneurial process (Nielsen & Lassen 2012). Downing's work on the social construction of Entrepreneurship (2005) describes "how notions of individuals and collective identity and organisation are co-produced over time". He highlights that further knowledge on interactions between entrepreneurs and stakeholders focusing on how they co-produce their identities is needed as this is currently "unclear".

Shepherd and Haynie (2009) add that such social construction has a cost for entrepreneurs. In the pursuit of satisfying the need to be different and unique, which is present in all individuals (Brewer 1991), entrepreneurs incur the risk of not belonging anymore and, as a result, experiencing the "dark-side" of mental health. The authors call for a model to manage multiple identities, to balance both needs. Shepherd and Haynie offer their own model that requires entrepreneurs to separate themselves from their venture, but it is only one attempt at identity management.

Nielsen and Lassen (2012) claim that Studentpreneurs are the perfect group to investigate identity construction in the entrepreneurial process. One of

the reasons is that while young people are getting ready to join adulthood, there is a high level of identity reflection (Erikson 1968). This is a complex time for young people as there are no clear answers to “who am I” and “who am I going to become” (Moshman 2005). Another reason, according to Nielsen and Lassen (2012), is that Studentpreneurs do not have a stable sense of identity. The reasoning is that they do not have the business knowledge, networking skills, and experience to understand the entrepreneurial process.

Multiple Identity in Student Entrepreneurship Requires Further Research

“Identity is fluid, depends on the environment, and is in constant change” (Harraway 1991). From a constructionist perspective, identity can also be seen as a “discourse, socially constructed through language and embedded in power relations”(Essers & Benschop 2007). It is on this theoretical ground that Essers and Benschop (2007) studied the “multiple identity construction” of Female Entrepreneurs of Moroccan or Turkish Origin in the Netherlands. They demonstrate the existence of complex processes of identity construction in female ethnic minority entrepreneurs. A key finding is that these identities are produced through communication /discussion with stakeholders, so the identities "become" instead of "are" (Essers & Benschop 2007). (2005) Downing (2005) comes to the same conclusion: “the becoming [of their identities] is negotiated with various constituencies”. This study from Essers and Benschop calls for “attention to en-

trepreneurial identities” (Steyaert & Hjorth 2003). A justification for this study is given by Essers and Benschop (2007): “There is a lack of research on identities of entrepreneurs whereas organisational identity is a mature topic”.

After studying the narrative of 10 Studentpreneurs, Nielsen and Lassen (2012) find that “identity is multiple and not coherent and that this influences the entrepreneurial process”. Entrepreneurship challenges the cognitive process of young people to create multiple identities: “when old meets new, multiple and hybrid identities may be created” (Nielsen & Lassen 2012). At this stage of the research it seems that Nielsen and Lassen’s article on “Identity in Entrepreneurship effectuation theory” is the only one mentioning the multiple identities in Studentpreneurs in the entrepreneurial process. This gap can be seen as an opportunity to further the knowledge on Student Entrepreneurship in the areas of management of Multiple Identity.

Conclusion

The area of Student Entrepreneurship is an emerging phenomenon. To further the knowledge on this phenomenon, two opportunities have been described: using the category of Studentpreneurs to identify theories that have been developed at the Entrepreneur meta category level and studying Studentpreneurs as an exemplary case. As a result, five research avenues have been highlighted that range from testing the dynamic capabilities on Studentpreneurs to studying how they manage their multiple identity.

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