

Pertanika Journal of SOCIAL SCIENCES & HUMANITIES

VOL. 24 (S) JUL. 2016

A special edition devoted to issues in Ecosystem, Innovation, and Excellence in Enhancing Organisation Competitiveness, and Sustainability

> Guest Editors Bachtiar H. Simamora, Idris Gautama So & Dyah Budiastuti



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Journal of Social Sciences & Humanities

About the Journal

Overview

Pertanika Journal of Social Sciences & Humanities (JSSH) is the official journal of Universiti Putra Malaysia published by UPM Press. It is an open-access online scientific journal which is free of charge. It publishes the scientific outputs. It neither accepts nor commissions third party content.

Recognized internationally as the leading peer-reviewed interdisciplinary journal devoted to the publication of original papers, it serves as a forum for practical approaches to improving quality in issues pertaining to social and behavioural sciences as well as the humanities.

JSSH is a **quarterly** (*March, June, September* and *December*) periodical that considers for publication original articles as per its scope. The journal publishes in **English** and it is open to authors around the world regardless of the nationality.

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History

lournal of Social Sciences & Humanities

Pertanika was founded in 1978. A decision was made in 1992 to streamline Pertanika into three journals as Journal of Tropical Agricultural Science, Journal of Science & Technology, and Journal of Social Sciences & Humanities to meet the need for specialised journals in areas of study aligned with the interdisciplinary strengths of the university.

After almost 25 years, as an interdisciplinary Journal of Social Sciences & Humanities, the revamped journal focuses on research in social and behavioural sciences as well as the humanities, particularly in the Asia Pacific region.

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An ISSN is an 8-digit code used to identify periodicals such as journals of all kinds and on all media–print and electronic. All Pertanika journals have ISSN as well as an e-ISSN.

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Most scientific papers are prepared according to a format called IMRAD. The term represents the first letters of the words Introduction, Materials and Methods, Results, And, Discussion. IMRAD is simply a more 'defined' version of the "IBC" [Introduction, Body, Conclusion] format used for all academic writing. IMRAD indicates a pattern or format rather than a complete list of headings or components of research papers; the missing parts of a paper are: *Title, Authors, Keywords, Abstract, Conclusions*, and *References*. Additionally, some papers include Acknowledgments and Appendices.

The Introduction explains the scope and objective of the study in the light of current knowledge on the subject; the Materials and Methods describes how the study was conducted; the Results section reports what was found in the study; and the Discussion section explains meaning and significance of the results and provides suggestions for future directions of research. The manuscript must be prepared according to the Journal's INSTRUCTIONS TO AUTHORS.

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In the peer-review process, three referees independently evaluate the scientific quality of the submitted manuscripts.

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Comments to authors are about the appropriateness and adequacy of the theoretical or conceptual framework, literature review, method, results and discussion, and conclusions. Reviewers often include suggestions for strengthening of the manuscript. Comments to the editor are in the nature of the significance of the work and its potential contribution to the literature.

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- 4. The authors decide whether and how to address the reviewers' comments and criticisms and the editor's concerns. The authors return a revised version of the paper to the chief executive editor along with specific information describing how they have answered' the concerns of the reviewers and the editor, usually in a tabular form. The author(s) may also submit a rebuttal if there is a need especially when the author disagrees with certain comments provided by reviewer(s).

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- 5. The chief executive editor sends the revised paper out for re-review. Typically, at least one of the original reviewers will be asked to examine the article.
- 6. When the reviewers have completed their work, the chief executive editor in consultation with the editorial board and the editor-in-chief examine their comments and decide whether the paper is ready to be published, needs another round of revisions, or should be rejected.
- 7. If the decision is to accept, an acceptance letter is sent to all the author(s), the paper is sent to the Press. The article should appear in print in approximately three months.

The Publisher ensures that the paper adheres to the correct style (in-text citations, the reference list, and tables are typical areas of concern, clarity, and grammar). The authors are asked to respond to any minor queries by the Publisher. Following these corrections, page proofs are mailed to the corresponding authors for their final approval. At this point, **only essential changes are accepted**. Finally, the article appears in the pages of the Journal and is posted on-line.

Pertanika Journal of

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ISSI Journal of Social Sciences & Humanities AN INTERNATIONAL PEER-REVIEWED JOURNAL

Foreword

We are very pleased to present this special issue of the International Journal of Social Sciences and Humanities (JSSH) which is a compilation of selected papers that were presented at the International Conference on Organisational Performance Excellence (iCOPE) 2015, held on the 7th - 8th December 2015 in Jakarta, Indonesia. There were a total of **44 papers** selected from this conference. Out of which, 22 were published in the preceding issue, and the remaining are published in this issue. These papers were subjected to rigorous peer reviewing process to ensure quality and consistency in content. The iCOPE 2015 was a collaboration between International Performance Excellence Forum (IPEF) and Binus University, Telkom University, Padjadjaran University, Budi Luhur University and Forum Management Indonesia (FMI).

In line with the theme 'Ecosystem, Innovation, and Excellence in Enhancing Organisation Competitiveness, and Sustainability', the topics in the issue include, but not limited to: Leadership, Strategic Planning, Customer and Market Focus, Information, Measurement, Knowledge Management, and Information Technology, Human Resource, Operational Focus, and Communication for Performance Excellence.

We would like to thank the contributors as well as the reviewers for their commitment and patience which made this JSSH iCOPE 2015 a success. It is hoped that this publication would encourage researchers from around the world to be more active in publishing their research output, in particular good quality social science papers, that would be useful for academics and practitioners alike.

Special thanks to the Chief Executive Editor, UPM Journals, Dr Nayan Kanwal, for his guidance and support in making this publication possible. This has certainly motivated us to be more prolific as well as do better in the future.

Guest Editors Bachtiar H. Simamora (*Assoc. Prof. Dr.*) Idris Gautama So (*Assoc. Prof. Dr.*) Dyah Budiastuti (*Assoc. Prof. Dr.*)

July 2016

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Knowledge Management System Evaluation

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ABSTRACT

The aim of this research is to determine the factors that may affect user awareness when using KM Portal. It analyses KMS using factor analysis to determine the factors influencing user awareness of KM Portal. Research is done through questionnaire on 275 respondents to collect data on KM Portal. The study showed that three factors influenced user awareness for KM Portal, 1) quality of KM Portal content and features; 2) admin and company participation; 3) user participation. All factors produced a model that can be used for the calculation of user awareness of KM Portal is barely sufficient. Thereby suggesting that the company can increase user awareness of KM Portal by improving the three factors mentioned.

Keywords: Knowledge; Knowledge Management System; Evaluation; Factor Analysis; User Awareness

INTRODUCTION

Nowadays, almost all companies are applying information technology to run their businesses. Information technology can assist companies to obtain accurate and relevant information and ensure efficiency and effectiveness in the workplace.

One that must be considered by the company is how to manage human resources to be able to improve efficiency and effectiveness. The transition from an industrial economy to a knowledge economy brings Knowledge Management (KM) to the forefront of industry. In an organization, knowledge is obtained from individuals or groups of people on organizational routines (McClure, 2010). All employees are expected to continue to

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E-mail addresses: dkristin@binus.edu (Kristin, Desi Maya), eekawati@binus.edu (Ekawati, Evy) * Corresponding author explore knowledge and not just rely on the existing system or technology. Kürsad Özlen also states the importance of the improved management of knowledge through the use of Knowledge Management Systems has enormously increased in order to solve

employees' tasks and deliver services to citizens effectively while facilitating decision-making capabilities. Furthermore, an organization's wide adoption of Knowledge Management becomes important in order to obtain higher benefits. It is crucial to develop a knowledge management program that allows organizations to store and recover new knowledge to sustain and maintain organisational effectiveness (Juan-Gabriel and Cepeda-Carrión, 2010). The matter of staff participation should not be an afterthought, rather it must be a core aspect of business strategy, and aligning knowledge activities with business objectives will provide a great positive impact for the company and improve its competitive advantage.

An organization needs to t learn how to leverage itself in order to gain valuable insight that will prove useful to it in the immediate and long term. (McClure, 2010). In order to thrive, members of a community must see tangible benefits such as fast answers to technical questions, insight on regional issues directly from local experts, searchable documents and discussions, and career support through training or networking (Keiser, 2013). John Browne states that all companies face the same problem, i.e. how to use knowledge more effectively than their competitors.

However companies often do not make good use of their resources and consequently fail to realize the importance of knowledge (Robertson, 2012). It is indeed most unfortunate if the knowledge of each employee is not tapped. Hence KM process should be aligned to both the organization's culture with measures to create and share knowledge. In achieving these objectives, companies need to create values by applying tacit and explicit knowledge into business processes. Processes based KM including the identification, collection, sharing, documentation and repeated use of a combination of explicit and tacit knowledge (Nogeste & Walker, 2006). The competence of a person can be increased by sharing knowledge because knowledge is keep in mind even can enhance his knowledge by receiving feedback from others (Eftekharzadeh, 2008). Explicit knowledge is the knowledge that has been codified (documented) in a form that can be distributed to others or transformed into a process or a strategy. In an organization, explicit knowledge consists of the policies, procedural guides, reports, products, strategies, goals, core competencies, and IT infrastructure of the enterprise (Rainer et al., 2015). Tacit knowledge is the cumulative store of subjective or experiential learning. In an organization, tacit knowledge consists of an organisation's experiences, insights, expertise, know-how, trade secrets, skill sets, understanding, and learning. Because it is unstructured, it is difficult to formalize or codify, in contrast to explicit knowledge (Rainer et al., 2015). To create a shared knowledge environment, companies need to have some criteria, i.e. how companies implement strategies to share knowledge, manage, improve, develop concepts and skills to share knowledge, and also support employees to practice knowledge-sharing

activities by building the information technology and techniques in sharing knowledge. Organizations' KM efforts often fall short when KM platforms lack great content or are overly complicated to use. Based on Keiser research, some firms succeed by shortening the learning curve for their employees and customers. They communicate with constituencies and recognize stakeholders for their contributions, completely eliminating the trust barrier that inhibits people from sharing knowledge when it's not clear how it will be used. The multiple channels allow for sharing across geographic boundaries, uniting people who work in different office locations, down the street, or around the world. Then the firms have built and are nurturing a knowledge sharing culture by capturing and sharing knowledge, making it available in a unified knowledge network, and eliminating the "lack of time" excuse used by many for not contributing to a community (Keiser, 2013). According to Lee and Yang as well as Fischer and Oshwald in Fong and Choi (2009), reveals that in fact the company undoubtedly has a process that manages the storage of knowledge and integration of knowledge from different divisions or units. This is due to users devoting attention to focusing on their main tasks and being reckless with matters such as knowledge storage. System to manage knowledge is called Knowledge Management Systems (KMS). Academics and practitioners admit KM can improve the competitive advantage of a company (Sambamurthy & Subramani, 2005).

Based on these problems, the objectives of this research is to analyse the performance of KMS that are running on the company in terms of KM factors, i.e. people, process, and technology, to find out the factors and indicators that affect the awareness of the users in using the KM Portal, and to identify the models based on the results of the KMS evaluation. This research will also provide an overview to the management through the factors, indicators, and models that have been identified that affect the awareness of users in using the KM Portal.

METHODOLOGY

The population in this research is restricted only to employees who are uses of KM Portal. The sample size is 275 respondents from a population of 1321 people.

Data Analysis Techniques

To perform data analysis in this research there was a series of stages , i.e. reliability test with Cronbach Alpha, test the adequacy of the data with KMO-MSA, variable correlation test with Bartlett Test, factor analysis, and perform factor regression from factor analysis result with factor scores.

Reliability Test, KMO-MSA and Bartlett Test

Results of the research called reliable if there are similarities of data in a different time (Sugiyono, 2008). In testing the reliability of existing variables, this research using SPSS software application to get Cronbach Alpha value. Cronbach's Alpha value shows the average value of the correlation between items that measure the same construct (Pallant, 2005). According to Nunnaly (1978) (as cited in Pallant, 2005) recommends a minimum Alpha value is 0.7. If the Cronbach Alpha value greater than 0.7, then the data can be said to be reliable. KMO-MSA test in this research will be performed with SPSS software application. If the KMO-MSA value is > 0.5, then the data has been enough to be factored (Heir et al, 2006). In this research, Bartlett test also performed using SPSS software application. If the Sig value is less than $\alpha = 0.05$, then the data has not been enough to be factored.

RESULT AND DISCUSSION

From the results of reliability test using SPSS is known the Cronbach Alpha value shows alpha coefficient at 24 variables has a value of 0.904 so the instrument used in this research was considered reliable for the questions in each of the variables used.

KMO & Bartlett's Test

Based on KMO test and Bartlett's Test using SPSS can be seen that the assumption of the adequacy of the data has been fulfilled because the MSA and KMO value is amounted to 0.905. It shows the adequacy of the data test has been fulfilled. Moreover, is known the significance of the Bartlett's test, Sig. is 0.000 showed less than α , i.e. 0.05, which means between variables has been correlated.

Anti-Image Correlation

The SPSS test results can be found in the table on Anti-image Correlation. Variable error can be predicted by another variable with the provision if MSA = 1, then the variable can be predicted without error by the other variables. And if MSA > 0.5, then variable can still be predicted and can be analysed further. Meanwhile if the MSA < 0.5, then variable can't be predicted and can't be analysed further, or excluded from other variables. Based on the results obtained is found one variable valued below 0.5, then these variable cannot be analysed further, whereas the other variables can be continuously analysed.

Total Variance Explained

Eigenvalues or characteristic roots used to measure the variance of all variables on factors, people, process, and technology. Ratio of Eigenvalues measure the importance of these factors to variable. The first test, with eigenvalue ≥ 1 , then formed 4 new factors of the analysis results. The cumulative result of the variance extraction is 58.257%. This cumulative result is greater than 50% so all of these factors are still valid. The researchers also do test on 3 factors, and then generated the cumulative value of variance extraction on 3 factors in the amount of 53.122% and the cumulative value of variance extraction on 2 factors is 49.372%. Seeing these test results, then for 2 factors is not valid because its value is below 50%. And the best distribution result is 3 factors. Thus all three of these factors will be processed for further analysis because it has met the criteria.

Component Matrix

After analysing the factors, then formed new factors and new indicators to increase user awareness and the reduction occurred on early indicator and on several factors. In this research, the indicator in question is indicator used to evaluate the KMS.

The first factor is formed from Detailed Knowledge or Information, Easily Find Information, System User Friendly, Sharing Knowledge, Knowledge Retention, Understandable, Knowledge for Decision Making, Knowledge for Improve Ability, and Information Update indicators. All of these indicators form factor "The Quality of KM Portal Content and Features". The second factor is formed from Reward, Knowledge Storage, Accessibility, Knowledge Creation, Training, Fast Reply, and Complexity Barriers indicators. This second factor is represented to be "Admin and Company Participation". The third factor is formed from User Active without Reward, User Active without Regulation, and User Active without Persuasion indicators. The third factor is represented to be "User Participation".

Model Used to Perform Evaluation of Knowledge Management System

Factors that formed are The Quality of KM Portal Content and Features, Admin and Company Participation, and User Participation. That factors used to evaluate KMS for User Awareness. To get the dominant factors, then performed the regression between these factors with value of the KMS according to the respondent assessment who obtained based on the results of questionnaires. The questionnaire asked about KM Portal overall assessment of 1-10 with quantification are 1 is very poor and 10 is excellence. The first factor to the third factor has significance value below 0.5%, respectively 0,000, 0,000 and 0,000 so these factors are reliable to include in the KMS evaluation model. Then the researchers do the calculations and the results obtained are the first factor value (X1) is 0.918; the value of the second factor (X2) is 0.252; the third factor value (X3) is 0.306; and the constant value (C) is 6,902. The following model has been created from KMS evaluation.

$$Y = 0.918 X1 + 0.252 X2 + 0.306 X3 + 6.902$$
(1)

Based on the model above, it can be depicted KMS evaluation model in Figure 1 as follows.

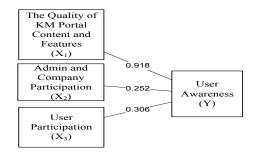


Figure 1: Factor's Value used to KMS evaluation

From the model on Figure 1 above, can be seen the first factor value (X1 = The Quality of KM Portal Content and Features) is positive 0.918, it means KM Portal quality improvement which includes Detailed Knowledge or Information, Easily Find the Information, System User Friendly, Sharing Knowledge, Knowledge Retention, Understandable, Knowledge for Decision Making, Knowledge for Improve Ability, and Information Update will affect 0.918 on increasing user awareness in KM Portal use.

The second factor value (X2 = Admin and Company Participation) is positive 0.252, showed any increase in Admin and Company Participation factor that manages KM portal including Reward, Knowledge Storage, Accessibility, Knowledge Creation, Training, Fast Reply, and Complexity Barriers will affect 0.252 on increasing user awareness in KM Portal use.

The third factor value (X3 = User Participation) is positive 0.306. This means any increase in User Participation factor which includes User Active without Reward, User Active without Regulation, and User Active without Persuasion will affect 0.306 on increasing user awareness in KM Portal use.

Knowledge Management System Evaluation

Based on the value of factors and the model can be determined evaluation user awareness of the use of KM Portal, then the researchers do the factor regression of these factors to get the maximum and minimum values. By doing the regression of these factors, then obtained minimum value of X1 factor = -3.29833, X2 factor = -4.15024, and X3 factor = -3.87210 and obtained maximum value of X1 factor = 2.94042, X2 factor = 2.83336, and X3 factor = 2.21678.

By doing the regression of these factors, then obtained limits of minimum and maximum values as follows at model Chung-Hung and Hwang-Yeh (2007), with minimum and maximum values:

 $-3.29833 \le X1 \le 2.94042 \quad (2)$ $-4.15024 \le X2 \le 2.83336 \quad (3)$ $-3.87210 \le X3 \le 2.21678 \quad (4)$

CONCLUSIONS

The first factor is formed from Detailed Knowledge or Information, Easily Find Information, System User Friendly, Sharing Knowledge, Knowledge Retention, Understandable, Knowledge for Decision Making, Knowledge for Improve Ability, and Information Update indicators. All of these indicators form factor "The Quality of KM Portal Content and Features".

The second factor is formed from Reward, Knowledge Storage, Accessibility, Knowledge Creation, Training, Fast Reply, and Complexity Barriers indicators. This second factor is represented to be "Admin and Company Participation".

The third factor is formed from User Active without Reward, User Active without Regulation, and User Active without Persuasion indicators. The third factor is represented to be "User Participation". Taking into consideration the limitations of this study which is focused on user awareness, the researchers suggest the need to increase the number of possible variables as well as the sample size.

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How Popular Culture Affects Brand Identity and Perceived Quality in Consumer Decision Making

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ABSTRACT

The purpose of this study is to determine whether Perceived Quality, Brand Identity and Korean Popular Culture influence decisions on product purchases. This research used path analysis to determine the relationship among these variables. Statistical analysis shows that Product Perceived Quality has 0.741 direct contributions to Purchase Decision while Brand Identity has 0.792 direct contributions to Purchase Decision. Based on the value of R Square 0.670 Product Perceived Quality together with Brand Identity has 0.670 (67.0%) influence on Purchase Decision. Based on the results of this research, customer assessment of Product Perceived Quality, Brand Identity, Popular Culture and Purchase Decision is good.

Keywords: Product Perceived Quality, Brand Identity, Popular Culture, Korean Wave, Purchase Decision

INTRODUCTION

The influence and spread of Korean popular culture worldwide is a popular topic among many researchers. This phenomenon has been discussed in many studies. Asian popular culture, in particular Korean Pop Culture, is quite unique and it is interesting to study the behaviour of its fans as well as its detractors (Thorn, 2011).

A newly coined phrase - *Korean wave* - refers to the popularity of Korean popular culture across East and Southeast Asia, a recent regional media development. Korea's growing cultural influence has been gaining a lot of recognition in the past few years with

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the massive increase in popularity of Korean pop culture products, particularly K-pop and TV dramas. But this is not the only market in which Korean products have been expanding. Korea has also seen a surge in interest in its fashion and lifestyle products.

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The Korean Wave has experienced a significant change with the development of digital technologies and social media, such as YouTube, social network sites (SNSs), and smartphones in the 21st century. These digital technologies, as new driving engines of the Korean Wave, have initiated and supported the popularity of its local culture in many countries.

The popularity of Korean cosmetic products has been dramatic, especially in Asia About 83% of Asia's cosmetics are imported from Korea. Despite that, Korean cosmetic imports are higher than its exports with about US\$300 million deficit. This is partly due to the fact that price of imported cosmetics is much cheaper than local products. Thus, Korea continues to increase its export to existing or new market (Kim et al., 2013).

The cosmetic industry continues to be a promising one as long as women whether they live in big or small cities load their purses with cosmetics. Nielsen Indonesia shows 9.4% increase of cosmetic use in 2013 compared with 2012. In the rural areas, there has been an increase of 27.5% in cosmetic purchase for the same period.

Consumer assessment of product quality influences his or her purchasing decision (Nugroho & Wihandoyo, 2009). Quality is a major concern when buying products or services. Tsiotsou (2006) found a positive direct effect of perceived quality on purchase intentions. Literature suggests a significant role of product quality in shaping buying behaviour but it may vary from culture to culture.

Consumer research (especially consumer culture theory) has explored and documented a variety of domains, contexts, socio-political aspects, and ideological issues of consumer-market dynamics to a great extent in relation to the consumption of goods, services, images, and experiences in the market. Popular culture is an important topic in consumer culture theory because of its function as a transmitter of marketplace ideologies. Since 1999, Korean pop culture has gained much recognition across many Asian countries and regions through mass media entertainment such as dramas, movies, and songs. This trend is known as Hallyu, which literally means Korean wave in English. The Korean Ministry of Culture and Tourism appointed Korean Wave popstars as cultural ambassadors to countries that have had a strained political relationship with Korea (Lee & Bai, 2012).

The Entry of Korean Products into Indonesia

Marketing scholars and many researchers have attempted to understand the popularity of Korean products in Indonesia, especially cosmetic product. Korean taste is the most important factors in local consumer's mind that impact his or her decision making. Indonesian consumers appear to prefer Korean products and brands compared with local or international ones (Kim et.al., 2013).

Korean cosmetic products in particular have not only completely dominated the domestic market vis a vis other foreign brands but the former are also popular overseas. Beauty products or cosmetics from South Korea that are marketed in Indonesia are Etude House, The Face Shop, Skin Food, Tony Moly and Lioele among others

The present author interviewed 30 people who like Korean Popular Culture and found that every K-Popers (those who love K-Pop) want to look like their idol (celebrity that they like), their style also resembles their South Korean idols whereby K-Popers would try to follow the celebrity's style which in turn influences them to purchase as many Korean product as possible, in particular cosmetics.

Lioele Cosmetic is a new cosmetic brand from Korea which has spread its wings into the Indonesian Market the beginning of 2012. Lioele stands for Life of Elegant Ease. This brand was officially launched in Korea on March 2007. Lioele's message is to be happy and beautiful. Like the story of Cinderella, an average-looking woman can turn into a noble and elegant princess, Lioele hopes that every customer is able to live that dream by using their products.

Intra-regional tourism affected by Korean wave has caused an increase in tourists from Asia to the United States. The popularity of Korea to a new generation of consumers has led the latter to actively copy and embrace Korean lifestyles in fashion, food, and consumption patterns, collecting Korean culture items, learning the Korean language, and actually making trips to Korea. This study aims to determine the influence of product perceived quality on purchase decision of Lioele' cosmetic products and the effect of popular culture in mediating brand identity to influence purchase decision. The following are the research questions:

- 1. Does Product Perceived Quality influences Purchase Decision?
- 2. Does Brand Identity influences Purchase Decision?
- 3. Do Product Perceived Quality and Brand Identity simultaneously influence Purchase Decision?
- 4. Does Brand Identity influence Popular Culture?
- 5. Does Popular Culture influence Purchase Decision
- 6. Is Brand Identity influence on Purchase Decision mediated by Popular Culture?

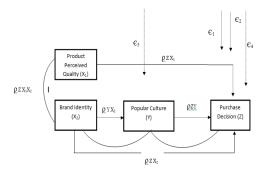


Figure 1: Evaluation Result of Structural Model

LITERATURE REVIEW

Product Perceived Quality

Quality refers to the superiority of a certain product or services (Zeithaml, 1988 as cited in Choi et al, 2013). Perceived quality is defined as the consumer's judgment about a product's overall excellence or its superiority (Tsiotsou, 2006). Zeithaml (1988) defined perceived quality as a global assessment characterised by a high abstraction level and refers to a specific consumption setting, but the terminology of perceived quality is different from objective quality. Many researchers or marketing scholars have done research on perceived quality especially in terms of the impact of product perceived quality on purchase intention.

Aaker and Joachimstaler (2000) also define perceived quality as a special type of association, partly because it influences brand associations in many context and partly because it has been empirically shown to affect profitability. The value of a product is determined by a person's perception of the attributes of the product. Perception of product quality is the most important aspect determining a person's purchase decision.

Brand Identity

Brand identity refers to everything that makes a brand meaningful and unique. The concept of brand identity and model have been discussed extensively by marketing scholars and researchers. Brand identity is still relevant and it is very important for marketers and consumers. Identity in the cultural context and social science relate to consumers' behaviour as their response to the global market dynamics.

A brand refers to the visual and verbal articulation of a product. It is a proprietary name of a product and service, a community, group and an organisation. Brand can be defined as the sum total of all functional assets. The American Marketing Association defines a brand as a name, term, design, symbol or any other feature that identifies one seller's good or service as distinct from those of other sellers. The legal term is trademark. The brand identity discussed in this paper is related to a pop culture phenomenon. Brand identity includes values, aim and moral image. A brand may identify one item, a family of items, or all items of that seller (Cravens & Piercy, 2009).

A consumer's brand image is the mental picture, that is, what is depicted in the minds of consumers of the products or services offered by marketers (Dobni & Zinkan, 1990, as cited in Cretu & Brodie, 2007). Brand image is also the meaning or symbol that is perceived by the consumer or any associated attributes (Padgett & Allen, 1997). Brand image is "the reasoned or emotional perceptions consumers attach to specific brand" (Cretu & Brodie, 2007). Brand identity is a unique set of brand associations that the brand strategist aspires to create or maintain. These associations represent what the brand stands for and imply a promise of quality to customers from the brand owner (Cravens & Piercy, 2009).

Popular Culture

Popular culture or pop culture has been defined in many different ways. One way is to consider it as mass culture for mass consumption from a commercial perspective. It has been proven to be an effective vehicle in attracting tourists to a destination while boosting its economic growth (Lee & Bai, 2012).

We are living in a globalised world which generates thoughts and ideas, real or false, associated with products and have an impact on values and local culture. Popular culture, the culture of society, is also subjected to changes. Popular culture is determined by daily interactions, needs and desires. In many countries, the local culture has faded and has been replaced by a kind of culture spread by the mass media and through globalisation.

The popular culture is in large part is influenced by industries that disseminate cultural materials, for example, the film, television, and publishing industries as well as the news media (Hosseini Hossein, "Popular Culture in Asia: Globalization, Regionalization, and Localization"). These new changes have had various impacts on all aspects of people's life. Mass culture is seen by many as inferior to high culture. Such aspects of culture are a product of industrial societies. Popular culture involves mass-produced, standardised and short-lived products, sometimes of trivial content, and seen by some as of no lasting 'artistic' value, largely concerned with making money for big corporations, especially the mass media.

Purchase Decision

The theory of purchasing behaviour is an integration of experiences that occur in a wide scope of social, psychological, and the influence of marketing in consumer purchasing decisions through a process of information search. Purchase decision is a situation when consumers select the option they like best, after they have evaluated possible alternatives (Lovelock & Wirtz, 2011). According to Schiffman and Kanuk (2007), a decision is the selection of an option from two or more alternative choices. Kotler (2000) defined purchase decision as a problem-solving process that consists of analysing the needs and desires or recognition, information search, appraisal sources of the selection of an alternative purchase, purchasing decisions, and behaviour after purchase.

Brand image in relation to consumer behaviour and purchase behaviour has been studied by researchers and marketing scholars. Brand image of a product greatly affects the perception and evaluation of its attributes (Chattopadhyay & Basu, 1990; Ha et al., 2009); it is also influenced by consumer impression of the brand image.

Purchasing decision entails five steps (Kotler, 2000): First, Initiator - the first person to realise his or her needs are unmet and proposes the idea to buy a particular good or service. Second, Influencer - the person who gives the views, advice or opinions that can help with the purchasing decision. Third, Decider - the person who determines the purchase decision, namely what to buy, how to buy, or where to buy it. Fourth, Buyer - the person who makes the actual purchase. Fifth, Users - people who consume or use goods or services that have been purchased.

RESEARCH METHODOLOGY

This applied research used quantitative data as primary data to study the popularity of the Lioele cosmetic brand. Path analysis was used to analyse data using SPSS (Statistical Product and Service Solutions) to find out the effect of popular culture in mediating brand identity on purchase decision and the influence of product perceived quality on purchase decision.

RESULT

The results of this research show that customer's assessment of Product Perceived Quality, Brand Identity, Popular Culture and Purchase Decision is good. The following were analysed: The influence of Product Perceived Quality on Purchase Decision, the influence of Brand Identity on Popular Culture and the impact on Purchase Decision of Lioele brand (PT. Intersa).

Product Perceived Quality (X₁) significantly influences Purchase Decision (Z)

Based on the results of this research, Product Perceived Quality has 0.741 direct contributions to Purchase Decision. Hence, the influence of Product Perceived Quality on Purchase Decision is $0,741^2 \times 100\% =$ 54,91% while the rest is influenced by other variables not discussed in this research. This indicates that Product Perceived Quality can increase the Purchase Decision of Lioele (PT. Intersa). The question: "I believe that Lioele products that original from South Korea has a good quality" has the highest score item. The results are similar to the question on Purchase Decision: Lioele's products give solution to my beauty problem" which also has the highest score item. It shows that the country of origin of the product affects customer perception about the quality of the product so that the customers believe it provides solution for their beauty problem.

Brand Identity (X₂) has significant influence on Purchase Decision (Z)

Based on the results of this research, Brand Identity has 0.792 direct contributions to Purchase Decision. Hence, the influence of Brand Identity on Purchase Decision is $0,792^2$ x 100% = 62,73% while the rest is influenced by other variables not discussed in this research. This indicates that the Brand Identity can increase the Purchase Decision of Lioele (PT. Intersa). The question: "I feel like a princess when using Lioele's product" received favourable response. Customers use this brand to bring out their true beauty. The results are similar to the Purchase Decision question:"Lioele's products give solution to my beauty problem". Princess is a symbol of beauty and customers' purchase Lioele because it makes them feel like a princess when using its product and at the same time provides solution for their beauty problems.

Product Perceived Quality (X₁) and Brand Identity (X₂) have significant influence on Purchase Decision

Based on the value of R Square 0,670 means Product Perceived Quality together with Brand Identity has 0,670 (67,0%) influence on Purchase Decision (Z) and the rest is influenced by other variables not discussed in this research.

Customers use make up as a solution to their beauty problems and hence they choose a cosmetic brand that is suitable with the skin colour and brings out their true beauty.

Brand Identity (X₂) has significant influence on Popular Culture (Y)

Based on the results of this research, the contribution of Brand Identity proportional to Popular Culture is 0.629. Hence, the influence of Brand Identity on Popular Culture is $0,629^2 \times 100\% = 39,56\%$ and the rest is influenced by other variables not discussed in this research. The question on Brand Identity: "Lioele's product symbolises South Korean culture" means when using Lioele's product, customers are truly adorning the Korean style.

This is similar to the question on Popular Culture: "Korean wave affects my view about cosmetic product". Lioele as a brand symbolises the culture of South Korean that can affect customer view of the cosmetic product.

Popular Culture (Y) has significant influence on Purchase Decision (Z)

Based on the result of this research, the contribution of popular Culture proportional

to Purchase Decision is 0,186. Hence, the influence of Popular Culture on Purchase Decision is 0,186² x 100%= 3,46% while the rest is influenced by other variables not discussed in this research. This indicates that popular culture has a positive influence on the Purchase Decision of Lioele (PT. Intersa). The questions: "Korean wave have changed my lifestyle" and "Lioele's product is the most suitable for me", show that customers who were affected by Korean wave will follow the Korean lifestyle and that includes purchasing Korean cosmetics that are suitable for them.

Brand Identity (X₂) has significant influence on Purchase Decision (Z) mediated by Popular Culture (Y)

Based on the results of this research, the total contribution of Brand Identity on Purchase Decision mediated by Popular Culture is 0.709. Hence, the influence of Brand Identity on Purchase Decision mediated by Popular Culture is $0,709^2 \times 100\% = 50,27\%$ and the rest is influenced by other variables not discussed this research. This indicates that the Brand Identity mediated by Popular Culture can increase the Purchase Decision of Lioele (PT. Intersa).

CONCLUSION AND RECOMMENDATION

Based on the above analysis, it can be concluded that:

1. Product perceived Quality has influence on Purchase Decision. Both variables have a significant positive correlation coefficient, where it has a strong and direct correlation between the variables.

- 2. Brand Identity influence Purchase Decision. Both variables have a significant positive correlation coefficient, where it has a very strong and direct correlation between the variables.
- 3. Product Perceived Quality and Brand Identity simultaneously influences Purchase Decision.
- 4. Brand Identity influences Popular Culture. Both variables have a significant positive correlation coefficient, where it has a strong and direct correlation between the variables.
- Popular Culture influences Purchase Decision. Both variables have a significant positive correlation coefficient, where it has a strong and direct correlation between the variables.
- 6. Popular Culture has significant influence in mediating Brand Identity on Purchase Decision.

The following are recommendations for Lioele (PT. Intersa) to increase customer purchase decision through product perceived quality, brand identity and popular culture:

1. Lioele can develop different product colours; for some customers, the existing colour is not suitable for their skin tone.

There is a different skin tone between Koreans and Indonesians. Different colours for BB cream product will be helpful since it is used as foundation make up for a natural look.

2. Since *Korean Wave* influences people to purchase Korean products, Lioele can launch programmes related to K-pop to promote its brands. It is natural for Korean *Wave* to lose its popularity sooner or later and thus r, Lioele must begin now to focus on building its Brand Identity that customers can associate with.

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Effect of the 2014 Election Campaign Material in Increasing Beginner Voters' Knowledge among Students

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ABSTRACT

Campaign is a socialisation programme to deliver relevant knowledge, ideas, vision, mission and programmes of political work by individuals or political organisations with the goal to change attitudes and behaviour of voters. Similarly, programmes or activities of a political campaign are also aimed at influencing students who have reached the voting age to elect the president of Indonesia in 2014. This study carried out a context-based investigation into how political campaign material influences student voters in Third Grade Senior High School students at Bekasi West Java, Indonesia. The purpose of this study was to determine the influence of political campaign material on high school voters. This Experimental Design research consists of an experimental group and a control group. Findings indicate that there are significant effects of political campaign material on the beginner voters. Results showed that the mean scores of Experimental Group (86) was higher than Control Group (78.6), or $\mathbf{t_n}$ is higher than $\mathbf{t_t}$ ($\mathbf{t_n} = 2.074$ and $\mathbf{t_t} = 2.021$).

Keywords: Communication, Political Campaign, Campaign Material, Socialisation, Beginner Voters' Knowledge, Students, General Election

INTRODUCTION

Political campaign programme is the delivery of knowledge associated with vision, mission, work programmes, and even political ideologies by certain individuals or political institutions. Political campaign aimed at the constituents include beginner voters such

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E-mail addresses: solatun@binus.edu (Sayuti, S.D.), maras@binus.edu (Aras, M.) * Corresponding author as senior high school students and equal (former high school senior) to improve their knowledge on their right as citizens to choose the right candidates for the House of Representatives and the regent, mayor, governor, and president (Afnaniyati, 2011). Political campaign is a form of political communication which is organised at a certain time. Political campaigns can be carried out by a person or group of people or a political organisation to gain political support from the people. It is one of the agenda in the general elections, local elections and presidential elections which have its own rules in which there is a schedule, procedures, supervision and sanctions in case of violation (Arifin, 2003; 2011, p.152-153).

Political campaigns can be a positive campaign or negative campaign (Suhartono, 2009). Positive campaign is the activity of conveying the vision, mission, and effective programmes to society such as socialisation and knowledge related to the vision, mission, and the work programme which is carried out based on government legislation. Negative campaign is often referred to as an activity that deviates from its actual mission or is prohibited, also known as a black campaign. Black campaign aims to agitate,, is inflammatory, abusive, libellous, pitting one against the other or spreading false news related to a group of people, organisations or political institutions with the aim of weakening one's political opponents (Almond et al., 1960).

This study examines at the presidential election campaign of 2014 and discusses the campaign rules as stated in Law No. 10 Year 2008 on General Election of President and Vice President. Article 41 of the Law No. 10 Year 2008 mentioned activities which are prohibited in the campaign, as well as prohibitions relating to black campaign, namely (1) insulting one's religion, ethnicity, race, class, candidate and / or the spouse of another candidate; and (2) and pitting one against other individual or communities (Pahmi, 2010). With regards to black campaign, Article 214 states that "those who deliberately violate the prohibition of the campaign shall be punished with imprisonment of minimum 6 months and maximum 24 months and a fine of at least Rp. 6,000,000.00 and maximum Rp. 24,000,000.00 ".

Based on the above, the research questions of this study are: (1) Can political campaign materials increase the beginner elector's knowledge of the general election? and (2) Is there any significant difference between the students who are taught using the materials of political campaign and those who are not taught using the materials of political campaign? Therefore, the objectives of this research are: (1) To find out if the materials of political campaign can increase the beginner elector's knowledge of the general election or not, and (2) To find out the difference between students taught using the materials of political campaign and those who are not taught using the materials of political campaign.

RESEARCH METHODOLOGY

The sample population of this study was third year students of X Senior High School at Bekasi, West Java Indonesia . Random sampling technique was used, namely Social Class, which consists of 50 students from two classes. The design used in this research is the experimental design as follows:

Table 1 Experimental Design

Randomly	Pretest	Treatment	Post-test
Experimental Group	O ₁	X ₁	O ₂
Control Group	O_1	X_2	O_2

From the experimental design above, subjects are divided into two groups: experimental group and control group. The experimental group consist of students taught using campaign material). The treatment (X) was expected to influence the dependence variable (Y). To know how the treatment (X) influenced (Y), a pretest (T_1e) was given to the subject, and after the experiment ended, a post-test (T_2e) was given by subtracting the result of T₁e to get D_e' which will show how effective the campaign materials has been in increasing knowledge of the third year students of X Senior High School at Bekasi West Java Indonesia. This research has two variables, namely independent variable and dependent variable. The independent variable consists of political campaign materials and verbal explanation, and the dependent variable is the students' mastery of the political campaign materials.

Independent variable is the classroom presentation of materials of political campaign. The students compete to teach the goal of the materials and are appreciated. The goal here is to obtain as much knowledge of the political campaign materials as possible. A dependent variable is the students' mastery of campaign materials or the treatments. The students' knowledge of the materials relate to their achievement through post-test after learning the political campaign materials.

Data were collected through two kinds of tests, namely pretest and post-test, consisting of 40 multiple choice questions on the political campaign materials.

The pretest was aimed at finding out the students' achievement in vocabulary before being given the treatment (Training for improvement) they were given the campaign materials while the post-test was to find out the students' vocabulary strength after being given the political campaign materials.

After collecting pretest data on the achievements of both groups, the author taught campaign materials to both groups. The experimental group was given the campaign materials while the control group received none.

The data collection procedure is described below:

- Pretest: The pretest questions were also asked on 14th April 2014 to both the experimental group and control group successively. They were given 60 minutes to answer the questions.
- Treatment. The first treatment for the experimental group was conducted on 17th April 2014. The first treatment for the control group was also conducted on 17th April 2014. The second treatment for experimental group was conducted on 19th April 2014. The second treatment for the control group

was also conducted on 19th April 2014. The third treatment for the experimental group was conducted on 21st April 2014. The third treatment for the control group was also conducted on 21st April 2014.

 Post-test. The post-test questions were asked on 23rd April 2014 to both the experimental group and the control group successively and they were allocated 60 minutes to answer the questions.

Data from the two tests were analysed quantitatively. Statistical calculation was used to support or reject the hypothesis. The following procedures were adopted in the quantitative analysis:

- 1. Tabulating the scores of both the given tests.
- 2. Measuring the mean of each test by using the formula:

$$M = \Sigma \frac{X}{N}$$

The result will be MT_1 = The mean scores for pre-test and MT_2 = The mean scores for the post-test.

3. Subtracting MT₁ from MT₂ by using the following formula:

 $DE = MT_{1e}$ for experimental group $DC = MT_{2c}$ for control group 4. To know the significance of the difference between the two means, they were analysed through statistical calculation (Hadi, 1988, p.268): $t = (Mx - MY)/\sigma_{DM}$

Where $\sigma_{bM} = \sigma^2 M_1 + \sigma^2 M_2$

RESULTS

Pretest and post-test instruments were used in this research. Before the experiment began, the pretest or T_1 was conducted to both groups to discover the students' knowledge of political campaign materials in General Election 2014; the scores were (X_{1C} =1850 and X_{1E} =1749).

The post-test or T_2 was conducted among students in the experimental group and control group after the political campaign materials had been taught to both groups - control group through ordinary teaching and experimental group through political campaign materials delivery. The scores were (X_{2c} =1965 and X_{2E} =2150).

To apply the statistical calculation of the pretest (T_1e) and post-test (T_2e) of the experimental group, the scores (X_{1C} =1749 and X_{2E} =2150). The mean scores of the T_1E was obtained by dividing the total of all the T_1E scores (1749) with the number of subjects (25) which equals 69,96. Similarly, the mean of the T_2 was calculated by dividing the total of all the T_2E scores (2150) by the number of subjects (25), which was equal to 86.

The progress made by the experimental group is seen in the difference between the

two means (D_E) that is, by subtracting the mean of MT₁E from MT₂E:

$$DE = MT_2E - MT_1E$$

= 86 - 69.96 = 16.04

To compare the two groups the scores of control group found in pretest (T₁C) and post-test (T₂C) were tabulated, X_{2C} =1965 and X_{2E} =2150).

To find out the mean scores for the control group in the pretest (T_1C) and posttest (T_2C) the same formula was used as for the experimental group.

$$MT_1C = X/N = 1850/25 = 74;$$

 $MT_2C = 1966/25 = 78.64$

The result of the post-test (T_2C) showed some progress which can be seen from the difference between the mean of T_2C and the mean of T_2C in the following calculation:

$$DC = MT_2C - MT_1C = 78.64 - 74 = 4.64$$

After obtaining the mean difference between the experimental group (D_E) and the control group (D_C) in the pre test and post test scores it was found that the difference for Experimental Group (D_E 16.04) was higher than the Control Group (D_C 4.64), namely 11.4.

To test the significance of the mean difference between correlated samples, such as those used in this experiment, the author used the long T-Formula as discussed in the methodology. 1. First, we have to find out the SD_{bM} or the value of:

 $SD_{bM} = SD^2M^X + SD^2M^Y$

- To calculate SD_{bM}, we have to find the value of SD²M^Y and SD²M^Y as shown below:
 - a. The value of mean group X and group Y
 MX = Fx/N = 2150/25= 86; My = Fy/N = 1965/25= 78.6
 - b. The value σ^2 of group X and group Y $\sigma^2_{MX} = Fx^2/N = 144$; Likewise $\sigma^2_{My} = Fy2/N = 161.44$
 - c. The value of σ of mean group X and group Y

 $\sigma_{Mx} = \sigma^2_{MX} / (N-1) = 6;$ $\sigma_{My} = \sigma^2_{My} / (N-1) = 6.73$

d. The difference errors of mean value of group X and Y.

 $\sigma_{\rm bM} = 3.5679$

e. The degree of freedom (d.f) $d.f = (N_x + N_y) - 2 = 25 + 25 - 2 = 48$

3. The value of
$$t = \frac{Mx - My}{SD_{bM}}$$

Where
$$M_x = F_x/N = 86$$
; $My = 78.6$
Finally, $t = (86 - 78.6)/3.5679 = 2.0740$

The final analysis shows t = 2.0740. From the "t" value 2.021, it can be seen that the degree of freedom d.b = Nx + Ny - 2 (25 + 25 -2 = 48) was 2.021. The value of "t" (2.0740) was rejected by using the level of significance 0.05, where 't_n' is higher than 't_t' (2.074 > 2.021).

DISCUSSION

This experiment was conducted to discover if political campaign materials can increase student (beginner voter) knowledge of the general election in Indonesia. Is there any significant difference between students that were taught the materials of political campaign and those who were not? This research question was aimed at finding if teaching campaign materials yielded better or worse result than ordinary teaching $(H_a:X_e = X_c)$. The research hypothesis is as follows: Materials of political campaign can increase the students' knowledge of the general election, and there is no significant difference between the students taught using materials of political campaign and those who are not taught using political campaign materials".

Based on the scores of experimental group, T_{1E} and T_{2E} (X_{1C} =1749 and X_{2E} =2150), data indicated that the scores of T_{1E} was 1749, so the mean of T_{1E} was 69.96 and the scores of T_{2E} was 2150, so the mean of T_{2E} was 86. This indicated that the

materials of political campaign can increase student knowledge of general election and has an influence over them.

The scores of the control group in their T_{1C} and T_{2C} was (X_{1C}=1850 and X_{2C}=1965), indicating that the score of T_{1C} was 1850, so the mean of T_{1C} was 74. This showed that the materials of political campaign can increase the students' knowledge of the general election. After teaching the materials, they were tested (post-test). The score of T_{2C} was 1965, so the mean score of T_{2C} was 78.6. The results indicated that both the Experimental Group and Control Group made better progress after being taught the same period of time by using the same materials but by using different teaching techniques. The mean difference of the experimental group was (86) which was higher than the control group (78.6), and the difference was 7.36. The fact that DE was higher than DC showed that the experimental group yielded better result than the control group. It means that delivery of political campaign materials was better than the ordinary teaching in the class.

Furthermore, to know whether the differences were significant or not, final analysis by using t - test formula showed that t was 2.0740. By looking at the table t value (2.021), it can be seen that the degree of freedom d.b = Nx + Ny - 2 = 25 + 25 - 2 = 48 was 2.021. The value of t (2.0740) was rejected by using the level of significance 0.5, where t_n is higher than t_t (2.0740 > 2.021). The differences between the two teaching techniques were significant.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the findings above, below are some conclusions that can be drawn from this research experiment:

- The political campaign materials related to the General Election yielded better results than that of ordinary socialisation for beginner elector in the case of the third year students of X Senior High School in school at Bekasi West Java Indonesia. Data showed that the mean score of Experimental Group (86) was higher than Control Group (78.6).
- 2. There was a significant difference in terms of knowledge of the general election between those that were taught the political campaign materials and those who were not. Data showed that \mathbf{t}_n is higher than \mathbf{t}_t ($\mathbf{t}_n = 2.074$ and $\mathbf{t}_t = 2.021$).

RECOMMENDATION

Below are some suggestions as to how student knowledge of the general election can be improved:

 Materials related to political campaigns should be taught to third year students as a beginner elector in a General Election in order to increase their knowledge of political campaigns and political issues. 2. Every Senior High School must be socialised in the political campaign material so that they become an informed beginner elector in the general election.

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Measuring Employee Readiness for Knowledge Management in PT. Mineral Indonesia

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ABSTRACT

This research aims to measure the readiness of employees for the implementation of knowledge management in order to achieve the support and readiness stage of employees of PT. Mineral head office. This research is a descriptive study using quantitative data analysis. The authors distributed questionnaires to all employees at PT. Mineral's head office; 183 questionnaires were returned from the respondents for analysis. The analytical technique of the Structural Equation Model (SEM) is used to determine whether models and indicators are correct and to enable the measurement of the readiness of the employees. Confirmatory Factor Analysis (CFA) first order and second order were constructed using the statistical software, SPSS and AMOS. The variable of employee readiness comprised socialisation, externalisation, combination and internalisation (SECI process, in short). The result shows that PT. Mineral employees are highly ready to implement knowledge management. This means that employees of PT. Mineral are willing to encourage knowledge management activities. Based on the results of the study, to achieve the readiness stage, PT. Mineral should consider reviewing their programmes based on the SECI model.

Keywords: Employee readiness, knowledge management, SECI model

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INTRODUCTION

The business environment is growing rapidly. This is caused by economic growth, technological advancements of the digital age and the development of science. For many companies, the rapid advancement of technology has resulted in the incessant struggle to maintain a competitive advantage

(Rasula et al., 2012). Thus, businesses need to move, work and adapt quickly in order to manage the intangible assets that generate competitive advantage (Rai, 2011; Lai & Lin, 2012). Knowledge as a competitive advantage of a company cannot be seen and quantified. Knowledge is notional, intangible, inferred and to some extent, subjective (Dearnaley, 2013). One of the most strategic measures to sustain competitive advantage is knowledge. Knowledge is widely recognised as a strategic asset in improving organisational performance. Even though some intellectual capital are transferable, internal knowledge is not easily copied because knowledge is anchored in peoples' (employees') mind. It is obvious that knowledge is slowly becoming the most important factor of production, next to labor, land and capital (Rasula et al., 2012).

Knowledge is neither data nor information, though it is related to both, and the difference between these terms is often a matter of degree (Davenport & Prusak, 1999). We will start with these terms because they are more familiar. Knowing the difference between data, information and knowledge can also help us better understand knowledge. Karadsheh et al. (2009) described data as a set of facts, while information they represented as categorised, reviewed and scrutinised data. Knowledge is the result of merging information with practice, perspective and expression, resulting in insinuation and plans for decision-making. Knowledge is what employees know about one another, their

customers, products, processes, mistakes and successes whether the knowledge is tacit or explicit (O'Dell & Hubert, 2011). According to Rai (2011), knowledge is contained in the minds of organisational members, and they are the greatest organisational resources. Many practitioners and researchers in the field of knowledge management argue that there are two forms of knowledge: explicit knowledge and tacit (implicit) knowledge. Ikujiro Nonaka and Hirotaka Takeuchi agreed with Michael Polanyi that knowledge consists of tacit and explicit knowledge (Mooradian, 2005). The concept of tacit knowledge as it appears in the literature is vague and ambiguous because it is active in the mind but not consciously accessed in the moment of knowing (Mooradian, 2005). Tacit knowledge is embedded in people, meaning that the concept of tacit knowledge is at the centre of knowledge management (Mooradian, 2005). Tacit knowledge is like an iceberg; only 10% of it is visible above water, while the other 90% remains hidden under the water (Bhardwaj & Monin, 2006). Researchers Bhardwaj and Monin (2006) found that tacit knowledge seemed to be a major concern for human resource professionals in knowledge-intensive organisations as it has a significant role in shaping the knowledge base of an organisation by providing a means of interaction between the important subsystems of the organisation. Explicit knowledge is tangible knowledge, usually available in written form, and easily accessible to anyone who needs it. Explicit knowledge enables, causes or somehow brings about focal knowing (Mooradian, 2005). The difference between tacit and explicit knowledge is that tacit knowledge is harder to formalise, codify or communicate, whereas explicit knowledge is codified, systematic knowledge that can be transmitted in formal language.

Change is a transformational process from the current situation to the next situation. In order for change to become accepted by people, an organisation should manage the change itself. Change has become both pervasive and persistent (Bouckenooghe & Devos, 2009). There are several key barriers to change: changing mindsets and attitudes (58%), corporate culture (49%) and underestimating project complexity (35%) (Jorgensen et al., 2009). Bouckenooghe and Devos (2009) found a strong consensus between the salient role of internal circumstances under which change occurs, the process of how change is dealt with and the level of readiness for change in understanding the processes that lead to successful change implementation. Managing change allows for employee readiness for change. When readiness for change exists, the organisation is primed to embrace change and resistance is reduced (Bouckenooghe & Devos, 2009). Megani (2012) described three dimensions of employee readiness for change: 'Participating' as involved members in the implementation of the process of change; 'Promoting' change as members of the organisation to colleagues; and resisting rejection of change. Readiness for the implementation of knowledge management

can be seen from the open attitude and high enthusiasm of employees to be involved in the process of knowledge management (Karim et al., 2012). In other words, a person who indicates his/her intention to be involved in knowledge management processes is likely to perform the actual activities involving the socialisation, externalisation, combination and internalisation processes (Karim et al., 2012).

In order to create awareness, knowledge sharing and continuous learning, which is the required standards competency, in 2013 PT. Mineral took various efforts to improve their programme and knowledge management system. To realise the vision of their human resources in 2015, the human resources director of PT. Mineral, Achmad Ardianto, explained that one of the strategic activities of the Directorate of Human Resources in 2013 was focussed on creating a culture of knowledge management in the readiness stage. Based on PT. Mineral's traffic data portal, the readiness stage in terms of human resources has not been realised. In order to realise the target (knowledge management in readiness stage in the year 2013) that was delayed, evaluation of the readiness of employees for the implementation of knowledge management based on socialisation, externalisation, combination and internalisation processes was required.

METHODOLOGY

This research adopteed theory that was used in previous research. The objective of this research was focussed on evaluating employee readiness of employees at the head office of PT. Minerals through the process of knowledge management. High intensity involvement of employees in the process of socialisation, externalisation, combination and internalisation indicated that the employees were ready for the implementation of knowledge management (Karim et al., 2012).

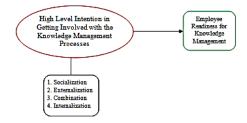


Figure 1: The research model

Based on the research model and relevant theory, the authors formulated two research questions, as given below:

- What is the state of employee readiness of employees at the head office of PT. Mineral for the implementation of knowledge management?
- 2. Are the processes of socialisation, externalisation, combination and internalisation able to measure employee readiness of employees at the head office of PT. Mineral for implementation of knowledge management?

This research was conducted in the head office of PT. Mineral, involving a total number of 241 employees (all the employees at the head office was included in the research population). The authors distributed questionnaires to all the employees. The questionnaire consisted of 24 questions from four sub-variables, with questions on socialisation (7 questions), externalisation (5 questions), combination (6 questions) and internalisation (6 questions). Some 183 questionnaires were processed. This research required data related to the topic of discussion, that is, readiness of employees to change and knowledge management. The data used in this study were primary data and secondary data. The authors obtained primary data through interviews and the questionnaire, while secondary data were obtained from the literature on the topic, previous research findings and the company's internal data.

Two methods of analysis were used in this research, namely, the descriptive and structural equation models. In this research, the author used descriptive analysis to transform data into concise information for convenience. Measurements were taken using a questionnaire to determine the readiness of employees for the implementation of knowledge management.

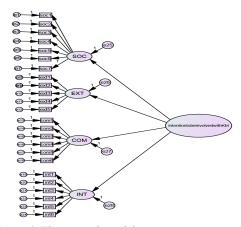


Figure 2: The research model

Each questionnaire was ranked by a 4-point Likert scale (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree). The authors eliminated the 'neutral' option to prevent the accumulation of data centred on the 'neutral' answer. The authors used the AMOS software to analyse the structural equation models. The results showed that the models, based on the eight criteria of goodness-of-fit, were fit models, meaning that the indicators could be used to measure the variables.

RESULTS

Based on the results of the factor analysis of the first-order construct, where 24 items were used as indicators, only nine items were considered to be the most representative indicators; these measured the socialisation, externalisation, combination and internalisation processes.

Structural Equation Model Analysis Result

Figure 3 is a summary of the secondorder factor analysis model. Table 1 summarises the goodness-of-fit criteria used in this study. It can be concluded that the socialisation, externalisation, combination and internalisation processes are proper dimensions to measure the readiness of employees for the implementation of knowledge management at PT. Mineral. Karim et al. (2012) argued that the model is considered to have discriminant validity if the factor loading indicates a value of at least 0.6. The figure shows that factor loading on each sub-variable indicates a value >0.6 (socialisation 1.0; externalisation 1.2; combination 0.9; internalisation 0.64).

Based on the factor loading that indicated the value >0.6, the processes of socialisation, externalisation, combination

Table 1The Result of Goodness of Fit

No	Statistic	Criteria of 'fit'	Value	Category
1	CMIN	Among CMIN saturated model and CMIN independence model	9.031	Fit
2	GFI	> 0.9	0.988	Fit
3	AGFI	> 0.9	0.968	Fit
4	RMR	It is better when the result approaches 0	0.001	Fit
5	NFI	> 0.9	0.981	Fit
6	CFI	> 0.9	1	Fit
7	IFI	> 0.9	1.017	Fit
8	RFI	> 0.9	0.961	Fit
9	RSMEA	<0.08	0	Fit

and internalisation can be said to have contributed to the readiness of employees for the implementation of knowledge management. The factor-loading value shows that the externalisation process had the highest score, at 1.2. The process of externalisation represented by item 8 as 'willing to engage in discussions with coworkers', item 11 as 'willing to exchange ideas with colleagues' and item 12 as 'willing to give a personal opinion when in dialogue' are rated as sub-variables that contributed the highest to the readiness of employees for the implementation of knowledge management.

DISCUSSION AND CONCLUSION

Employees based in PT. Mineral's head office had high readiness in the implementation of knowledge management as measured from the processes of socialisation, externalisation, combination and internalisation. This argument, proved by descriptive analysis, showed an average value of 3.20, in the high category, while the results of the structural equation model

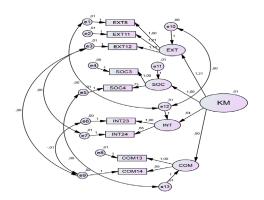


Figure 3: Second order factor analysis model

analysis revealed that there were nine items considered the most representative dimensions in the SECI process. This means that employees based in the head office PT. Mineral were willing to engage in knowledge management activities.

The processes of socialisation, externalisation, combination and internalisation are dimensions that can be used to measure the readiness of employees based in the PT. Mineral head office for the implementation of knowledge management. This is concluded by the results of the structural equation model analysis on the second-order construct or goodness-of-fit test. Moreover, the factor-loading value of each dimension showed a score of >0.6, meaning that all the criteria of the goodnessof-fit models tested were qualified criteria (Sugiyono, 2013b).

In order to facilitate the achievement of the readiness stage, the authors suggest that PT. Mineral should focus on activities that are considered the most representative of the socialisation, externalisation, combination and internalisation processes, such as:

- Conducting the process of socialisation through coffee-break activities, for example, in the middle of the working day every week for each division, with varying discussion topics
- 2. Conducting the externalisation process through the establishment of activities such as providing brief information on a bulletin board in the lifts.

- Conducting the combination process such as providing extracts of reports on a bulletin board in each workspace.
- 4. Conducting the internalisation process such as providing a bulletin board in suitable places (such as lifts and the workspace of each division) in order to create awareness among employees of the implementation of knowledge management.

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Impact of Website Design, Trust, and Internet Skill on the Behaviour Use of Site Internet Banking in Bandung Raya: A Modification of the Utaut Model

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ABSTRACT

This study aims to determine the effect of expectancy effort, social influence, performance expectancy, website design, experience, Internet banking and Internet usage skill in the use of Internet banking in Bandung Raya, Indonesia. Partial Least Square was used to examine the model used in this study. The results show that expectancy effort does not have a significant effect on performance expectancy in the use of Internet banking, social influences do not have a significant effect on performance expectancy in the use of Internet banking but performance expectancy has a significant effect on effort expectancy and social influences in the use of Internet banking. Website design has a significant influence on the behaviour of Internet banking websites. Website design has a significant impact on the use of Internet banking through mediation of performance expectancy. Prior experience has a significant influence performance against expectancy in the use of Internet banking. Prior experience has a significant effect on website design in the use of Internet banking. Internet banking. Prior experience has a significant effect on website design in the use of Internet banking. Internet banking.

Keywords: Website design, Internet banking, PLS (Partial Least Square), UTAUT, Internet skill

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INTRODUCTION

Every innovation in Indonesia's banking world is supported by users and today, this certainly includes the many internet and mobile phone users as well. Retail financial services are a widely studied area of technological transformation. The Internet has sparked an IT-based revolution in the financial services sector that has radically altered the way banking services are delivered. This development, referred to as Internet banking (IB), has enabled busy people to complete their financial activities in a cost-effective and efficient manner at any time of the day, regardless of their physical location (Makris et al., 2009). This use of the Internet in financial services and banking, referred to as Internet banking (IB), has also allowed bank customers to engage in a vast array of financial services such as paying bills, checking account information, transferring funds and utilising investment and check services through bank websites (Tan & Teo, 2000). Nowadays, the banking industry must provide added value in their services in order to survive.

There have also been benefits for the financial institutions. Banks spend a great deal of money on IB because it reduces cost relative to other forms of banking and provides more timely and complete customer information (Gerrard & Cunningham, 2003). It also increases service quality ,which is necessary for survival in competitive markets (Rouibah et al., 2009).

Financial service providers must aim to have a comprehensive understanding of how their customers feel about this technology (Lassar et al., 2005). An important factor that influences customer adoption and use of IB is their attitude towards the technology. By identifying the expectations and wants of customers, and understanding their motivations for adopting (or not adopting) IB, bank managers and policy-makers can develop strategies to improve the adoption of such technology (Hanafizadeh et al., 2014).

Indonesian Banking Overview

The banking industry in Indonesia today is dominated by a few large banks such as Bank Mandiri, BCA and BRI. Table 1 shows the amount of assets owned by banks in Indonesia compared to total assets of national banks. Note that the 10 largest banks in Indonesia have a shared 61.64% of the total banking assets in Indonesia.

Table 1Ten Biggest Banks di Indonesia (in Million rupiah)

Bank Name	Total Assets (Million)	% Accumulative	
Bank Mandiri	733,009,762	22.58%	
BRI	626,182,926	41.86%	
BCA	496,304,573	57.15%	
BNI	386,654,815	69.06%	
CIMB Niaga	218,866,409	75.80%	
Bank Danamon	184,237,348	81.47%	
Bank Permata	165,833,922	86.58%	
Bank Panin	164,055,578	91.63%	
BII	140,546,751	95.96%	
BTN	131,169,730	100.00%	

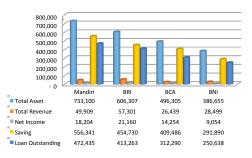


Figure 1: Financial data of the top four banks in Indonesia (in billion rupiah) *Source:* Annual Report of each bank Based on the total net income of the top four banks, BRI is currently ranked first with revenue in the amount of Rp. 57,301 trillion and a net income of Rp.21,160 trillion. Bank Mandiri is ranked second with a large net profit of Rp.18,204 trillion and a total revenue of Rp.49,909 trillion while the total revenue of BCA and Bank BNI is Rp.26,439 trillion and Rp.28,499 trillion, respectively. But in total assets, customer deposits and bank loans are ranked the highest, with total assets of Rp.733,100 trillion, Rp.556,341 trillion in customer deposits and Rp.472,435 trillion in loans granted. BRI Bank ranked second in the amount of Rp.606,370 trillion in total assets, Rp.454,730 trillion in customer deposits and Rp.413,263 trillion in loans. BRI is followed by BCA and BNI, ranked respectively as third and fourth. With total assets amounting to Rp.496,305 trillion, BNI have customer deposits amounting to Rp.386.655 trillion, while Bank BCA has customer deposits

amounting to Rp. 409.486 trillion and Bank BNI has customer deposits amounting to Rp.291,890 trillion. BCA has Rp.312,290 trillion in loans granted while Bank BNI has Rp.250,638 trillion.

Intenet banking services offer many conveniences but most customers in Indonesia are still attached to conventional banking, which includes using ATMs or queueing at bank counters.

Table 2 shows that in 2013, BRI's ATM transactions amounted to 823.2 million rupiah, while its SMS banking transactions amounted to 57.7 million rupiah and its internet banking transactions amounted to 16.1 million rupiah. Similarly, the number of Mandiri's ATM transactions in 2013 amounted to 912 million rupiah, while its SMS banking transactions amounted to 146.9 million rupiah and its Internet banking transactions amounted to 310 million rupiah. BCA's ATM transactions in 2013 amounted to 1461.5 million rupiah, while its SMS

Bank	Year	ATM	SMS Banking	Internet Banking
BRI	2011	482.7	24.3	6.9
	2012	523.9	31.8	9.8
	2013	823.2	57.7	16.1
MANDIRI	2011	695.38	87.69	197.99
	2012	828	120.2	314.6
	2013	912	146.9	310.8
BCA	2011	1004.8	223.6	607.7
	2012	1212.2	308.6	888.4
	2013	1461.5	408.1	895.9
BNI	2011	390.1	53.6	3.7
	2012	483.4	83.9	5.5
	2013	573.4	130.2	8.9

Table 2 Number of ATM, SMS and Internet Banking Transactions in 2013

banking transactions amounted to 408.1 million rupiah and its Internet banking transactions amounted to 895.9 million rupiah. BNI saw 573.4 million rupiah ATM transactions, 130.2 million rupiah SMS banking transactions and 8.9 million rupiah Internet banking transactions made in 2013.

Since the new millennium. Internet banking has been developed in numerous countries. By offering Internet banking services, traditional financial institutions seek to lower operational costs, improve consumer banking services, retain consumers and expand their share of customers. Recent evidence suggests that an Internet-based consumer banking strategy may be more effective and more profitable as well as draw more loyal and committed consumers compared with traditional banking. Thus, contemporary banks now regard the Internet channel as equally important to traditional channels of branches, ATMs, telephone banking and call centres (Gartner, 2003a). In the new banking environment, Internet banking is increasingly managed as an operational activity and is an important component of a multi-channel strategy (Black et al., 2002). There is extensive diffusion of consumers in Internet banking in various countries (Lichtenstein & Williamson, 2006).

RESEARCH QUESTIONS

Attempts to model e-commerce adoption often utililise behavioural models, such as the technology acceptance model (TAM). To model e-commerce adoption, behavioral models, such as TAM, are generally used. But few studies have considered customer acceptance of Internet banking and even fewer have assessed models across the market. Proponents of the theory of reasoned action (TRA) and its derivatives (Fishbein & Ajzen, 1991) and TAM and the theory of planned behaviour (TPB) (Ajzen, 1991), acknowledge the attached limitations that have resulted in proliferation of explanatory variables (Moon & Kim, 2000).

This study sought to investigate factors that influenced Indonesian bank customers' adoption of four major banking channels i.e. branch banking, ATM, telephone banking and internet banking. Specifically, it aimed to focus on the influences of demographic variables and psychological beliefs related to the positive attributes possessed by the channels. This study was aimed at analysing the factors that affected Indonesian bank customers' adoption of four major banking channels i.e. branch banking, ATM, telephone banking and Internet banking. This study looked especially at the demographic variables and psychological beliefs about the positive attributes possessed of the four channels.

The theoretical goals of this research were:

- To contribute to the literature on Internet-banking by exploring and analysing current knowledge on Internet banking;
- 2. To determine some important factors that influence the adoption of Internet banking in Indonesia;

3. To compare the adoption of Internet banking adoption across various strata of the population (cultural) living in both developed and developing countries (Netherlands and Indonesia).

The practical goals of this study were:

- To provide insight into the banking industry to direct the clients to use Internet banking;
- 2. To provide bankers the benefit in assessing their website quality perception by actual users.

The specific research question addressed in this study was:

What impact do Internet skill, trust, prior experience and website quality have on performance expectancy, effort expectancy, social influence and Internet banking usage?

LITERATURE REVIEW

Technology Acceptance Models

According to Anderson (2010), Mobile banking (M-Banking) has the potential to provide simple banking and electronic transaction services for unbanked customers in the development of markets. However, when activating mutual markets, the solutions of M-banking raise questions in the minds of the regulators of the distant communication industry, particularly about the privacy of the communication network. Previous studies have revealed that some users choose to use technology to avoid direct communication with the staff offering those services or with other clients (Meuter et al., 2000). No significant study has been conducted in the area of M-banking and only behavioural aspects and different factors of mobile services have been investigated by researchers in different ways. Nonetheless, a number of researchers have studied behavioral aspects and different factors of mobile services from numerous distinctive points of view. Laforet and Li (2005) investigated the factors affecting the adoption and use of Internet banking in China. They studied the factor of gender and concluded that most users of Internet banking in China are men. Also, security is among the factors affecting the adoption of M-banking, whereas factors such as risk, computer, skills needed to use new technologies and the culture are factors inhibiting the adoption of M-banking in that country.

Hanafizadeh et al. (2014) have attempted to answer the question whether bank customers' awareness of the services and advantages of IB is effective in reducing the negative effect of customers' perceived risk on their intention of IB adoption. The results indicated that IB awareness acts as a factor reducing all dimensions of the perceived risk (including time, financial, performance, social, security and privacy). In addition, they found that except for social risk, other dimensions of the perceived risk have significantly negative effect on the intention of IB adoption. Al-Somali et al. (2009) investigated the acceptance of online banking in Saudi Arabia. The findings of this study refer to the quality of internet connection. The awareness of online banking and its benefit, the social influence and computer self-efficacy have significant effects on the perceived usefulness and perceived ease of use of online banking acceptance. In this study, education, trust and resistance to change also have a significant impact on the attitude towards the likelihood of online banking adoption.

Khalfan et al. (2006) investigated factors influencing the adoption of Internet banking in Oman. The findings of this study showed that the issues of security and data confidentiality were a major barrier in the adoption of Internet banking. Top management support was also an inhibiting factor in the adoption of electronic commerce applications. According to this study, banks in this region were 'quite slow' to launch e-banking services. While they are convinced that online services reduce overheads significantly, a mixture of factors such as customer insecurities, technology investment costs and lack of market-readiness have all conspired to make e-banking 'unattractive'. Nasri and Charfeddine (2012) conducted a study about the factors affecting the adoption of Internet banking in Tunisia. They used the technology acceptance model (TAM) and theory of planned behavior (TPB). Their model employed security and privacy, self-efficacy, government support and technology support, in addition to perceived usefulness, perceived ease of use, attitude, social norm, perceived behaviour control

and intention to use Internet banking. These factors had various effects on Internet banking adoption.

Riquelme and Rios (2010) investigated the moderating effect of gender in the adoption of mobile banking. This study sought to test the factors that can influence adoption of mobile banking among current users of internet banking in Singapore and used gender as a moderating variable. The findings of this study showed that usefulness, social norms and social risk were the factors that influenced the intention to adopt mobile banking services the most. Ease of use had a stronger influence on female respondents than on male respondents, whereas relative advantage had a stronger effect on the perception of usefulness on male respondents. Social norms (or the importance of others in the decision) also influenced adoption more strongly among female respondents than among male respondents. Abdul-Hamid et al. (2007) conducted a comparative analysis of Internet banking in Malaysia and Thailand. The results of this study indicated that both nations were dissimilar in providing basic services offered by their commercial banks. Lack of effort in educating consumers about Internet banking further affected the usability of Internet banking in both countries.

Trust

Trust refers to "an individual's belief of how others will behave based on the individual's expectation" and "an expectation that others one chooses to trust will not behave

opportunistically by taking advantage of the situation" (Gefen et al., 2000a). Grazioli and Jarvenpaa (2000) and Luhmann (1979) (as cited in Gefen et al., 2000a) stated that trust is a people's expectation that others will comply. In online shopping, users feel fearful about transacting with e-vendors whom they cannot see. Hoffman, Novak and Peralta (1999) indicated that the critical obstruction in e-commerce was the fear of the lack of standards for secure payment, the lack of profitable business models and fraudulent use of personal data. Trust helps decrease these fears and facilitate transaction in e-commerce by reducing fraud, uncertainties and potential risks (as cited in Gefen et al., 2000b; Pavlou, 2003).

Many recent research indicate that trust is another key construct of TAM. Most research has found that trust influenced behavioral intention (Gefen & Straub, 2003; Gefen et al., 2003), but trust causality will not take advantage of customers based on the situation (Gefen et al., 2003a).

However the potential of Internet banking remains beneficial to banks and their customers. The primary advantages to banks include cost savings, time savings, achieving new segments of the society, effectiveness of operations, improvement of the bank's status and better customer service and client satisfaction (Alsajjan & Dennis, 2010). Clients of online banking become motivated through trust, which plays an important role in improving the level of the availability of Internet banking in the online environment. In contrast with offline banking, the concept of trust is a vital consideration in online banking as it requires the sharing of essential files and important information.

RESEARCH METHODOLOGY

In this study, the provision of personal services was specified more clearly as the provision of financial services, provision of financial information and provision of professional financial consultation. Clarity of service instructions was added as a separate factor. All in, 11 dimensions were used in this study:

- efficiency of the services delivered by the channel;
- (2) convenience of the location of the channel;
- (3) convenience of the operating time of the channel;
- (4) speed of the service provider/system in delivering services;
- (5) provision of financial services;
- (6) provision of financial information;
- (7) provision of professional financial consultation;
- (8) ease of use;
- (9) clarity of service instructions;
- (10) security of customer information; and
- (11) accuracy of transaction information.

According to the theory of reasoned action (Ajzen, 1991), adoption of a banking channel is positively associated with beliefs

about the extent to which the channel possesses positive attributes. Therefore, we proposed the following hypothesis:

H1. There are positive associations between the adoption of a banking channel and the beliefs about the extent to which the banking channel possesses the 11 specific attributes identified in this study.

Questionnaire

The questionnaire included three sections. The first section was on the beliefs about the banking channels on the 11 attributes identified above. The beliefs about each of the four banking channels with respect to each of the 11 attributes were measured on a 7-point Likert scale. A larger number represented a stronger belief that the channel possessed the attribute in question. The second section examined the extent to which each of the four banking channels was adopted. Four banking services were provided by all four banking channels:

- (1) checking account balances;
- (2) payment of credit card bills;
- (3) payment of bills of telephone services, water, electricity, school fees etc.; and
- (4) transfer of funds among accounts.

For each banking service, the respondent allocated a constant sum of 100 points to the four banking channels to reflect how often the respondent used the four banking channels. The third section recorded demographic information including gender, age, monthly household income, educational level and occupation. It took less than 10 minutes for all of the respondents to complete the questionnaire. If a respondent had not used a particular channel before, the questions pertaining to beliefs about that channel would be treated as having missing values, and the levels of adoption would have a value of zero.

Non-probability sampling was used, where respondents were not given equal opportunity for answering the question. The sampling technique used in this research was purposive sampling. The population in this study was the base of Internet banking customers of Bank Mandiri, BCA, BNI and BRI in Bandung Raya. The sample in this study was 250 respondents. The scale of measurement used a Likert-type scale interval.

The data analysis technique used was PLS (Partial Least Square) to explain the relationship construct and to emphasise the understanding of the value of the relationship. PLS can also be used to describe the relationship between the presence or absence of latent variables. For convergent validity, a development of measurement scale loading value of 0.50 to 0.60 was considered sufficient (Ghozali, 2011). All values in the model with sufficient loading with values ranging from 0.500 to 0.838 can be seen in Appendix 1. The reliability of all the constructs can be seen from the composite realibility and construct validity. The value composite reliability of >0.70 may be taken to mean that the value of the composite reliability was acceptable (Ghozali, 2011).

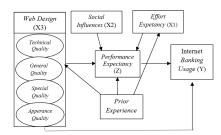


Figure 2: Research model

The current research attempted to answer specific questions pertaining to the relationships among the Unified Theory of Acceptance and Use of Technology (UTAUT) construct: PE, EE, SI and Usage. These constructs, as demonstrated in the conceptual framework, resemble other constructs in the eight models comprising the aggregated model. To a certain extent, the UTAUT constructs are similar to those comprising the TAM model. Hence, the research ddresses the nature of these relations.

UTAUT models used in this study consisted of variable expectancy effort, social influence and website design as an independent variable. Performance expectancy was used as an intervening variable, prior experience as an antecedent variable and Internet banking usage as the dependent variable. Ibrahim and Mustafa (2013) proposed a link between expectancy effort and performance expectancy and also between social influences and performance expectancy. UTAUT is defined as the extent to which an individual believes that using the system will help one in achieving better performance and is similar to models such as perceived usefulness or Technology Acceptance Model TAM (Venkatesh et al, 2003). Effort expectancy UTAUT construction is defined as related to perceived ease of use (PEOU) of the system, such as TAM. TAM shows the influence of external factors on the intention mediated by PEOU and PU (perceived usefulness) (Venkatesh et al., 2003).

Performance expectancy mediates the relationship between business expectations (effort expectancy), social influence (social influences) and Internet banking usage. Aladwani and Palvia (2002) associated dimensions of perceived website quality for the purpose of researching web design variables, where the variable was a substitute for the faciliting condition in the original UTAUT model. Aladwani (2006) stated that website design and its characteristics are a form of technical support for online behaviour and the stipulated quality website design has a considerable impact on the behaviour of individuals or the web. The system design also shows an indirect effect on intention to use through usability and ease of use (Lee & Lin, 2005). Ibrahim and Mustafa (2013) proposed that the elements affect the use of web design mediated by performance expectancy.

Experience was used as an antecedent in previous research. Experience also affects perceived usefulness. Experience in a broad sense means knowledge, and experience here referred to Internet users visiting banking websites and using a variety of value-added services offered by Internet service providers (Nysveen & Pedersen, 2004). Experience in computer use and knowledge of the Internet as an antecedent perception significantly affect the individual's perception of computer use and web technology. According to Van Deursen and Van Dijk (2010), competency of Internet skills is linked to performance expectancy.

Research Design

Sekaran (2003) argued that research design involves a series of rational decisionmaking choices regarding the purpose of the study (exploratory, descriptive, hypothesis testing), its location (the study setting), the type of investigation, the extent of researcher interference, time horizon and the level to which the data will be analysed (unit of analysis). In addition, decisions have to be made regarding the sampling design, how data are to be collected (data collection methods) and how variables will be measured and analysed to test the hypotheses (data analysis). According to Sekaran (2003), the methods are part of the design; thus, she agreed with Bryman and Bell (2007) that methods are meant to describe data collection. This study is based on Sekaran's definition of research design, and the study was conducted for the purpose of testing the hypotheses derived from the conceptual framework presented. It is believed that studies employing hypotheses testing usually tend to explain the nature of certain relationships or establish the differences among groups or the independence of two factors or more in a situation. Hypotheses testing offers an

enhanced understanding of the relationships that exist among variables.

The study's horizon refers to conducting a longitudinal versus cross-sectional study. A cross-sectional study, also called a oneshot study, is done when data are gathered just once over a period of time such as days, weeks or months in order to answer a research question. For a longitudinal study, data are collected more than once (Creswell, 2003). According to De Vaus (2001), longitudinal studies are more feasible when there is a need to describe the pattern and direction of change and stability (at an individual level).

Sampling Technique and Sample Size

The population for this study consisted of individual users of Internet banking services in Indonesia. As technology acceptance research has been criticised for using student samples, which adds limitations to generalisability of findings, this research targetted actual users with no discretionary conditions. A controlled environment where actual behaviour could be measured by electronic observation would have enhanced the generalisability of the findings, but the resources necessary for this option were not available to the researcher. Due to the wide geographical distribution of the samples, it would not have been economical or time-efficient to conduct face-to-face or telephone interviews. Since the base of the consumers was widely spread and in the absence of a sampling frame due to the lack of census or a readily available list of this type of user, this study adopted

the convenience sample approach. Sample size was based on the statistical tool to be used i.e. structural equation modelling technique. Although large samples generally tend to produce more reliable solutions, sample size must be based on the model complexity, expected rate of missing data and the estimation procedures used (Hair et al., 2006). The minimum size of 200 usable responses was the target set for this study, taking into consideration the model complexity and guidelines suggested in past research.

ANALYSIS, FINDINGS AND DISCUSSION

The collection of questionnaires was conducted over one month (May 2015-July 2015). Analysis of the questionnaires revealed that 125 users of Internet banking in Bandung Raya were male while 125 were female. The majority of theInternet users were 21-30 years old and held private jobs. The majority earned an income of Rp.5,000,001-Rp.10,000,000 per month and had a Bachelor's degree.

The structural model given in Figure 3 shows the t-statistic values obtained from the bootstrap test using the programme, SmartPLS 3. The model had a value of R-Square 70.6% for effort expectancy, 46.7% for Internet banking usage, 67.8% for performance expectancy and 25.4% for website design.

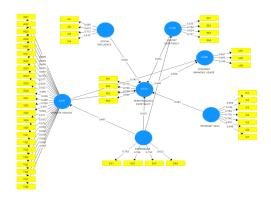


Figure 3: Bootstrap results

The bootstrap results in Figure 3 shows if the effect was significant or not. The constructs had a significant effect when the t-statistic was greater than the t-Table (1.96). The bootstrap results showed that three variables were not significant, namely social influence on performance expectancy, effort expectancy against expectancy performance and Internet skills for performance expectancy.

Performance expectancy (t-statistic=8223) had a significant influence on Internet banking usage. According to Ibrahim and Mustafa (2013), the extent to which an individual believes in using a system is beneficial in achieving performance. In this study, the respondents thought that the use of Internet banking could help to obtain benefits such as speed and convenience. This increased usage behaviour in using Internet banking.

Website design (t-statistic=2.496) had a significant impact, which made it a good substitute technology resource, facilitating the conditions of the UTAUT as in Venkatesh et al. (2003). These results indicated that the respondents chose the quality dimension of website design as a technical quality (TQ) as they felt it was safe, easy to use and accessible. Common quality (GQ) was also believed to be useful and clear. According to Ibrahim and Mustafa (2013), Internet banking must feature useful website qualities such as accessibility, ease of navigation and speed as these are determining factors in the adoption of Internet banking. The perceived benefits of using this substitute technology must also be clear to users. In this study, the respondents thought that the quality of the website design for the banks' website looked safe for them to proceed with Internet banking. They also believed that the websites looked easy to access, offered useful content and that information was clearly visible.

Website design had significant influence on performance expectancy (t-tatistic=3.789); this is the same value obtained by Ibrahim and Mustafa (2013). The results of the study were the same as those obtained by Pikkarainen et al. (2004) i.e. that perceived benefits are the main factor in the acceptance of online banking. In this study, this result can be attributed to the users' agreement that the content of the banks' websites was useful and of good quality. Experience was the most influential variable in this study (t-statistic=22.249). According to Ibrahim and Mustafa (2013), experience develops confidence and leads to ease of use (Venkatesh & Davis, 1996). Experience has a major influence on effort expectancy; as the respondents in this study were actual users, it can be assumed that they had experience in using the Internet banking system. Experience also affects perceived usefulness and whether the user will continue to use it in the future.

Experience also had significant influence on performance expectancy (t-statistic=5.488). According to Ibrahim and Mustafa (2013), mediation of performance expectancy makes it possible to make judgments about the users' gains in improved performance. In this study, it was assumed that the respondents had at least two years' experience in using the Internet, signifying that they probably already believed that using the system would create a beneficial increase in performance.

Experience had a significant influence on website design (t-statistic=8.476), as discovered by Ibrahim and Mustafa (2013) in their research, that user experience of using computers and the Internet would lead to the realisation of the quality of website design in four ways, namely: through technical content, generally, specifically and through the appearance of the site. In this study, the respondents had experience in utilising the banks' websites and they found useful information such as the contact information of the bank (e.g. email addresses and telephone numbers). The experience of the respondents in accessing the Internet on a daily basis can also create trust in banks' websites for transactions.

Effort expectancy did not have a significant effect on performance expectancy (t-statistic=0.602). Sedana and Wijaya (2010) found that the level of convenience associated with the use of a system would affect intention to use the system. This finding was probably due to the relative ease of using Internet banking i.e. the respondents did not consider ease of using Internet banking would affect behaviour to use Internet banking.

Social influence did not have a significant effect on performance expectancy (t-statistic=0.759). The impact of social influence on perceived usefulness tended to not apply or the user may have depended on his own conviction of the opinions of others or they tended to use the system on the basis of direct experience. In this study, the respondents used Internet banking not because of references from other people, but based on their own conviction to use it.

In this study, the Internet skill was not connected with performance expectancy and was an insignificant factor or it had no effect (t-statistic=1.359). According to Van Deursen and Van Dijk (2010), Internet skill (operational and formal) and knowledge related to content obtained from the Internet (information and strategy) are considered necessary for the general public as they are helpful when working in the online environment. In this study, the respondents did not possess the skill of surfing for Internet banking access.

CONCLUSION

Three of the hypotheses suggested in this study were rejected i.e. H1, H2 and H9. Performance expectancy had a significant effect on effort expectancy and social influences in the use of Internet banking. Website design had significant influence on the behaviour of site usage in Internet banking. Website design had a significant impact on the use of Internet banking through mediation of performance expectancy. Prior experience had significant impact on effort expectancy in the use of Internet banking. Prior experience had significant effect on performance expectancy in the use of Internet banking. Prior experience had a significant effect on website design in the use of Internet banking.

This study had limitations, which will be reduced or eliminated altogether in future research into this subject. The first limitation of this study was that it was confined to only one research site, Bandung Raya. Future research into Internet banking can be done in other cities. Second, this study used the UTAUT model that depended on four core determinant variables i.e. performance expectancy, effort expectancy, social influences and faciliting conditions. Ibrahim and Mustafa (2013) suggested to use experience as a variable because it has been proven to be a significant factor in the decision to use Internet banking. Therefore, this research only used experience as a variable. Future research should include other variables such as age, gender and voluntary use in addition to experience.

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Influence of the Use of Brands in a Foreign Language (English) on the Purchase Decision Process of Cosmetic Products Made in Indonesia

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ABSTRACT

Business competition in the marketing world today is getting tougher. It takes the right strategy to be able to attract the attention and interest of consumers. One strategy applied by businesses is to use a foreign language, especially English, in their branding because brand names in the Indonesian language are perceived to be less credible. The purpose of this study was to analyse the influence of brands in English on the purchase-decision process of consumers of cosmetic products made in Indonesia. This was a causal research study using the quantitative approach and it involved 400 respondents in Bandung chosen by convenience sampling. The research model was made of two variables, which were brands in a foreign language (i.e. the attributes of benefits, values, culture, personality and user) and the purchase-decision process. The data collected were processed using path analysis techniques. The results showed that use of the brand in English influenced the purchase-decision process of buying cosmetic products made in Indonesia and only the attributes of benefits, culture, personality and user partially gave influence to the purchase-decision process of consumers of cosmetic products made in Indonesia.

Keywords: Brand, purchase-decision process, cosmetics, path analysis

INTRODUCTION

Free trades lanes have made business competition in Indonesia more intense; many products from cities around the world and of any type are sold in the country. Therefore, it requires the right strategy to attract the attention and interest of consumers to buy local products and

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for local products to remain competitive against products from other countries. The decision to buy consumer-made products is an important aspect for manufacturers in order for their products to dominate the market. It is important for a company to study and understand consumer behaviour in the decision-making process of buying goods. One strategy applied by companies is to use foreign languages, especially English. Kotler and Armstrong (2014) showed that branding in foreign languages or using foreign-language spelling or pronunciation, although it may sound uncommon and be difficult for locals to pronounce, can create a positive association that affects the consumer's assumption of the quality and benefits of the product.

The use of foreign languages in branding sometimes leads to words and phrases that are difficult to pronounce or whose meaning is difficult to understand. This is not in line with the theory that states that branding must meet the criteria of using words and phrases that are easy to say, easily recognisable, memorable or short, different or unique and which illustrate the benefits of the product, have a positive connotation and strengthen the image of the desired product. Currently, the use of the Indonesian language in product branding is still perceived to render the product less credible compared with if it carried a brand in English. In addition, brands in English and brands in the Indonesian language are priced differently, and price does relate to buyer class or cause segmentation. Therefore, many local manufacturers try to raise the prestige of their products by creating brands in English.

With the growing sophistication of multimedia nowadays, anyone can access any information via the Internet. Foreign artistes who have smooth skin inspire many people, especially women, to find out what skin products they use. Everyone wants to be attractive and beautiful, and consumers are usually willing to spend much to look like an artiste.

Beauty product manufacturers usually offer a variety of products including foundation, powder, blusher, eye shadow, lipstick, acne cream, anti-ageing cream, eyebrow pencil, mascara and lip gloss, among others. Beauty products whose brands are in the Indonesian language are usually offered at lower prices while those in English are usually more expensive, such as Revlon, Maybelline and so forth. This has encouraged manufacturers of cosmetic products in Indonesia to use local and foreign brands to attract as many buyers as possible and to ensure that their products do not become inferior to foreign products. Some of these brands include 'Make Over' by Wardah, 'Caring' by Sariayu and PAC ('Professional Artiste Cosmetic') and 'Inez Cosmetic' by Martha Tilaar.

The phenomenon of branding in a foreign language to enhance brand image has become the reason for the researcher to investigate the influence of brands in a foreign language (English) on the purchase decisions of consumers of madein-Indonesia cosmetic products. With this objective, the questions to be answered in this study were determined as the following:

- a. How is the use of brands in a foreign language (English) perceived by respondents?
- b. How is the purchase decisions process of cosmetic products made in Indonesia perceived by respondents?
- c. How great is the influence of the use of brands in a foreign language (English) on the purchase-decision process of consumers of made-in-Indonesia cosmetic products?

LITERATURE REVIEW

Kotler and Keller (2012) defined brand as a name, sign, symbol or design or a combination thereof used by some marketers of products and services to identify and differentiate their products/services from those owned by competitors. Risandi (2011) stated that the use of a brand is intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competitors. Companies use foreign-language brand names to enhance the value of a product. Foreign-language branding is a strategy that uses spelling or pronunciation of a foreign language, intended to enhance the brand image of a product (Aaker, 1991). Brands become important in tight marketplace competition because there is no guarantee for a company to sustain its market position at the top,

even if it does everything right; if other companies do something better, its brand may be in danger of losing out to theirs (Rachmawati, 2009).

The next element is brand knowledge. Consumers should know about the difference between products that carry different brands, should be aware of the difference and should appreciate that the differentiation is meaningful for them. The last key element is consumer response; consumers should respond favourably to the differentiation between brands and hopefully, this favourable response will be reflected in their desire to demonstrate loyalty towards a product and in their willingness to pay a premium price for it (Kotler & Keller, 2012). High brand equity provides a company with many competitive advantages. Because a powerful brand enjoys a high level of consumer brand awareness and loyalty, a company with a successful brand will incur lower marketing costs and higher revenue (Atilgan et al., 2005). Marketers need to manage their brands carefully in order to preserve brand equity. They must develop strategies that effectively maintain or improve brand awareness, perceived brand quality, the usefulness of the product and positive brand association consistently (Rachmawati, 2009).

Brands can convey more than one as a symbol; according to Keller (2003), brands could have six levels of meaning, namely in terms of:

a. Attributes. Each brand has attributes that are managed and created so that

consumers can know with certainty what attributes are essential to a brand.

- Benefits. Brands have useful benefits for consumers. Manufacturers must be able to translate the attributes of a brand to beneficial functions that also yield emotional benefits.
- c. Values. If a brand is perceived to have high value, consumers will appreciate it as a classy brand. Manufacturers of the brand must envisage specific groups of consumers who are seeking that value.
- d. Culture. A brand can also represent a particular culture.
- e. Personality. The 'personality' of a brand reflects the personality of the consumers who use the product.
- f. User. Brands can indicate the type of consumer brand user. This explains why marketers always use famous individuals to promote their brands.

Consumer Behaviour

Consumer behaviour is influenced by marketing stimuli and other stimuli that play a role in consumers' purchase-decision process, which begins when consumers recognise the need to buy or make repeat purchases (Rachmawati, 2009). Risandi (2011) defined consumer behaviour as the actions of individuals who are directly involved in the procurement, use and determination of products and services, including the decision-making process. Wolfe (2002) found that marketing stimuli that consists of products/services, pricing, distribution and communication and other stimuli, which consist of economic, technological, political and cultural aspects, shape consumer behaviour, which consists of consumer psychology (i.e. motivation, perception, learning and memory) and the characteristics of consumers (i.e. cultural, social and personal).

According to Kotler and Keller (2012), the purchase-decision process is divided into five stages, namely: Problem recognition, information search, evaluation of alternatives, purchase decision, and postpurchase behaviour.

- a. Problem recognition. This is the stage at which buyers recognise a problem or need. Buyers feel the difference between the actual state and the demanded state.
- b. Information search. At this stage, consumers seek information from personal sources (family, friends, neighbours and acquaintances), commercials (advertising, salespeople, brokers, packaging), the public (mass media, organisations that rank manufacturers and their products) and experience (assessment and use of the product).
- c. Evaluation of alternatives. Here, consumers narrow down their options until a selection is made based on the closeness of correspondence between

the demanded benefits and the selected product.

- d. Purchase decision. This is the stage at which consumers have a choice and are ready to make a purchase or exchange between money and/or a promise to pay the owner of the product for use of the product.
- e. Post-purchase behaviour. At this stage, consumers are faced with two possibilities, namely, satisfaction or dissatisfaction with the product chosen.

Therefore, the research hypotheses to be tested were as follows:

- H1: Attributes influence significantly on purchase-decision process
- H2: Benefits influence significantly on purchase-decision process
- H3: Values influence significantly on purchase-decision process
- H4: Culture influences significantly on purchase-decision process
- H5: Personality influences significantly on purchase-decision process
- H6: User influences significantly on purchase-decision process

RESEARCH METHODOLOGY

Zikmund (2010) stated that the sample is a part, or parts, of a larger population. It is used when the population is large and researchers may not learn all that exists in the population because of, for example, limited funds, manpower and time. In this case research can use a sample taken from the population (Sekaran, 2003). The sampling technique used in this study was non-probability sampling. The method used was convenience sampling, and the sample was taken from individuals who could be reached and met with (Sugiyono, 2012). The measurement scale chosen was the interval Likert scale with 400 respondents and a cross-sectional survey. Analysis of the data used in this research was through path analysis. Path analysis is used to analyse the pattern of relationships between variables in order to determine the effects directly or indirectly from a set of independent variables (exogenous) on the dependent variable (endogenous) (Riduwan & Kuncoro, 2011).

RESULTS AND DISCUSSION

Response analysis of the assessment criteria in this research study was based on the number of respondents and the interval Likert scale used. For the total of 400 respondents, a 5-point Likert scale was used. Respondent characteristics consisted of: Gender (92% women and 8% men), brand awareness (42% of the respondents were aware of Make Over, a beautyproduct brand; 31% were aware of PAC; 20% were aware of Inez Cosmetics; and 7% were aware of Caring); and occupation (private employees dominated the number of respondents of this study with 141 people, or 35% of the sample population, followed by 111 student respondents or 28% while 73 respondents or 18% were housewives and 26 respondents, or 6% were public servants and six respondents, or 2% were entrepreneurs. The remaining 43 respondents or 11% of the sample population were from professions other than those mentioned).

The following are the results obtained from this descriptive research: The response to each of the sub-variables i.e. benefits, attributes, user, values, culture and personality were, respectively, 70.30%, 70.26%, 69.63%, 68.20%, 65.65% and 64.73%. The overall response to the use of brands in foreign languages (English) was good, with an average score of 68.13%. Perception of the purchase-decision process was 67.16%.

Based on respondent perception, it can be interpreted that:

- 1. Attributes. The respondents agreed that the packaging of local cosmetic products using brand names in English clearly displayed the information about how to use and benefit from the products.
- 2. Benefits. The respondents felt they derived benefits from using local cosmetic products with brand names in

the English language. The respondents also felt they looked more attractive after using such products.

- 3. Values. The respondents perceived local cosmetic products using English brand names as having high value, but they did not agree that the local cosmetic products with English brand names were high-quality brands.
- 4. Culture. The respondents argued that it was less appropriate for local cosmetic products to use brand names in English, which is the language of a foreign culture, but they could adapt to the culture represented by the products.
- 5. Personality. The respondents answered that local cosmetic products with English brand names were less suited to their personality, making them less confident, and that the products had no specific characteristics.
- 6. User. The respondents stated that the use of foreign models for local cosmetic products with English brand names was less suitable.
- 7. Purchase-decision process. The respondents did not have the intention to recommend new products from local brands with English names, as they considered these products to be less suitable they were less satisfied with the products.

Overall, the purchase-decision process of cosmetic products that were made in Indonesia obtained the response of 'Unfavourable' from respondents, with a score of 67.16%. This was based on the respondents' responses that they lacked intent to recommend the new local products with brand names in English as these products were considered to be less suitable and they were less satisfied with the product.

Path analysis was used in this study for data analysis. Riduwan and Kuncoro (2011) showed that the path model analysis is used to analyse the pattern of relationships between variables in order to determine the direct and indirect effects of a set of independent variables (exogenous) on the dependent variable (endogenous). A path model can be made if all the exogenous variables have a significant influence on the endogenous variable. Therefore, simultaneous and partial testing should be conducted (Umar, 2008; Sugiyono, 2012).

After testing simultaneously and partially, the researchers came to a conclusion that two variables of brand attributes i.e. Attribute (X_1) and Value (X_3) did not qualify for modelling as the path model; therefore, the mentioned variables were excluded from the calculation (Zikmund, 2010). The remaining variables, Benefits (X_2) , Culture (X_4) , Personality (X_5) and User (X_6) were calculated to determine their influence on Purchase-Decision Process (Y).

The results showed that the determination coefficient (R Square) was 0.656 or 65.6%, which can be interpreted as that the use of English in brand names

influenced the purchase-decision process as much as 65.6%, while other factors that were not the concern of this research influenced customer satisfaction by as much as 34.4%. This study obtained an F_{count} of variables of 188.369 while the F_{table} was 2.3945. It can be concluded that $F_{count} > F_{table}$. This can be interpreted as that the use of brands in English have a significant influence on the purchase-decision process by as much as 65.6%.

After being tested simultaneously, a partial test was performed again to check the significance of the influence of the independent variables (X_2 , X_4 , X_5 and X_6) partially on the dependent variable (Y). It was tested by t-test and the results were as follows:

- a. X_2 had a t_{count} of 6.076, where t_{hitung}>t_{tabel} was valued at 1.966, so it can be said that there was significant influence between the attributes of benefits and purchasing-decision process of consumers of cosmetic products that were made in Indonesia.
- b. X_4 had a tcount of 4.493, where $t_{count} > t_{tabel}$ was valued at 1.966; it can be said that there was significant influence between the attributes of culture and purchasedecision process of consumers of cosmetic products that were made in Indonesia.
- c. X_5 had a t_{count} of 5.126, where t_{count}>t_{tabel} at 1.966, meaning that there was significant influence between the attributes of personality and purchase-decision

process of consumers of cosmetic e. products made in Indonesia.

- d. X_6 had a t_{count} of 6.781, where t_{count}> t_{tabel} valued of 1.966, meaning that there was significant influence between the attributes of user and purchase-decision process of cosmetic products made in Indonesia.
- . The calculation of the total effect of the attributes of benefits, culture, personality and user on purchasedecision process of consumers of local cosmetic products in English language.

The respondents' perception feedback on the use of brands in foreign languages (English) was 'Good', with an average

Table 1

Calculation of Total Effect of Benefits, Culture, Personality and User on Purchase-Decision Process of Consumers of Local Cosmetic Products in the English Language

Influence of variable	Benefits (X ₂)	Culture (X ₄)	Personality (X ₅)	User (X ₆)
Benefits (X ₂)	0.066	0.021	0.0413	0.0482
Culture (X ₄)	0.021	0.0268	0.022	0.0233
$Personality(X_5)$	0.0413	0.022	0.0585	0.051
User (X ₆)	0.0482	0.0233	0.051	0.0888
Total Influence	0.1765	0.0931	0.1728	0.2113
Total	(0.1765+ 0.0931+ 0	.1728 + 0.2113 = 0.6	537

score of 68.13%. They felt they received benefits from the use of local cosmetic products with brand names in English. The respondents also felt that they looked more attractive after using several local cosmetic products with brand names in English. The respondents could understand the instructions and the benefits of the products clearly from the explanation provided on the product package. The respondents also responded that the packages of local cosmetic products with brand names in English displayed clear information on how to use the products and the benefits of using the product. The use of Indonesian female models was considered suitable for promoting local cosmetic products with brand names in English and the respondents

felt comfortable using these products. The respondents also assessed such local cosmetic products and considered them as being products that had high value.

The response to the decision-making process of consumers in purchasing cosmetic products made in Indonesia received a score of 67.16%. This was based on the respondents' response that they lacked the intention to recommend the new local products using brand names in English as they considered the products to be less suitable and they were less satisfied with the products.

A simultaneous test was carried out and the F-test showed that F_{count} > F_{tabel} , with a value of 188.369>2.3945, meaning that H0 was rejected; thus, there was significant influence of using a brand in a foreign language on the purchase decision of consumers of cosmetic products made in Indonesia by as much as 65.6%.

The t-test performed to test the effect of partially showed that the attributes of benefits, culture, personality and user affected the buying-decision process of consumers of cosmetic products made in Indonesia partially with a t_{count} - each of 6.076, 4.493, 5.126 and 6.781, of which four variables had a t_{count} greater than the t_{tabel} worth 1.966; this revealed a significant effect.

The results for the partial relationships, such as attributes of local products with foreign (English) brand names showed that these attributes did not affect the purchasedecision process of consumers of cosmetic products that were made in Indonesia. The attribute of benefits of local products with foreign language (English) brand names affected the purchase-decision process of consumers of cosmetic products made in Indonesia. The attribute of value of local products with foreign language (English) brand names did not affect the purchasedecision process of consumers of cosmetic products that were made in Indonesia. The attribute of culture in local products with foreign language (English) brand names affected the purchase-decision process of consumers of cosmetic products that were made in Indonesia. The attribute of personality in local products with foreign language (English) brand names affected the purchase-decision process of consumers of cosmetic products that were made in

Indonesia. The attribute of user in local products with foreign language (English) brand names affected the purchase-decision process of consumers of cosmetic products that were made in Indonesia.

CONCLUSION AND RECOMMENDATIONS

Conclusion

- a. On the whole, the use of foreign languages (English) in local brands obtained a 'Good' response from respondents, with a score of 68.13%, with the attributes of benefits and values obtaining a response of 'Good', while the attributes of user, culture and personality received a response of 'Unfavourable'. The attribute of benefits obtained the highest response, with a score of 70.30%.
- b. Overall, the purchase-decision process of consumers of cosmetic products that were made in Indonesia whose brands are in English obtained a response of 'Unfavourable', with a score of 67.16%.
- c. The use of brand names in a foreign language (English) simultaneously influenced the purchase-decision process of consumers of cosmetic products that were made in Indonesia, and only the attributes of benefits, culture, personality and user showed partial influence. The total effect of the attributes of benefits, culture, personality and user on the purchasedecision process of consumers of

cosmetic products that were made in Indonesia that used English brand names was 65.37%.

Recommendations

- As the respondents gave a response of 'Good' on the attribute of benefits of local products that use brand names in English, it is recommended that benefits of these products are both maintained and improved.
- b. As the response on the attribute of culture in connection with local products that used brand names in a foreign language (English) was 'Unfavourable, it is necessary for the manufacturers of such products to rethink their present strategy and to devise new strategies related to culture that will encourage consumers to be more willing to adapt to what is perceived to be foreign culture represented by the product.
- c. The attribute of personality related to the use of brand names in a foreign language (English) for local products received a response of 'Unfavourable'. Thus, it is recommended that such products be imbued with characteristics are easily recognised by consumers. Manufacturers should focus on marketing strategies that can increase the confidence of consumers in using the product.

- d. The response on the attribute of user in the use of the brands in a foreign language (English) was 'Good'. Manufacturers should maintain the use of Indonesian female models to promote local cosmetic products although they may have brand names in English. At the same time, they should create strategies to make consumers feel comfortable in using the product.
- e. Further research should examine other variables that influence the purchasedecision process such as brand equity, perception, expectations, marketing stimuli, consumer psychology (i.e. motivation, perception, learning and memory) and consumer characteristics (social, cultural and personal).

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Designing Cannes Eco-Product Using Quality Function Deployment

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ABSTRACT

This research aims to determine what factors are needed to design Cannes shoes, a brand of eco-friendly footwear products, and to examine the theory behind the implementation of Quality Function Deployment (QFD) related to eco-products. Samples were collected by distributing questionnaires with non-probability sampling to 100 respondents to define what customers want in eco-shoes. The data were then analysed by QFD. An in-depth interview with the product owner was carried out to determine technical specifications and also to determine benchmarking with two competitors. The results showed that customers want comfortable shoes manufactured using eco-friendly materials. The technical response to Cannes environmentally-friendly shoes is that they are made from genuine leather, they use natural dyes and they have a foot bed, eco-friendly soles and shoe construction that are comfortable for wear. The variables tested showed a good relationship with one another. Comparison with its competitors showed that Cannes is considered far superior in quality by consumers. The technical evaluation considered the use of these elements: Horween leather, natural dyes, arc-technology foot bed, eco-friendly sole 100 % reuse and recycle and Norwegian welt construction.

Keywords: Environmentally-friendly design, house of quality, quality function deployment

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INTRODUCTION

Quality Function Deployment (QFD) was developed in the Mitsubishi Kobe Shipyard, Japan, in 1972. It was pioneered by Yoji Akao in Japan in 1966. Akao's finding published in an article in 1972 under the title 'Hinshitu Teinkai System' came to be known as Quality Deployment. This function

was later adopted by Toyota Ford Motor Company and Xerox and then brought to the United States at the end of 1986. Since then, QFD has been implemented by many Japanese companies as well as those in the United States and Europe. Big companies such as Procter & Gamble, General Motors, Digital Equipment Corporation, Hewlett-Packard and AT&T now use this concept to improve communication, develop products and process their measuring systems (Desiawan, 2010). Small Medium Enterprises (SME) have been able to increase their economic growth to reach 6.3% by using this concept. They have been able to increase their GDP to 56% (Mulia, 2013). SMEs in 2011 contributed to 55,206,444 units of the 'Usaha Menengah" (UM) business consisting of 54,559,969 units of the business. They also contributed to 602.195 Millions "Usaha Kecil" (UK) business units, and a 'Menengah Besar' (MB) of 44.280 Millions business units. The number of SMEs in the year 2012 increased to 56,534,592 units of the UM business consisting of 55,856,176 units of the business, amounting to 629.418 UK business units and for MW, it was 48.997 business units. The development of SMEs in the period 2011-2012 was 2.41% or 1,328,147 units of the SME business. For 'Usaha Besar' (UB) in 2011, the amount was 4,952 units, while the UB business in 2012 amounted to 4.968. UB and development amounted to only 0.32% or 16 business units. Based on Table 1, it can be concluded that SMEs experienced greater growth than UBs.

SMEs that are showing growth are those dealing in shoes (Kemennegkop, 2012). The shoe industry began to grow after Presidential Instruction No. 2 was issued in 2009 by the government for domestic product usage of goods and services. The Presidential Instruction had a positive impact on shoe sales, which increased by 20% (Rubiyantoro, 2009) as it was seen by the CEOs of Chevalier (http://chevalierstore. com/) and Cannes (http://cannesstore.com/) shoe stores as a huge opportunity for their shoe business. Since the important criterion was quality, Chevalier used materials of international standard while Cannes used environmentally-friendly materials.

This study focussed on the factors that have made Cannes shoes popular among consumers. The researchers set out to discover: the technical response necessary to produce Cannes eco-friendly shoes; the relationship between each item related to technical response; the importance of technical response; the competitors based on an assessment of the needs of consumers; and the technical evaluation of competitors of Cannes. A new perspective derived from the literature showed that the concept of a house of quality can also be used in the manufacture of eco-products. There is a lack of research on eco-product development using Quality Function Deployment (QFD). With QFD, eco-products of good quality can be made. QFD has also made a social contribution to Indonesian SMEs, enabling them to develop quality products at affordable prices without having to engage professional designers.

LITERATURE REVIEW

Mahaptra and Mohanty designed office furniture using Quality Function Deployment (QFD), showing that QFD could be used as an integrated approach to design office furniture. QFD can also be used to improve the quality of products as it helps in identifying important design characteristics (Mahaptra & Mohanty, 2013).

Bereketli, Genevois and Ulukan attempted a green-product design for mobile phones using Eco-QFD, integrating social responsibility with the original QFD model. For such a venture, the raw materials or substances used can be less toxic and more environmentally-friendly. The needs of consumers and the government's call for adherence to recycling and environmental awareness in industry should be taken into the account by the manufacture of ecoproducts (Bereketli et al., 2009).

Ersam and Supriyanto used Integration Servqual and QFD in 'Gedung Olahraga' (GOR) Kertajaya to improve the quality of a service gymnasium. In their research, they used Cartesian diagrams charted around six elements of perception (clean toilets, optimum temperature, proper schedule, sufficient lockers, hygiene and services). They were able to collect four responses to do with technical details (Ersam & Supriyanto, 2012).

Pusporini, Abhary and Luong, in 2013, stated that environmentally-friendly products are becoming an important consideration for the manufacturing industry, and that this growing focus would force the industry to increase their awareness of the need to protect the environment by producing products that would meet customer and environmental requirements. Such products would be accepted based not only on quality but also on their ability to meet the environmental requirements. They concluded that QFD is effective in designing and developing products with the aim of creating customer satisfaction and that this has been successfully implemented in many industries (Pusporini et al., 2013).

Cardoso, Filho and Miguel, in their research on the application of QFD for the development of an organic product, found that the element of preventing harmful socio-environmental damage is essential for developing an organic product because this dimension comprises one third of the relative weight of the planned quality (Cardoso et al., 2014).

Li and Guo (2013) stated using the concept of the house of quality could not be guaranteed. Manufacturers would need to find the key factors to make their product a success. Alemam and Li (2014) researched eco-design using an integration of QFD and functional analysis, and concluded that QFD had solid grounds for design and planning and that using an eco-design would indeed reduce environmental impact. The key technique of the proposed method is to integrate the functional descriptions of a product in the framework of QFD for eco-design. However, certain features of the method have not been implemented or studied, such as benchmarking and tradeoff analysis. The proposed method does, however, provide a solid framework for including more features for the eco-design method (Alemam & Li, 2014).

METHODOLOGY

Questionnaires intended to discover what customers want were distributed to 100 respondents based on convenience sampling. The house of quality shown in Figure 1 was used the assessment tool.

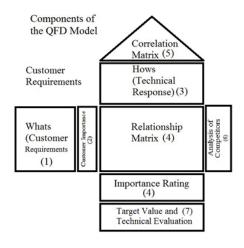


Figure 1: House of quality (Heizer & Render, 2009).

Customer Requirements

Customer requirements are important attributes for an eco-product. According to Heizer and Render (2009), the six guidelines below can help operations managers to design an ethical and environmentallyfriendly workflow:

- a. Make products that can be recycled.
- b. Use raw materials that can be recycled.
- c. Use components that are not dangerous.
- d. Use components that are light.

- e. Use more economical sources of energy.
- f. Use raw material that are less harmful to the environment.

Customer Importance

First, the questionnaires were distributed among the respondents. Then the attributes under customer requirements were arranged based on the Likert scale used. Data from the questionnaires were calculated using descriptive analysis and weighted for priority.

Technical Response

Collecting data on technical response was done through an in-depth interview with the maker of Cannes products.

Relationship Matrix and Importance Ratings

The relationship matrix was calculated as follows:

 $Kt_i = \sum BT_i \times H_i$

Where:

- Kt_i = absolute value technical needed by every attribute
- BT_i = relative importance of customers who have a relationship with the attributes
- H_i = desire a relationship between customers and the attributes

Correlation Matrix

The data for this were collected from an interview with the CEO of the company that produced Cannes products.

Competitor Analysis

Analysis of competitors of Cannes was done through observation of the competitors. Product competitors were compared against the attributes under customer requirements. The data were collected through benchmarking against two competitors.

Target Value and Technical Evaluation

Target value was assessed from observation of the attributes of technical response and through an interview with the management of the company supplying eco-products. Technical evaluation of each company's product (Cannes, Amble and Portee) was also done.

RESULTS AND DISCUSSION

Respondents in this study were all consumers or users of shoes, numbering 100 respondents. The characteristics of the respondents taken into account for this study were gender, age, importance of environmentally-friendly products to the respondents and purchase of environmentally-friendly footwear products. About 43 or 43% of the respondents were male while 57 or 57% were female. Four (4%) were in the age category of 17-19, 90 (90%) were in the age category of 20-22 years and six (6%) were in the age category of 23-25. None were above 25 years of age. Women in the age category of 20-22 years formed the largest group of the population. All the respondents (100%) considered environmentally-friendly products as being important. Respondents who had previously bought environmentally-friendly products

numbered 50 (50%); this was of course the same number of respondents who had not previously bought environmentally-friendly products. This showed that among the respondents, there was an equal distribution of those who bought environmentallyfriendly products and those who did not.

The number of respondents responding to the statement item on environmentallyfriendly design was very high. The response to the item on recycled shoes was 79.80%. The lowest response was to recyclable product attributes. The less harmful rating was the most important attribute, with a quality score of 922. The attribute of less material was seen to be the least important, recording a quality score of 855.

The correlation matrix on QFD evaluated the relationship between technical response items. The value of the association was subjective based on qualitative data obtained from interviews with management and field observations, indicating that genuine leather had a relationship to all the indicators such as natural dyes with a weight of 5, foot bed with a weight of 1, eco-friendly soles with a weight of 3 and construction shoes with a weight of 5. Natural dyes had no relationship except for original quality with a weight of 5. Foot bed had a moderate relationship with a weight of 3 to eco-friendly soles while ecofriendly soles had a high correlation with a weight of 5 with construction shoes.

Figure 2 shows that customer requirements contained six attributes i.e. product recyclable, recycled materials, less harmful, lighter components, less energy and less material. These six attributes

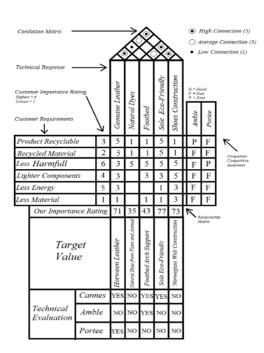


Figure 2: House of quality for eco-shoes.

obtained from six opinions were tested for validation through questionnaires to 30 respondents from Bandung city.

The relationship matrix provided customer importance ratings and scores for the technical response. The results were based on kilogramme. The relationship matrix was multiplied with the customer importance ratings. The result was added to the relationship matrix. The attribute of native leather received a response of 71, native dye, 35, foot bed 43, eco-friendly sole (material used), 77 and construction shoes, 73. The relationship matrix was correlated with the importance ratings.

The competitive competitor assessment was done through benchmarking and observation. Cannes' competitors were

Amble and Portee. The results gave a 'poor' rating to Amble's efforts to recycle products. This is because Amble used skin synthesis that was not environmentally friendly. Recycled materials received a rating of 'fair' because some of the components were easy to recycle. The attribute 'less harmful' received a rating of 'fair' because arc technology was used, which safeguards shoes. Lighter up components as an attribute got a rating of 'fair; because the thickness of the skin used to make the shoes was only 5mm. Less energy, another attribute, received a rating of 'fair' because the shoes used the skin type, corrected grain breads, which was easier for customers to clean. The attribute, less material, received a 'fair' rating because the product did not use too many use additional accessories. Portee received a rating of 'fair' for recyclable products because it used original. Its skinrecycled materials received a rating of 'fair' because some of the components were easy to recycle. Its attribute, less harmful' received a rating of 'poor' because only wooden sleepers were used. Its lighter up components received a rating of 'fair' because the thickness of the skin used was only only 5mm. Less energy, another attribute, received a rating of 'fair' because the shoes used the skin type, corrected grain breads, which was easier for customers to clean. The attribute, less material, received a 'fair' rating because the product did not use too many use additional accessories. Based on the interview with the owner of Cannes, Amble and Portee shoes were the closest competitors to Cannes. Observation of footwear products of the three competitors showed that Cannes was superior, with higher ratings for six customer requirement attributes compared to Amble and Portee. Cannes scored in the categories recyclable products and less harmful while Amble received 1 and 5 for these attributes. Portee received the same rating as Amble.

Five attributes made a reference to the target by description attributes for the target, value. To gauge value, interviews with shoe experts were conducted. Five attributes were noted: use of Horween leather; use of natural colouring agents made from plants and animals; use of arc-technology foot beds to avoid feeling tired; and the use of environmentally-friendly soles that can be recycled. Environmentally-friendly soles are made of microtech materials that degrade automatically and do not pollute the environment because they do not contain heavy metals such as phthalates (chemicals that are difficult for microorganisms to reduce). The technique used to make environmentally-friendly shoes is the technique of using Norwegian welt, where the soles are sewn rather than glued to make them durable and waterproof. Cannes products used Horween leather, arc-technology foot beds, environmentallyfriendly soles, natural colouring agents and Norwegian Welt, while Amble had only one positive attribute, the use of arc-technology foot beds and Portee's only positive attribute was the use of Horween Leather.

Technical evaluation of performance among the competitors provided results for target value. The data collected showed that Cannes used three attributes, namely, Horween leather, arc-technology foot beds and environmentally-friendly soles while Amble only used arc-technology foot beds and Portee used Horween leather.

CONCLUSION AND RECOMMENDATION

Cannes footwear products use original leather, natural colouring agents, arctechnology foot beds, environmentallyfriendly soles and construction shoes. Of high interest among the respondents was the use of environmentally-friendly soles, construction shoes, original leather, original foot beds and natural colouring agents. Cannes was ranked as being superior to its nearest competitors, Amble and Portee. Technical evaluation considered the use of Horween leather, natural colouring agents, arc-technology foot beds, eco-friendly soles and Norwegian Welt construction.

Some of the conclusions obtained from this study are:

- 1. Consumers want comfortable shoes that do not hurt their feet while also being environmentally-friendly.
- 2. Technical response to satisfy consumers who demand eco-friendly shoes is to use genuine leather materials, natural dyes, foot beds, environmentally-friendly soles and construction shoes.

- 3. The relationship between each attribute evaluated in the technical response is as follows:
 - a. Genuine leather materials have a high relationship with natural dyes
 - b. Genuine leather materials has a low correlation with foot beds
 - c. Genuine leather materials with sole eco-friendly relationships being the most important
 - d. Construction material genuine leather shoes have a relationship with quality
 - e. Foot beds with environmentallyfriendly have a relationship with quality
 - f. Foot beds have a high relationship with construction shoes
 - g. Environmentally-friendly soles have a high relationship with construction shoes
- 4. The level of interest ranging from the highest to lowest is as follows:
 - a. Environmentally-friendly soles with a score of 77
 - b. Construction shoes with a score of 73
 - c. Genuine leather material with a score of 71
 - d. Foot beds with a score of 43
 - e. Natural dyes with a score of 35

- 5. Assessment of the competitors based on customer needs showed that Cannes was considered superior to Amble and Portee both in terms of customer requirements and target value as Amble and Portee did not meet the needs of consumers and was far from the desired target value.
- 6. Technical evaluation of the characteristics showed the following as attributes that consumers want in shoes:
 - a. Cannes and Portee used Horween leather from the United States, rated the best in the world.
 - b. Cannes, Amble and Portee do not use natural dyes from plants and animals that do not contain chemicals and are more environmentally-friendly.
 - c. Cannes and Amble use arctechnology cushioning foot beds for comfort and to prevent foot tiredness.
 - d. Cannes used environmentallyfriendly sole technology from Italy that allows 100% recyclability.
 - e. Cannes, Amble and Portee use Norwegian welt sewing. Norwegian Welt sewing is a technique that sews the upper part of soles, the insole and the outsole and it does not use glue/adhesive chemicals as making it more powerful and environmentally friendly.

Cannes should develop comfortable shoes that are less harmful, as desired by consumers. Cannes should use natural colouring agents from plants and animals to be more environmentally-friendly. Cannes should immediately implement construction shoes that use Norwegian welt sewing technique because this technique allows for shoes to be more durable, waterproof and environmentally-friendly. Cannes must do more to innovate to create greater distinction between its products and those of its nearest competitors, Amble and Portee.

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HR Sustainability Practices Instrument Comparative Analysis in Malaysian SMEs

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ABSTRACT

This article discusses the impact of the implementation of HR sustainability practices through human resource policies on employee productivity of SMEs. Secondly, this article also discusses the results of a comparative analysis of the validity and reliability of two studies, namely pilot test and the actual research. Both analyses were conducted through an instrument used to measure the influence of human resource sustainability practice on employee productivity of SMEs through an HR policy. The instrument is based on a research model introduced by Gollan (2000), 'Model factors that influence HR sustainability'. This research does not only attempt to prove that the instrument is strong in terms of content validity (previous studies) but also in terms of construct validity, predictive validity and reliability. The analysis results show that all the variables used in the instruments have a high value of reliability and validity in both studies. In addition, this article indirectly proves that the Gollan (2000) model has empirical proof for future research. This is supported by the stakeholders and institutions theory.

Keywords: HR sustainability practice, human resources policy, employee productivity, small and medium enterprises

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E-mail addresses: beni@utm.my (Kelana, B. W. Y.), Nurnaha@utm.my (Mansor, N. N. A.), Lsanny@binus.edu (Sanny, L.) * Corresponding author INTRODUCTION

The focus of this study was to examine the effects of human resources (HR) sustainability on employee productivity in the SMEs sector through an adequate HR policy. To ensure the quality and reliability of the results of the research, a validity and reliability analysis was carried out (2). The

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	Constructs of Research			
No	Original Construct (Gollan Model)	Pilot Test Constructs (Empirical)	Remarks	
1	Career development and Organisational learning	Career DevelopmentLearning Opportunities	7 items6 items	
2	Organisational change	Organisational Change	10 items	
3	Workplace institution and systems	Facilities and Welfare	10 items	
4	Work-Life balance	Work Schedules FlexibilityPersonal Flexibility	7 items6 items	
5	Employee consultation and involvement	Employee Involvement	5 items	
6	HR policy	HR Policy	17 items	
7	Employee productivity	Employee Productivity	9 items	

 Table 1

 Variables Used in This Research (After Pilot Test – Factor Analysis is Conducted)

variables and instruments involved in this research are shown in Table 1.

Gollan's (2000) model for HR sustainability, 'Model factors that influence HR sustainability' listed five HR sustainability practices that increase productivity, commitment and satisfaction among employees through human resource policies. However, after a validity and reliability analysis was conducted, the HR sustainability practice was changed to seven variables as shown in Table 1. This situation is normal and variable content still refers to the same definition albeit with several differences and under a new name. Such a situation occurs when the constructs are more focussed in terms of items instead of on the constructs involved themselves (Meyer, 2006).

According to Ehnert (2006) and Wilkinson et al. (2001), the requirements of HR sustainability are increasing, especially to reduce issues in HR. This is because HR issues such as stress at work, increased turnover rates and low productivity among employees have begun to plague organisations (Wilkinson et al., 2001). This is similar in the context of SMEs in Malaysia. The SMEs sector in Malaysia is facing a crisis with low productivity among employees compared to among employees of large firms (Croucher, 2010). The situation becomes worse when human resource issues are often ignored by owners and managers of SMEs (Spencer, 1986). In addition, the human resource policies practiced by SMEs are outdated and do not meet the current needs of employees (Barney & Wright, 1997). This situation can affect the growth of the Gross Domestic Product (GDP) of Malaysia because the SMEs sector is the biggest contributor to Malaysia's GDP (Chaudhry, 2013). According to the annual report (2013/2014) of Malaysian SMEs, the GDP of the SMEs sector was higher than Malaysia's GDP at around 6.3% compared to 4.7% (PKS, 2014) (Croucher, 2010). This is because employees are the main asset of an organisation and they are able to improve the competitiveness of the organisation (Wilkinson et al., 2001). Therefore, Gollan (2000) suggested that HR sustainability practices be implemented within the organisation to address these various issues.

THEORY

To support Gollan's model (2000) in the context of this research, the institutional and stakeholder theory used as they are the most relevant theories for the context of this research. This is because when viewed in terms of the HR sustainability practices that have long been practised in organisations, some organisations still do not apply HR sustainability as their official practice (Yong, 2008). Institutional theory emphasises the importance of the role of the policy as a medium to ensure HR sustainability is the official practice of an organisation (Androniceanu, 2011). This is because the theory of the institution itself refers to a method in which normal and routine regulation is adopted as a guideline in social behaviour of an organisation (Phillips & Tracey, 2009).

In addition, the stakeholder theory is also seen as instrumental in supporting Gollan's model (2000), particularly in meeting the needs of employees to be more productive. Freeman et al. (2004) defined stakeholders as individuals or groups who can affect or who are affected by the scope of the objectives of the organisation, which includes actions, decisions, policies and goals of the organisation. For example, 'New Corporate Relations' is one of the stakeholder theory approaches that emphasise collaboration between organisations at multiple levels, especially those involving the interests of employees (Freeman et al., 2004). Therefore, if an organisation wants to nurture a productive workforce, it must meet the needs of its employees through the implementation of HR sustainability practices delivered through HR policies. This is because employees are one of the stakeholders of an organisation who are very important in making the organisation more competitive (Mainardes et al., 2011).

Overall, this article illustrates how the model of HR sustainability practices functions in improving employee productivity through an adequate human resource policy especially in SMEs in Malaysia. In addition, this article shows how theory plays an important role in strengthening the basics of research and the model that it uses.

METHODOLOGY

IBM SPSS 22.0 was used as an analysis method for analysing construct validity, predictive validity and internal reliability. In addition, exploratory factor analysis (construct validity) technique was used to ensure that the specific measuring instrument such as questionnaire was in line with the theory and concept developed in the research. Reliability analysis was carried out for the purpose of ensuring that the variable of the research had quality and was reliable (Sekaran & Bougie, 2010). A correlation test was also conducted to obtain results for predictive validity. The sample for this analysis involved 340 employees in the SME sector around Klang Valley. However, only 210 of them responded (61.8%). According to (Hair et al., 2010), in order to carry out an analysis factor test, a respondent sample of at least 60% is required.

RESULTS AND DISCUSSION

This section presents the comparison results of the exploratory factor analysis (construct validity), predictive and reliability (pilot test and actual) tests. The results of the analysis are as follows:

Factor Analysis

Based on the results of the factor analysis (contruct validity) as shown in Table 2, it was found that both studies met the indication requirements of the factor analysis. This can be seen through the KMO value, which exceeds the value of 0.7 for both studies, indicating that the sample was qualified to perform the factor analysis. Meanwhile, in terms of value, Barletts's Test of Sphericity also showed less of the value of p<0.001, which means that the variables were independent and appropriate for carrying out the factor analysis. Overall, the

Table 2

Comparison Results (Pilot Test vs Actual Research) - Factor Analysis

	Research Variable				
Research variables	Research Variable (Pilot test)		Research Variable (Actual research)		
	КМО	Barletts's Test of Sphericity value p<0.001	КМО	Barletts's Test of Sphericity value p<0.001	
HR sustainability (7 independent variables)	0.862 (51 items)	0.000	0.850 (46 items)	0.000	
HR policy	0.919 (17 items)	0.000	0.932 (17 items)	0.000	
Employee Productivity	0.808 (9 items)	0.000	0.825 (9 items)	0.000	

results of the factor analysis showed that the instrument was appropriate in both studies.

From Table 2 it can be seen that the results of the factor analysis for construct validity of the independent variable (human resource sustainability practices) shows only 46 balance of items compared to 51 items during the pilot test. However, the independent variable still retained the seven constructs even though there was a slight change in the value of KMO.

Predictive Validity

According to the results in Table 3, it can be deduced that all independent variables and intermediate variables had positive significant correlation with employee productivity (pilot test and actual research). Therefore, it can be concluded that the instrument used had sufficient predictive validity value.

	Correlation Coefficient with Employee Productivity **p<0.01			
Research Constructs	Research Constructs (Pilot test	Research Constructs (Actual research)		
Career development	r = 0.363**	r = 0.388**		
Employee involvement	r = 0.434 * *	r = 0.405 * *		
Facilities and welfare	r = 0.346 * *	r = 0.279 * *		
Work Schedules flexibility	r = 0.215 **	r = 0.199 * *		
Personal flexibility	r = 0.212 **	r = 0.176*		
Learning opportunities	r = 0.486 * *	r = 0.453**		
Organisational change	r = 0.487 * *	r = 0.379 * *		
Total 7 IV	r = 0.443**	r = 0.420 * *		
HR policy	r = 0.270**	r = 0.244**		

Table 3Correlation of Research Variables (Pilot Test and Actual Research)

Reliability

According to the comparison results of the reliability analysis in Table 4, it can be seen that all eight variables had high reliability value of more than 0.7 (Svensen et al., 2007). However, employee involvement had a Cronbach Alpha value of below 0.7 but according to Piaw (2011), an Alpha value

in the range of 0.6 is good and acceptable. Therefore, as a whole, after a reliability analysis was conducted, only 41 items out of 46 items were retained in the questionnaire for variables of HR sustainability. As for the intermediate variables 17 items were retained for further analysis.

Table 4 Results of Reliability Analysis

	Reliability Value			
Research Variables	Pilot test		Actual research	
	items	Cronbach's Alpha (α) (pilot test)**p<0.01	items	Cronbach's Alpha (α) (pilot test)**p<0.01
Career development	7 items	0.880	4 items	0.841
Employee involvement	5 items	0.690	5 items	0.674
Facilities and welfare	10 items	0.869	10 items	0.797
Work schedules flexibility	7 items	0.748	5 items	0.761
Personal flexibility	6 items	0.813	6 items	0.792
Learning opportunities	6 items	0.815	4 items	0.847
Organisational change	10 items	0.705	7 items	0.830
HR policy	17 items	0.941	17 items	0.945

CONCLUSION

Based on the results of all three analyses, it was discovered that the instrument had a high value of validity and reliability for both studies. Thus, the instrument was capable to measure the impact of HR sustainability practices on employee productivity in SMEs in Malaysia through HR policies. In addition, the analysis also proved that there was a significant relationship between the variables in both studies. The findings not only provide evidence through value of validity and reliability, but can help future research in this area.

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Building Image of Government through Radio Taiwan International for Indonesian Female Listeners

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ABSTRACT

This research is conducted to find out how radio broadcasts as media communication abroad can be managed for excellent performance excellence and can build the image of Indonesia and Taiwan as local governments. The focus is to discover how communication used by Radio Taiwan International (RTI) for Indonesian citizen can build a good image for governments. The result of this study shows: First, image building through radio broadcasting for governments can be done through the role of radio as a medium of communication between the government and local communities. Second, the method of delivering the message for female radio listeners is a two-way communication in which the broadcaster has to prepare direct conversation with the listeners or provide time to speak directly as a friend in the real world. Third, radio programmes that are ethnically coloured are an effective form of radio programme for citizens abroad that supports image building. The conclusion of this study is that image building through radio can be done for female Indonesian citizens in Taiwan because radio as a medium of socialisation works as two-way communication and it can be ethnically coloured.

Keywords: Image building, Indonesian, Radio Taiwan International

INTRODUCTION

Radio shows have their own way of creating a sense of closeness with listeners through the way radio hosts greet listeners as if they were greeting close friends. Through its broadcasts, radios also have the ability to create a familiar atmosphere and a sense of closeness between listeners and

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broadcasters. This atmosphere and sense of closeness created by radio broadcasts conveyed are well received by female Indonesian citizens (TKW) who desire a connection with their homeland. The messages sent through Indonesian language radio broadcasts abroad can help to build a good image for the unitary state of Republic of Indonesia (NKRI). Such radio broadcasts can be seen as government public relations activities, to recall that there is a lot of interaction between listeners and radio hosts; thus, Indonesian citizens staying in foreign countries can feel a "warmth" that links them to their homeland, and this leads to the creation of a good image. Radio, according to its history, contributed in influencing listeners to listen to political messages. Its power as a form of mass media has been found to exceed other media of communication in terms of establishing a nation's ideological values.

Radio broadcasts heard by listeners give the impression of actuality and immediacy, allowing listeners to feel less distant from their homeland. It is without question that Radio Taiwan International (RTI) broadcasts receive great response from Indonesian citizens, especially women (Thamsir, 2012). Meanwhile, the number of Indonesian women in Taiwan is gradually increasing and many of them are marrying Taiwanese citizens (Antaranews.com, 2012).

The total of Indonesian citizens in Taiwan was 190,000 in 2012, with 27,000 women being married to Taiwan men. In 2012 alone, an additional number of 10,155 Indonesians were married to Taiwanese citizens, with Indonesian women forming the majority (Okezone. com, 2012). Given the growing number of citizens in Taiwan, RRI (Radio Republik Indonesia), FORMMIT (Indonesian Muslim Students Forum in Taiwan), PKPU (Pos Justice Caring Ummah) and IETO-Taipei (Indonesian Economic and Trade Office in Taipei) held a workshop with RTI (Radio Taiwan International) on October 21, 2012. RTI was chosen by RRI as they air daily in 13 different languages, including Indonesian. The programmes presented include news, politics, economics, culture, education, entertainment and community service posts. Indonesian language shows in RTI are 'Indonesia di Hari Ini & Kotak Pos' (Indonesia Today & Mailbox), 'Ada Apa dengan Tony' (What's Up with Tony), 'Yuk Ngrumpi' (Let's Chitchat) and 'Plaza Wanita & Mari Menyanyi' (Women's Plaza & Let's Sing) (Thamsir, 2012).

Meanwhile, the current social situation in Taiwan allows more Indonesian women to marry Taiwanese men. The high cost of living and gender equality have caused Taiwanese women to choose making a career over starting a family. As a result, the birth rate in Taiwan has declined, making Taiwan a country with the lowest birth rate in the world (Okezone.com, 2012). High cost of living and gender equality caused Taiwanese men to marry foreigners. In 2006, more Indonesian women became brides in Taiwan; the number is approximately 10.67% out of 95,177 foreigners from other countries who wed Taiwanese (Antaranews. com, 2012). Mix marriages that happened

between Indonesian women and local Taiwanese men have the potential to fade nationalism towards their homeland, Indonesia, and research into this matter should be conducted. These is a necessity to find out whether Indonesian radio programmes abroad have the potential to be a public relations (PR) programme that the government can use to instil a good image of the home country.

Governments need to have concern for citizens who live abroad. A sense of caring can be shown by an official body as a representative of the State in a foreign country or through local media, in this case the radio. In a radio broadcast, supervision needs to be done in order to control information. According to Anderson and Egglestone, "The second second aim of the BBC's online news provision is to provide a means of helping maintain and increase the quality of the same key aspects of BBC news output at the stages of reporting and editorial decision-making within ongoing stories" (Anderson & Egglestone, 2012). They discuss the role of media in revealing social problems. Although this research study showed that the media do not have direct authority, the agenda of the media can change the focus of the public towards a certain thing and establish a positive assumption as media agenda (Conway et al., 2012).

The British Broadcasting Corporation (BBC), the British government's official public communications portal, should be alert to commercial dominance that has given its views more power than the voice of the government. The BBC's role as the state media gives it less power of influence compared to its commercial strength (Thomas & Hindman, 2011). Conway and Thomas presented two differing ideas about the BBC's roles as the state media. At first, when a medium is dominant in presenting existing realities to society, all information generated by it becomes important. Secondly is the fact that the government's strength is eroded by hegemony of the advertiser. Direction of the media is determined by the rulers of commercials. Ma (2010) discussed the modernity that is engulfing Hong Kong. "The market in this country become capitalist, the life of the world to have classes, consumerism becomes a lifestyles of upper middle class community. This phenomenon is reflected in local magazines. Modernity rapidly developed as promoted by television dramas" (Ma, 2010).

It is seen, then, that mass media have the power to affect the chosen lifestyle of whole societies. In this context, it becomes interesting to consider how immigrant communities residing in these countries cope and develop. Do local media in countries like Hong Kong have a great influence on immigrant communities? What is the role of government (e.g. in the case of Indonesia) in maintaining positive information for citizens in countries that are already modern? Nurdiaman (2009) wrote that mental and spiritual debriefing are needed to counteract the effects of foreign culture upon an immigrant community to prevent it from conforming to the norm (Nurdiaman, 2009). This does not mean

that modernity as a mistake but that the government's role in instilling a positive image of the nation continues to be required also for citizens living abroad. When it comes to security, communication is the key, and information should be properly disseminated to all the parties involved, ensuring that everyone has a clear and common understanding of security needs facilitating their implementation and operation (Ranganathan et al., 2012). Ranganathan et al. went on to explain in their article that communication is the key to security. In this case, security can be translated as mental security and the perception of citizens.

Messages conveyed through the mass media are expected to refresh the audience so there is no cognitive dissonance to the recipients of the message. It is important to be considered, especially if the audience is located far away from their country. Furthermore, Whitaker et al. (2011)'s social influence theory states that members of a social group string reality to their interests, and have the power to reject media intrusions. The media themselves often review topics related to public interest with the aim of serving the public (Whitaker et al., 2011).

This study will explore first, how communication through radio abroad builds up the image of both the governments of Indonesia and Taiwan; second, the delivery method that is effective in national governmental image building among female radio listeners; and third, the kind of radio programmes for the citizens abroad that support image building. The focus of this study is on the excellent communication model used by Radio Taiwan International (RTI) can be used among Indonesian citizens to build a good image for both the governments of Indonesia and Taiwan.

METHODOLOGY

The qualitative paradigm was used in the study. The qualitative paradigm was used in order to access data from the informants such as Radio Taiwan International (RTI) broadcasters and RTI's listeners. All the informants lived in Taiwan. The data described how the radio broadcast management impacted Indonesian citizens as a family and indirectly built a good image of both the governments of Indonesia and Taiwan. Data were collected through direct observation of Indonesian women workers in Taiwan through interviews. The radio station in Taiwan was observed and interviews were conducted with the management and two radio announcers. The broadcasters were a man and a woman, both Indonesian broadcasters who had long settled in Taiwan. The data were also compared through quantitative research. The interviews were done in Taiwan two years ago and followed up with the quantitative research collected through a questionnaire. However, for this article the methodology focussed on qualitative data supported by literature review and previous research.

To examine the image that the Indonesian women workers (IWW) had of the two governments, Indonesian and Taiwanese, the women were interviewed in places they gathered regularly as a community on days off. They usually gathered at the Taipei Main Station (TMS). The train station has a field with a closed roof and the building is air conditioned. This field acts as a clean floor, and the workers can sit comfortably on the paved floor, in relaxed and joyful mood. One of their favourite activities here is to listen to songs broadcast by RTI, especially the Indonesian broadcasts, plugging in with their mobile phones.

RESULT AND DISCUSSION

The importance of establishing communication from the government to its citizens residing abroad lies in the fact that it is also a provision for citizens to trust their country. What is good government? According to the Chinese philosopher, Confucius, "good government is government that can feed the people, provide adequate weapons for defense of the state and which has the trust" (quoted in Reddi, 2010, p.156). In discussing the importance of trust of citizens for their government in fostering a strong sense of belonging for the sake of the future of the nation, Confucius added, "A people that has lost faith in the government is a people without a future" (Reddi, 2010; Nah & Chung, 2012, p.97). A study by Nah and Chung (2012) entitled 'When citizens meet both professional and citizen journalists: Social trust, media credibility, and perceived journalistic roles among online community news readers', which involved 238 respondents in 2014, concluded that what will be trusted by the public will depend on the packaging

provided by journalists in conveying the message to the audience.

The Indonesian community residing abroad cannot be ignored. They should be given access to home news in order to remain proud of being Indonesian. Awareness of national values needs to be inculcated in them as their rightful inheritance from the founding fathers of Indonesia. In fact, according to Srijanti (2008), Indonesia needs a "civilization change monument" to ensure the nation continues to exist (Srijanti et al., 2008, p.88).

In this study, it is argued that Indonesia must exist in the citizen's point of view, especially that of women residing abroad. They need to feel safe and sound and find it easy to communicate with the government of the Republic of Indonesia; this can be done effectively through local radio programmes.

Radio Taiwan International

Based on interviews with the informants, Radio Taiwan International (RTI) was founded in 2002. It began as The Central Broadcasting System (CBS) founded in 1928 as the voice of the Kuomintang (KMT) government quartered in Nanking in mainland China. In addition, via domestic AM radio and shortwave, CBS also broadcast three different 'networks' in Chinese (mainly Mandarin) to the mainland. Next, it broadcast to mainland China and the rest of the world under the call sign Radio Taipei International and the Voice of Asia. Radio Taipei International essentially replaced the international radio services of the Broadcasting Corporation of China (BCC), known as the Voice of Free China. Radio Taipei International broadcast to China and to an international audience; by contrast, the Voice of Asia was broadcast to the Asia-Pacific region only and offered a lighter format than that used by RTI. In 2002, the Voice of Asia call sign was dropped, leaving Radio Taipei International as the sole broadcasting name of the service. This, in turn, was changed to Radio Taiwan International to avoid confusion on the part of listeners, who had trouble associating Taipei with Taiwan.

Indonesian Female Workers in Taiwan

All the informants who were listeners were female and official citizens of Indonesia. The marital status of the informants' included single, married without children, married with children and widow. The women who were married were married either to Taiwanese or Indonesian men. One listener was married to neither Indonesian nor Taiwanese man. The informants' age varied from below 21 years old to 31-40 years old and above 41 years old. The majority were in the 31-40 years of age group while few were in the above 41 years of age group. The income/earnings of the informants was: less than IDR 5,000,000, between IDR 5,000,000 and 10,000,000 and more than IDR 20,000,000. The majority were in the second group while very few were in the last group, earning more than IDR 20,000,000.

In Taiwan, these women fill the gap made by young Taiwanese who have difficulty taking care of their elderly. The three main professions that Indonesian women workers enter into in Taiwan are care-giver, nurse and housemaid. Indonesian citizens working in Taiwan has reached the number of 157,403 people; this is equal to 82% of the total of all Indonesian citizens. In Taiwan, Indonesian women workers retain their religious practices, duties and responsibilities by taking part in religious events in mosques that are open to Indonesians as well as Taiwanese nationals. Community programmes organised by these mosques are designed to raise awareness of gender equality, increase welfare and encourage justice.

A deal that between the Agency for the Placement and Protection of Indonesian Citizens (BNP2TKI) and the Indonesian Commerce and Economy Body (KDEI) in Taiwan on December 14, 2012 stated the salary rate for Indonesian citizens as being NTD 18.870 (IDR 6.291.300); this was an increase from IDR 5.148.000, an increment of 18.56%. The new rate applied officially on February 1, 2013. This increment also applied to former Indonesian citizens in Taiwan who had extended their work permits after completing the first segment of their contract of three years. The total number of Indonesian citizens working in Taiwan is around 200,000 people. About 85% of them are in the domestic sector while the other 15% are in construction and other infrastructural sectors. Placement of Indonesian citizens in Taiwan can be viewed as the most massive in Southeast Asia. In Taiwan, these workers take opportunity of Saturdays and to meet and catch up. Places

like Taichung Park, Pyramid at Taichung and Main Station are their favourites meeting points. Although it may be their day off, they may bring along the elderly for whom they care.

Communication Tools to Support the Management

Indonesian women workers use sophisticated communication tools such as high-end devices like the iPhone. They use these expensive gadgets openly and freely to communicate with their friends/relatives as well as to listen to radio programmes. One of the popular radio programmes in Taiwan is 'Wanita di Rantau' (Women in Foreign Countries), which offers listeners interviews and stories of female Indonesian citizens during their stay in Taiwan. It also offers 'Surat Pembaca' featuring on-air reading of mail by the radio hosts and song requests. In addition to this type of entertainment, the channel also provides news about Indonesia to update listeners on happenings in their homeland. The relationship between the women workers who listen to these Indonesian language radio broadcasts in Taiwan and the broadcasters is extremely close, like that of a close friendship. When listening to these radio programmes, the women feel like they are accompanied by their friends; in this case, the friends are the radio hosts.

These broadcasts provide information that is immediate and relevant as the broadcasters do more than just inform listeners of happenings. Radio becomes desirable then because of actuality, body style and locality. Radio can invite listeners to participate in giving a response. Compared to TV, radio is more imaginative. Successful news radio is able to arouse the emotions of its listeners. According to Masduki (2001), radio has four functions, namely: to present information, to provide mobility of public opinion in influencing policy, to bring two different opinions and to act as a medium to bring togetherness.

In public relations, the radio can help in the formation of an image; it can make "something" become more visible in the public eye. With these functions, radio is able to bring listeners and of course potential advertisers together. Radio has been effectively proved to be the best way to attract public attention in publicrelations activities (Field, 2009). So, there is a cross between public relations and radio broadcasting. They can complement one another in a campaign programme or one geared to plant a positive image.

According to Mowitt (2001), in certain situations, radio can be the nation's "mouthpiece" (p.76). A study on the radio is able to describe its social and cultural history with a critical perspective. Radio can have philosophical meanings related to political communication and it can also be used as a medium of provocation that contains certain political thinking (Mowitt, 2001).

Radio, then, can be a political force capable of manipulating the mind of the public. Government in relation to citizens needs to encourage them to maintain an attitude of pride in the country that is reflected by the following indicators: the attitude of pride in the nation and the state; the spirit of national unity; sense of belonging in using Indonesian products; using Bahasa Indonesia as the primary language in formal communication as well as in everyday conversation (Nurdiaman, 2009).

Image Building Through Radio Broadcasting for Governments

Using radio to build trust in the government of the Republic of Indonesia was reported to have been done in the following ways: the informants heard good things about the government through statements made on the radio, making them place even more confidence in the government of Indonesia. This indicates that the radio is not maximised in imparting credibility of the government among its citizens. The discussion of social issues on the radio was seen in the statement, "If I got a problem in Taiwan, I will contact the radio to be a mouthpiece for the government of Indonesia," and the statement that the radio was able to uncover social problems with regards to Indonesian citizens who lived in Taiwan. Therefore, radio was less revealing on matters related to issues about citizens living in Taiwan.

Radio also functioned as motivator/ media in the model of communication between Indonesian government and its citizens. As female Indonesian citizens who stayed abroad, they reflected a very good image of Indonesian women. The informants prided themselves on being Indonesians staying in Taiwan. They were also heroes in terms of foreign exchange; they were all proud to be working women earning a living in Taiwan. Regarding concern for them from the government of the Republic of Indonesia, they responded that they felt their fate and the needs were important to their government although they were far away in Taiwan. These data indicated that Indonesian citizens in Taiwan had a positive image of their government.

The results showed that the informants had acquired a good image of the Indonesian government from the radio broadcasters. They knew that Radio Taiwan International was a collaboration between the governments of Indonesia and Taiwan. As we know, radio functions as a provider of media information and plays a role in collecting, gathering, processing news and disseminating it to the public, both among the public or from the government to the public or vice versa. The role of radio is to provide communication between people, manage information required by society, and in its role as a provider of communication between the government and local communities, it acts as a medium of socialisation programmes initiated by the government. This socialisation includes disseminating rules and providing empowerment, entrepreneurship, health counselling, education and other information that society needs. For proper functioning, a state needs the media as a communication tool. As a social medium, radio has a very important role in building the image of a community as it, together with other mass media, is able to establish certain

conditions in society. Radio, like all other mass media, can disrupt an event or act as a unifier through patriotic songs or other programmes.

The Method of Delivering the Message to Female Radio Listeners

In this study, the informants said that there was a correlation between government communications by radio and the positive image it conveyed among Indonesian workers in Taiwan. The more effective the communication was, the more positive was the image of the government of Indonesia that was built. Thus, for the cultivation of a positive image of the government among Indonesian workers, the government should design messages for dissemination through local radio for use in countries where Indonesian citizens are living.

Each radio station must have a strategy to overcome competition in the industry in order to capture the attention of the targetted listener group. Good planning of broadcast programmes is one of the important actions to attract listeners. When it comes to an audience of women listeners, radio should focus on the needs of women ranging from development of personality, how to nurture inner beauty, building a career, fashion and domestic issues, among others. The programmes offered on radio must be different. Radio must be able to deliver innovation in building the image of a government.

The government of Indonesia, despite the location of their citizens, should show concern for the fate and needs of all Indonesian citizens, such as women workers in Taiwan. A good image would be built if Indonesians working abroad are able to have their needs met by the government even if only through the medium of radio. While the issue of ethnicity was not an issue for the informants that affected their feelings towards the Indonesian government, the government of Indonesia can consider promoting any ethnic-themed radio programmes that can relate to all Indonesian citizens regardless of their ethnicity, whether, for example, Sundanese, Javanese or Lampung. Thus the communication model of radio communication should be based on interpersonal relations.

Radio broadcasts have advantage for listener groups such as Indonesian female listeners. Delivery of message by radio broadcast is done using spoken language and non-verbal signals such as beeps counting down the time for the start of a news programmes are kept to a mimimum. People can enjoy a radio broadcast while eating, lying down, working or driving. Therefore, radio broadcasts are a suitable form of entertainment and connection with the homeland for women workers living abroad whose work does not leave them much time for socialising or to read newspapers.

Women by nature prefer listening for information and look forward to receiving information in interesting ways such as through story. Delivery in presenting information is important because the public are selective. Since there are many choices of radio channel and medium of communication, people have a wide variety of media to pick from and will select the one that best fits their needs. Music plays an important role as most people are attracted to it.

The complicated nature of women listeners in general makes it a challenge for a radio channel to provide the right mix of what would appeal to this segment of the audience. However, it is necessary to understand their needs and try to cater for them as audience segmentation helps marketers to detect and cut out competitors. The competitors are not solely broadcast media that offer the same programmes, but also those that are able to provide a suitable alternative that would be attractive to the targetted audience. To address this, radio channels should work out a method of delivery that would appeal to female listeners so that image building among this target group will be effective.

Radio is a source of complex information ranging from providing news and information to encouraging economic development, boosting popularity of the government and promoting political propaganda and ideology. For listeners, radio is a friend, a means of communication, a channel for exercising the imagination and for giving information. One of the weaknesses of radio is that it is a one-way communication channel that provides communication only from the communicator to the communicant. Communicators do not know the response of the communicant. This weakness, coupled with its ability to offer only 'bits of hearing' through brief messages means listeners are not able to acquire more

information or deeper understanding of a message as immediate feedback is not possible. Listeners who do not understand or who would like further explanation cannot ask the broadcaster to repeat something that has been said. This weakness has led to much study focussed on improving communication through radio. This being the case, radio broadcasters must deliver messages intended for women listeners through relevant talk and by speaking directly to them as a friend in the real world.

Radio Programmes for Citizens Abroad that Support Image Building

As a mass medium, radio has the power to appeal to the imagination and to individuals directly as when broadcasters greet each listener individually. Listeners tune in to their radio in the car, at home and even in bed. Radio can stimulate the imagination in a powerful way. Radio listeners must participate actively by responding to suggestions in order to appreciate the information being shared; they will need to rely on their senses of sight and smell, for instance, to bring an experience to life. Listening to the broadcaster, the listener must visualise what the speaker looks like and how his or her facial expressions and body language might match what is being shared. Therefore, the words used by the broadcaster must be apt and accurate as well as correctly chosen in order to convey the message clearly and effectively. In this way, radio can help to build a credible image of the government.

Radio, then, is a friend to listeners, a means of communication, exercising the imagination and a channel of information. Radio programmes designed to build the image of a government among its citizens working abroad must provide connectivity between the government and the listeners. For Indonesians working in Taiwan, this can be done through the airing of traditional or folk songs and stories from the homeland. Also important is the language used for the programmes. Even the names of the broadcasters can provide connectivity, creating a sense of home in a foreign country for the migrant worker. Positive news content on the Indonesian government and their policies that protect them as foreigners in an alien land will also help.

In general, in Indonesia, radio as a medium is associated with local needs. Radio cannot be separated from technological innovation. The use of this medium affects many aspects of life, especially in the social and economic aspects. Radio technology advances at the same time society does. Therefore, RTI should update its technology to adapt to the needs of its listeners i.e. Indonesian workers in Taiwan. In this way, it can also build support for itself as a reliable, useful and much needed medium.

The advantage of radio is that it is adaptable and can be used to present live events at the same time they occur. Radio does not require lengthy film processing nor does it need a long printing process. Radio is also used as a medium for providing education based on concepts and facts. This provides a good opportunity for the management of RTI to build a positive image of the Indonesian government speedily.

CONCLUSION

This study found the following to be true: First, image building through radio broadcasting for governments can be done as an important role of radio is that being a medium of communication between the government and local communities, as well as a medium of socialisation through government programmes. This socialisation includes disseminating rules and providing empowerment, entrepreneurship, health counselling, education and other information that society needs. For proper functioning, a state needs the media as a communication tool. Second, the method of delivering a message to female radio listeners should be two way communication. This being the case, radio broadcasters must deliver messages intended for women listeners through relevant talk and by speaking directly to them as a friend in the real world. Third, radio programmes that are ethnically coloured ethnicity would be an effective for citizens working abroad as they support image building. This study concludes that image building through radio is an excellent means of communication for Indonesian women working in Taiwan and can help build a good image among the women workers for both the Indonesian and Taiwanese government.

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Determinants of Transfer Pricing Aggressiveness in Indonesia

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ABSTRACT

The objective of this empirical research is to examine the major determinants of transfer pricing aggressiveness in Indonesia. This research used a sample of multinational companies listed in the Indonesian Stock Exchange (IDX) from the period of 2010 to 2012. The data analysis was based on the company's financial statements generated from the IDX. Transfer pricing aggressiveness was measured by TPRICE index, which consists of items that represent occurrences of non-arm's length transactions. Six determinants of transfer pricing aggressiveness were tested in this study, including firm size, profitability, leverage, intangible assets, multi-nationality and tax haven utilisation. To test the model, multiple regression analysis was applied. Based on the results, the authors discovered that firm size and leverage are positively associated with transfer pricing aggressiveness, while intangible assets and multi-nationality are negatively associated. This study also shows that profitability and tax haven utilisation are not related to transfer pricing aggressiveness.

Keywords: Transfer pricing, tax avoidance, arm's length principle, Indonesia

INTRODUCTION

Reese et al. (1989) defined a multinational enterprise (MNE) as either a public or private corporation that owns at least one foreign subsidiary or affiliate division. In the last few decades, many companies have expanded their operation to overseas markets as part of their business strategy to increase their size. A study conducted by the World Trade Organization (World Trade Organization, 2007) showed that half of the largest economies

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received contribution from corporations, out of which approximately 70% of worldwide trade in the past 20 years was generated from Multinational Enterprises (MNEs). By operating in overseas markets, MNEs are able to un-tap opportunities that are not available in the local market due to differences in the competitive advantages among nations such as access to raw materials, access to customers, cost of production, technology advancement, infrastructure maturity etc. (Ernst & Young, 2011).

These MNEs reflect the increase in economic integration among nations (Rugraff & Hansen, 2011). Aligned with the activities by MNEs, the number of crossborder transactions between related parties increased in the form of trade of goods and services, transfer of intangible assets, flow of fund etc. (Conover & Nichols, 2000). The statistics indicate that 30% of current international transactions come from intragroup trade (United Nations, 2013). Crossborder transactions are not always driven by commercial reasons but are conducted instead for tax purposes (i.e. tax arbitrage due to different taxation regulation among nations), and this practice leads to popularity of transfer pricing practices (hereinafter referred to as 'TP').

The Organisation for Economic Cooperation and Development (2003) defined TP as the price at which to buy and sell goods and services between parties that are related. The transaction may be conducted by a person or an entity that has special relationship with the corporation. Hence, the intra-group transaction is purposely structured such that the profit is shifted and reported in the low-tax country as much as possible while the cost is recorded in the high-tax country. This practice is against the arm's length principle (Bernard et al., 2006). The arm's length principle is a condition wherein terms of transactions to a related party are the same as those applied to an independent party.

Global taxes that are influenced by nonarm's length conditions are further facilitated by tax haven countries (Dharmapala, 2008). OECD (2006) conducted an extensive study that is revised regularly and reports 39 taxhaven countries. Those countries provide a favourable tax regime by charging foreign investors zero or low withholding-tax rates. They allow the shifting income from high-tax to low-tax jurisdiction countries and shifting expense in opposite directions (Hamilton et al., 2001). Those TP practices have led to TP aggressiveness, which causes tax avoidance, and is significantly lower in corporate tax payments for the group as a whole (Sukanto, 2013). In fact, Agus Martowardojo, former Indonesian Minister of Finance, was quoted in an MUC Consulting Group report (2013) as claiming that 4,000 multinational firms based in Indonesia had not paid corporate tax in seven consecutive years. Kontan newspaper pointed out in a report that potential losses of tax revenue in Indonesia during 2009 due to transfer pricing was approximately 1.3 trillion rupiah (Yani, 2010). All this indicates the existence of MNEs and signals that an increasing number of foreign operations have existed in Indonesia. The many issues that have arisen regarding tax avoidance through TP practices prompted this research, which has as its objective the examination of the major determinants of TP aggressiveness in Indonesia.

LITERATURE REVIEW

Transfer pricing is the price used to transfer either tangible or intangible assets among entities in a group. OECD (2013) defined transfer pricing (TP) as "shifting of risks and intangibles, the artificial splitting of ownership of assets between legal entities within a group, and transactions between such entities that would rarely take place between independents" (p.6). TP, thus, is the price used to transfer either tangible or intangible assets among entities in a group.

Transfer pricing is currently a crucial issue because it is difficult to determine the price considered as effective in transferring assets between entities in the same group (Holmstrom & Tirole, 1991). It would be easy if the related price were available as that could be used as a reference point. For instance, the price of commodities is obviously available in the market, but the price of proprietary goods and services or intangibles is not. As a result, it is easy to determine whether the transactions on commodities to related parties are arm's length, but this becomes a complicated task when it comes to the proprietary ones. The price charged to acquire those goods and services, however, can significantly influence global taxes.

Hypothesis Development

Firm size. Tax planning activities consume resources, such as human resource and money and time. Wahab and Holland (2012) stated that the fee from related tax activities is the second largest source of income for UK accounting firms. As it needs additional efforts, a company needs to consider tax planning carefully, particularly the availability of resources. The economics of scale theory states that there is a competitive advantage as a result of an increase in a firm's size of operations that leads to a decrease in unit cost. By producing and selling more products, a company has the ability to invest in specialist expertise (Manktelow, 2014). Hiring specialists may seem expensive at the beginning; however, their presence enables a company to improve quality and increase efficiency in production with the same amount of input. Hence, this additional cost of employees can be offset.

From the financial point of view, operating a bigger size of company may indicate that more assets can be used by a company as collateral. Therefore, it offers an opportunity to acquire borrowings with a lower interest rate. In relation to tax avoidance, Siegfried (as cited in Rego, 2003, p. 810) pointed out that larger firms have the ability to recruit more employees, play a role in the political process and construct activities to optimise tax saving. Corporations are able to gain access to expertise particularly in tax planning, which aims to reduce corporate tax payment with a lower average cost as referred to in the economics of scales theory. As a result, larger firms are more aggressive in organising tax planning strategies than smaller firms (Siegfried, 1972; Stickney & McGee, 1982; Porcano, 1986; Conover & Nichols, 2000). Shackelford et al. (2007) also stated that larger firms are likely to shift their income for tax purposes. As they grow bigger, they are more efficient in exploiting and arranging tax avoidance (Mills & Maydew, 1998). These advantages significantly increase the incentives for companies to reduce corporate tax liabilities by being more aggressive in applying TP practices. Hence, the following hypothesis is formed:

H1: Firm size is positively associated with transfer pricing aggressiveness

Profitability. Economies of scale also exist in companies that have larger pre-tax income. Firms with greater income before tax have more incentives to reduce their tax payment by shifting their income to a low-tax jurisdiction or by transferring tax deductible expenses to high-tax nations (Womack & Drucker, 2011; Duhigg & Kocieniewski, 2012). Rego (2003) argued that companies with greater pre-tax income have resources to participate in tax avoidance activities. Further, Rego explained that companies that gain more profit have a tendency to formulate transactions to avoid tax payment.

Wilkie (1988) and Wilkie and Limberg (1993) found that profitability is negatively associated with effective tax rates (ETR). ETR is used to measure group or overall corporate tax payment, which is calculated by dividing corporate tax payment with the total pre-tax income. Companies with the same amount of income may have different ETR. A lower ETR indicates the company is more effective in tax planning activities that aim to reduce corporate tax payments. Research into the relationship between profitability and ETR has shown that profitable companies have more ability to pay less than the overall corporate taxes. In other words, the more profitable the company, the lower is its overall corporate tax payment.

Wilkie (1988) also conducted research that showed that companies with more profit have higher capability to apply the tax preference theory. Tax preference refers to components such as debt financing and intangible assets that allow pre-tax income that is different from taxable income. Companies that make a higher profit are more likely to have more preferences or items to engage in tax planning activities to reduce corporate tax payments. Thus, our next hypothesis is:

H2: Profitability is positively associated with transfer pricing aggressiveness

Leverage. Leverage is used to show how much debt is used in order to finance a firm's assets. Basically, capital is structured either according to debt or equity. The total of both types of capital of a company reflects its total financing capacity. Debt is considered lower than equity due to tax benefits and limited obligation to lenders. Debt is claimed as a tax deductible item. The payment of interest to a lender is part of the expenditure allowed in an income statement, while payment of dividend to equity holders is part of retained earnings. Hence, debt gives more benefit in terms of tax purposes for the borrower. Debt can be taken advantage of as a tax-deductible item in a financial statement, specifically in the expenses section in an income statement.

Firms with high leverage are likely to take opportunity of tax avoidance by structuring its debt (Grubert et al., 1991; Newberry & Chaliwal, 2001; Dyreng et al., 2008). This is done by acquiring debt from group members located in low-tax regions (Hines, 1996; Rego, 2003; Dyreng et al., 2008) and incurring the interest in hightax areas. Hence, companies in high-tax jurisdictions can have additional expenses to deduct from their tax payment. Mills and Newberry (2004) showed that companies with a high leverage report lower ETR. A previous study conducted by Bernard et al. (2006) also stated that firms with debt higher than equity are more aggressive in planning their tax system. Further, it is common that multinational companies transfer debt/ equity between group members (Richardson et al., 2013).

Thin capitalisation rules exist as a tax-avoidance rule to restrict interest deduction when the debt-to-equity ratio is considered excessive. OECD (2013) stated that these rules may enable the limiting of transfer of debt done by related parties; however, companies are able to organise a scheme of debt transference through an independent third party. Hence, there is still a possibility of using debt in reducing overall tax payment.

The shifting of profit through a debt scheme is also motivated by tax arbitrage opportunities. Tax arbitrage is a strategy to exploit different tax rate rules of different countries. Corporations with high-tax jurisdiction acquire debt from group members located in low-tax regions (Hines, 1996; Rego, 2003; Dyreng et al., 2008) to have tax-deduction items (i.e. interest expense) to include in their income statement. A hypothesis regarding firm leverage impact on transfer pricing aggressiveness was therefore developed as follows:

H3: Firm leverage is positively associated with transfer pricing aggressiveness

Intangible assets. OECD member countries and other countries that adopt the arm'slength principle believe that the principle provides broad parity on how taxes should be applied when MNE groups and independent parties transact. The arm'slength principle treats firms in MNE groups (related parties) and independent enterprises equally to prevent neither of them from being advantaged or disadvantaged for tax purposes. The arm's-length principle works effectively in various cases, such as in commodities. The prices of commodities, as an indicator to determine arm's-length transactions, are readily available in the market. They enable purchase and sell activities such as conditions and circumstances to be compared between independent and dependent parties. There are also other methods from the financial perspective that are used to make relevant comparison of transactions such as net profit, gross profit and mark-ups on cost. There are, however, many cases where applying the arm's-length principle is difficult and complicated, such as unique intangibles.

Issues regarding the arm's-length principle arise when companies under the same group transfer their intangible assets, such as royalties (Gravelle, 2010). Intangibles are acknowledged as highly flexible and less fixed to a particular time and place. Transfer of intangible assets incurs significant risks of transfer pricing aggressiveness due to variability in interpreting valuations and difficulties in determining accurately under which intangible assets the transactions occur (Grubert, 2003). Such activities may be different from those engaged in by independent enterprises. As a result, there is no clear evidence on how the transaction of intangibles should be undertaken. Hence, they can be transferred between nations as a way to reduce corporate tax payments by shifting income internationally (Hanlon et al., 2007; Shackelford et al., 2007; Dyreng et al., 2008).

Intangibles, for instance, new invention of foods, are difficult to be valued and compared because of market price unavailability. Subjective reviews also may be involved in deciding the most appropriate terms of transactions and can lead to difficulties in determining whether the conditions of transactions are arm'slength. As a result, the characteristics of those intangibles' may open great opportunities to transfer pricing aggressiveness through transfer intangibles between entities in a group with different corporate tax rates (Shackelford et al., 2007). Our hypothesis regarding intangible assets is presented as below:

H4: Intangible assets are positively associated with transfer pricing aggressiveness

Multinationality. Companies that operate overseas have significantly more opportunity and incentive in shifting their profit and escaping tax through crossborder transactions (Slemrod, 2001; Rego, 2003). Slemrod (2001) also claims that multinational companies are facilitated by various tax avoidance mechanisms and approached to reduce their tax liabilities significantly.

Tax non-compliance is done by exploiting the differences in tax rules between countries and the changes in tax distribution from what is intended or suggested by tax law (Conover & Nichols, 2000; Rego, 2003; Hanlon et al., 2007). Hanlon et al. (2007) also stated that successful non-compliance by one corporation will trigger other entities to do the same as a means of avoiding additional payment. Some observers believe that multinational corporations have greater opportunity to relocate their profits from one jurisdiction to another than companies operating domestically i.e. only in one location (Rego, 2003).

Rego (2003) found that multinational enterprises have lower worldwide ETRs than do domestic-only companies. The discovery indicates that companies with extensive foreign operations do transfer pricing more aggressively by shifting income from high-tax locations to lowtax locations; this allows multinational firms to pay less corporate tax than do companies that operate in the same location. This led to the next hypothesis regarding multinationality i.e:

H5: Multinationality is positively associated with transfer pricing aggressiveness

Tax haven utilisation. Tax haven is a jurisdiction that applies favourable tax regimes to both its residents and non-residents. OECD (1998) defined a set of criteria to identify tax-haven countries, including zero or low taxes, absence of effective exchange of information and absence of transparency. These criteria are advantages and reasons why non-residents are able to escape tax payments in their country of residence.

Tax havens open opportunities for entities to operate in high-tax territories to indulge in tax avoidance activities by shifting their profits to zero or nominal tax territories (Desai & Dharmapala, 2006; Slemrod & Wilson, 2009). Tax havens apply strict confidentiality rules and have laws and administrative practices to avoid sharing information between tax authorities on taxpayers benefiting from those countries. Hence, other countries do not have access to information regarding what their residents do in tax havens. Tax havens give advantages to taxpayers by keeping their income unreported in the source country. They hide information regarding source of income invested in their jurisdictions.

Tax havens facilitate tax planning activities, which aim to reduce corporate tax payments significantly, through transfer pricing practices (Grubert et al., 1991; Hines & Rice, 1994). They allow transfer of goods or services from countries with high tax rates to those with low tax rates at the lowest transfer price and transfer goods or services out of those countries at the highest transfer price. For instance, company A, which runs a business in country A with a 25% corporate tax rate, has a subsidiary B in a tax-haven country. It sells product X that costs IDR95,000 to its customer in country A for IDR175,000 per piece. A taxavoidance activity would be to sell product X to subsidiary B for IDR100,000 each, then have subsidiary B sell to customers in country A for IDR175,000 each. Hence, the taxable income of company A in country A is only IDR5,000 instead of IDR80,000, without considering other costs or expenses.

Prior research conducted by Dyreng and Lindsay (as cited by Mills, 2012) shows that firms incorporated in tax havens have lower ETR due to an increase in incentives to reduce overall corporate tax payment. It is done by establishing operations in or sourcing intangibles to low-tax jurisdictions and allocating the income or expense to camouflage firm performance as a whole.

Harris et al. (1993) found that multinational companies in the US have lower corporate tax liabilities with the existence of tax havens. This is indirectly used as proof that firms with tax-haven subsidiaries lead to transfer pricing aggressiveness (Slemrod et al., 2009). Furthermore, tax-haven incorporated entities play a significant role for the whole corporate group. They are able to influence the corporate group as a whole, including business, treasury and service functions. Hence, the presence of tax-haven incorporated firms will affect accountability and transparency of the entire corporate group (Desai et al., 2007). A hypothesis regarding tax haven utilisation, thus, is as follows:

H6: Tax-haven utilisation is positively associated with transfer pricing aggressiveness

METHODOLOGY

There were 447 publicly-listed Indonesian entities for the year 2012. However,

the sample used was 93 multinational companies due to the exclusion of financial firms (62), insurance companies (11), companies without overseas subsidiaries, which were considered non-multinational companies (251) and companies that did not report earnings in 2010-2012 (30). In total, there were 279 financial reports to be analysed. This number was derived from multiplying 93 companies by three, as the financial reports of three years, 2010-2012, were used.

In this study, the relationship between variables is presented using the multiple regression model. This was modified from the regression model created by Richardson et al. (2013).

TPRICEit= α oit+ β 1SIZEit + β 2PROFITit + β 3LEVit + β 4INTANGit + β 5MULTIit + β 6THAVit + β 7-15INDSECit + ϵ it

Table 1Dependent Variables and Measurements

Category	Variable	Measurement		
		Transfer pricing index, ranging 0-100% from each company's mean of criteria as follows:		
		1. The existence of interest-free loans between related entities		
		2. The existence of debt forgiveness between related entities		
		3. The existence of impaired loans between related entities		
Dependent variable	TPRICE	 The provision of non-monetary consideration without commercial justification 		
		5. The absence of formal documentation to support selection of appropriate arm's-length methodologies or the formal documentation regarding related parties transactions		
		6. The disposal of capital assets to related entities without commercial justification		
		7. The absence of arm's-length justification for transactions between related entities		
		8. The transfer of losses between related entities without commercial justification		

(i=listed multinational companies on the Indonesian Stock Exchange (excluding financial institutions, banks and insurance and securities companies; eit=error).

Variables and Measurements

TPRICE represents the dependent variable. It consists of eight dichotomous items that can be found in notes to financial statement, particularly in the receivables, loans and related party transactions sections. These items aim to measure the occurrence of non-arm's-length transactions that lead to the percentage of transfer pricing aggressiveness.

This research used 'sum-score' approach, which has been successfully applied in other research, particularly in the development of corporate governance indices (Brown & Caylor, 2006; Bebchuk et al., 2009) and accounting disclosure indices (Salter & Niswander, 1995; Zarzeski, 1996; Lanis & Richardson, 2012). The higher the percentage of the overall result, the higher the level of transfer pricing aggressiveness.

Table 2Independent Variables and Measurements

Category	Variable	Measurement
	1. Firm size (SIZE)	Natural logarithm of total assets
	2. Profitability (PROFIT)	Natural logarithm of pre-tax income
	3. Leverage (LEV)	Long-term debt divided by total assets
Independent variables	4. Intangible assets (INTANG)	A dummy variable (1 if the company has payment of royalties with related parties, otherwise 0)
	5. Multi- nationality (MULTI)	Total number of company's foreign subsidiaries divided by total number of company's subsidiaries
	6. Tax Haven Utilisation (THAV)	A dummy variable (1 for the entity with at least one subsidiary company incorporated in an OECD (2006) listed tax haven, otherwise 0)

There were six independent variables in this research, including firm size (SIZE), profitability (PROFIT), firm leverage (LEV), intangible assets (INTANG), multi-nationality (MULTI) and tax-haven utilisation (THAV), and each variable measurement is reflected in Table 2.

FINDINGS AND DISCUSSION

This research included all the multinational companies listed on the Indonesia Stock Exchange for the year 2010 to the year 2012 based on the criteria discussed in Part 3. Table 3 below shows the multiple regression results.

Variables	Expected Sign	Coef	Sig	VIF		
Constant		0.036				
SIZE	+	0.014	0.092*	1.737		
PROFIT	+	-0.004	0.347	1.67		
LEV	+	0.19	0.007***	1.195		
INTANG	+	-0.084	0.014**	1.085		
MULTI	+	-0.1	0.025**	1.151		
THAV	+	0.033	0.133	1.184		
R sq.	0.113					
Adj. R sq.	0.094					
F-stat	0					

Table 3	
Regression R	esults

***significant at α =0.01 **significant at α =0.05 *significant at α =0.10

The regression showed the acceptance of the first hypothesis at 10% significance level with a coefficient of 0.014. As shown above, there was a significant positive relationship between firm size (SIZE) and transfer pricing aggressiveness (TPRICE). The result was supported by the theories expressed in Part 2, which stated that bigger companies are more aggressive in conducting tax planning to minimise the payment of corporate tax. This finding was also consistent with findings Shackelford et al. (2007), who claimed that larger firms have a tendency to shift income for tax purposes through transfer pricing practices. As larger firms have more resources and opportunities, they have bigger incentives to construct tax planning. The advantages owned by bigger corporations refer to the economics of scale theory; this was also the conclusion reached by Conover and Nichols (2000), Porcano (1986) and Stickney and McGee (1982) in their research. They concluded that these advantages pushed

bigger companies to utilise the opportunity to reduce corporate tax payment.

Profitability variable (PROFIT) has -0.004 of correlation coefficient and 0.347 of p-value. It indicates an insignificant outcome as well as a negative association with TPRICE. There is no significant relationship between profitability and transfer pricing aggressiveness. The finding is not aligned with the studies of Rego (2003), Womack and Drucker (2011), and Duhigg and Kocieniewski (2012), which prove that firms with higher pre-tax income have more incentives to formulate transactions to shift their income or to transfer expenses to reduce tax payment. The result contradicts the expected outcome, and implies that profitability is irrelevant in affecting transfer pricing aggressiveness in Indonesia to reduce corporate tax payment.

Firm leverage (LEV) has a significant as well as positive relationship with transfer pricing aggressiveness (TPRICE). It is highly significant under α =0.01. Further,

the correlation coefficient was in positive sign (0.190). The result confirmed that the higher the leverage of a firm, the more aggressive a company was in doing transfer pricing activities. This is consistent with previous research conducted by Bernard et al. (2006), which concludes that firm leverage did have a significant effect on transfer pricing aggressiveness. This is also in line with the earlier studies of Grubert & Harry (1995), Newberry & Chaliwal (2001) and Dyreng et al. (2008) that firms that are highly-leveraged have more opportunity to avoid corporate tax payment through debt structuring between group members. It enables companies to deduct their profits through the payment of interest as a result of intra-group loans. Therefore, pre-tax income becomes smaller; consequently, the payment of corporate tax liability is reduced. The finding of a positive relationship between firm leverage and transfer pricing aggressiveness is also supported by the discovery of Mills and Newberry (2004) that concluded that lower ETR is owned by companies with higher leverage. Lower ETR (reduction of total tax burden of overall group tax payment) indicates that companies have achieved tax savings.

Intangible assets that are represented by royalty have a significant effect at α =0.05 to TPRICE as dependent variables; nevertheless, the coefficient of -0.084 indicates a negative relationship that is different from the expected sign. It is not possible to prove that the existence of royalties in companies can increase the level of transfer pricing aggressiveness. Instead, companies with royalty payments decrease the practice of transfer pricing. This result is inconsistent with the studies of Shackelford et al. (2007) and Hanlon et al. (2007) that states that intangibles are difficult to be valued and compared. This opens great opportunities for transfer between firms within a group for tax purposes. One explanation might be due to tight regulations that particularly regulate transaction of royalties in Indonesia. The Regulation of the Director General of Taxation No. PER-32/PJ/2011 issued on November 11, 2011 as an amendment to PER 43/PJ/2010 requires certain conditions that indicate arm's-length intra-firm royalty payment assessed through specific tests called a three-step process. Firstly, there should be proof of intangible property (IP) ownership against the IP existence. Secondly, there should be tangible benefits generated by the payee towards the receipt of royalty payments. Thirdly, an arm's-length test should be passed in assessing the payment. The first two requirements need to be met before proceeding to the third step (Phan & Gupta, 2012). Other regulations exist to avoid corporate tax payment through intrafirm royalty payments. The Regulation of the Director General of Taxation No. Per-61/PJ. /2009 regulates the procedure and implementation of tax treaties. It ensures the prevention of misappropriation of tax treaties. Bilateral tax treaties between Indonesia and other countries are made not only to avoid double taxation but also to reach the agreement of arm's-length transfer prices (OECD, 2008). A section in the tax treaty discusses royalty transactions in detail. It specifies the definition of royalty, how taxes are charged on royalty and at what rate, and so forth, so the presence of a tax treaty helps to prevent transfer pricing practices that aim to avoid corporate tax payment. Therefore, due to the tight regulation on royalty in Indonesia, the existence of royalties in multinational companies listed in the IDX does not increase the transfer pricing aggressiveness. Therefore, the finding that of a negative relationship between intangible assets and aggressiveness of transfer pricing is reasonable.

Multi-nationality was significantly negative in affecting transfer pricing aggressiveness. As a result, the fifth hypothesis is rejected at a significant level of 0.05 with a coefficient of -0.100. The outcome indicates that the more foreign subsidiaries companies have, the fewer transfer pricing activities they perform. This contradicts results by Hanlon et al. (2007), Conover and Nichols (2000) and Slemrod (2001), who found that companies with foreign operations have more chances and courage to escape taxes. This is done by exploiting tax rules differences between countries through various transfer pricing practices. These findings are not applicable in Indonesia as there are almost no transactions between companies and their foreign subsidiaries used in the sample based on the notes to the companies' financial statements. This might be because foreign subsidiaries that are formed by Indonesian listed companies may act as dormant companies and the existence of assets owned by foreign dormant companies is not disclosed in detail in the financial statement of parent companies. According to a glossary published by OECD (2008), a dormant entity is a "legally alive and has legal personality, but does not carry on any activity and has neither employment nor turnover" (p.73). As a result, there were almost no transactions recorded between companies and their foreign subsidiaries referred to in the notes to the companies' financial statements. However, dormant entities have a potential risk of transfer pricing misappropriation, such as activities of dormant companies with intercompany creditors and net assets/investments (OECD, 2012). This is because there are several cases where dormant companies are purposely established only to hold an asset or intellectual property without having to comply with transfer pricing requirements (Department for Business Enterprise & Regulatory Reform, 2009).

Tax-haven utilisation showed a positive relationship with a coefficient correlation of 0.033. The result aligned with the expected sign as stated in the hypothesis that the existence of tax-haven countries positively impacts the aggressiveness of transfer pricing practices. However, the variable was not significant either at α =5% and α =10%. This indicates that tax-haven utilisation was not significant to transfer pricing aggressiveness. This may prove the findings of Richardson et al. (2013). Their study found that tax-haven utilisation was in line with transfer pricing aggressiveness but the result was insignificant. Therefore, the existence of tax-haven countries does not really affect the tax planning to avoid payment of corporate tax.

CONCLUSION

Transfer pricing aggressiveness reflects the activities that are purposely structured to avoid corporate tax payment. This research was conducted to examine major determinants of transfer pricing aggressiveness in Indonesia, particularly the factors that support multinational companies to conduct those practices. Six determinants were tested in this study, including firm size, profitability, leverage, intangible assets, multi-nationality and tax haven utilisation. This research found that firm size (SIZE) and leverage (LEV) were major determinants of TP aggressiveness in Indonesia. On the other hand, profitability (PROFIT) and tax haven utilisation (THAV) were not found as determinants, whereas intangible assets and multi-nationality were negatively significant in relationship to TP aggressiveness.

There was a positive significant relationship between firm size (SIZE) and transfer pricing aggressiveness (TPRICE) that was measured by using total assets. This finding implies that total assets of companies affect the aggressiveness of transfer pricing. The result was aligned with the expected hypotheses, which predicted a positive significant relationship between the variables. It was also in line with the greater opportunities and incentives that bigger companies have that can lead to transfer pricing aggressiveness. There was also a positive significant relationship between company leverage (LEV) and TPRICE which is measured using total long-term debt divided by total assets. The result indicated that the higher the leverage, the more aggressive companies are in doing transfer pricing.

The result of this study contradicts the expected hypothesis on positive significant relationship. There was a significant negative relationship between INTANG and TPRICE that was examined through the existence of royalties. The outcome implies that the existence of royalties lessens the transfer pricing aggressiveness. The expected hypothesis is not applicable in Indonesia, which may be due to tight regulation and specific procedures to be fulfilled to prove arm's-length royalty transactions. There was also a significant negative relationship between MULTI and TPRICE that was quantified by dividing total foreign subsidiary with total subsidiaries. The result reflected that the higher the percentage of foreign subsidiaries that companies owned, the lower was the aggressiveness of transfer pricing activities. The outcome may be due to foreign subsidiaries that act as dormant entities. They do not carry on businesses but are allowed to hold assets or intellectual property.

The outcome of this study indicated that there was no significant relationship as predicted hypothesis. PROFIT, which is presented by total pre-tax income, and TPRICE were not significantly related. This means that the profitability of a company does not really give impact to transfer pricing activities. THAV, which is measured by the existence of subsidiaries listed under tax-haven countries published by OECD in 2006, and TPRICE were insignificantly related. It indicated that the presence of subsidiaries located in tax-haven countries did not affect the aggressiveness of transfer pricing.

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A Comparative Consumer Behaviour were Diffused by Innovation Website: The Online Students and The Regular Students

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ABSTRACT

The purposes of this study was to determine the scale of diffusion of innovation websites in consumer behaviour of two different groups, online and regular students. Previous studies showed that interactive website service, motivation to use the website, Internet literacy and user satisfaction were related to consumer behaviour. Therefore, this research considered user satisfaction as an intervening variable. Analysis of the six hypotheses used the Structure Equation Model with the analytical tool, WrapPLS, for both groups. The respondents were sampled from online students, numbering 274 respondents from two universities and regular students numbering 317 respondents from six universities. The results show that the online student's behaviour was diffused more by the innovation of the website rather than that of the regular students. Furthermore, student's satisfaction served as an intervening variable, which means that student's satisfaction is a must for universities to consider. Moreover, data provided by the online students showed that website interaction for student behaviour was not significant. The student behaviour was not significant to the scale of diffusion of innovation websiteThe five other hypotheses support the theory of diffusion innovation on consumer behaviour.

Keywords: Comparative, consumer behaviour, diffuse, innovation website, online students, regular students

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INTRODUCTION

Consumer behaviour includes patterns of purchasing, evaluating and disposing of products and services that consumers expect will satisfy their needs (Schiffman & Kanuk, 2010). Globalisation has brought consumer behaviour to the Internet. An approach is succesful if consumer needs can be related to consumer wants (Sheth & Parvatiyar, 1995; Kotler & Armstrong, 2012). Globalisation of the economy has enabled companies to operate in various sectors of the global market. The global market is moving rapidly because of the Internet. The use of the Internet has become wide spread through a number of technological innovations, one of which is the presence of website service. The service is currently an intensively used website marketing tool to seize opportunities. The service company's website can be used as an opportunity to serve and develop a close relationship with consumers. Consumers can be asked for feedback. If consumers' desires are fulfilled, they are likely to become repeat customers because they have experienced high satisfaction (Sheth & Parvatiyar, 1995; Kotler & Armstrong, 2012).

Research into the behaviour of consumers in adopting the service website is important. The adoption process of website services by consumers can be achieved if customer satisfaction is met (Kotler & Armstrong, 2012). The satisfaction of consumers is influenced by many factors (Kotler & Armstrong, 2012). Many companies fail to identify these factors. Identifying what these factors are is very important for companies, and this is a good reason to measure customer satisfaction. The results of this study are expected to encourage universities to provide website services that meet the needs of their students.

Globalisation emphasises the importance of technological innovation in

consumer behaviour theory and the theory of diffusion of innovation. Globalisation has made innovation diffuse in the service website in a variety of industries, not least the education industry in many parts of the world. Consumers are willing to adopt innovations in the form of repeat behaviour, and this can be regarded as customer satisfaction. Innovation affects how customers behave as well as how they do not behave (Rogers, 2003; Sahin, 2006; Deibel, 2011). Diffusion innovation is the understanding consumers receive on how to use innovation. Acceptance of the diffusion of innovation is not easily achieved. The process of diffusion of innovation is communicated all the time in certain social communities (Rogers, 2003). Diffusion of innovation can be defined as repetitive behaviour that describes consumer satisfaction in such technologies (Kotler & Armstrong, 2012).

Innovation may be a new idea, a new way, a new system or a new technology for the consumer or community. The Diffusion Innovation Model by Rogers is one application of the theory introduced 30 years ago. This model has been applied in a variety of disciplines such as politics, public health, history, economics, technology and education. Some of these fields were quick to accept the innovations but some were slow to accept them. The effect of the adoption of this dynamic website services is constantly changing all the time and cannot be predicted (Rogers, 2003). Rogers (2003) stated that consumers experience the process of adopting an innovation decision

in several stages: knowledge, persuasion, decision, implements, confirmation and adoption. Through these stages a customer makes a decision for adoption or not of an innovation. The concept of diffusion of innovation emphasises how these innovations can be adopted by consumers and how adoption can be spread to other potential adopters (Roehrich, 2004; Deibel, 2011; Sriwardiningsih, 2015). Consumer behaviour diffuses innovation if the consumer repeats use of teh innovation (Kotler & Armstrong, 2012). Innovation will diffuse consumer behaviour because of these characteristics: relative advantage (Rogers, 2003; Deibel, 2011; Sriwardiningsih, 2015), the need for compatibility (McKenzie, 2001; Hoerup, 2001), complexity (Martin, 2003), can be tested (Rogers, 2003; Sriwardiningsih, 2015), easily observed by others (Sriwardiningsih, 2015), freshness of information (Rogers, 2003) and uniqueness and communication (Rogers, 2003).

Consumer behaviour will be diffused by innovation of a website based on Internet use, which differs from individual to individual. The time it takes for an innovation to influence consumers can be long or short, and it can differ for individuals or communities. Innovation works as long as consumers use it and will not be useful if the consumer himself rejects it. It works unless the consumer is diffused (Schiffman & Kanuk, 2010).

The innovation of a website consists of hardware and software. Hardware is the physical example of technology services and software refers to its user requirement to use the technology. According to Rogers, research in software of websites is slower than research in hardware, this is because software is more difficult to measure in terms of its attributes (Rogers, 2003).

The Internet is an innovative global tool of technology that has come to be applied in all fields of activity today. This diffusive tool can meet diffuse consumer needs. Websites can service a lot of consumers at the same time. This makes the use of websites a crucial and suitable tool for use in the field of education. Therefore, it is relevant to investigate the behaviour of consumers in the adoption of technology in education (Sahin, 2006; Deibel, 2011).

Data have shown an increase in student application to universities from year to year. An interesting fact is that students who enter universities in Indonesia are not only recent high school graduates, but also from working adults. Their goal is to seek knowledge and skill that will hopefully improve their human capital (Central Bureau of Statistics Indonesia, 2012). The ratio of lecturer to students is low. This imbalance causes its own difficulties for the lecturer having to repeat the same material in different classes, so fatigue is a common complaint among lecturers, and tends to make their teaching ineffective (Ministry of College Education, 2012). Such conditions can be bridged with website innovation, where an innovation service website can be used to deliver the materials and information and provide communication between students and administrative staff and lecturers. Innovation is sorely needed to support teaching and learning in universities today (Herawati et al., 2008; Sravanthi, 2013), especially since the majority of young people, especially universities students, are familiar with the use of the Internet and gadgetry connected with it (Central Bureau of statistics Indonesia, 2012b).

This study is important as previous research has noted the difficulty today's students have in interacting with universities and lecturers (Daulay, 2008; Herawati et al., 2008). A data survey (Kompas.com, 2012) showed that students preferred to use online gaming websites than university website.

Students should be encouraged to use university websites as part of their learning process. These websites can also build selfmotivation in students through frequent use. At the same time, it will also develop their computer skills and ability and increase their satisfaction with the university. Research has shown that online student satisfaction in using university websites is relatively low (Herawati et al., 2008; Ministry of College Education, 2012b; Sriwardiningsih, 2014). Several factors are expected to influence students' satisfaction in using university websites. Consumer satisfaction can be seen from happiness, frustration and sadness (Kotler & Keller, 2012), perceived benefits in accordance with expectations, positive recommendation and repeat behaviour (Kotler & Keller, 2012). Online universities are supposed to provide online education and if they cannot provide student satisfaction, their services are deemed to have failed. As a provider of educational services both online colleges and universities must provide consistent satisfactory services. High satisfaction is the item paid for by the consumer. Student satisfaction and student behaviour in adopting the use of innovation websites is the focus of this research subject.

This research topic is important for two reasons. First, it provides fresh insight into the behaviour of students who use university website services, a topic that has received little attention even though it is an interesting topic that is pertinent and relevant to daily life. Researchers are interested to know how quickly students adopt the use of university. Previous research only focussed on the performance of websites, but did not consider the behaviour of users of the websites. Secondly, this study is important because it compared the behaviour of the adoption of innovations of two different groups i.e. online students and regular students. The pertinent questions that this research sought to answer were: Is the behaviour of both groups the same or different? Do both groups of students have the same characteristics? What are the differences between the two groups of students?

The speed of adopting website use differs from student to student. Many factors influence the speed of adoption of the use of university websites. Some of these factors may be true for one group but not the other. Technology factors and social factors are involved in the process of diffusion of innovation (Rogers, 2003; Sriwardiningsih, 2015). This research also sought to discover the level of satisfaction of both groups and whether satisfaction was an intermediate variable for factors that affected the behaviour of the two different groups.

The difference between commercial websites and educational websites is the emphasis on virtual display although each industry may have its specific needs. Educational websites are orientated around information (Medlin, 2001; Parasuraman et al., 2005; Loiacono et al., 2007) and university websites are relevant only if students access them. The adoption of university website services would be effective if the website interacted with students. Educational websites have different characteristics compared with other industries (Surendra, 2001; Less, 2003; Parasuraman et al., 2005; Belanche et al., 2011; Sriwardiningsih, 2014). Educational websites need effective twoway interaction between the communicator and the listener (Medlin, 2001; O' Brien & Marakas, 2008). They are effective if they have certain characteristics (Less, 2003; Collier & Bienstock, 2006; Eom et al., 2006; Sriwardiningsih, 2015): (a) enables interaction between students through materials posted online (b) enables interaction between students and tutors or experts and (c) enables interaction between students. These characteristics are demonstrated in the availability of e-mail links, forum discussion, search functions and the speed of feedback (Medlin, 2001).

Customer satisfaction is a modern marketing orientation (Sheth & Parvatiyar, 1995; Shiffman & Kanuk, 2010; Miles, 2012). In this context, customer satisfaction encourages the customer to adopt the university website (Eom et al., 2006; Shiffman & Kanuk, 2010; Miles, 2012). This can guarantee frequent use of the service and enlarge the student population who use the service. Consumer satisfaction is obtained when the student gets more than he expected to receive from the service. Previous research showed that the process of diffusion of innovation was achieved when customer satisfaction was met (Schiffman & Kanuk, 2010; Kotler & Armstrong, 2012; Kotler & Keller, 2012).

Factors that cause consumer satisfaction have always been a topic of interest to researchers. The diffusion of website services refers to customer satisfaction and the intention to adopt the offered technology (Sheth & Parvatiyar, 1995). The evolutionary marketing paradigm can be accepted by earlier researchers (Bagozzi, 1994; Morgan & Hunt, 1994). Previous research has not proved possible satisfaction could influence customer behaviour in adopting website services.

Many studies have linked self-motivated customers to the adoption of website services (Carter, 1998; Medlin, 2001; Rogers, 2003; Eom et al., 2006). Motivation can be either intrinsic or extrinsic. Both have the power to affect customer behaviour in the adoption of websites (Miles, 2012). Consumers need motivation to override passive behaviour. The motivation of self-control consists of autonomy, ability and social relationship. The environment can also influence consumer motivation (Deci & Ryan, 2008; Gagne et al., 2010). The concept of motivation is sometimes criticised because: a) It considers only the positive, but is often the opposite in reality; b) It assumes that all consumers are active, but this is not always so; c) Self-esteem is different between individuals; d) There is no explanation for why low consumer motivation leads to a high drop-out rate; e) There are no clear internal and external motivational forces that are required by consumers to use media, especially Internetbased websites (Miles, 2012).

Literacy may refer to various concepts such as literacy education, computer literacy and internet literacy, among others. In this paper literacy refers to access to information using the Internet. There has been no research into the direct relationship between the behaviour of consumers who adopt the use of websites based on Internet literacy although there has been research into the influence of Internet literacy on the behaviour of consumers who use websites for the purpose of learning.

Contingency is another matter that is relevant to this discussion. Some studies have pointed out that while websites should bring benefits to consumers, some websites have caused students to drop out of college due to disappointment with the poor service provided by the websites (Collier & Bienstock, 2009). Previous research linked no internet literacy, motivation and satisfaction as well as individual social factors to the behaviour of consumers in adopting the use of website services. The Internet connects millions of global information networks and this is extremely beneficial for users (Laudon & Loudon, 2005; O' Brien & Marakas, 2008) as it enables all sectors of the economy to adequately meet their needs. Literacy is the comprehension of an area. Internet literacy is the consumer's comprehension of the use of the Internet and includes possession of information, consumer comprehension and the ability to acquire benefits from information sourced through the Internet (Kogut & Zander, 2003) as well as the distribution of knowledge and information through social media (Adler, 2001). It can be the ability of the individual to manage information to succeed in his chosen task (Castro et al., 2011). The concept of information literacy has raised many definitions: visual literacy is understanding and using images for visual learning, visual thinking and visual communication. Media literacy is the ability to access, analyse and produce information for a specific result. Computer literacy is the ability to create and manipulate documents or data with the help of word processing software and databases, among others. Digital literacy is the mastery of the source of software and digital devices. Network literacy is a term that is still developing that refers to the ability to access, locate and use information in the world of networking, for example, the Internet (Eisenberg, 2008).

Many previous studies have shown that interactive services are needed in the process of consumer behaviour in an effort to improve it. Many factors can influence customer satisfaction. Motivation in education is the perceived through learning outcomes and student satisfaction. This study aimed to conduct a comparative study of two groups of students with different characteristics. Based on empirical findings, we made six hypotheses as follows:

- H1. Consumer satisfaction has a positive relation to consumer behaviour.
- H2. Interactive websites have a positive relation to consumer behaviour.
- H3. Interactive websites have a relative relation to customer satisfaction.
- H4. Consumer motivation has a positive relation to consumer behaviour.
- H5. Consumer motivation has a relative relation to customer satisfaction.
- H6. Consumer literacy has a positive relation to consumer behaviour.

METHODOLOGY

This study used qualitative and qualitative data to test the hypotheses. Qualitative data was collected from the respondents' feeling or insight through media interviews or focus groups. The interviews were conducted with students, staff academics and practitioners. Quantitative data was collected from information on comparative studies. A number of questionnaires were distributed for sampling. A Likert scale was used. The programme used to analyse the data was Warp PLS 3.0 (Kock, 2012).

The sixth hypothesis came from the PLS or Partial Linear Square model (Hair et al., 2011). The study population consisted of undergraduate university students who used the campus website that was open to both regular and online students, from various majors and semesters. This research was conducted at several universities in Jakarta and West Java. Jakarta and West Java were chosen for practical reasons. There were six regular universities and two online universities. The regular universities were University of Indonesia in Depok, Bandung Indonesia University of Education, University of Padjadjaran Bandung, University Mercubuana Jakarta, Indonesia University of Computer UNIKOM and Bina Nusantara University in Jakarta. The sample included 317 regular students from the six universities. The two online universities were Universitas Terbuka in Jakarta and Online Bina Nusantara University in Jakarta. The sample of online students comprised 274 respondents. The sample used crosssectional collecting data. The research sample used stratified sampling. The number of samples of a number of sub-populations was obtained by sample fraction (f). The formula for the sample fraction was fi=Ni/N, where the number of elements of each subpopulation was divided by the number of all elements of the population.

RESULTS AND DISCUSSION

Both groups met the three requirement categories. The Average Path Coefficient (APC) and Average R-Square (ARS) had a p-value of <0.05 while the Average Variance Inflation Factor (AVIF) had a value of <5. The model test qualified compatibility (fit) and could proceed to the next test. The model with the value of the variance inflation factor or AVIF <5 showed no multi-collinearity between the indicators with latent (lateral collinearity) and latent variables (classic collinearity) in this model. The APC and ARS values were p-value<0.05, indicating the stable coefficients path of the variables (Lindell & Whitney, 2001; Kock, 2012). The outer models for both groups had a high convergent validity value that was understood by the respondents and associated with the latent variables. The latent variables were measured with a significant p-value of <0.05 and discriminant validity value with AVE value. In addition, the value of the composite reliability coefficient (CR) should have been greater than 0.7 and the value of the Cronbach's Alpha coefficient increased with the increasing number of indicators used (Hair et al., 2010; Kock, 2012).

 Table 1

 Model Structural Equation Model for Two Groups

	Online students	Sig p	Regular students	Sig p
Satisfaction \rightarrow Consumer behaviour	β=0.52	< 0.01	β=0.54	< 0.01
Motivation \rightarrow Consumer behaviour	β=0.19	< 0.01	β=0.19	< 0.01
Motivation \rightarrow Satisfaction	β=0.82	< 0.01	β=0.57	< 0.01
Literacy \rightarrow Satisfaction	β=0.16	< 0.01	β=0.05	=0.25
Interaction website \rightarrow Consumer behaviour	β=0.02	=0.35	β=0.14	< 0.01
Interaction website \rightarrow Satisfaction	β=0.09	=0.05	β=0.15	< 0.01

The model group of online students had an R-squared coefficient (R2) of 0.80 for the behaviour consumer variable. Consumer behaviour of value 0.67 indicated a very strong relationship, where the consumer had shown repeat behaviour in continuing to use the website. The regular students had an R-squared coefficient (R2) for variable behaviour consumer of 0.61, which was between 0.33 and 0.67, indicating strong consumer behaviour, in terms of repeat behaviour. The challenge for universities is to improve the factors that influence regular students to adopt the innovation of a university website.

The online students had a determinant value of R2=0.6, where consumer satisfaction was adequate but not good enough from the marketing perspective. The regular students had an R-squared coefficient (R2) for variable satisfaction consumer of 0.4, which was between 0.33 and 0.67. The score 0.4 was approaching the value of 0.33, meaning that student satisfaction was small or low as their expectation had not been met by reality. Universities face the challenge of satisfying their students because they are paying customers who expect to get their money's worth from the website.

The online students diffused innovation of the university website because their motivation was high (0.82) to complete the process of learning. Their satisfaction lay in acquiring the degree they were pursuing (0.52) through the Internet (0.16). An interesting finding of this study was that online students did not interact significantly with the university's website directly. However, they had no other choice for discussion with the teacher or mentor except through online communication.

The regular students diffused innovation of the university website because their motivation was quite high (0.57) but lower than that of the online group. Their satisfaction lay not only in acquiring the degree they were pursuing but also in acquiring other beneficial skills such as soft skills that would help them succeed in the work place in the future (0.54). For them website interaction with the facilitator was indispensable for learning in the classroom and outside the classroom (0.14). An interesting finding of this study was that Internet literacy was not significant for student behaviour. While Internet literacy was a significant variable for online students, it was not significant for regular students.

The findings obtained from this study were that students would adopt the website if their needs were fulfilled for learning and freedom of access to communication that is not limited by time and distance. It is also shown that repeat behaviour in using university websites is crucial for the success of the learning process.

The students were satisfied when they believed using the website service would enhance their abilities. They were satisfied and happy and eager to learn. Lastly, the students were satisfied if they could benefit from the information acquired from the learning process. The data showed that student satisfaction was a very strong influence on the behaviour of adopting website services. The data indicated that the service was an interactive website that made a contribution to the learning process but its influence was relatively lower than that of motivation for adoption behaviour or loyalty to the website. Students who assessed the interactive website focudsed on two equally important factors: the characteristics of the website and active two-way communication with college students. The characteristics they were concerned with were an attractive look and an interface that provided information clearly; the addition of additional materials; ease of access; and easy access to the library as well as to international e-journals. Active two-way communication with college students must be facilitated by e-mail and discussion forums with quick and clear response. The data indicated that the service made a contribution but its influence was relatively lower than that of the motivation for adoption behaviour or loyalty.

Students' internal and external motivation to use the website was very strong. Internal motivation was driven by habit and passion. External motivation was driven by the students' desire for selfdevelopment and for social affirmation. The data showed that motivation for using the website service had a high influence.

Internet literacy is the ability of students to access information in the learning process. Internet literacy in this research referred to understanding the Internet as a source of information that is diverse and not limited in scope. Internet literacy would give them the ability to understand the potential of the information they were acquiring as well as enable them to navigate the links to access the information they required. It also referred to being able to understand useful information through the Internet to support learning quickly and efficiently and understanding how to use the Internet as social media. The research data did not support (not significant) Internet literacy as a supporting variable.

CONCLUSION

This study contributes to the theory of consumer behaviour with regards to the diffusion of innovation and how it works in education. In addition, this study proved that satisfaction works as an intervening variable on consumer behaviour. In connection with the results of the study are various managerial implications. One is to increase student satisfaction in using service websites. Student satisfaction arises from the positive perception after interacting with the services accessed through the website. The positive perception of students is gained from the benefits received, pleasure and confidence after using the websites. The unique advantage of the website is that it

must be able to provide exceptional levels of experience.

Every university hopes that its customers, its students, will adopt regular use of its website as a form of customer loyalty. This loyalty can only be achieved if the students' needs are met. Website adoption will happen if customers are satisfied with the services provided by the website. The satisfaction of students is important because they are paying for the information they need. Consumer satisfaction when using the website is affected by the attributes of the user, who is influenced by the characteristics of the website. Adoption behaviour as a form of student loyalty occurs because the website is able to provide satisfaction for college students. The satisfaction felt by students is supported by motivation, Internet literacy and interactive website services.

Internet information services is based on an alternative system of conventional services. The education system can experience innovative services in accordance with the needs of students. Students will adopt a website if their needs are met. Website information services need to be adapted to student needs, otherwise the service will not reach the target website.

Complaints are one form of registering user dissatisfaction. The focus of the research was the factors that influenced consumer satisfaction. This study aimed to evaluate interactive website services that are adopted according to student needs. The adoption of a website is possible if there is integration between the interactive website and the social self-concept of consumers such as motivation, internet literacy and a sense of satisfaction. The integration of these factors is the paradigm of the evolution of marketing in the modern era. The flexibility of websites has made it a suitable alternative to conventional delivery at universities and colleges. Websites provide an effective network of information services and are not limited by time and distance. This study showed that the diffusion of consumer behaviour among the online students was greater than that among the regular students.

LIMITATIONS AND SUGGESTIONS FOR FURTHER STUDY

The limitations encountered in this study are: (a) The researchers did not have the same data on the characteristics of website services as a form of customer service provided to students as the university; (b) The sample size was not the same, (c) The research period was not the same for both groups; (d) There was a difference in age of the respondents from the two groups. There was a significant influence between Internet literacy with adoption behaviour mediated by the interactive website services. The Partial Least Square (PLS) had a comparative advantage to predict but was disadvatanged by the lack of precision of the overall measurement of goodness-of-fit.

Some of the variables managed to confirm the underlying theory, but one variable, Internet literacy, was not able to confirm the theory. The effect was quite significant and therefore, needed further assessment. Future research in this area should pay attention to the indicators of the underlying variables such as Internet literacy and other items that might affect the endogenous variables, namely the effect of literacy on the Internet and the interactive website services. It is possible that there might be other mediating variables such as Internet literacy, satisfaction, behaviour or adoption of websites.

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Does Synergy Mentality Mediate Between Strategic Planning Relationship and a Firm's Performance? An Empirical Study of Manufacturing Companies in Indonesia

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ABSTRACT

This study endeavours to investigate the mediating role of synergy mentality between strategic planning relationship and a firm's performance. The study used the descriptive research design and the conceptual framework was tested using a multiple regression model. Data were collected using questionnaires distributed to senior managers, general managers and directors of manufacturing companies in Indonesia. The hypotheses were analysed using IBM SPSS. The results suggest that not only does strategic planning have a direct impact on a firm's performance but also on the mediating role of synergy mentality. In support of past findings, the present study shows that strategic planning has a positive relationship related to a firm's performance especially with synergy mentality within a firm's managerial levels. The present study is one of the first to empirically examine and confirm the mediating role of synergy mentality on strategic planning and firm performance.

Keywords: Synergy mentality, strategic planning, firm performance

INTRODUCTION

Since 1994 when Henry Mintzberg's book "The Rise and Fall of Strategic Planning" came onto the scene, Igor Ansoff, the "victim" of most statements in the book, answered and challenged it with several published international journals and seminars in his

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E-mail address: nico@binus.edu (Oroh, A. N. H.) * Corresponding author academic classes. Most of that academic feedback could be found in Ansoff's book, "Implanting Strategic Management", and several unpublished dissertations by Ansoff's strategic management students. From time to time most of the prominent scholarly works that were published by international journals stated that firms with formal strategic planning had performed much better than firms without it (Ansoff et al., 1970; Steiner, 1979; Rhyne, 1986; Martinet, 2010).

The first activity in management is planning and therefore, company leaders need to understand the essential importance of planning to produce the right plan by the right person. Strategic planning comes into the picture when they need a plan to anticipate their future environment. Thus, companies need to understand the role of a strategic plan concerning their internal environment and their external environment.

The study of strategic planning has been evolving following the changes in the business environment. Ansoff and his fellow Ansoffians (Moussetis, 2011) have shown that companies that fail to match their environmental turbulence level would in the end fail to compete. Companies must align their strategic aggressiveness and capability responsiveness and then plan and manage changes that should be made accordingly to gain a future competitive advantage. It is dynamic as change is always present and if flexibility is required by the external business environment, companies need to be more prepared and active in anticipating the future by preparing their strategic activities in view of possible future scenarios.

In explaining Ansoff's real contributions, Martinet (2010) said that today, few students, teachers and consultants realise that they are using, on a daily basis, a large set of concepts and tools elaborated in Ansoff's seminal book (1965, 1988) and developed further by consulting firms (Boston Consulting Group, Mc Kinsey, AD Little) and other researchers. Examples include the three-level process of decision making, namely, strategic, administrative, operational; the objective system; the concepts of synergy and competencies profile; the matrix products vs. markets; the generic strategies and the growth vector; the portfolio analysis.

Synergy today is still one of the most common activities in the business environment and it was clearly stated by Ansoff (read the Mintzberg 1994 quotation on synergy by Ansoff) that it was one of the key factors in strategy and therefore, companies need to know the essentials of synergy and should know how to measure synergy. Synergy needs to be planned since every level in the business environment requires a different mindset and appropriate style of synergy (Martinet, 2010; Moussetis, 2011).

THEORETICAL BACKGROUND

Strategic Planning

Besides Mintzberg and Ansoff's works, several other research works on the relationship between strategic planning and firm performance have been conducted in different countries and industries and have yielded ambiguous results. Most supported the positive relationship between strategic planning and a company's innovations towards firm performance (Ansoff et al., 1970; Steiner, 1979; Kohtamaki et al., 2012; Dibrell et al., 2014), but a few were against optimum performance (Mintzberg et al., 1994, 1998).

Earlier scholars argued that strategic planning was a formal process needed by top management. Strategic planning should be entrepreneurial and strategic to position and relate a firm to a relevant business environment and therefore, be able to better guarantee its future success (Ansoff et al., 1970; 1990; Steiner, 1979), since it is based on examination, evaluation and investigation of several genuine and innovative alternatives.

One study of 448 firms in a multiindustry sample explored the link between financial performance and the formal strategic planning process, planning flexibility, and innovativeness. The results suggested that firms' formal strategic planning processes and planning flexibility are positively associated, and each is positively related to innovativeness. In addition, innovativeness fully mediates the relationships between firm performance and the formal strategic planning process and planning flexibility (Dibrell et al., 2014). This research explained that flexibility was important during the process of planning, and when the implementation results have been facing many challenges. The author believes that besides innovation there are also other strategic aspects that a company could focus on to enhance its competitive advantage.

Based on an empirical investigation of 160 IT firms based in Finland, one study demonstrated that personnel commitment to strategy implementation clearly mediated the relationship between participative strategic planning and company performance but that organisational learning did not (Kohtamaki et al., 2012). The results contributed to the literature on current strategic planning and strategic entrepreneurship by identifying a construct that plays a mediating role in the relationship between participative strategic planning and company performance in the context of a dynamic industry.

The above-mentioned studies have shown the role of mediating variables in a firm's performance, and we can also assume that not only is the formal strategic planning process essential but also the informal aspect of organisational behaviour. Both contribute to the overall performance and achievements of a firm. We can hypothesise then that the more usage of strategic planning by a firm's top management the better will be the firm's overall performance and other aspects of its operations and achievements.

Synergy Mentality

The word synergy comes from the Greek language *synergos*, meaning *working together* (Hitt et al., 2005). Webster's New World Dictionary describes synergy as a combined or cooperative action or force. The study of synergy was initiated some time ago and it has been shown to have both positive and negative impact on a firm's performance (Gruca et al., 1997; Damodaran, 2005). The synergistic effect works by combining essential forces that drive a company and this can be worked out in formula i.e. 2+2=5 as derived by Ansoff (1965, 1988).

One scholar argued that two business units gain synergistic value when their "two in one" value is much more compared with the total value of the two units added separately; this is given in a simple formula as value (a, b) > value (a) + value (b) (Tanriverdi, 2006). The same scholar also said that a company would benefit in cost synergy when the usage of production factors reduced the overall cost of production from the two business units, or cost (a, b) < cost (a) + cost (b).

According to Webster's New World College Dictionary, mentality means mental capacity, power or activity; mind and mental attitude, or outlook; state of mind. Studies on management and strategic management have shown that without top management commitment and mentality a plan and a strategic plan cannot be properly established and executed and therefore, a firm's competitiveness cannot be reached.

As defined by Ansoff (1990), the mentality of a firm's managers or leaders includes the relative preoccupation with external and internal problems, and this is reflected in prominent companies as good overall performance because the firm focusses on matching its internal capabilities environment with its external business environment, which is ever changing. Managers or leaders are concerned with the past versus future time orientation, propensity to take risks, the manager's personal model of the world and what leader perceives to be critical success factors and behaviours, and the leader's values, norms and personal goals.

Based on this argument, strategic mentality can be developed as an effective mindset and managers can be trained to exercise strategic thinking to ensure they are prepared to anticipate future potentials, opportunities and threats. Thus, this type of thinking should become entrenched at top-management level and spread as an effective mindset and behaviour for the whole company to adopt. Therefore, essential training for building strategic mentality should also be planned according to the psychological characteristics of the top management and potential future top managers in addition to technical and technological aspects.

In their research into tackling the question of what good knowledge worker leadership in China and Indonesia is supposed to entail, Bildstein et al. (2013) identified several critical challenges and synergy potentials that could be identified from complementary behaviours to increase a firm's overall performance.

Corporate leaders and managers having a bureaucratic management style or defending the status quo mentality often cannot cope with the unavoidable change and turbulence of the business environment. They need marketing and creative mindsets as necessary aspects in a business environment for companies to gain and sustain a competitive advantage (Ansoff et al., 1988, 1990; Moussetis, 2011).

Using Ansoff's paradigm (1990), employees' mentality level toward synergy can be grouped depending on the turbulence level of each company's business environment. If the business environment is at level 1 with only a company in one particular industry, then the mindset of working together might not be needed because there is no competition in the market. However, today's world is changing and nothing is more stable than change itself. A company needs to ensure that it can manage unavoidable change.

For a business environment at level 3, which requires a greater 'marketing' mindset to succeed, the extent of working together at the synergy level may not be needed as much as by companies at the level 5 environment (creative and entrepreneurial mindset), but a synergistic plan should be explicitly stated in the agenda by top manager. Failure to have and to implement such a plan will cause a significant effect for the company to build and sustain its competitive advantage (Porter, 1983; Ansoff et al., 1990).

Problems will occur when companies at business turbulence level 3 and level 5 have in top management people who possess the mentality of managers at business turbulence level 1 such as that no change is needed, defending status quo, nothing to be compared with and sticking to business as usual.

We may, therefore, hypothesise that a suitable level of synergy mindset might have a positive relationship with firm performance and it can also mediate between strategic planning relationship and the firm's overall performance. The more positive the mindset towards synergy, the better the firm's performance will be.

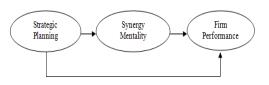


Figure 1: . Research model

RESEARCH METHODOLOGY

Data Collection

To explore strategic planning and synergy mentality at a firm's management levels, the author at the outset prepared questionnaires based on some relevant published journals and seminal books by prominent writers in the field of strategic management, strategic planning and synergy (Ansoff et al., 1965, 1970, 1988; Steiner, 1979; Mahajan et al., 1988; Mintzberg et al., 1994).

The author has given thorough attention to the Indonesian economic facts and figures (Gross Domestic Product, GDP), particularly on the contribution of the manufacturing industry. The contribution of the manufacturing industry to the Indonesian GDP in 2014 was 21.02 % as compared to 20.98 % in 2013. The contribution of the oil and gas industry within the manufacturing industry was 3.26 % in 2013 and 3.15 % in 2014 while the non-oil and gas industry contributed 17.72 % and 17.87 % in the years 2013 and 2014, respectively (Ministry of Industry, 2015).

In terms of consistent and representative data from the companies, the author focussed on respondents who were members of management teams including senior managers who had been working for more than five years in one firm, general managers who were the supervisors of the senior managers and who had worked for more than five years in a firm and directors in selected manufacturing sub-industries e.g. the chemical industry, automotive industry, infrastructure industry, coal mining industry, power plant industry and pulp and paper industry. These industries are important in the context of the Indonesian economy and based on the Ministry of Industry's report (Ministry of Industry, 2015).

To ensure the respondents clearly understood all the points when giving their answers in the questionnaire, the author conducted direct interviews with them by phone after sending out the questionnaire and prior to receiving their feedback. The author also gave a proper and immediate response when receiving questions in emails from all the respondents to ensure their answers were correct and relevant.

Measures

Synergy mentality, the independent variable in this research, was measured following earlier research in the relevant field as well as the respondents' background in the manufacturing sub-industries. Synergy mentality was measured by analysing the behaviour behind sales activities and operation activities (Mahajan et al., 1988); the questions asked were designed to focus on what the companies' had used in their sales force, advertising programme and sales promotion programme and on whether the purchase of materials and supplies was made from other companies owned by the same group of companies. A 5-point Likert scale was used, where 1 corresponded to 'strongly agreed' and 5 corresponded to 'strongly disagreed'.

The other independent variable, strategic planning, was measured using the model from the study that explored the link between financial performance and the formal strategic planning process, planning flexibility and innovativeness in a multi-industry (Dibrell et al., 2014). For the formal strategic planning process, the original Likert scale used was from 1, which corresponded to 'none or not at all' to 5, 'to an extreme extent'. For planning flexibility, 1 signified 'not all flexible or a trigger' while 5 signified 'very flexible or a definite trigger'. In order to be consistent, the author adjusted 1, 'to an extreme extent', to 5, 'none or not at all' for the formal strategic planning process while for planning flexibility, the adjustment was from 1, 'very flexible or a definite trigger' to 5 'not all flexible or a trigger'. Thus, the Likert scales were the same with the other variables in the research model.

The dependent variable, firm's performance, was measured using a model that required all the respondents to rate the degree to which the survey questions were a current concern to their companies, as compared to the industry average. The original model used a 7-point Likert scale with 1 for 'strongly disagreed' and '7' for 'strongly agreed' (Feng et al., 2013), but to

be consistent with the other variables, the author modified the scale to 1 for 'strongly agreed' and 5 for 'strongly disagreed'. Thus, the Likert scale used the same variables in the research model. The questions or statements that needed to be confirmed were included, for example, "We can quickly modify products to meet major customer's requirements," "We can quickly introduce new products into the market," "We have an outstanding on-time delivery record for major customers," "The lead time for fulfilling customers' orders (the time elapsed between the receipt of customer's orders and the delivery of the goods) is short," and "We provide a high-level of customer service to major customers" (Feng et al., 2013).

RESULTS

The descriptive statistics and correlation matrix results are shown in the tables below. From the tables, showing a total of 110 respondents, it can be seen that strategic planning was more highly correlated with the dependent variable, firm's performance, than with the other variable, synergy mentality. However, synergy mentality also had a positive relationship with the dependent variable, firm's performance.

Table 1Descriptive Statistics

	Descriptive Statistics				
	Mean	Std. Deviation	N		
FPerformance	3.667	0.3970	110		
Strategic Plan	3.700	0.4543	110		
Synergy Mentality	3.653	0.2497	110		

Table 2 Correlations

		Correlations				
		FPerformance	Strategic Plan	Synergy		
Pearson Correlation	FPerformance	1.000	0.498	0.249		
	Strategic Plan	0.498	1.000	0.332		
	Synergy Mentality	0.249	0.332	1.000		
Sig. (1-tailed)	FPerformance		0.000	0.004		
	Strategic Plan	0.000		0.000		
	Synergy Mentality	0.004	0.000			
N	FPerformance	110	110	110		
	Strategic Plan	110	110	110		
	Synergy Mentality	110	110	110		

Table 3
Model Summary

				Model Su	mmary				
Model	R	R Square	Adjusted	Std.			Chang	e Statistic	CS
		-	R Square	Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.506a	.256	.242	.3456	.256	18.437	2	107	.000

The results of testing the fit on the proposed framework showed that the Multiple Correlation (R) of the model summary was 0.506, with a corresponding value of R-Square of 0.256, suggesting that 25.6% of the variance of firm performance was explained by the set of predictors, synergy mentality and strategic planning. The correlations in the coefficients table showed zero-order, partial and part numbers at 0.498, 0.455 and 0.441, respectively.

Table 4Coefficients and ANOVA

				Coefficient	s ^a				
		Unstandardised Coefficients				Sig.	Correlations		
		В	Std. Error	Beta			Zero- order	Partial	Part
	(Constant)	1.610	0.499		3.228	0.002			
1	Strategic Plan	0.408	0.077	0.467	5.287	0.000	0.498	0.455	0.441
	Synergy Mentality	0.150	0.141	0.094	1.064	0.290	0.249	0.102	0.089

a. Dependent Variable: FPerformance

			AN	OVAª		
		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	4.404	2	2.202	18.437	0.000 ^b
1	Residual	12.779	107	0.119		
	Total	17.182	109			

a. Dependent Variable: FPerformance

b. Predictors: (Constant), Synergy Mentality, Strategic Plan

The ANOVA table provides the test result of the statistical significance of the regression model. The author proposed model accounts for a significant amount of dependent variables variance (Sig 0.000). The model was statistically significant.

The author then used the IBM SPSS Stepwise Method to test further the relationship of one independent variable (in this study, synergy mentality) to the firm's performance. The result showed that the model was statistically significant while the model summary table showed that the Multiple Correlation (R) was now at 0.498 with a corresponding value of R-Square of 0.248, suggesting that 24.8% of the variance of firm performance was explained by the predictor, strategic planning, while in the coefficients table the correlations showed the zero order, partial and part at 0.498, 0.498 and 0.498, respectively. These coefficients numbers indicated a stronger relationship between strategic planning and firm performance when synergy mentality was taken out from the model.

To extend the above regression analysis and instead of just specifying a set of predictor variables, the author added and used a simple mediation analysis in which the variables were arranged in a predictive "causal" path model to assess the dynamics of the variables relationship (Meyers et al., 2013, p.379).

The mediation model performed a total of three linear regression analyses including the independent variable, strategic planning, to directly predict the mediator variable, synergy mentality, and independent variables, strategic planning and synergy mentality, to predict the outcome of the variable, firm performance, and generated the unmediated model with strategic planning predicting firm performance in isolation. Finally, the model determined the relative strength of the mediated effect.

The result showed that the strength of the indirect effect (the product of the beta coefficients) associated with the paths, strategic planning to synergy mentality and synergy mentality to firm performance, in the mediated model was equal to (0.332) * (0.094) or 0.031. The strength of the isolated direct effect (the beta coefficient) in the unmediated model where strategic planning was the single predictor of firm performance was equal to 0.498.

The relative strength of the mediated effect was equal to the indirect effect divided by the direct effect, which was 0.031/0.498 or 0.062 (6.2). We could then conclude that about 6.2% of the effect of strategic planning relationship on firm performance was mediated through synergy mentality.

DISCUSSION AND CONCLUSION

The research result clearly showed that strategic planning had a strong and positive relationship to firm performance and it supported the school of planning research results (Ansoff et al., 1965, 1970, 1988), and therefore companies should use strategic planning to produce a proper plan for the company to compete better from now on and for the future in order to gain competitive advantage. We can also conclude that the failures of many companies in the intensely competitive business world resulted from their poor knowledge of executing proper strategic planning to establish an appropriately useful plan for companies to lead in the current and future industry.

Strategic planning, according to Ansoff (1988), is the firm's answer to two strategic needs. The first is to prepare the firm to anticipate its future un-extrapolative situation, the unpredictable conditions of the market and competition, which is always fierce. Ansoff believed that for companies to succeed, their strategic aggressiveness must match their business environment turbulence level. The second strategic need is to manage the firm in a comprehensive and systematic way. The firm should follow an official plan, and yet be flexible at the same time, to achieve its goals and to increase its capabilities following the strategic aggressiveness it is pursuing and to stay ahead of competitors.

Synergy is commonly said to be as one of the key variables for a company to succeed in today's business environment. The research into synergy conducted in this study has indeed shown that it makes a positive significant contribution to firm performance of manufacturing companies in Indonesia. Synergy has shown a positive relationship to firm performance and plays a mediating role in the strong relationship between strategic planning and a firm's performance. Indeed, there are other variables that make a greater contribution to firm performance (Mahajan et al., 1988; Damodaran, 2005). It is clear that based on this research result, synergy mentality plays a positive mediating role in strategic planning relationship with a firm's performance.

The author, through direct phone interviews with the respondents, discovered that some of them were unclear of the meaning of synergy and its implications to senior managers and the firm's overall performance. More training and discussion are needed to ensure the respondents understand appropriate terminology and have accurate perceptions on synergy to inculcate the right mentality and produce better performance. It is clear that more research into strategic planning, synergy and strategic management is needed.

Managerial Implications

Most of the managers of manufacturing companies in Indonesia focus more on business as the regular activities of operations rather than as activities that need strategic planning to accomplish operational tasks and targetted key performance indicators. They also frequently have little time to complete their work in spite of their managerial skills. This condition has given rise to more negative effects on strategic planning and other strategic activities, which require managers to set aside time dedicated to properly analysing aspects of their business in order to formulate strategic plans and to optimize operation strategies. They lack the time for planning strategies that can help top management accomplish their objectives for the firm's success.

Furthermore, the mindset of most Indonesian managers is fully occupied with performing what has been instructed by their direct supervisors and not encroach beyond their job specifications, particularly if a task may require them to exercise more control than they have been authorised to display. This is limiting thinking as it does not allow them to grow beyond what they know and are familiar with, and they stop themselves from learning about current and workable strategies such as synergy. Synergy based on this research is the combined force of elements of a business that creates a positive mediating role on the relationship between strategic planning and a firm's performance. It is a concept that needs to be clearly understood and properly planned, executed and controlled by top management. A company needs to initiate managerial training on the fundamental theory of synergy that would instil awareness and ability in staff about how and who should plan synergy and carry out synergy execution and how to control synergy.

The indicators on synergy mentality signalled that when senior managers gave more attention to other aspects of the business, accepted other departments' as also having important roles to play and cooperated with other departments, the firm performed better. The implication is clearly that if the mindset of the key people were corrected apply synergistic techniques that could help to achieve the firm's overall strategic goals, the firm's performance would be greatly enhanced.

The response of senior managers on strategic planning aspects, particularly the

more specific objectives when formulating strategy, the higher the degree of strategic implementation plans developed as a result of the formation process and also the higher the degree of objectives resulting from a formalised and documented strategy formation process, the better was the firm's overall performance.

Top management needs to pay closer attention to how to build corporate culture through a strategic formal plan and mindset inculcated among employees as a way to achieve the firm's goals, to compete effectively with current and future rivals, and to anticipate unexpected economic situations. Top management needs to understand the positive impact of strategic planning and the plan itself on the firm's performance as well as the role of synergy in enhancing the firm's performance.

Looking at the competitiveness index of the current Indonesian industries in the world global context, strategic planning process knowledge and the effectiveness of internal training conducted by Indonesian companies in strategic management should be analysed and then changed in order for managers to understand firm performance and to compete better. The job of top management, either in the private-public sector or in state-owned firms, is, therefore, to really understand the strategic problems of the firm and the industry.

Strategically, a company's top management should have a more futureorientated mindset to think of how to survive and to gain competitive advantage by acquiring other companies in the same industry dealing in a related business or to diversify by moving to another industry that may have no connection at all with the company's existing business but which has more potentials and opportunities.

Limitations and Future Research

Further research needs to be conducted using not only more respondents but also covering more industries especially in the services sectors e.g. banks, fast foods, hotels and tourisms, education and small and medium enterprises, all of which have more and more strategic roles in the economy of developing countries. The number of small and medium enterprises in Indonesia reached 3.4 million units in 2013. They contributed 90% of the total business units of the national industries and provided more than 9.7 million jobs (Ministry of Industry, 2015). These are significant numbers for the economy of Indonesia and therefore failure of companies to strategise their competitiveness would damage the country's overall competitive index in the world global context, which would in turn reduce foreign direct investment.

Since there is a huge number of State-Owned Enterprises in Indonesia compared to in other developing countries, research into State-Owned Enterprises is crucial. More attention should be paid to this important sector by involving their senior managers, general managers and directors as future respondents as this will enrich research into synergy, strategic planning and strategic management as a whole. Another suggestion is to conduct similar research in other countries in the region like Singapore and Malaysia or in other Asian countries where transparency is greater.

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Teamwork as an Innovation Generator: An Analysis of Project Hatchery at Binus University International

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ABSTRACT

There are numerous researchers studying the substance of innovation in an organisation. Teamwork is always the essential part of innovation in organisation; in other words, good teamwork is an important ingredient in achieving innovation. In higher education institutions, many strategies have been implemented to achieve innovation. This paper uses the Team Quality Construct (TWQ) from Hoegl and Gemuenden (2001), which highlights several factors namely, communication, mutual support and balance between member contributions, coordination, effort and cohesion as being other essential qualities for the generation of innovation. In addition, this paper examines the relationship between teamwork and innovation by using TWQ and the Innovation Competency Development (INCODE) assessment at BINUS University International. INCODE is a form of assessment that has been implemented in BINUS' Project Hatchery classes for first-semester students from diverse academic backgrounds. The results of the study have signified the role of teamwork as a construct that influences innovation significantly. The study showed that there were no differences in respondents' perception of teamwork among students enrolled in different programmes included in the sample population. This proved that teamwork can be considered as the main contributing factor in innovation generation.

Keywords: Teamwork, innovation, innovative pedagogy, developing ideas, Project Hatchery, Indonesian higher education, INCODE, communication

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INTRODUCTION

Numerous organisations including education institutions survive competition with very little innovation applied in their system, products (graduates) and even services. However, the trend is changing in this era of globalisation. Nowadays, people are required to innovate in order to achieve better results. Innovation is a necessity for every organisation that hopes to thrive well into the future. This condition also applies in higher education business competition. Higher educational organisations are obliged to create more creative and innovative ideas so they can survive the impact of globalisation. Innovation is needed to foster economic growth and creative ideas. Yet, the process of generating innovative ideas can become challenging, especially when organisations are not actually generating innovative ideas, but are, rather, repeating ideas and producing more general ideas that have no innovative meaning at all. What is innovation? Innovation in an organisation is meant to improve the quality of the organisation holistically. According to Shukla (2009), innovation is the process of generating ideas that can lead to a new product or new services. To innovate can be articulated to be creating change. In order to create change, the primary thing that needs to be done is to analyse and define the driving force behind the organisation and to reprogramme it to create change; such analysis should consider what techniques are used by the organisation as well as what previous outcomes have been achieved as a comparison for improvements.

There are many ideas revolving around pedagogical methods that are intended to generate innovation in higher education, especially on how to teach innovation to students. However, the methods used sometimes do not generate innovation, but are mostly repetition of ideas; repetition is not classified as innovation. According to Kalyani (2011), change is usually related to innovation; however, not all change essentially occupies new thoughts or leads to major development or radical breakthroughs. In several organisations, change happens from the organisation structure to the compensation system in order to trigger staff into generating innovative ideas. One of the strategies to achieve this is to foster teamwork. Teamwork can achieve better results, faster decisions and diverse and creative ideas. Countless research works have been done studying the importance of teamwork in the innovative process, for instance teamwork quality and the success of innovative process (Hoegl & Gemuenden, 2001), a conceptual framework for innovation (Cavagnoli, 2011), managing teams as a strategy for success (Hayes, 2002) and innovation and entrepreneurship (Drucker, 1985). However, there is still limited research on how to generate innovation using teamwork as a pedagogical method in higher educational institutions. This paper examines teamwork as a strategy to generate innovative ideas, especially in higher educational institutions.

INNOVATION IN INDONESIAN HIGHER EDUCATION

Indonesia's Minister of Research, Technology and Higher Education has called for improvement of the education system, an increase in working opportunities for graduates and enhancement of innovation in the country. He has called for the ministry to be reformed (Nurdiani, 2015). The minister pointed out that Indonesia is grappling with a high rate of youth and graduate unemployment. The creation of a common market made up of ASEAN (Association of Southeast Asian Nations) nations, of which Indonesia is a member, will open employment sectors within the region, and this makes it urgent for the Indonesian higher education system to become more internationally competitive. The Central Statistics Agency reported last November that the highest rates of unemployment were being experienced by the most educated people. Some 5.6% of graduates are unemployed, but experts said among new graduates this could be as high as one in four. In addition, according to a recent World Bank report, Indonesia was seeing a disconnect between the higher education system and the labour market. The higher education sector needs to be improved before it can turn out large numbers of 'jobready' graduates (Nurdiani, 2015).

Indonesian education experienced stagnancy in innovation during the late Suharto era in the 1990s, when the education system was tightly centralised. Remarkably, a Organisation for Economic Co-operation and Development (OECD) Report (2014) placed Indonesia second most innovative country in education for innovation, behind the highest scorer, Denmark, trumping more developed countries such as South Korea, Singapore, Japan, Germany and the United States, which scored 'below average' in the rating. The report measured innovation in the classroom and school in the primary and secondary education of 24 countries between 2000 and 2011 (Rohmayaningsih, 2014). There are pros and contras regarding this OECD report because the findings are in sharp contrast with another OECD study, the 2013 Programme for International Student Assessment, (PISA), which rated Indonesian students as the second-lowest performers in maths and science. Stephan Vincent-Lancrin, the report's lead author, defined innovation in education either as a new and emerging method that had not been used before or an old practice that had changed significantly, such as using textbooks as the primary source and parental participation. Indonesia performed better on the latter.

It is believed that innovation generation should be started in the early years of children's development (Kasper, 2008). In support of this idea, BINUS University International, one of Indonesia's renowned private universities, has taken great strides in growing innovative generation by implementing hatchery courses. Several studies on how to produce hardy students who can survive the current trends have also been done at BINUS University International. In line with the university motto, "People, Innovation and Excellence," BINUS came up with the idea of creating a curriculum fuelled by innovation.

Inspired by Turku University, Finland, BINUS University International formed a division called CIE (Centre for Innovation and Entrepreneurship) to trigger, guide, monitor and evaluate the process of innovation. As the starting stage, a course named Project Hatchery (PH) was established in 2014-2015. The purpose of this course was to facilitate students towards understanding the importance of the innovation process. The course introduced the concepts and practice of working on real-world projects involving a variety of stakeholders. Students from different programmes were brought together to work as a team. A well-defined problem chosen by the lecturer/mentor was assigned to each multi-disciplinary group. Every session comprised a brief lecture of concepts and best practices, followed by practical work on the project under the mentorship of the lecturer. The project adapted design-thinking methods, which include empathise, ideate, prototype, test and exhibit to elaborate the innovative process being experienced by the students. BINUS University International believed that this project would generate innovative behaviour among its first-year students.

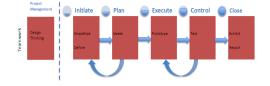


Figure 1: . Stages of Project Hatchery

PROBLEM ANALYSIS

Methods of solving problems and creating innovation in groups is an crucial focus of organisations and businesses. In essence, innovation is seen as being necessary for the resolution of various problems affecting an organisation. Without innovation, it would be difficult to achieve progress and to achieve targets designed by the organisation. To comprehend how teamwork can generate innovation, one should know how innovation is first created. According to Drucker (1985), there are seven sources of innovation, which are:

- 1. The unexpected. Innovation can be generated from unique opportunity such as an unexpected achievement, unforeseen failure or unexpected occasion.
- 2. Incongruities. Sometimes, differences can be part of the innovation.
- Process needs. Innovation refines the existing process using a weak connection in the chain or by redesigning an old process that previously existed.
- Industry and market structure. Opportunity to approach products, services or innovative business happens when the fundamental foundation of a business or market changes.
- Demographics. Population movement and differences in age, composition, job, education level and earnings might generate innovative chances.
- New perception. Innovative opportunities can increase when the attitudes, beliefs and assumptions of people, in general, change.
- 7. New knowledge. Progress in scientific knowledge and non-scientific knowledge is able to trigger the invention of innovative products and new markets.

Clearly, then, innovation is a force that can be created and implemented. Nonaka and Takeuchi (1996) also mentioned that knowledge creation or innovation in knowledge is based on how an individual or organisation is able to mobilise and convert tacit knowledge. In a team, converting tacit knowledge into explicit knowledge can accelerate the innovation process. The research problems studied in this work were framed as four major questions: Does teamwork generate innovation? What are the difficulties in generating innovation? What are the advantages and the disadvantages of using teamwork as a new method for generating innovation? What is the impact of using teamwork?

PLANNING INNOVATION DISCUSSION: TEAMWORK AS INNOVATION GENERATOR

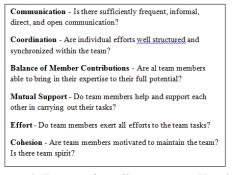
After determining the issues that obstruct innovation generation, as discussed in the previous section, the next stage in the process of generating innovation is to determine the technique to achieve innovation. First of all, it should be acknowledged that many factors can impede innovation from the culture of the organisation to the organisation structure and also the resources (people and money) owned by the organization. There are also work culture problems related to organisational structure, such as individuality and reluctance to openly share ideas with the team. We first consider the source of innovation by starting from a change in perception.

Many people generate innovative ideas every day. However, they usually do not lock their ideas in written format, and this, instead of anchoring the ideas for development, allows it to disperse. The process of generating ideas, capturing them and applying them are the foundation of innovation. Ideas can be a solution for problems in an organisation, and at the same time they create opportunities for inventing new products and better service, new business models and a new marketing concept. Therefore, the notion of creating a pool of written ideas in teamwork in order to generate innovation is an alternative in pushing boundaries in expressing ideas. In addition, innovation requires teamwork. Without ideas, the innovation process will not occur. However, one thing to remember is that innovation not only consists of a set of ideas; innovation is a process that will shape ideas to their maximum results.

Lee and Na (1994) in their research explained that innovation is a cultural factor implanted in organisations including the people in them. Positive relationship between supportive culture and organisational innovation were indicated in research done by Chang & Lee (2007), who found that organisational culture affected knowledge management, which can trigger innovation within an organisation itself. Significant influence is also felt in business management performance and competition. It is recognised that teamwork has sophisticated function that can influence culture, such as clarity, trustworthiness, innovative consciousness and participation from members. Another research work related to teamwork and innovation comes from Amabile (1990), who showed that there are some factors that can affect innovation at work that can obstruct innovation such as work culture, management style and resources. Hoegl and Gemuenden (2001) identified six elements to construct quality teamwork namely, communication, mutual support, balance of member contributions, coordination, effort and cohesion. Hoegl and Gemuenden (2001) also stated that the success of innovative projects requires that team performance and motivation be maintained.

Teamwork should be the primary principle in generating innovation. It is similar to the creativity technique invented by Osborn in 1939, brainstorming. It cannot be denied that current organisations use the teamwork principle in their management style as a focus. Effectiveness and efficiency are the main reasons to create teamwork in an organisation. Jones et al. (2007) stated that cooperation, individual skills and constructive feedback would be generated if teamwork were applied in organisations. Cohen (1997) defined a team as a pool of people who shared responsibilities and were connected and interdependent in carrying out tasks. Frye (2015) added that maximum results could only be achieved when all members within a team worked together to gain the common goal. Brainstorming activity has effectively proven capable of solving problems and providing alternative ideas in the beginning stages of innovation generation.

According to Osborn (1963) brainstorming is a method where a group tries to find solutions to specific problems by collecting a list of ideas spontaneously contributed by group members. As has been analysed in an earlier section, individuality is the common issue in teamwork. In the author's perspective, an organisation will not accomplish its goals effectively if there is more individuality than group identity in team work. At this stage, it is recommended that the working culture be changed to one of effective cooperation and teamwork. There are three mandatory efforts designed to create a successful team, namely, create a good culture, construct the best team and be planned and prepared (Frye, 2015). This paper will add to previous research by Hoegl and Gemuenden (2001) regarding the six elements to construct quality teamwork, namely, communication, coordination, balance of member contributions, mutual support, effort and cohesion. Hoegl and Gemuenden (2001) also mentioned that in order to make sure of the success of an innovative project, team performance and motivation should be maintained.





BINUS University International adapted the pedagogical method used by Turku University to prove that teamwork can be used to generate innovative ideas by implementing the Innovation Competency Development (INCODE) assessment in its Project Hatchery course for first-semester students. INCODE is an assessment rubric used by some universities to measure the innovation process. It covers three levels of generic assessment i.e. assessment of individual, interpersonal and networking competencies (Watts et al., 2013).

Table 1PINCODE Assessment Rubric

No.	Attribute	Peer Group	Final Grade
1	Transmits ideas effectively		
2	Listens to teammates		
3	Collaborates actively		
4	Contributes to group functioning		
5	Takes initiatives		
6	Drives others to act		
7	Faces conflicts with flexibility to reach agreements		

In this study, teamwork was implicitly defined and listed in INCODE form. The Project Hatchery mentors believed that forming a small team would create a better work environment. Therefore, teamwork from INCODE and and the team quality construct from Hoegl and Gemuenden (2001) were mapped and aligned as given below:

Table 2 Teamwork Mapping

Teamwork (INCODE)	Team Work Quality Construct
Transmits ideas effectively	Effort
Listens to teammates	
Collaborates actively	Coordination
Contributes to group functioning	Balance of member contributions
Takes initiatives	Cohesion
Drives others to act	Mutual support
Faces conflicts with flexibility to reach agreements	Communication

ADVANTAGES OF TEAMWORK

As described by Osborn (1963), innovative ideas come from the brainstorming; this is similar to the idea itself, which is teamwork. Different people with different backgrounds have a tendency to produce different ideas and this can be harnessed for the common good when they work together effectively as a team. Ingram (2000) in his research specified that a good manager is a person who can assign a task to his subordinates in group form in order to attain the greatest output from his subordinates. Additionally, Ingram (2000) also emphasised that in the process, teamwork could develop individual performance and organisation. The relation between innovation and teamwork is clearly stated by Cavagnoli (2011), who attested that decision making among individuals and distributing responsibilities is a result of innovation engagement. Luca and Tarricone (2002) explained some of the attributes needed for effective teamwork as given below:

- Team success and commitment to shared goals – Members are obligated to achieving the team's success and they are expected to shared their ideas and visions.
- 2. Interdependence Members should encourage one another as this contributes to a better working environment.
- Interpersonal skills Trust, honesty and support can create an effective work environment. Erdem et al. (2003) concluded that better skills and the coordination of individuals are actually formed by constructing trust in teamwork.
- 4. Open communication and positive feedback Respecting each other and valuing one another's contribution is also needed. Internal communication also has a positive impact on team performance and innovation. According to Hola and Pickhart (2014), if an organisation is able to add internal communication in their management system and maintain it systematically, then efficiency of communication will be achieved.
- Appropriate team composition This is related to job allocation, depending on what skills the members have.
- Commit to process, accountability and leadership – Awareness of the processes and accountability for contributions by

team members will generate a better teamwork environment.

Furthermore, as a trial to understanding how teamwork runs, Lombardo and Eichinger (1995) improved the T7 Model to signify the main aspect of team work performance. Each aspect begins with the letter T. The aspects are:

- Thrust: Usually related to general purpose regarding what is needed to be achieved or regarding team objectives
- Trust: It is important to believe in each other as team members
- Talent: The communal ability and skills of teammates to finish the job perfectly
- Teaming skills: Effectively working together and efficient as a team
- Task skills: Successfully implementing or getting the job done

The two external team factors are:

- Team-Leader fit: Compatibility between the team leader and team members; this enables the team leader to assure members of their needs
- Team support from the organisation: Support for the team leader and the team as a whole enables the leader to lead the team to perform effectively within the organisation

Each aspect within the team can be defined into sub-factors or dimensions.

LIMITATIONS OF TEAMWORK

The limitations that might appear from this strategy were developed by Lencioni (2002). Based on his research, there is the potential for a team to be dysfunctional. To develop proper team functioning, it is important to recognise the dysfunction type and level. Here are five potential dysfunctions of a team based on Lencioni's (2002) research:

- 1. Absence of trust. This will occur if teammates are hesitant to be vulnerable with each other and do not want to confess their faults, limitation or ask for assistance.
- 2. Fear of conflict. Decisions that are inferior will be created if team members feel the environment does not allow them to express their opinion. Teams that lack trust engage in serious and transparent debate on key issues.
- Lack of commitment. Without conflict, lack of commitment might affect employees, particularly workers who are role models, who might be dissatisfied.
- 4. Hindering accountability. This will happen when the team does not have a clear plan of action.
- 5. Inattention to results. Team members usually have a tendency to put personality, recognition, job development and other issues ahead rather than the interests of the team. If a team has lost focus of its target, then the business will ultimately suffer.

Joseph (n. d.) stated that there are five things that can impede teamwork: uneven participation, not inclined to be a team player, hindering creativity, lengthy process and internal conflict. The literature clearly defines that the advantages of teamwork far exceed itts limitations even though those limitations are factual and to a degree, unavoidable. The reasons will be clarified in the following sections.

IMPACT OF TEAMWORK

Teamwork has a huge effect on improving innovation and work performance, and it is very sophisticated when researchers try to use teamwork to achieve results. Organisations that apply teamwork have the habit of keeping their best people in order to create higher performance among staff and to achieve better profit (Manzoor et al., 2011). Pedler et al. (1991) identified a learning organisation as an organisation that provides and endorses education from all its members and systematically changes itself. The hypothesis here is that teamwork generates an environment for shared knowledge, responsibility and also for developing personal and professional members continuously, all of which will finally generate innovation.

Basically, this method impacts all factors in different types of organisation such as its human resources, its culture, its other resources and its organisational structure. Related to the human resources of an organisation, teamwork can change the attitudes of workers, increase their skills and enhance job satisfaction as well. According to Hayes (2002), teamwork enables and assists individuals to develop

their own creativity and this can lead to job satisfaction and decrease pressure at the work place. When there is adequate trust from team members, task conflicts will tend to be avoided (Jehn & Mannix, 2001). In addition, resources such as time efficiency and ideas will be efficiently used by a team of workers rather than by individuals. Recognition (rewards) as another resource can considerably affect performance positively. Teamwork can also result in clear, linear communication that ensures smooth flow of operations. Teamwork shatters non-linear communication and allows information to flow smoothly to all members of the team.

The main objective of this study was to examine the influence of teamwork when building innovation competency, using the Teamwork Quality concept and Innovation Competency Development (INCODE) within the scope of BINUS University International's Project Hatchery classes for semester-one students from different programmes (six different study programmes, two different main faculties). Two main hypotheses were formulated to signify the impact of teamwork on innovation among first-semester students from different programmes in BINUS University International, and to acknowledge possible differences in student perception of Teamwork Quality values and innovation competency based on the available programmes.

RESEARCH METHODOLOGY

The study was conducted to prove the influence of teamwork on innovation as perceived by BINUS University International students from different main programmes or majors, and furthermore, to analyse whether there were possible differences among students from multiple programmes in perceiving teamwork value. The quantitative research technique was used due to the nature of the study that was based on explanation. A survey strategy was applied in order to collect sufficient data within a short time from a sizeable population. Quantitative data for the study were collected through self-evaluation and peer-evaluation questionnaires as the main data-collection tool. The questionnaire itself was distributed during the fall semester of 2014 and it was used to gather perceived views and experiences from BINUS University International students on developing teamwork to generate innovative ideas through a standardised set of questions compiled as a questionnaire. The questionnaire was modified based on the Innovation Competency Development (INCODE) questionnaire used by Turku University, which consisted of 25 questions representing all the variables relevant to teamwork in building innovative values. Each question was measured using a rating scale; closed-ended questions were given a specific scaling measure where '1' was the lowest possible score and '10' the highest. The innovation values came from the assessment questionnaire given to the assessors (faculty) in evaluating the works of each student who participated in this study at the end of the fall semester 2014 and upon evaluating their final project or work. The two assessments were separated although they were later analysed as one set of data for the study. Although the required data for the study was conducted through two different data collections conducted at different time, the study itself was conducted using the concept of cross-sectional research time frame, in which the study focussed on a particular phenomenon at a particular time frame, thus mostly relying on a monomethod through single-data collection techniques.

The whole population of first-year students from several different programmes was selected, while the programmes were selected through purposive sampling in order to ensure only specific cases would respond and become part of the study. The programmes selected were International Accounting and Finance, Hospitality and Tourism Management, International Business and Marketing, all of were represented the Faculty of Business, while Computer Science and Information System represented the Faculty of New Media and Computer Technology. Overall, 250 questionnaires were distributed, with 210 valid responses received as the final data to be analysed for this study. Upon satisfactory reliability and validity checking on the construct's questionnaire using Cronbach's Alpha and the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test, the consistency, stability and quality of the measurement tools were proven. Two data analyses were conducted. The two main data analyses conducted were the linear regression analysis and t-Test comparison. These two statistical analyses were selected in order to prove the significance of teamwork in innovation within the two variables relationship, as well as to compare the results of both teamwork values and innovation competency as perceived by the students from different programmes in BINUS University International.

FINDINGS

The study managed to gather a total of 210 valid responses from six programmes. The number of responses received were 23 from the International Accounting and Finance programme, 19 from the Hospitality and Tourism Management programme, 72 from the International Business programme, 33 from the Marketing programme, 43 from the Computer Science programme and 20 from the Information System programme. All the responses came from first-semester/ year students.

The first data analysis for this study was conducted through the use of linear regression data analysis. The results are presented in Table 3. The main dimension of teamwork significantly influenced innovation as the dependent variable (Sig=0.009, with 95% confidence level), thus supporting the notion of teamwork as one of the crucial factors in forming innovation among the samples. The R-Square value signified 32% variance of innovation, which can be explained by the fact that it was the main variable of interest, teamwork.

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Table 3	
Results of Linier Regression Analysis	5

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Hypothesis	R square	Constant	Teamwork	Significant Value	Status
H _a : Teamwork towards innovation	0.032	60.393	0.164	Sig = 0.009 Sig < 0.05	Reject H ₀

From the coefficients result, the following equation can be derived:

Y = 60.393 + 0.16XTeamwork

Based on the equation model, it is indicated if the value of teamwork increases by 1, there will be an increase within the innovation value by 0.16 points, with the constant or base point of the study given as 60.393 points.

The second data analysis was the t-Test comparison, which was conducted to signify any possible differences among the sampled students from multiple programmes in BINUS University International in perceiving the teamwork values. Results of the t-Test comparison signified no difference in values perceived by the sampled students regarding teamwork based on the 6 different programmes (Sig 0.713, with 95% confidence level). Therefore, it could be acknowledged there was no significant difference in the way students perceived teamwork among different programmes. Results of the analysis are presented in Table 4.

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Hypothesis	Significant Value	Status
Ha: Significant differences among the International Accounting & Finance, Hotel Tourism Management, International Business, Marketing, Computer Science and Information System students in perceiving teamwork	Sig = 0.713 Sig > 0.05	Do not Reject H ₀
Group	Mean	
International Accounting & Finance	74.78	
Hotel Tourism Management	72.26	
International Business	71.36	
Marketing	71.85	
Computer Science	73.74	
Information System	71.55	

Results of t-Test Comparison Analysis

CONCLUSION

Based on the research results, more innovative ideas were certainly developed during the activities on teamwork. Successful teams become stronger when members learnt to work together and appreciate each other's ideas. The result shows there was a major contribution of teamwork as a major motor in developing innovative ideas, which generated innovation ability among the BINUS University International students. However, there were no differences from their point of view in perceiving the function of teamwork quality among students from different programmes although there was an indication that students from different programmes would possess differences in nature that would lead to differences in perceiving teamwork as well as innovation competency. One limitation of this research was that it was conducted only at BINUS University International and only with first-year students as the research object. The results may not be the same in different settings. For future research, it suggested to analyse this method in profit and nonprofit organisations, which also implement teamwork in their organisational structure, or in a different educational settings with a wider range or scope of respondents (different age groups or across universities). Different concepts and/or factors in measuring teamwork quality as well as innovation competency could also be used to explore the concept even further.

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Product Quality Development Analysis with Six Sigma Method: Case of SME Tofu Production in Indonesia

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ABSTRACT

For Small and Medium Enterprises (SME), quality is one of the factors that determine the success of their products in competition, especially in this era of globalisation. This study was conducted on small and medium companies that produce various products made from soybeans. The problem faced by the company is located in the production process, especially regarding the quality of its products. The purpose of this research is to investigate types of disability and the factors that cause disability issues in the production process. Data are analysed using the six sigma method, which aims to identify and decrease factors that cause disability. Six sigma claims that focussing on reduction of variation will solve process and business problems. By using a set of statistical tools to understand the fluctuation of the process, management can begin to predict the expected outcomes of that process that do not fulfil the standard and texture, caused by human factors, raw materials, production methods, machinery and equipment. The results of this analysis are expected to contribute to the company in order to be able to increase the quality of production so the company is able to grow and compete effectively in the market

Keywords: Analysis, quality, six sigma

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INTRODUCTION

Indonesia is a member of the ASEAN (Association of Southeast Asian Nations) Economic Community, which leads to free trade between ASEAN countries. The 10 ASEAN countries are the Philippines, Thailand, Singapore, Brunei Darussalam, Vietnam, Laos, Cambodia, Malaysia,

Myanmar and Indonesia. the ASEAN Economic Community is a competitive market, in which companies must compete not only with local companies but also with companies from the ASEAN region; this means that they need to create products that can fulfil the minimum quality requirements assigned to all ASEAN members. Indonesia normally uses the SNI (Standar Nasional Indonesia) as its national standard as a reference for products throughout the country. Products that cannot meet the minimum quality requirements will face many difficulties competing with similar companies in the country as well as with ASEAN companies.

Besides the technical requirements, the quality of the products themselves need to be considered. Quality is one of the factors that determine the success of a product in penetrating the market, in addition to other major factors such as price and service. Today, consumers everywhere demand high-quality products. A quality product will meet great competitiveness and its chances of being accepted by high society are very high. Quality is also one of the benchmarks for a company's success because the quality of a product greatly influences corporate image, productivity, profits and liability. Quality is not solely the responsibility of production departments but must be accepted as the most significant objective of a company by every one of its departments.

Quality control no longer belongs to the production department only, but is also carried out by all the company's operations from selection of raw materials suppliers up to the delivery process and after-sales service. A production system can be said to be effective if it can carry out production activities that can meet consumer demands at minimum cost. Production activity meant here is activity involving the use of raw materials limited in terms of both quality and quantity.

To ensure the quality of management, a system must be established on a set of procedures, documents, practices and standards for management systems that aim to ensure the suitability of the process and product to the particular needs or requirements of customers. Needs or requirements are determined by the customer and the organisation. Management system quality defines how organisations implement quality management practices consistently to meet the needs of the customer and the market.

A variety of factors affect customer satisfaction and demand for a product. A company needs to know what consumers want and then be able to match that requirement with a suitable product to achieve customer satisfaction. In addition, the product needs to comply with the relevant laws and regulations of the country and show timeliness of delivery. All of this must be achievable at reasonable cost. These are some of the important characteristics of a successful business, especially in Indonesia.

The index ranking of Doing Business 2014 published by the World Bank in September 2014 placed Indonesia in the position of 120. This rank reflects the difficulty of establishing a new company or of playing an active role in business in Indonesia. These conditions require entrepreneurs and business analysts to think hard about addressing the negative impacts that could arise in the future in order to be able to overcome the various problems that occur and yet emerge as winners in the increasingly complex and competitive business world.

If thoroughly analysed, the core of business competition lies in how companies can create products that are cheaper, better, faster and in accordance with the needs and desires of consumers. The progress and development of the times have changed the way consumers think about selecting a desired product. This not only applies to large industries, but also to small and medium industries.

One of the small and medium industries with very rapid growth is the food industry, especially that specialising in Indonesian traditional food. One of the special products produced by the local industry that is very popular in Indonesia is tofu. Tofu is the most wanted special Indonesian food product, especially on Java Island. Tofu is not only consumed by the lower and middle classes, but also by the upper class. However, since the issue of formalin in tofu was raised, tofu entrepreneurs have been challenged to prove that they can produce natural tofu products free of preservatives and in line with customer expectations.

The soybean cake (*tempe*) and tofu industries were income earners for 285,000 workers and earned about Rp.700,000,000 per year at one time, according to the

Chairman of Gakoptindo (Association Producers Cooperation of 'Tahu Tempe' Indonesian), Ayip Syarifudin (Hahn et al., 2000). Recently there were 177 KOPTI (Cooperation Producers of 'Tahu Tempe' Indonesian), which spread in 18 provinces with a total of 115,000 tofu and soybean cake producers and 1,000,000 workers. The total amount of soybean to produce this quantity of soybean products is 132,000 tonnes per month.

In the production process, the producers find difficulties in processing the products effectively and efficiently. Waste generated is high, signalling that process cost is inefficient. The inefficient processing cost arises because of the loss of production capacity, which is caused by the failure of the production process, leading to overproduction.

In addition, the most frequent problem experienced by companies is difficulty in obtaining high quality soybean. Soybean production in Indonesia cannot meet the high demanda of companies that use soybean as its main raw material mainly because the price of soybean is unstable as it depends on the imports. This, of course, has a significant effect on the price of tofu and soybean cake.

This study focussed on solving problems that occur in the production process, finding the cause of damage to the product, which leads to inefficiency, because defective or rejected products cannot be sold to customers. This research analysed how to reduce failure in the production process so that companies can improve the quality of their products and reduce the cost they spend on defective products. This research is significant as it studied ways to minimise defects and problems in production.

THEORETICAL BACKGROUND

Six sigma is defined as the most appropriate method of business process improvement. It aims to find and reduce the factors that cause defects and errors, reduce cycle time and operating costs, increase productivity, better meet the needs of customers, reach higher asset utilisation and gain returns on investment in terms of both production and services.

The six sigma approach is customerdriven (Aboelmaged, 2010). For the business or manufacturing process, the six sigma capability is a metric that indicates how well the process is being performed (Harry & Schroeder, 2000). Six sigma is a quality approach to Total Quality Management (TQM). Generally, quality control systems such as TQM only emphasise on continuous improvement based on self awareness of management (Ansari et al., 2013). Thus, the system does not give any right solutions for any steps that should be done to increase quality dramatically to the failure rate of 0 (zero defect) (Cagnazzo & Taticchi, 2011). Six sigma is a method developed by Motorola that aims to reduce the variability in the main characteristics of quality product at very low levels (Hsieh et al., 2007). Because of its success in quality management through the development of the six sigma concept, Motorola was awarded the Malcolm Bridge Quality Award in 1988, and this concept was later adopted by many

other large companies around the world (Parast & Jones, 2011).

Six sigma has been defined as a management strategy for improving product and process quality (Gakoptindo, 2014). It is also a statistical term used to measure process variations and eliminate defects (Harrison, 2006). Six sigma focusses on how to increase each of the four basic factors i.e. quality, productivity, cost and profitability (Russell & Bernard, 2003). The core of the six sigma methodology level is DMAIC, which stands for define, measure, analsze, improve and control.

Six sigma uses metric measurements, which is a way to measure the specific character that can be verified, either numerically (e.g. percentage of disability) or qualitative (level of satisfaction) (Hammer, 2002). Metric measurement provides information on performance and gives the opportunity to managers to evaluate performance and decision making, identifies opportunities to make improvements and creates performance standards for employees, customers, suppliers and other interested parties (Downing & Bryan, 2010). Six sigma defines quality performance as defects per million opportunities (DPMO).

RESEARCH METHODOLOGY

This study used the descriptive research method based on field observation. This type of research yields data that can describe the kind of factors that can turn out to be obstacles for companies in their natural conditions without any involvement or any changes to their original conditions. This method is used to see what kind of obstacles the company faces that could hinder them from achieving maximum product quality and capacity.

The method used in this study was observation, where researchers conducted observations directly of the tofu production process to find out what factors caused the problems that occurred. To determine this, the researchers conducted a direct observation of the unit of analysis consisting of the production process, production equipment or machinery and raw materials as well as the human factor involved in the production process.

This research was done through crosssection, meaning that researchers used existing data so as not to take a long time to obtain the data required for this study (Sekaran & Roger, 2013). The research was conducted during the months of September, 2014 to January, 2015. The author used two data sources as data collection strategy, which were the primary data and secondary data sources. The primary data were obtained directly through interviews and observations, while secondary data was obtained from other sources besides the object of the research (Sekaran & Roger, 2013). Nevertheless, the secondary data complemented the primary data and could support this research. It consisted of several literature studies.

The method used was based on the principles contained in the six sigma method. This method was used to anticipate the occurrence of disability or defect by using steps that were scalable and structured. On the basis of existing data, continuous improvement can be done with the six sigma methodology, which includes defining, measuring, analysing, improving and controlling (DMAIC).

Define

The define phase aimed to identify the products or processes that would be fixed and to determine what kind of resources would be needed in the implementation of the project. At this stage, a checklist was used as a tool to make it easier to determine what type of defect occurs and the number of defects that might occur. The main purpose of the checklist was to ensure that the data were collected carefully and accurately by the operating personnel to control the process and also for decision-making (Herjanto, 2008, p. 422).

Afterwards, the researchers used a Pareto diagram to determine the sequence from greatest to smallest types of defect and their occurrence frequency so that the company could focus on the most dominant types of defect that occurred in its production process. The arrangement helped the researchers to determine the importance or the priority of the event categories. The causes or events were examined to determine the main problems in the process (Nasution, 2005).

Measure

The measure phase was aimed at discovering the Critical to Quality (CTQ) of a product or process that the researchers wanted to fix. It was also aimed at collecting basic information (baseline information) regarding a product or process and at setting improvement targets to be achieved. The following were the steps performed at this stage of measurement:

- Analysis of P control charts (P-chart) The P-chart used for the attribute quality control, which is an essential aspect of production, did not conform to the standards established by the company in the production phase. The diagrams was done using the following steps:
 - a) Population sampling for P-chart analysis
 - b) Examination of the characteristics by calculating the mean or control line (CL). Control line was the average of a defective product divided by the number of observation time.

Mean formula:

$$CL = p = \frac{\Box np}{\Box n}$$
 or $\frac{number of defect}{actual product}$

Note: CL = p = mean of defect proportion Np = number of defect

- n = total sample (total production)
- c) To determine the control limits of the supervision, UCL (upper control

limit) and LCL (lower control limit) were set according to this formula:

$$UCL = p + 3\sqrt{\frac{p(1-p)}{n}}$$
 $LCL = p - 3\sqrt{\frac{p(1-p)}{n}}$

Note: UCL = upper control limit LCL = lower control limit p = mean of defect proportion n=total sample (total production)

 To analyse the level of sigma and the company defect for millions of opportunities

Analyse

In the analyse phase, management tried to understand why there were deviations and sought the reasons that led to such deviations. A tool used at this stage was the causal diagram that used to identify and organise the causes that might occur from a specific effect, after which the root cause was established.

Improve

Improvement stage is the stage to generate ideas, design, improve implementation and validate repair. The repair phase was carried out by measuring the level of damage that occurred in the production process, after which improvement recommendations were made and analysing was done, followed by corrective action.

Control

Control was the last stage in the six sigma approach, where the process was organised, product improvement was carried out and ongoing performance monitoring was done. At this stage the manager ensured a new level of performance in standard conditions, which were then documented and published as useful corrective measures for the subsequent repair process.

USING THE TEMPLATE

The method used was based on the principles contained in the six sigma method. This method was used to anticipate the occurrence of disability or defects according to steps that were scalable and structured. Based on the existing data, continuous improvement could be done using the six sigma DMAIC method. The DMAIC method involved the following steps.

1) Define

Define was the stage of defining the quality problem and determining the defect priorities that often occurred on the tofu product. At this stage, the defects that occurred in the final result of the production processes were

Table 1

Accumulation Data of Defect Product (2014 Sept-Dec)

defined and the factors that cause the defect were also identified.

Problems in the production process can be easily defined using the checklist to know what kind of defects had occurred and the number of defective products generated on each type of error.

Based on the observations that had been made, there were four kinds of defects that occurred in the company: thickness of the tofu was not the standard thickness (thin), the tofu fell apart (poor texture), water content was excessive and the tofu colour was dull.

Based on production research conducted from October to December 2014, there were four types of tofu defects that occurred in the company: Tofu thickness was not up to the required standards, as observed in 979 trays of tofu; Tofu with falling apart texture was observed in 717 trays of tofu; Excessive water content was observed as the defect in 80 trays of tofu; and Tofu with dull colour was observed in 50 trays of tofu. The average of defective trays over the three-month period was 57.079 trays as illustrated in Table 1 below:

No	Month	Defect type				
		Thickness not up to standard	Fall apart texture	Excessive water content	Dull colour	 Total defect (Trays
1	October	399	173	35	25	632
2	November	295	268	27	18	608
3	December	285	276	18	7	586
Total	(Trays)	979	717	80	50	1826

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Type of defect	Defect amount (Trays)	Defect percentage (%)	Cumulative percentage (%)
Thickness not up to standard (thin)	979	53.6	53.6
Fall apart texture	717	39.3	92.9
Excessive water content	80	4.4	97.3
Dull colour	50	2.7	100
Total	1,826	100	

Table 2Amount of Defect Product Data (2014 Sept-Dec)

Source: The results of processing the data, 2015

The defects that occurred in the production process can be described using a Pareto diagram using Minitab application version 17 as given below:

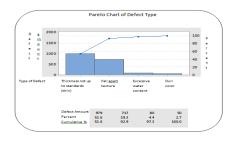


Figure 1: Defect type Pareto diagram

Figure 1 above shows that the defect that affected the largest amount of tofu, which occurred in the tofu production process during the months of October to December 2014 was thickness that did not comply with the required standard of thickness (thin); there were as many as 979 trays or 53.6% of the total that showed this defect while the type of defect that affected the least number of trays was dull colour of tofu and in the months of October to December 2014, 50 trays or 2.7 % of the total production of tofu was defective.

2) Measure

At the measure phase or measurement stage of production, the researchers calculated the values of CL, UCL, LCL of the tofu production process in the company during the month of October of December 2014. A control chart, the P-chart, was used to determine whether the number of defects that occurred in the production process was in the upper control limit and if the limit was within control or not. Figure 2 shows the P-chart using Minitab version 17 applications:

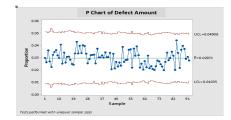


Figure 2: P-chart of defect

From Figure 2, it can be concluded that the number of defects that occurred in the production process during the months of October to December 2014 was in the Upper Control Limit (UCL) or within the Lower Control Limit (LCL); therefore, production in this period could be said to be stable.

The Defect per Million Opportunities (DPMO) and sigma value showed that in the months of October to December 2014, the company had a sigma value of an average of 3,393 with a defect probability of 29.764 trays per one million trays produced.

However, when corporate profit was analysed, it turned out that the company had suffered losses due to the loss of profit opportunities, with an average of 29.9% from the profits that would have been accrued in the absence of defect issues.

This scale of loss was was certainly detrimental to the company. If the problem is not addressed immediately, the company will continue to lose opportunities to earn greater profits.

3) Analyse

Furthermore, at this stage of the analysis, a diagram of causal factors was used to determine the root cause of the problems that occurred in the production process.

The factors that caused the defects were classified into four main factors: human factor, methods, materials and machinery. In terms of the human factor, due to lack of training for new employees and lack of supervision from the head of production, employees worked less efficiently. In terms of methods, there were no clear standards and procedures that were written down or determined by the company so that the employees could have a benchmark from which to run production process standards. In terms of materials, the materials sent by the supplier were of different qualities, while in terms of machinery, the machines and equipment used by the company were old and traditional, and therefore, not able to provide high accuracy. Figure 3 shows these results.

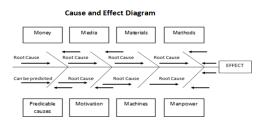


Figure 3: Cause and effect diagram

4) Improve

The next stage was the improve phase. At this stage, the company looked for actions or measures that were appropriate to overcome disability problems that occurred. Solutions to each problem that occurred affecting every factor were sought. The results showed that the company needs to make these changes: Conduct regular training, especially for new employees to make them more proficient in the production process so that small errors that can lead to disability issues can be minimised.

Conduct closer scrutiny using rigorous oversight of the production process at the company so that employees are productive and conscientious.

- Conduct briefings or evaluation at the beginning and at the end of the production process to determine what problems occurred during the production process so that they can be solved quickly.
- Establish clear standards so that work during the production process runs smoothly and is more targetted.
- To strictly check raw material quality delivered by suppliers.
- Perform scheduled maintenance and purchase of new equipment such as tools to support the production process.
- 5) Control

The last stage was the control phase, where the company documented and disseminated what action to take to achieve disability issues of 0% (zero defect). This was done to prevent the recurrence of problems. Below are ideas of how to prevent the recurrence of the same problems:

• To strictly control both raw materials or employee behaviour that is involved in the production

process to make sure that product quality is good

- To perform regular maintenance and repair of machinery and equipment used in the production process
- To ensure that production division employees write down the number of defective products and the types of defect that occur every day and report them to the chief of production.
- To conduct briefings at the beginning of each production process and evaluate it at the end of the production process in order to minimise the possibility of having the same mistake recur too frequently.
- To produce a report each month that includes a graph that compares production volume with the number of defective products for easy evaluation and resolution of the dominant type of defect.

CONCLUSIONS AND RECOMMENDATIONS

Several conclusions can be made from this study, as given below.

- Based on the analysis using the cause and effect diagram, some of the main causes of defects in the tofu production process were:
 - a. Human factor
 - b. Method factor
 - c. Material or raw material factor
 - d. Machinery and equipment factor

The research showed that the most influential factors affecting defects in tofu production were the human and method factors.

- 2) Analysis and implementation of the six sigma method showed that:
 - a. Several defects were obvious: Tofu thickness was not up to standard (thin), tofu texture was poor (falling apart), there was excessive water content and the tofu colour was dull. Defective trays from September to December 2014 numbered as many as 1,826.
 - b. The Pareto diagram showed two predominant types of defect: Tofu thickness was not up to standard (thin) defect (53.62%) and the tofu texture fell apart (39.27%).
 - c. Based on the data analysis using the Defect per Million Opportunities at the measurement stage, the company was shown to have an average sigma level of 3.393 with a defect possibility of 29,764 trays in one million trays.
- 3) Recommendations given after this study are:
 - a. Strictly control both raw materials and employee behaviour to ensure that product quality was better.
 - b. Perform regular maintenance and repair of the machinery and

equipment used in the production process.

- c. Employees from the production division must write down the number of defective products and the type of defects that occur every day and report the results to the chief of production.
- d. Conduct briefings at the beginning of each production process and evaluate it at the end of the production process to minimise repeats.
- e. Prepare a report that compares the volume of production each month and which also shows the number of defective products each month using graphs for easy evaluation and resolution of the dominant types of defect.

The author also advises that, among other actions, the company should use the six sigma method DMAIC to determine the types of defect that often occur in the production process and the factors that cause this type of defect in order to reduce the number of defects or even achieve a zero defect production process for the generation of maximum profit.

The research also revealed that the defects were caused by the human factor, method factor, materials factor and machinery and equipment factor. It is, therefore, necessary for the company to put in the effort to resolve the related problems. Efforts to this end that can be undertaken by the company include:

- a. Strictly control both raw materials and employee behaviour to ensure that product quality was better.
- b. Perform regular maintenance and repair of the machinery and equipment used in the production process.
- c. Employees from the production division must write down the number of defective products and the type of defects that occur every day and report the results to the chief of production.
- d. Conduct briefings at the beginning of each production process and evaluate it at the end of the production process to minimise repeats.
- e. Prepare a report that compares the volume of production each month and which also shows the number of defective products each month using graphs for easy evaluation and resolution of the dominant types of defect.

These proposals will require the company to invest time and money into training new employees and repairing equipment and machines. The company may even have to purchase new equipment to better support its production process. Such measures will provide sustainable benefits to the company as well as minimise the occurrence of defects in production. These efforts can ensure that the company does not miss out on opportunities of winning maximum profit. Moreover, if such action is done, the company can produce products of better quality so that consumers feel satisfied. This can create customer loyalty for the company.

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Towards Automatic Customer Purchase Behaviours Prediction through a Social Media Lens Using the Hidden Markov Model

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ABSTRACT

In this research article, we present our work on building computational prediction models to dynamically predict users' purchase behaviours by implementing Hidden Markov Models (HMM). The models can be used by decision makers in a company to develop a strategy (e.g. marketing, products development) based on the prediction results. We evaluate the model using our datasets of Facebook. We collected the data by utilising Facebook API. Furthermore, we implemented a Hidden Markov Model (HMM) algorithm to the datasets to provide a dynamic prediction of customers' purchase behaviours over time. In the preliminary evaluation, we implemented our model to the datasets with t=2. In our datasets, we found that the category, electronics, was the most favourite topic to discuss, share and like regarding electronics. Interestingly, we found that a positive direction for its trend appeared in the second run of the model.

Keywords: Customer purchase behaviour, Hidden Markov Model, Facebook datasets, strategic management, computational prediction model

INTRODUCTION

In the era of social networks, more than 74% of Internet users are connected to social networking sites. Most of them (96%) are on Facebook (Pew Research Center, 2013). Social media have been used to interact and engage with people all over the world. Billions of topics, from politics to hobbies, are discussed in social media. People often

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share their interests, thoughts and ideas on social media. Others, who share the same interests, may post general comments or like a posting.

This phenomenon allows us to leverage on a plethora of information provided on

social media to improve company strategy in marketing or product development. This is achievable by predicting users' purchase behaviour through a social media lens.

This paper provides the following main contributions:

- We present our work on building computational prediction models to dynamically predict users' purchase behaviours by implementing Hidden Markov Models (HMM). The models, hence, can be used by decision makers in a company to devise strategies (e.g. marketing, products development) based on the prediction results.
- We evaluated the models using our datasets of Facebook with 24 users, 568 posts and 126 likes. This provided preliminary results for the proposed models in this paper.

The rest of the paper is organided as follows: Relevant previous works are presented in the next section. Section 3 outlines our research methodology. In Section 4, we describe our computational prediction models. We present the evaluation results and discussion in Section 5. Finally, we conclude our work and describe future work in Section 6.

LITERATURE REVIEW

Research into customer behaviour provides data to be used for strategic managerial decisions in marketing (e.g. market segmentation, targeting and positioning), customer relationship management (e.g. customer value and satisfaction) and product development (Schiffman et al., 2012). This research provides an insight into customer behaviours in searching for, purchasing and using products and services. In this era of social networks and digital technology, customer behaviour has evolved to a whole new stage. Nowadays, customers can easily buy and sell products through the Internet. Over the decades since the introduction of the Internet, the total revenue of e-commerce has doubled from 15% (2002) to 30% (2012) (United Nations Conference on Trade and Development, 2015) and reached \$1.5 trillion in 2014 (The Nielsen Company, 2014).

This new stage provides huge advantages to researchers of customer behaviours, as most of the data are available for public consumption. The only problem is that researchers will need to mine the data with an equitable model or technique to produce relevant information for decision makers within a reasonable amount of time. Several studies have been done in this area. Schafer et al. (1999) and Sarwar et al. (2001) suggested a model with collaborative filtering to filter the users who share similar characteristics among themselves. They argued that users with similar characteristics usually have or like similar products. Similarly, Catanese et al. (2012) proposed a model consisting of similarity detection and community detection to detect groups of related users over time. Those models are widely used to predict or recommend products purchased through e-commerce (Catanese et al., 2012).

With advances in information retrieval technology, content-based search methods applied to web pages, social media, customer reviews, search results etc. are now becoming popular. Certain information can be extracted from these media using machine learning methods. Zhang and Pennacchiotti (2013) utilised datasets of eBay users who have connected their eBay account to their Facebook account. Thus, they can extract their purchase history and their likes on Facebook to obtain a prediction of users' purchase behaviours. Similarly, Sen et al. (2009) utilised users' tags to predict movie preferences. They described the algorithms based on the users' interactions with tags and movies (Sen et al., 2009). The same method was implemented to provide a large set of words based on users' recommendations on Twitter (Netzer et al., 2008). The algorithm was intended to recommend interesting content and provide recommendations or filtering services to Twit users.

In this paper, we built a prediction model based on the Hidden Markov Model (HMM). An HMM model is a tool that represents probability of distributions in time series over sequences of observations with unobserved or hidden states. Although the HMM algorithm is mostly applied to solve computational problems (e.g. speech, handwriting and many other computervision problems), it is also a well-known technique to predict behaviour. Netzer et al. (2008) applied an HMM for customer relationship management models. The researchers constructed an HMM to relate latent relationship states to observed buying behaviour; eventually, they could evaluate customer relationships over time. Netzer et al. (2008) proposed a customer relationship model with HMM to build a customer portfolio. In addition, Kiseleva et al. (2013) predicted user intent with an HMM model to understand user intentions based on their browsing behaviours.

METHODOLOGY

We collected datasets from Facebook, as currently Facebook has one billion active users (http://newsroom.fb.com/ company-info/). This made Facebook the most used social medium in the world. We collected data from the Facebook API. The data collected were extracted using keywords and the number of likes from posts. Subsequently, the extracted features were categorized into electronics, travelling, motors and fashion. In this paper, we minimised our categories into four general categories, as we aimed to evaluate our models first.

To extract the features, we first implemented a keyword search function in the Facebook API to spot some keywords we wanted to search for (e.g. name of the products, places etc.). The spotted keyword was consequently categorised (e.g. Android or hand phone was categorised under electronics, Bali or London was categorised into places). All the feature data were stored in a single text file.

The next step was to implement the Hidden Markov Model (HMM) algorithm to provide a dynamic prediction of customers' purchase behaviours. In this paper, however, we only provide a dynamic prediction of the trend of the categories. The details of the model are described in the next section.

THE MODELS

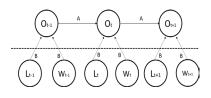


Figure 1: HMM models

Figure 1 presents our model of an HMM with states of categories at time t (0t), and two observations: Like at time t (Lt-1) and Word at time t (Wt-1). Using prior knowledge (t-1) of the model, we were able to determine the unobserved sequence of hidden states for the current state (t). The model definition is:

- T = length, in this paper, we set T=2;
- N = number of states in the model, where N=4;
- M = number of observations in the model, where M=2;
- $Q = \{q0, q1, ..., qN-1\} = states of the Markov process$
- $V = \{0, 1, ..., M 1\} = set of possible observations$
- A = state transition probabilities
- B = observation probability matrix
- π = initial state distribution
- O = (O0, O1, ..., OT-1) = observation sequence.

Furthermore:

O = {Electronics, Travelling, Motor, Fashion}

$$Q_{i,j} = \begin{bmatrix} q_{0,0} & \cdots & q_{0,N-1} \\ \vdots & \ddots & \vdots \\ q_{3,N-1} & \cdots & q_{N-1,N-1} \end{bmatrix}$$
(1)

The state transition probabilities were defined by probability of state q at time t-1 given state q at time t occurred. Hence:

$$A = \{a_{ij}\}; where P(q_{i,t+1}|q_{it})$$

$$(2)$$

while the observation probability matrix was defined by probability of observation k at time t given state q at time t occurred. Hence:

$$B = \{b_{jk}\}; where P(\partial_{k,t} | q_{jt})$$
(3)

where the observed probability value could be obtained from the number of likes and spotted keywords in certain categories using the logarithm function as can be seen in (4) and (5).

$$\vartheta_{t,k,c} = \sum \frac{Likes_{k,c}}{max_c \in Likes_{k,c}} \times \log \frac{|k|}{|(k,u)|} \quad (4)$$

and

$$\vartheta_{t,k,c} = \sum \frac{Words_{k,c}}{max_c \in Words_{k,c}} \times \log \frac{|k|}{|(k,u)|}$$
(5)

$$L_t = \{L_0, L_1\}$$
(6)

$$W_t = \{W_0, W_1\}$$
(7)

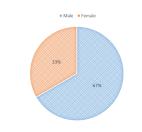
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$$\vartheta_t = \{\vartheta_0, \vartheta_1\} \tag{8}$$

Finally, from (6)-(8), the mathematical model of the probability of the state sequence was denoted by:

$$P(L) = \pi x_0 b x_0(\vartheta_0) a x_0, x_1 b x_1(\vartheta_1)$$
(9)

$$P(W) = \pi x_0 b x_0(\vartheta_0) a x_0, x_1 b x_1(\vartheta_1)$$
(10)



EXPERIMENTAL RESULTS

Figure 2: Demographic data

Figure 2 illustrates the demographics of our Facebook datasets. Most of the users were

Table 1HMM Implementation

Category	t = 1			t = 2		
	P(L)	P(W)	AVG	P(L)	P(W)	AVG
Electronics	0.42	0.39	0.405	0.32	0.23	0.275
Travelling	0.33	0.24	0.285	0.29	0.31	0.3
Motors	0.13	0.16	0.145	0.16	0.19	0.175
Fashion	0.12	0.21	0.165	0.23	0.27	0.25

males (67%). In this preliminary evaluation we implemented our model to the datasets with t=2. Table 1 and Figure 3 describe the results of the models.

As we can see from both Table 1 and Figure 3, the top category was electronics (0.42, 0.39, 0.32, 0.23). This indicates that there were quite a number of people who discussed, shared and liked topics or posts regarding electronics. Travelling was the second hot topic, with 0.33 and 0.24 for probability from likes and words the first time we ran the model and 0.29 and 0.31 the second time we ran the model.

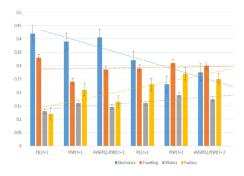


Figure 3: Results

From Figure 3 we can conclude that while electronics was the favourite topic on Facebook, there was an overall decrease trend (see the blue dot). Interestingly, fashion showed a positive direction (see the yellow dot). This data provides strategy makers with additional information to predict customer purchase behaviour based on trends obtained from social media. In this paper, Facebook was used as a study case for our model.

CONCLUSION AND FUTURE WORK

We proposed a computational prediction model to dynamically predict users' purchase behaviours by implementing Hidden Markov Models (HMM). Furthermore, we evaluated the models based on our datasets from Facebook, providing preliminary results for the proposed models explored in this paper.

There were some limitations encountered in this study. Firstly, the datasets were not considerable enough to represent global population. Most importantly, in this research we ran the model only twice, whereas it should have been run over several weeks or even months. Future research into this topic can go on to collect more data at least to represent a much wider, if not the entire population of Internet users. It should also include historical data of the users. Secondly, we need to expand the categories, and add more keyword databases for keyword search functions to enhance the accuracy of the feature extraction and classification.

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Knowledge Management Function Design in PT X*

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ABSTRACT

The purpose of this research is to provide understanding of knowledge management function in PT X for technical account managers in premier delivery, improving business processes, pooling redundant tasks and simplifying onboarding processes. The analysis and modelling method used was in accordance with ITIL v3 (2011), one of the most widely used IT management tools. It was found that employees experiencing work overload can benefit greatly from the establishment of knowledge management. Previously, there was limited knowledge management in PT X, and also, it was not specific to the needs of PT X. Expected results of this research were a change in process and establishment of a new function within PT X. This project will benefit users in improving processes, gathering and distributing knowledge and offloading some amount of workload experienced by technical account managers in PT X by using knowledge management.

Keywords: Knowledge management, services, delivery, ITIL

INTRODUCTION

PT X Premier Support helps organisations maximise value from IT investments through lower costs, risk and downtime and improved technology adoption, IT department capabilities and end-user productivity. These benefits are delivered 24/7 from a designated team of PT X's top subject-matter experts. The designated team helps organisations with a wide range of needs including urgent break-fix scenarios, system security, forward-looking

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henkie@binus.edu (Ongowarsito, H.) * Corresponding author risk assessments and holistic, multi-year IT plans designed to optimise people, processes and technology.

Premier is an end-to-end IT support and service offered by PT X. Premier Support provides service management through a technical account manager (TAM) from PT X, proactive services and resolution services. The Premier delivery team comprises a support practice manager (SPM) and technical account managers (TAM). At the moment there is a diffusion of knowledge among TAMs, and with all of the tools that TAMs use, it becomes harder and harder to monitor delivery as the Premier business grows. This issue of scattered information is one of the biggest factors that is causing workload overload for TAMs. Typically, a TAM is expected to work around 70-80% of his work time, but currently, this can go as high as 150%.

This demands a knowledge management function in which knowledge of Premier is pooled together, and reports for monitoring purposes are able to be generated periodically. This enhances the decision making power of the support practice manager and the services director. The knowledge management function serves as a pool of knowledge in which information and knowledge are easily obtained.

This function also serves as support for future growth and is easier onboarding for new staff attached to the Premier team. According to Tounkara (2013), knowledge transfer is a real challenge for organisations. A knowledge management function should, therefore, be able to help mediate this problem.

Premier offers open workshops to all Premier customers. These open workshops are currently handled by one TAM, but with the growing number of customers and workload, there have been hold-ups and delays in the workshop management process. The knowledge management function can also help solve this problem. Workshop knowledge can be centred in the knowledge management function and be easily distributed to TAMs and customers.

According to Edwards (2011), although knowledge management (KM) should focus on people, processes and technology, organisations often put too much emphasis on people and/or technology to the exclusion of the process factor. This causes a risky initiative implementation, which is why thinking about process can improve general knowledge management.

METHODOLOGY

The main methodology used in this research comprised three main methods, which were:

Process Design Methodology

The knowledge management model that was used is in accordance with Information Technology Infrastructure Library (ITIL) v3 which was published in 2011. The knowledge management methodology is described briefly in "The Official Introduction to the ITIL Service Lifecycle" and described more in depth in the book "Service Transition". Both books were published by the Office of Government Commerce (OGC). According to the "Service Transition", there are three core parts to knowledge management, which are:

- Knowledge Management Strategy
- Data and Information Management
- Key Performance Indicators (KPIs) and Metrics

The history of ITIL is described in the book, "Introduction to ITIL Service Lifecycle". As technology develops and its use proliferates organisations, Information Technology Service Management (ITSM) evolves and gains more attention. In the 1980s, the United Kingdom government, in an effort towards efficiency, started documenting how the best organisations approached service management. The result of this effort was the early versions of IT Infrastructure Library (ITIL), which compiled a series of books that document how IT service management supports business users. Although it was started as a library of over 40 books, today, ITIL is in its third version and is compacted into five core publications:

- 1. ITIL Service Strategy
- 2. ITIL Service Design
- 3. ITIL Service Transition
- 4. ITIL Service Operation
- 5. ITIL Continual Service Improvement

The five core publications each describe a part of the service lifecycle in ITIL. Now, ITIL is owned by the Office of Government Commerce (OGC), and the books are all published by The Stationery Office (TSO).

ITIL is not a 'how-to' manual nor is it a complete solution. Instead, it is a framework of practices that aim to deliver business value. The key characteristics of ITIL are:

 Non-proprietary – ITIL service management is applicable to any organisations because it is not based on any specific technology or platform. It is also not tied to an industry.

- Non-prescriptive ITIL provides robust, time-tested and mature practices applicable to all types of service organisations in both private and public sectors, all sizes, internal and external, and in any technical environment.
- Best practice ITIL represents learning experiences and thought leadership of the worlds' best service organisations.

ITIL Service Lifecycle and Processes

The processes involved in the ITIL service lifecycle are divided into five main processes and 26 processes:

- Service Strategy (SST) This is the core of the service lifecycle. Service strategy guides organisations in viewing service management as a strategic asset. Here, organisations develop objectives, performance standards and define the business value that is needed from services. The processes involved with service strategy are:
- Business Relationship Management
 the process that is responsible for managing and maintaining relationship with business stakeholders. This involves:
- Managing relationships with business stakeholders
- Providing input to the service portfolio management from business stakeholders
- Ensuring that the business needs of the business stakeholders are fulfilled by the IT service provider
- Demand management the process that is responsible for understanding

and influencing business users' demand for IT service and providing IT service capacity to meet those demands. This can involve analysis of patterns of business activities, user profiles, peak times etc.

- Financial Management for IT Services

 the process that is responsible for managing the finances of IT services, including budgeting, accounting and charging
- Service Portfolio Management the process to manage the service portfolio of the IT service provider
- Strategy Management the process to manage the strategy of the IT service provider
- Service Design (SDE) Turning service strategy to a blueprint to deliver objectives and values. Designing and developing the services is done here, along with maintaining the services catalogue and portfolio. The processes involved in service design are:
- Availability Management the process to ensure that the level of service availability delivered in all IT services matches or exceeds the agreed upon level of business needs
- Capacity Management the process to ensure that the IT service provider capacity is available in all areas of IT in a cost-justifiable manner
- Information Security Management the process to align IT security with business security and ensure that information security is effectively

managed in all its service and service management capabilities

- IT Service Continuity Management the process to ensure that the required IT capabilities can be resumed within the required and agreed upon business timeframe if unpredicted incidents occur
- Service Catalogue Management the process to provide a single source of information of all agreed upon services, and ensure that this information is made readily available to everyone who is approved to access it
- Service Level Management the process to ensure that an agreed level of IT service is provided for all current IT services and that future services are delivered to agreed achievable targets. This process involves negotiating, agreeing and documenting appropriate IT service targets with business stakeholder representatives; it also monitors and produces reports on the IT service provider's ability to meet the agreed upon IT service targets.
- Supplier Management the process to manage suppliers and the services they supply
- Service Transition (STR) Guiding transitioning new and changed services to live operations. The processes involved with Service Transition are:
- Change Management the process to ensure that all changes are recorded, evaluated, authorised, prioritised, planned, tested, implemented,

documented and reviewed in a controlled manner.

- Evaluation the process that considers whether the performance of a service is acceptable and whether the performance justifies the cost. This continues with approval, rejection etc.
- Knowledge Management the process to ensure that right information is delivered to the appropriate person to enable informed decisions to be made. With knowledge management, organisations are enabled to improve the quality of the management decisionmaking process by ensuring the availability of reliable and secure data and information throughout the service lifecycle.
- Release and Deployment Management

 process to deploy service releases to
 production and to establish effective use
 of the service to extract the maximum
 value to the customer and to be handed
 over to service operations.
- Service Asset and Configuration Management (SACM) – the process to define and control components of the service infrastructure and to maintain accurate configuration of services and assets (historical, planned and current state)
- Service Validation and Testing the process to ensure that a service will provide value to customers and the business. The concept in this process is quality assurance. Without sufficient testing in the quality assurance process,

there can be a rise in incidents when the service is put to use in production.

- Transition Planning and Support the process to plan the appropriate capacity and resources to build, release, test, deploy, package a release and establish the new or changed service to production. The goal of this process is to ensure that a new or changed service is established to production within the predicted cost, quality and time estimates.
- Service Operation (SOP) embodies day-to-day practices of services. In service operation, the value of services is shown, making this a critical capability. Service operation guides organisations in achieving effectiveness and efficiency in delivering services. The components in service operation are:
- · Processes:
- Access Management the process to grant authorised users access to a service, while restricting access to all unauthorised users
- Event Management the process that monitors all events that occur during the service operations throughout the IT infrastructure. When there are exceptions, the process defined here should be able to detect and escalate them to incident or problem management.
- Incident Management the process to quickly restore unexpected degradation or disruption to service operations in order to minimise business impact.

Incident management is the short-term solution that seeks to find a quick fix to quality disruption/degradation.

- Problem Management the process to analyse the root cause of incidents, to do proactive activities in order to prevent future incidents and to manage a known error database that allows quicker diagnosis and resolution if future incidents occur. An incident is called a problem when it has happened more than once. Problem management is the long-term solution that takes more time than incident management, but finds the root cause and fixes it.
- Request Fulfilment the process dealing with fulfilling service requests (changes that are requested to the Service Desk regarding IT services). Whenever necessary, the request is connected to a previous incident/problem that may have triggered the request.
- Functions (groups of people who use processes to match the IT infrastructure capability to the business need):
- Application Management the team that manages the applications throughout their lifecycle. Applications are defined as the software/system that is implemented to support the business process of the users.
- IT Operations Management the team that executes the day-to-day operational activities needed to manage the IT infrastructure. They follow the performance standards that were defined

during the service design stage of the service lifecycle.

- Service Desk the primary point of contact for all users. Service Desk handles services requests, service disruption and requests for changes. They provide a point of communication for users and coordination for the IT groups and processes.
- Technical Management the team that provides the resources and technical expertise to support ongoing IT operations
- Continual Service Improvement (CSI)

 this system guides the organisation in creating and maintaining value to service customers through better design, transition and operation of services. The process involved with Continual Service Improvement is:
- The 7-Step Improvement Process (see Figure 2)
- Define what to measure

This activity defines where the organisation is currently at in terms of IT infrastructure maturity. The team decides on the metrics that should be measured to assess the quality/ performance of the IT service.

Define what you can measure

This activity is related to defining where the organisation wants to be in terms of IT infrastructure maturity. The team identifies the new service level requirements of the business, the IT capabilities and the budget. - Gather the data

Based on the goals and objectives that have been identified, raw data are gathered. This activity also defines who has the data, how the data should be gathered and when the data should be gathered. Integrity of the data must also be ensured to avoid false data.

Process the data

The activity to process data from multiple disparate sources into a similar format so the data can be compared

- Analyse the data

In this activity, the data becomes information after analysis that identifies service gaps, impact on business and service trends

- Present and use the information

This activity displays accurate representation of the results of the improvement efforts to various stakeholders. Knowledge from the information is presented to the business to assist them in determining the next steps.

- Implement corrective action

Knowledge that is gained from the previous activity is used to optimise, improve and correct services. The managers identify the issues and present solutions at this stage. Then, corrective actions are communicated and explained to the entire organisation. After this step, the organisation establishes a new baseline, and the CSI cycle can start again. Knowledge management (KM) is a deliberate, systematic business optimisation strategy that selects, distills, stores, organises, packages and communicates information essential to the business of a company in a manner that improves employee performance and corporate competitiveness (Bergeron, 2003). In the book, "Knowledge Management in Theory and Practice", there are several more definitions of knowledge management based on different perspectives (Dalkir, 2005).

The perspectives that are explored are:

Business Perspective

Knowledge management is a business activity with two primary aspects: Treating the knowledge component of business activities as an explicit concern of business reflected in strategy, policy and practice at all levels of the organization; and, making a direct connection between an organisation's intellectual assets, both explicit (recorded) and tacit (personal know-how), and positive business results. (Barclay & Murray, 1997). Knowledge management is a collaborative and integrated approach to the creation, capture, organisation, access and use of an enterprise's intellectual assets (Grey, 1996).

Cognitive Science Perspective

Knowledge i.e. the insights, understanding and practical know-how that we all possess, is the fundamental resource that allows us to function intelligently. Over time, considerable knowledge is also transformed to other manifestations such as books, technology, practices and traditions within organisations of all kinds and in society in general. These transformations result in cumulated expertise and, when used appropriately, increases effectiveness. Knowledge is a, if not the, principal factor that makes personal, organisational and societal intelligent behaviour possible (Wiig, 1993, pp. 38–39).

Process/Technology Perspective

Knowledge management is the concept by which information is turned into actionable knowledge and made available effortlessly in usable form to the people who can apply it.

Data Gathering Methodology

The data in this research was gathered as primary data and secondary data. Primarily, data that were related to the process were gathered through interviews with PT X employees. Secondary data were gathered through reviewing internal data and presentation.

SharePoint Design

The SharePoint was designed according to the basic structure described by PT X.

RESULTS AND DISCUSSION

Based on the case studies and the issues affecting Premier Support Delivery, it was proposed to establish a knowledge management function named Indonesia Services Center to handle several functions. Instead of Premier Service Center, based on discussion with the Services Director and Support Practice Manager of PT X Indonesia, it was decided that in the future, the Services Center would extend its services to PT X Consulting Services. Thus, to reflect the future needs of the business, the name of the function was changed to Indonesia Services Center (ISC).

Service Strategy

Governance model. As the ISC focusses on Premier Support Delivery to begin with, the ISC organisation falls under the responsibility of the SPM. An ISC Lead is appointed, along with a number of ISC staff. The ISC is monitored by the SPM and Services Director.

The ISC process must be transparent to everyone on the Premier Support team (SPM, TAM, PFE and Sales) and a review of the catalogue and quality of services is done every quarter of the fiscal year. In the event that the strategy and process have to be changed, the change to the strategy and to the ISC process will have to be approved by the SPM and Services Director before it can be implemented.

The governance model for the ISC is within the governance model of PT X as a whole. ISC is subject to regulations that were created by the compliance team of PT X that is also followed the PT X Worldwide compliance team. At the time of this research, there were no organisational changes underway that could significantly impact roles, responsibilities and processes in the Services division. **Roles and responsibilities**. The roles and responsibilities of the stakeholders of ISC are:

- Services Director: Sponsor of the ISC. The Services Director is responsible for:
 - Providing input and feedback to the ISC strategy and processes
 - Approval of any strategy and process change within the ISC
 - Approval of hiring decisions
 - Conducting review of the ISC performance together with the SPM
 - the SPM
- The SPM: Manager of the Premier Delivery team as a whole, which manages the ISC and TAMs. The SPM is responsible for:
 - Providing input and feedback to the ISC strategy and processes
 - Approval of any strategy and process change within the ISC
 - Hiring of new staff
 - Conducting review of ISC performance together with the Services Director
 - Reporting problems to the correct personnel (This can be the product team, system developer team or other departments of PT X)
- ISC Lead: Manager of ISC staff. The ISC Lead is responsible for:
 - Leading the effort to establish and implement the ISC function

- Proposing new and/or changed services
- Managing ISC staff
- Handling incidents that occurs in ISC operations
- Escalating problems to the SPM
- ISC Staff: Responsible for delivering services that provided by ISC; they handle day-to-day requests from TAMs and customers. Whenever any incidents arise, ISC staff must report them to the ISC Lead.
- TAM: As ISC stakeholders, is responsible for providing input and feedback on ISC processes

Managing the knowledge. The knowledge possessed by ISC can be derived from sources inside PT X or from external sources. It can be generated either by the ISC itself or by adapting knowledge from external sources (both within and outside PT X).



Figure 1: Knowledge and information relationship in ISC

To assess what knowledge is needed, the decisions that are based on these data have to be specified. The knowledge management function provides the knowledge to support decision making of:

- Workshop pricing and scheduling
- Number of hours that Premier requires from PFE and CTS/GTSC to resolve problems
- Which TAM is best suited to handle a customer
- How Premier Delivery can be improved
- How TAMs can better serve the customer

Knowledge that can be generated includes:

- Workshop frequency and margin
- Trend of problem resolution cases
- What opportunities are available for every customer
- What the customer's preference is
- History of meetings and decisions within the Premier Delivery team

Knowledge gathered from outside sources include:

- PT X Internal
- Knowledge about Premier Support offerings
- Troubleshooting guide to offerings
- New offerings and announcements from the worldwide Services team
- New announcements from the product team

- PT X External
- Knowledge of training centre availability and capability
- Issues and concerns of customers

The knowledge will be made available online in the SharePoint site of PT Services Indonesia and can be accessed from outside the corporate Intranet.

Resources requirements. In the process of delivering services to stakeholders, ISC requires several resources requirements, which on the high level are:

- Staff to run the ISC
- Access to data and information from the corporate Intranet
- Approval and support to interview TAMs and SPM
- Sponsorship from PT X Services Indonesia for funds necessary for hiring and events executed by the ISC

Performance measures. To continually improve the ISC, a few performance measures are established, mainly:

- TAM satisfaction
- Efficiency of the ISC function
- Improvement to the Premier Delivery process

Service catalogue. This includes:

Workshop management. In the workshop process, the role of the WC TAM in open workshops is replaced by the ISC. The management of closed workshops is handled

by ISC. TAMs can submit a request for a closed workshop to ISC, along with the customer's name, date and topic requested. ISC then provides the resources and gives feedback on availability to the TAM.

Case management. The objectives of this are:

- To ensure the hygiene of open Problem Resolution Support incidents twice per week on an exception basis
- To ensure no incident sits idle for more than three days
- To ensure that incidents open for more than 30 days have an update
- To ensure that the SPM is aware of any incident where the hours charged are over a certain threshold by sending a summary report to the SPM.

The Service Centre Team will:

- Liaise via email (or phone if required) with the customer or MS engineer

The Service Center Team will not (unless agreed to in advance):

- Provide a full incident management service
- Update each individual incident

Customer profiling. The objective of profiling the customers is to provide the SPM with better knowledge of the customers' spread in different areas. The profiling is done based on data gathered from interviews with each TAM.

The Service Centre Team will:

- Interview TAMs for initial data collection
- Process and compile data from all customers

The Service Centre Team will not (unless agreed to in advance):

Reach the customer for data collection

Knowledge repository. The objective of the knowledge repository is to provide a single knowledge database for all Premier Support team members. This repository was created based on SharePoint 2013.

The Service Centrer Team will:

- Maintain the SharePoint site
- Add, edit and change permissions to each customer's folder in accordance with account delegation by TAM

The Service Centre Team will not (unless agreed to in advance):

- Change the contents of any folder

Customer communications. The objectives of this are:

- To provide Premier announcements in a timely manner to all customers
- To provide effective communications with customers and to not overstep boundaries; the Service Centre Team will request TAMs to provide a list of their customers to whom emails can be sent regularly regarding updates and announcements.

The Service Centre Team will:

- Contact customers who are whitelisted
- Maintain a list of the whitelisted customers

SharePoint design. To accommodate the services in the catalogue, a SharePoint sub-site in the PT X Services Indonesia is created. From the options that are available, the Team Site option was chosen to best accommodate the requirements. These are the components of SharePoint:

- 1. Document libraries
 - a. Open Workshop Schedule

This document library holds all workshop schedules, revisions and workshop datasheets.

b. Open Workshop Invitations

This document library holds all invitations to workshop and services events that are customer-ready.

c. TAM Resources

This document library holds all resources that a TAM should have to do his or her job more efficiently.

d. Customer Information

This document library holds all documents pertaining to every customer. All customers are assigned their own separate folder, which is accessible only to the TAM who handles that customer, the ISC Lead, the SPM and the Services Director.

- 2. List
 - a. Certificate Reprint Request A list to register the names of workshop attendees who need their certificate to be reprinted
 - b. Services Events Calendar Calendar list to register all Services events.
 - c. Performance Interview Every quarter, the performance of ISC will be reviewed by the SPM and Services Director. Other than numbers viewed directly from the internal system, TAMs will be given a questionnaire and interviewed. The questionnaire questions are:
 - 1. How useful do you find the ISC SharePoint site? Please rate the usefulness between 1 and 5, with 1 as the least useful and 5 as the most useful.
 - How useful do you find the workshop management by the ISC? Please rate the usefulness between 1 and 5, with 1 as the least useful and 5 as the most useful.
 - How useful do you find the case wellness function by the ISC? Please rate the usefulness between 1 and 5, with 1 as the least useful and 5 as the most useful.
 - 4. How useful do you find the customer communications function by the ISC? Please rate

the usefulness between 1 and 5, with 1 as the least useful and 5 as the most useful.

The interview questions were:

- 1. What information do you need to be made available by the ISC?
- 2. What do you think can be improved in the ISC?
- 3. What services do you want to have made available from the ISC?

CONCLUSION

X Services Premier Support, as PT X's highend service offering, helps organisations maximise value from IT investments through lower costs, risk and downtime and improved technology adoption, IT department capabilities and end-user productivity. These services are managed by a technical account manager (TAM) from PT X. These TAMs are the customer's single point of contact for all the customer's needs with PT X. However, with employee turnover and holidays/out-of-office days, it becomes a challenge to maintain information on customers. Leaving employees sometimes do not hand over their customer data to other employees. Moreover, as the Premier organisation grows and handles more customers, delivery needs to be monitored so as to maintain service speed and quality. In the process to solve the issues that emerge, Indonesia Services Center (ISC) was formed to handle knowledge management for the Services division of PT X Indonesia. In developing the ISC, case studies on other subsidiaries of PT X were done and keeping to their example, not only does ISC handle the SharePoint site, but also several other service catalogues.

Knowledge management software such as SharePoint 2013 is a tool that is convenient to implement and useful for knowledge management function. Notebook software such as OneNote 2013 and Evernote, is also an easy tool to use to share knowledge management in documents that can be edited concurrently by all team members.

In order to implement both of systems, an organisation needs to analyse the specific requirements for strategy, governance, data, information, knowledge, retention, roles and responsibilities as well as user rights within the organisation. After this information is captured, then an organisation can implement a KM software to accommodate knowledge management.

For future research into applications of knowledge management, the organisation for which the function will be implemented must be analysed carefully as knowledge management implementation is unique to every organisation. Initial knowledge management implementation does not have to be overly complicated as the organisation continues to learn to use knowledge management. However, in implementing knowledge management, the organisation must be willing to change, whether in organisational structure, employee skillsets, business processes or habits. Resources that maintain knowledge management must also be predicted in the analysis.

Risk management must also be considered as some information may be confidential. In the case of this research, PT X already implemented measures to manage risks. To simplify the sharing process, another system can also be set up to make the process of uploading to cloud easier rather than having to upload in the site directly.

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The Success of Toto Brand in Grabbing Purchase Intention

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ABSTRACT

The purpose of this study is to investigate the impact of perceived price value and perceived product quality functional value on brand loyalty and purchase intention along with perceived value of transaction as a moderator variable. A survey was conducted with 200 consumers of Toto brand products. Structural equation modelling and Partial Least Square (SEM-PLS) were used for data analysis. This study is important in terms of perceived price value in terms of its effect on brand loyalty, purchase intention and perceived product quality functional value. The results of this study can help businesses (Toto in this specific case) to determine strategy and create correct value perception.

Keywords: Perceived price value, perceived product quality functional value, brand loyalty, perceived value of transaction, purchase intention

INTRODUCTION

Human life has been made easy by rapid developments in technology. Various kinds of technology are used in everyday life and at work. Today, human life is highly dependent on technology. One aspect of heavy use of technology is in the generation of innovations, which are more easily supported by existing technology. This includes innovations in the field of sanitaryware.

Sanitaryware refers to bathroom fittings. Sanitary products include sinks, bidets and bathtubs, among others. These products adjust and improve the functions of a bathroom. Bathrooms must be made available in every place where people gather, whether in

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houses, offices, buildings, hotels, restaurants or schools, among others. Therefore, the sanitary industry is an industry with excellent prospects and it is a profitable industry. PT. Surya Toto Indonesia Tbk is a manufacturer of sanitaryware in Indonesia with the largest market share in the industry.

PT. Surya Toto Indonesia not only produces primary sanitary products, but also manufactures fittings, kitchen sets and vanity sets. Fittings, in simple definition, are items that are attached to facilities such as a water tap that is attached to a sink in the bathroom. This product equips and beautifies the facility. A kitchen set is a set of kitchen tools in the form of a cupboard serving to store household tools that supports cooking activities whereas a vanity set is furniture consisting of a table, a mirror, a cupboard or storage case and sink on the top.

Several Toto products are not as popular as its sanitary products but they still enjoy limited market share. Unlike Toto sanitary products that are widely well-known, its fittings, kitchen sets and vanity sets are only known to certain people who may like interior design (e.g. architects and interior designers). Therefore, the researchers believed it would be beneficial to study consumers who have been loyal to Toto sanitary products to examine if their loyalty encouraged them to purchase other Toto products as well. However, prior to that, the researchers investigated whether value perception of consumers towards prices and products influences consumer loyalty to a brand. Little research has been done into this, and this gap, in our understanding, provides justification for exploring the relationship between perceived price value, perceived product quality functional value, purchase intention and brand loyalty as mediators as well as perceived value of transaction as a moderator between brand loyalty and purchase intention.

Perceived value of transaction is a transaction value perceived by consumers. This variable was employed as a moderator between brand loyalty and purchase intention. Consumer perception of transaction value can strengthen or weaken purchase intention of consumers. The research questions in this study were: Does perceived price value have a significant influence on brand loyalty? Does perceived product quality functional value have a significant influence on brand loyalty? Does perceived price value have a significant influence on purchase intention? Does perceived product quality functional value have a significant influence on purchase intention? Does brand loyalty have a significant influence on purchase intention? Does perceived price value have a significant influence on purhase intention with brand loyalty as its mediator variable? Does perceived product quality functional value have a significant influence on purchase intention with brand loyalty as its mediator variable? Does brand loyalty have a significant influence on purchase intention with perceived value of transaction as a moderator variable? Does perceived value of transaction have a significant influence on purchase intention? The main purpose of this study was to determine the possible intervening and moderating variables.

LITERATURE REVIEW

Purchase intention is a strong indicator for estimating future behaviour (Wu et al., 2011; Thakur & Singh, 2012); therefore, it has been frequently debated by researchers, with the focus being on how to build brand loyalty. Purchase intention is referred to as a subjective judgment by consumers after general evaluation to buy a product or service (Rahman & Dron, 2012). This means that purchase intentions are composed of consumer feelings, thoughts, experiences and external factors, all of which are considered before making a purchase (Tanvir & Shahid, 2012). Previous studies have focussed on the impact of perceived value on purchase intention (Wang, 2010). There is reason to believe that certain conceptualisations of perceived behavioral control determine behavioural intentions (Notani, 1998). Predictive value of perceived behavioral control supports the theory of planned behaviour (TPB).

The TPB model describes how behaviour is formed (Ajzen, 1991). TBP comprises three perceptual constructs of beliefs i.e. attitudes, subjective norms and perceived behavioural control; these influence behaviours to a high degree of accuracy. The first construct, attitude, represents the individual's favourable or unfavourable evaluation of the behaviour. The second construct of TPB is a social norm factor that reflects the influence of perceived social pressure on others and the motivation to comply with those social referents while perceived behavioural control, the third construct of the model, reveals the perceived ease or difficulty of carrying out the behaviour. Perceived behavioural control reflects past experience as well (Ajzen, 1991).

For the purpose of this research, the model used comprised the three perceptual constructs of attitude, subjective norms and perceived behavioural control. The strong approach to predicting intentions was TPB (Ajzen, 1991, 2002). TPB can predict intented behaviour because behaviour can be planned. Behavioural intentions can be planned through integration of attitude, subjective norms and perceived behavioural control (Nilipor et al., 2013). Baldauf et al. (2003) found brand loyalty to be positively related to brand profitability performance and brand market performance.

In this study of subjective norms, perceived price value and perceived product quality functional value wee studied. Consumer values perceived products related to the consumer's overall assessment of the utility of a product or services based on perceptions of what was received and what was given (Zeithaml, 1996). Customer value focussed on the relationship between quality and price (Lee et al., 2011). The consumer behaviour approach includes brand loyalty and the focus on paying a price differential (Myers, 2003). The perceived value pressure to social norms refers to the pressure to perform or not to perform a social act (Ajzen, 1991). Subjective norms have significant impacts on purchase intention (Jalilvand & Samei, 2012; Wang & Wei, 2012). Subjective norms work as a determinant of intention (Taylor & Todd, 1995).

The first construct was measured using perceived price value and the perceived product quality functional value as independent variables that have an effect on brand loyalty. The second perceptual construct of belief was perceived value of transaction as a perceived behavioural control that influences purchase intention. This construct was studied as perceived value of transaction and was tested as a moderator between brand loyalty and purchase intention. Perceived value of transaction was positive to willingness to buy from a specific retailer.

The third construct was measured by brand loyalty as a mediating variable between perceived price value and purchase intention. Studying brand loyalty as a mediator is based on past research by Severy and Ling (2013). A deeply held commitment to the same brand reflects brand loyalty (Sahin et al., 2011). Brand loyalty indirectly influences repurchase intention through commitment (Balakrishnan et al., 2014). Loyalty is defined as a favourable attitude towards a product or service that results in recommending the product or service to other consumers and exhibiting repurchase behaviour. Attitudes can reflect favourable and unfavourable evaluation (Jalilvand & Samiei, 2012). Attitude is defined as a learnt predisposition to respond in a consistent manner with respect to a given object (Ajzen, 1991; Doorn et al., 2007). Attitude is the one factor that can predict many behaviours.

This study developed a framework to investigate the influence of perceived price value and perceived product quality functional value on brand loyalty, where brand loyalty was a mediating variable and the perceived value of transaction was the moderating variable. This study considered perceive value of transaction as a variable that prevented or interrupted the flow of brand loyalty to purchase intentions. This study investigated the perceived value of transaction that moderates the relationship between brand loyalty and purchase intention.

RESEARCH METHOD

In this study, the researchers employed an associative analysis method. Through this associative study, the relationship between variables and the dependence level of each variable, either an independent variable, dependent variable, mediating variable or moderating variable, can be discovered. The sample population for this study came from Indonesian consumers who were familiar with the Toto brand and who were actively doing their shopping in the Toto showroom in Panglima Polim, Jakarta, Indonesia. This study was mainly interested in labelling shoppers as users of sanitary products of Toto brand. In deciding the proper sample size for this survey, Roscoe's (1975) rule of thumb was used i.e. the minimum sample should be at least 10 times the number of the variables. The total number of variables in this study was 12, so the required minimum number of samples was calculated to be 120 (12 variables x 10=120). This study used 200 samples. Meanwhile, Sekaran and Bougie (2009) suggested that a sample size of 30 to 500 is good enough for most surveys whereas Tabachnick and Fidell (2001) suggested that a sample size of at least 10 times per surveyed variable is acceptable for use. The sampling method used in this research was probability sampling. In order to have a representative finding, the sample must be representative and the sampling technique must be objective.

In the implementation of this research method, a survey was conducted. The survey is a research tool used to measure a large or small population. The studied data were from a sample taken from the population. Therefore, it could be used to ascertain relative events, distribution and relationships between variables. Data collection was done through a questionnaire. The questionnaire is a data collection technique conducted by providing a set of questions or written statements for respondents to answer or respond to. The researchers performed data collection by providing a set of written statements to the respondents.

The data were obtained by distributing the questionnaire to customers of Toto products. It contained some questions regarding the variables to be studied. The questionnaire was divided into two parts, namely, a section on demographic data of respondents, using closed statements, with a choice of answers in the form of a nominal scale and a section on responses to statements about the variables. The indicator used to measure the responses to each variable was measured using an ordinal scale that was converted into the interval. A 5-point Likert scale was used with the indicators being 'Strongly agree', 'Agree', 'Neutral', 'Disagree' and 'Strongly disagree'.

Before the questionnaires were distributed, the researchers firstly conducted an observation in the distribution site of the questionnaire, which was the Toto store in Panglima Polim, Jakarta, to observe conditions in the store. A total of approximately 200 people had come to shop in the store. Consumers who shopped there weree individual consumers as well as representatives of business consumers. The questionnaires were distributed to individual consumers who had shopped for Toto products at least twice.

The data analysis technique used in this study was the SEM-PLS. SEM-PLS is a causal modelling approach that aims to maximise the variance of criterion latent variables (latent variables were hypothesised as outcomes of other variables) that can be explained (explained variance) by predictor latent variables (latent variables were hypothesised as determinants of other latent variables). SEM-PLS can work efficiently with small sample sizes and complex models. The assumption of data distribution in SEM-PLS is relatively looser than in CB-SEM. SEM-PLS is also able to analyse reflective and formative measurement models and latent variables with one indicator without raising problems of identification.

SEM-PLS has limitations, namely, (1) the SEM-PLS technique is inapplicable when structural models contain reciprocal relationship between latent variables. (2) because SEM-PLS does not have a global measurement for goodness-of-fit, its use for testing the theories and confirmation

is limited (Hair et al., 2012). Assessment validation techniques have been identified in the previous section. The research models were analysed using Smart PLS 2.0 (Ringle et al., 2005). Smart PLS assessed the psychometric properties of the measurement model i.e. reliability and validity of the scales were used to measure each variable and to estimate the parameters of the structural model. The measurement model, structural model and quality index results were presented and discussed below. The two important criteria to test right measurement were validity and reliability. According to Hair et al. (2011), the procedures explained how factor loadings should be at 0.5 and

above, Cronbach's Alpha should be above 0.7 and the composite reliability above 0.7. Essentially, SEM-PLS was similar to regression analysis of the ordinary least square (OLS) as it aimed to maximise the variance of the dependent variable that was explained in the model. The goal was to maximise the value of the R-squared and minimise residual or error prediction. Another goal of SEM-PLS was to evaluate data quality based on the measurement model. Therefore, SEM-PLS can be viewed as a combination of regression and factor analysis.

RESULTS AND DISCUSSION

Table 1Output of Total Effect

	Original Sample (O)	Sample Mean (M)	Standard Error (STERR)	T Statistics (O/STERR)	P Values
BL -> PI	0.526	0.512	0.159	3.300	0.001
Interaction Effect: PVOT (Two Stage) -> BL -> PI	0.019	0.012	0.145	0.128	0.898
PFQV -> BL	0.320	0.330	0.090	3.564	0.000
PFQV -> PI	0.540	0.542	0.087	3.611	0.000
PPV -> BL	0.346	0.346	0.081	4.291	0.000
PPV -> PI	0.064	0.061	0.076	1.418	0.397
PVOT -> PI	-0.054	-0.041	0.161	0.335	0.738

Bases for Decision Making

 $T_{statustics} \ge T_{value}$, then Ho is denied, Ha is accepted

 $T_{statustics} < T_{value}$, then Ho is accepted, Ha is denied

Based on the above data, these results were obtained:

1. There was a significant influence at 4.291. Hence, perceived price value

significantly influenced the variable of brand loyalty.

- 2. There was a significant influence at 3.564. Hence, perceived product quality functional value significantly influenced brand loyalty.
- 3. Perceived price value did not significantly influence purchase intention due to $T_{statustics} < T_{value}$, that is at 1.418.

- 4. There was a significant influence at 3.611. Hence, perceived product quality functional value significantly influenced purchase intention.
- 5. There was a significant influence at 3.300. Hence, brand loyalty significantly influenced purchase intention.
- According to Hayes (2009), if the total effect is significant, it serves as a mediator. Total effect was 3.300>1.96 so perceived price value significantly influenced purchase intention with brand loyalty as the mediator.
- Direct effect of PPQFV to PI was 3.611>1.96, hence perceived product quality functional value had a significant influence on purchase intention with brand loyalty as the mediator variable.
- Perceived value of transaction and brand loyalty did not influence purchase intention, either to strengthen or weaken it. Therefore, it was concluded that there was no moderate relationship or perceived value of transaction was not a moderator construct.
- 9. Perceived value of transaction did not significantly influence purchase intention due to $T_{statustics} < T_{value}$, that is, at 0.335.

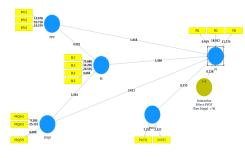


Figure 1: Output of SmartPLS 3

From the results of the data processing conducted by the researchers as seen in Table 1 and Figure 1, there were several observations to report, as given below.

Perceived price value did not significantly influence purchase intention at 1.418. Perceived product functional quality value had a significant influence on purchase intention, where the resulting influence was 3.611. Brand loyalty had a significant influence on purchase intention, where the resulting influence was 3.300. Brand loyalty mediated perceived price value and purchase intention, evidenced by Baron and Kenny and Hayes' (2009) testing methods. The result was 15.5783 and 3.300. Brand loyalty mediated the perceived product quality functional value with purchase intention, evidenced by the direct effect of 3.611. Interaction between perceived value of transaction and brand loyalty did not influence the purchase intention, either to strengthen or weaken it. So, it was concluded that there was no moderate relationship or perceived value of transaction was not a moderator construct, where the resulting influence was 0.128. Perceived value of transaction did not significantly influence purchase intention at 0.335.

The research results also provided the following insights.

 Perceived price value on brand loyalty Based on the hypothesis testing result: Perceived price value had a significant influence on brand loyalty. This proved that the perceived price value by consumers greatly influenced their loyalty to Toto products. If consumers had a good perceived price value for Toto products, such as the price according to the products or favourable prices, then this would increase consumer loyalty to Toto. These results supported previous research by Ramezani and Heidarzadeh (2014), which stated that perceived price value influenced consumer loyalty to a brand.

2. Perceived product quality functional value on brand loyalty

Based on the hypothesis testing result: Perceived product quality functional value had a significant influence on brand loyalty; this proved that perceived product quality functional value influenced consumer loyalty to Toto products. Consumers' perception of Toto as a product of good quality would further enhance customer loyalty to Toto. Factors that influenced the perception of a product as being one of good quality are good performance, good service, long durability, reliability, additional features, compliance with specifications and quality perceived by consumers. These are important quality perception indicators for consumers. If perception is well formed by consumers, it will increase consumer loyalty to the products.

3. Perceived price value on purchase intention

Based on the hypothesis testing result: Perceived price value did

not significantly influence purchase intention; this proved that the perceived price value by consumers of Toto had no effect on consumers' purchase intention. It can be concluded that Toto consumers were not concerned about price in their consideration to buy Toto products. Because Toto products were premium products with a high price and possessed good quality, Toto consumers' perception of the price value did not affect their purchase intention.

4. Perceived product quality functional value on purchase intention

Based on the hypothesis testing result: Perceived product quality functional value had a significant influence on purchase intention; this proved that the perceived product quality functional value influenced consumers purchase intention. Unlike price, which was not taken into consideration by consumers in buying Toto products, quality was an important consideration for consumers. It can be concluded that what influenced consumers' purchase intention in buying Toto products was product quality; consumers did not consider price as long as the product quality was good. This result supported previous research conducted by Ar (2012), which stated that perceived quality value of a product influenced consumers' purchase intention concerning a product.

 Brand loyalty on purchase intention Based on the hypothesis testing result: Brand loyalty had a significant influence on purchase intention, consumer loyalty to Toto products influenced their purchase intention because loyal customers will always make Toto products their primary choice unlike non-loyal consumers who tended to move from one brand to another. Consumers displaying loyalty to the brand are bonded to the brand, and will always choose the brand over others.

6. Perceived price value on purchase intention with brand loyalty as a mediator

Based on the hypothesis testing result: Brand loyalty mediated perceived price value and purchase intention; this proved that consumer loyalty can relate perceived price value owned by consumers to purchase intention. Consumers who are loyal to s brand have s perceived price value obtained from a product; their good or bad perception will turn into purchase intention because consumers already are loyal to the brand.

7. Perceived product quality functional value on purchase intention with brand loyalty as the mediator variable. Based on the hypothesis testing result: Brand loyalty mediated perceived product quality functional value and purchase intention; this proved that brand loyalty can be a mediator of perceived product quality functional value to consumers' purchase intention. Perceived product quality functional value by consumers will turn into purchase intention because consumers already have loyalty to a brand.

- 8. Brand loyalty on purchase intention with perceived value of transaction as a moderator. Based on the hypothesis testing result: Perceived value of transaction did not moderate brand lovalty and purchase intention, either to strengthen or weaken purchase intention; this proved that perceived value of transaction did not influence consumer loyalty to their purchase intention. Consumers' perceived value of transactions cannot have an influence on the relationship between Toto consumers against their purchase intention. Consumers who are loyal to Toto in relation to the purchase intention did not necessarily require the process of value transactions.
- 9. Perceived value of transaction on purchase intention

Based on the hypothesis testing result: Perceived value of transaction did not have a significant influence on purchase intention; this proved that the perceived value of transaction did not strengthen or weaken purchase intention. Toto consumers' purchase intention was not influenced by their perceived value of transaction.

CONCLUSION AND RECOMMENDATIONS

Research into perceived price value and perceived product quality functional value on brand loyalty and their influence on purchase intention with perceived value of transaction as a moderator variable of Toto products showed the following: Perceived price value had a significant influence on brand loyalty. Perceived product quality functional value had a significant influence on brand loyalty. Perceived price value did not have significant influence on purchase intention. Perceived product quality functional value had significant influence on purchase intention. Brand loyalty had significant influence on purchase intention. Brand loyalty mediated perceived price value and purchase intention. Brand loyalty mediated perceived product quality functional value and purchase intention. Perceived value of transaction did not moderate brand loyalty and purchase intention. Perceived value of transaction did not have a significant influence on purchase intention.

The following are several recommendations to PT. Surya Toto Indonesia as well as other businesses in general.

• Toto should maintain the value of products supplied to its consumers. Consumers who have a good perceived price value of Toto products will increase their loyalty to Toto.

- Toto has to maintain good quality for consumers and it will even be better if it can improve the quality.
- Toto should focus on improving product quality and not need to be too concerned with product prices. This will be beneficial for Toto to determine the optimum prices that can be used to increase profit or to buy resources that can be used to build a brand and invest resources to strengthen the brand.
- Toto product quality should always be improved so that the perception of quality by consumers of Toto products will improve. This is consistent with the values obtained from the perception of quality by consumers, which was the impression that product quality would provide an important reason for consumers to make purchases. The quality of a product can differentiate it from other products, thus making it easier for consumers to choose the products that they will buy.
- Toto does not need to pay close attention to how to provide an easy transaction process for its consumers because the transaction process did not affect Toto consumers' purchase intention.

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Operationalizing Internal Knowledge Transfer Factors: An Application for Small and Medium Enterprises (SMEs)

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ABSTRACT

Being aware of the knowledge transfer process enables small and medium enterprises (SMEs) to improve their organisation. Despite the many barriers that prevent SMEs from conducting knowledge transfer, SMEs should be aware of the factors that should be considered in the knowledge transfer process. This paper aims to operationalise factors that should be considered in the knowledge transfer process, especially in small and medium enterprises (SMEs). From interviews conducted with 13 employees as informants, we discovered indicators for each dimension that we adopted from the original model, namely, co-worker, senior employee and director for the dimension, actor; job-related and non-job-related for the dimension, context; services and product for the dimension, content, and for the dimension, media, we identified website, e-mail and chatting application. We also identified a new dimension that was not mentioned in the original model, namely, time, which comprises frequency and duration as indicators.

Keywords: Knowledge transfer, knowledge transfer factors, small and medium enterprises (SMEs)

INTRODUCTION

According to the Ministry of Small and Medium Enterprises of Indonesia, the level of SME growth in 2012 increased by around 2.41% from 2011 whereas the level of big company growth increased by around 0.32% in the same year. To be able to compete globally, SMEs have to escalate the competitive advantage they have. In order to improve

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their competitiveness, SMEs need efficient human resources. The quality of human resource can be measured from its ability to gather knowledge to improve operations. In order to compete in the market, each member of an organisation has to share the knowledge he or she has. The company must, therefore, act to emphasise that each member should transfer his or her knowledge to the rest of the team. Knowledge transfer is one of the main sources for SMEs to access knowledge.

According to the knowledge-based view (KBV), performance between organisations is not determined by any internal resources of organisation, but is caused by asymmetries of knowledge (Curado, 2006). KBV emphasises that the objectives of organisation are actually the generation and the application of knowledge (Bartianu & Orzea, 2010). The assumption is also applicable for Small and Medium Enterprises (SMEs). In this era of fierce business competition, it is important for small and medium enterprises (SMEs) to access the knowledge that is needed. Knowledge for SMEs is a leverage of business, and knowledge transfer is the main source of accessing knowledge for SMEs (Chen & Chang, 2012). This is much more important for SMEs, as they organise fewer knowledge resources compared to big companies (Durst & Ferenhof, 2014). Being aware of the knowledge transfer process enables SMEs to improve their organisational factors (Yousif, 2012). However, there are many barriers raised against SMEs, and this causes them to tend to neglect to implement knowledge transfer (Razak et al., 2013). Previous studies have revealed several factors that can be barriers for SMEs such as financial factors, management strategic orientation and management capacity and resources (Eckl, 2012). Razak et al. (2013)

included knowledge capabilities and process practices in the organisation as some of the main weaknesses of SMEs. Eckl (2012) emphasised on the lack of participation and culture barriers as being the most important barrier preventing SMEs from conducting knowledge transfer.

Knowledge transfer can be done in many forms including interaction between people (Yousif, 2012). Chen and Chang (2012) emphasised the process, stating that the higher the absorptive capacity, knowledge complexity and specialised structure, the better the transfer of knowledge. Razak et al. (2013) emphasised on the need for a proper knowledge infrastructure such as structure, technology and culture to ensure that the process of knowledge transfer among employees is effective. Thus, despite the many barriers preventing SMEs from conducting knowledge transfer, SMEs should be aware of the factors that should be considered in the knowledge transfer process so that SMEs can conduct knowledge transfer in an efficient way. This paper aimed to operationalise the factors that can be considered in the knowledge transfer process, especially in small and medium enterprises (SMEs).

THEORETICAL BACKGROUND

Nature of Knowledge

Davenport and Prusack (2000) saw knowledge as a further level of evolution of data and information. Data were objective facts about events that may have no meaning to a particular user. Through the processes of contextualising, categorising, calculating, correcting and condensing, however, data are transformed into information (Davenport & Prusack, 2000). Information is data that already have meaning. However, information is not yet considered knowledge. Information only gives meaning or context for data, while knowledge enables individual to justify the truthfulness of their observations based on their observations of the world. It is also the capacity to define a situation and then to act accordingly (Nonaka et al., 2006).

Knowledge comes from information as information comes from data. Information can be transformed into knowledge through the process of i) Comparison i.e. How does information about this situation compare to other situations we have known?; ii) Consequences i.e. What implications and does the information have and what actions will it lead to?; iii) Connections i.e. How does this bit of knowledge relate to other knowledge or information?; and iv) Conversation i.e. What do other people think about this information? (Davenport & Prusack, 2000).

Knowledge is complex as a concept. To understand clearly what the meaning of knowledge is, we have to examine its key components, such as experience, ground truth, judgement, rule of thumb and values and belief (Davenport & Prusack, 2000). Knowledge is developed from time to time through experience. Being knowledgeable is not the same as being informed. We are considered having knowledge if we know the truth of a real situation rather than only knowing the theory or generalisation behind it. Unlike data and information, knowledge contains judgement. Individuals who are considered very knowledgeable or, as we call them, 'experts', can form judgements in the form of solutions to new situations based on knowledge that he/she already has. Knowledge also works through rule of thumb. There are 'shortcuts' to solutions to new problems that resemble problems that existed previously that were solved by experienced workers. Knowledge also naturally cannot be fully neutral. It is influenced by an individual's values and beliefs.

Tacit and Explicit Knowledge

Knowledge can be found as either tacit or explicit in form (Nonaka & Konno, 1998; Seidler-de Alwis & Hartmann, 2008; Laudon & Laudon, 2010). Tacit knowledge is more difficult to articulate and to transfer, while explicit knowledge can be captured in tangible form (Dalkir, 2011). Tacit knowledge is subjective, experience-based knowledge that cannot be expressed in words, sentences, numbers or formulation. Seidlerde Alwis and Hartmann (2008) explained that tacit knowledge embodies education, natural talent, experience and judgement that we are not conscious of because these elements are not communicated in language. Tacit knowledge cannot be taught and cannot be articulated and cannot be observed because of its richness and complexity (Davenport & Prusak, 2000). We can acquire tacit knowledge through the sharing of experience, observation and imitation (Seidler-de Alwis & Hartmann, 2008).

Explicit knowledge or codified knowledge refers to knowledge that is transmittable in formal systematic language (Nonaka & Konno, 1998). It is the kind of knowledge with which we are more familiar. We find it everywhere, in newspapers, textbook, television and the Internet. We are aware of it and we use it, and we can share it in the form of data, manuals, reports etc. (Seidler-de Alwis & Hartmann, 2008).

Individual and Organisational Knowledge

Most tasks conducted by people at work are knowledge-based (Smith, 2001). Thus, the way to manage knowledge and to get as much value as possible from it is greater now than it was in the past (Davenport & Prusack, 2000). Knowledge can be considered as a corporate asset (Smith, 2001). It is what we call organisational knowledge. Individual knowledge or personal knowledge belongs to the individual who possesses it rather than to the organisation, but the organisation can use it as long as the individual is involved with the organisation. Individual knowledge refers to Polanyi's tacit knowledge (Mahdi et al., 2011), while organisational knowledge can be tacit (human-centred assets) and explicit (intellectual property assets, infrastructure assets and market assets) (Beckman, 1999). Bhatt (2002) argued that individual knowledge and organisational knowledge are distinct yet interdependent. The interdependence comes from the nature of an organisation, which cannot claim rights to an individual's knowledge (Bhatt,

2002), yet individual knowledge does not merely transform into organisational knowledge, but is more than the sum of individual knowledge (Baek et al., 1999). To be transformed into organisational knowledge, individual knowledge needs to be facilitated by interaction between individuals who possess the knowledge (Bhatt, 2002). In other words, organisational knowledge is knowledge shared within the organisation (Baek et al., 1999).

Knowledge Transfer

To be able to capture the value of individual knowledge, organisations should provide a conducive environment for knowledge transfer to happen (Smith, 2001). According to Manovas (2004), knowledge transfer is the transmission of knowledge from one division to another within an organisation in order to achieve desired goals. Manovas, Weissenberg and Spieth (2006) also emphasised that knowledge transfer is goal-orientated, but it includes the individual, the group and the organisation as actors of knowledge transfer. Razak et al. (2013) emphasised on the correlation between knowledge transfer and retention and upgrading of human skills and talents. Thus, in this research, knowledge transfer is defined as the process of knowledge handover or the transmission of knowledge from one individual or group to other individuals or groups orientated to achieve organisational goals by developing competencies of individuals.

Knowledge Transfer Factors

There are several factors that influence the process of knowledge transfer within an organisation. Boisot (1987) emphasised on aspects of the communication process and developed dimensions such as the availability of communication facilities, coding between sender and receiver, sharing between sender and receiver, speed of message transmission, follow up and legal aspects. Another point of view from Boschma (2005) included distance, absorptive capacity and dissemination of innovation and trust as further dimensions that should be considered as knowledge transfer factors. Razak et al. (2013) mentioned four dimensions i.e. technology, structure, culture and human resources. However, this research adopted Yousif's (2012) model based on the work of Albino et al. (1999), which can be considered more advanced compared to other frameworks (Yousif, 2012). The model includes the dimension, actors i.e. the people involved in the process of knowledge transfer; the dimension, context i.e. the situation in which the interaction takes place; the dimension, content i.e. what is being transferred between the actors; and the dimension, media i.e. the channel by which the transfer is carried out. These dimensions were also mentioned by Eckl (2012). Eckl differentiated the actors involved in the process of knowledge transfer into three: knowledge creator, knowledge disseminator and knowledge taker. Each role related to other dimensions. Knowledge creator related to the object of knowledge transfer (in Yousif, this is

called content); knowledge disseminator related to the media of knowledge transfer; while knowledge taker related to absorptive ability. In this research, the actor's role was limited to creator and disseminator only, thus the ability or competency of the knowledge taker is not discussed.

METHODOLOGY

This research is qualitative in nature, and its objective was to operationalise the factors of knowledge transfer within small and medium enterprises (SMEs) by conducting interviews with the informants. The object of this research was knowledge transfer factors, defined as factors involved in the process of knowledge handover or in the transmission of knowledge from one individual or group to other individuals or groups with an orientation to achieve organisational goals by developing the competencies of individuals. The literature provides four dimensions of knowledge transfer factors, namely, actor, context, content and media. The actor is the individual who plays a role in the process of knowledge transfer as sender or receiver of knowledge. Context can be divided into two categories, internal and external. Content in this research referred to knowledge needed in order to do the job in organisation. Media is the channel for transmitting knowledge.

The SME that was the study object for this research was a technology-based SME now positioned in the growth phase of its lifecycle. It has three branches, in Bandung, Jakarta and Yogyakarta, and employees from all three branches were included in the interviews. The authors used purposive sampling to determine the respondents to include in the data collection stage.

The authors focussed on the divisions for which, in their opinion, knowledge transfer was critical. For the Bandung branch, three divisions were selected: technical support division, billing and customer service division and accounting division. From the technical support division, three employees are included as informants, with the initials C, S and W. For billing & customer service, three employees with the initials R, Y and A were included as respondents. From the accounting division, only one employee was chosen, with the initial G. For the Jakarta branch, the authors chose the technical support division and marketing division. From technical support two employees were included as informants, with the initials A and Z. From the marketing division, only one employee was chosen, with the initial S.

For the Yogyakarta branch, three divisions were chosen as division samples, namely the marketing division, billing and customer service division and SEO division. From the marketing division, there was one informant, with the initial D. From billing & customer service division, there were three employees included as informants, with the initials L, M and Z. From the SEO division, there was only one informant, T.

The thematic analysis technique was used to analyse the results. The steps used in the analysis process were as follows:

1. The interview recording was transcribed.

- 2. From the transcript, the researcher identified particular themes that were mentioned by the respondents.
- 3. The themes that were identified were deployed to each dimension.
- 4. The themes in each dimension were converted into indicators.

RESULTS AND DISCUSSION

Case Study

This research used one small enterprise that operates in technology information and services in Indonesia, PT Q. PT Q provides services and information technology, in particular the manufacture of web domains, web hosting and servers. PT Q has three branches in three big cities in Indonesia i.e. Bandung, Jakarta and Yogyakarta. At PT Q, the process of transfer of knowledge as provided by the company is entrusted to senior employees. The actors whose responsibility to transfer the knowledge are appointed by the human resource department (HRD); they are usually those who already have experience and knowledge in a particular division. Senior employees guide new employees for approximately two months. In the first month, the new employees are given basic knowledge about the products offered by the company as well as the knowledge possessed by their respective divisions. In the second month, the employees work in accordance with their respective divisions but are still under the supervision of senior employees. However, there are difficulties that hamper the knowledge transfer process, especially in the divisions of billing and customer service and technical support.

In the billing and customer service division, problems arise if the new employee does not come from the information technology (IT) field. Lack of familiarity with IT makes it difficult for new employees to understand the work of the division. Another problem is the difference in the quality of human resources of each branch, especially in the division of billing and customer service. For example, the branch in Yogyakarta, which began operations in July 2014, finds difficulties in conducting knowledge transfer because most of its senior employees are based in the Bandung branch. Therefore, knowledge transfer is done by means of online messages or online chatting. This problem is also prevalent in the technical support division.

In general, the process of knowledge transfer, which is not smoothly conducted in PT Q, has a big impact on the transition of knowledge as a whole, especially when there are changes in staff because of promotions or resignations. Whenever one employee leaves his/her job, other employees are not always ready to fill the gap. This is a problem that greatly disrupts the business activities of the company.

Results of the Interview

In this section, we will present the descriptive analysis of the transcript of the interview. Only one example is cited for each indicator shared. **Dimension of actor**. In this dimension, respondents were asked to identify the individual involved who provided knowledge transfer to the respondents. The respondents named the respective individuals. We noted that three persons were important in the process of knowledge transfer: co-worker, senior employee and the director. Here are excerpts from selected interviews:

Indeed, we should share job-related knowledge with co-workers. Especially in the marketing division, we should understand the product well; this can be achieved by sharing. (Co-worker).

Then, when I was newly started as an employee, there was a senior employee who guided me in doing my job. (Senior employee)

I was told to read the terms regarding my work. I continue to be guided by a senior employee as I learn to do my job. (Senior employee)

Of course, (Director involved in process of knowledge transfer), Especially for us in the headquarters. If there is new technology or new Product, Mr Rendy (name of Director) would tell us immediately. (Director)

Table 1
Thematic Analysis for the Dimension, Actor

Theme	Frequency	Indicator
Director	12	Director
Senior employees	8	Senior employees
Co-worker (Respondents mentioned the name of their co-workers)	34	Co-workers

Senior employees play a role in the transfer of knowledge through the guidance process. Senior employees are instrumental in the counselling process. Senior employees were found to be the most helpful in transferring specific knowledge to new employees. However, new employees in the Yogyakarta branch experienced a problem. Senior employees were required to be in Yogyakarta, but the time to commute there from their homes in Jakarta or Bandung is too long.

Based on field observations, the researchers also noticed that the director played an active role in the process of knowledge transfer, especially in the Jakarta branch. The employees can be asked directly about the work they do by their superiors. When there is new information, the director passes on the information to all employees, especially in the city branches. However, most of the respondents mentioned at least one co-worker as the knowledge disseminator. This means that when they need help to understand specific knowledge, co-workers are the most accessible sources. **Dimension of context**. For this dimension, the respondents were asked to describe the context in which the knowledge transfer process occurred. We identified two main contexts: job-related and non-job-related. Excerpts of selected interviews are given below:

We learn many things from coworkers; especially when it is job-related, it is very useful. (Jobrelated)

There's nothing wrong about sharing non-job-related knowledge, as long as it is positive, sure it will bring a benefit. (Non-job-related)

Table 2

Thematic Analysis for the Dimension, Context

Theme	Frequency	Indicator
Job-related	13	Job-related
Non-job-related (General)	6	Non-job- related

General knowledge is important in business activities. General knowledge can also help employees in carrying out their job. This was mentioned as a repeated theme in the interviews by many of the respondents.

Dimension of content. In this dimension, the respondents were asked to describe the content of knowledge that was involved in the knowledge transfer process. Two main content was identified: services and product. Excerpts from selected interviews are given below:

The company provides new information related to services and product to all employees.

Because we (the marketing department) need to know about the products and services provided by the company. So we are the most updated.

Table 3

Thematic Analysis for the Dimension, Content

Theme	Frequency	Indicator	
New product	10	Product	
New services	8	Services	

Information on latest products and services offered by the company is relayed to employees, particularly to those in the marketing division, technical support and billing and customer service as these are the three divisions that deal both directly and indirectly with consumers.

Dimension of media. In this dimension, respondent was asked to tell interviewer, the media which be used during the knowledge transfer process. From the interview we identified three types of media: website, e-mail, and chatting application. Here with the examples of the citation of the interview:

Then, when I newly started as an employee, I was told to read all the materials in the company's website. (Website) E-mail is used to disseminate new information to all employees because it is more easily obtained by the employee. (E-mail)

We use Yahoo messenger to coordinate with other divisions because we can directly ask about problems we face. (Chatting application)

Table 4

Thematic Analysis for the Dimension, Media

Theme	Frequency	Indicator
E-mail	14	E-mail
Yahoo messenger	11	Chatting application
Website	8	Website

E-mail is a medium that is used by the company to update employees on the latest information. However, some employees feel the quality of the transfer of knowledge through e-mail is not effective. They consider face-to-face relay of information to be more effective than through e-mail.

New dimension of time. During the interview, one dimension was not deductively provided in the framework. Interviewees tended to emphasise the time factor both in frequency and duration of the knowledge transfer process. For instance, one respondents stated, "The company conducts a general meeting twice a year, but we in the technical support division usually conduct meetings more frequently" (Frequency), and, "We usually receive a month's training. But I think that is not enough, we need longer periods of training" (Duration).

 Table 5

 Thematic Analysis for the Dimension, Time

Theme	Frequency	Indicator
Duration	8	Duration
Frequency	4	Frequency

Duration is the length of time used by the company in the process of guidance. This may affect the transfer of knowledge to new employees. Time spent socialising was adequate but time spent on transferring knowledge related to guidance was felt to not be sufficient by the respondents. The process of guidance was conducted by senior employees over the period of one month. Most of the respondents felt that this was not long enough a time to acquire full understanding of new knowledge.

It is also revealed that meetings and appointments were rarely carried out by the company. According to the employees, meetings were not only to discuss new information, but to also talk about the difficulties they faced in their daily job; therefore, it was important to conduct meetings more frequently.

DISCUSSION

Discussion about knowledge transfer cannot be separated from the nature of knowledge forms, whether tacit or explicit. In the workplace, experienced people transfer tacit knowledge to less experienced people (Smith, 2001), while explicit knowledge can be easily transferred through fewer humaninteraction methods or through media such as e-mail, website and chatting applications as discovered from the interviews. These were the media most often used by respondents in this research, but they acknowledged that these media were not sufficient, and they preferred face-to-face channels for transfer knowledge, which may be caused by the tacitness of knowledge, especially for new employees.

Smith (2001) suggested four different modes that can be used in transferring knowledge. Personal knowledge disseminated in an informal forum usually uses role modelling as a method. Public knowledge disseminated in an informal way is usually conducted through a community of practice. Formal ways of transferring knowledge includes occupational training for personal knowledge and information management system for public knowledge. In this case study, it was found that the director and senior employees held an important role in transferring knowledge, while co-workers collectively acted as a community of practice in the transfer of public knowledge in an informal way. Respondents accessed knowledge through e-mail, chatting applications and the website, where public knowledge could be accessed in the form of an information system that was embedded in the company website. Transfer of knowledge to new employees in particular was conducted through training. This corresponded with Smith's (2001) finding from studying forestry-based SMEs that informal methods of knowledge transfer were less important compared to formal modes of knowledge transfer.

A novel finding of this research was the additional dimension of time as an important factor in knowledge transfer. This new dimension was not mentioned in previous studies. Regarding the tacitness of knowledge, it is possible that the more tacit the knowledge, the longer the duration or the higher the frequency needed in transferring knowledge.

CONCLUSION

This paper aimed to operationalise factors that can be considered in the knowledge transfer process, especially in small and medium enterprises (SMEs). From interviews we discovered indicators for each dimension that we adopted from the original model, namely, co-worker, senior employee and director for the dimension, actor; job-related and non-job-related for the dimension, context; services and product for the dimension, content, and for the dimension, media, we identified website, e-mail and chatting application. We also identified a new dimension that was not mentioned in the original model, which was time, comprising frequency and duration indicators.

One implication of this research is the measurement of knowledge transfer performance that can be adopted from these findings, rather than using the indicators that are often used in previous studies on big companies. For further research, it is important to explore deeper the tacitness factor of knowledge to find specific methods for knowledge transfer. The findings of this research also need to be validated statistically.

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Influence of Employee Stock Option Program and Job Satisfaction on Employee Commitment (A Case Study of a Telephone Company in Indonesia)

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ABSTRACT

This study is conducted to analyse how much influence the Employee Stock Option Programme (ESOP) has on job satisfaction on employee commitment at the Financial Directorate of a telephone company in Indonesia. In 2013, the company offered ESOP to all employees including subsidiaries who were still active in 2012 as an incentive for performance in 2012. Variables in this study are ESOP and job satisfaction as independent variables and employee commitment as the dependent variable. Data are collected by distributing a questionnaire to respondents. This research used path analysis techniques to analyse the data. The results showed that employees of the telephone company perceived ESOP as being good, and that job satisfaction and commitment of employees were high. The influence of ESOP and job satisfaction to commitment is significant with a value of 56.3%. Therefore, the company should continue such programmes

Keywords: ESOP, job satisfaction, employee commitment

INTRODUCTION

In today's globalised world, Indonesia is facing intense competition, particularly from advanced countries that have an advantage in technology, capital and human resource. Human resource is a key success factor for all organisations, both big and

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small to accomplish their business goals. Therefore, companies have to develop good rapport with their employees. Both parties, companies as well as employees, should mutually recognise one another's need of each other. Keeping in mind that all individuals have goals, a harmonious relationship between a company's goals and those of its employees is necessary. It is vital that a company and its employees acknowledge that each has its specific goals that each desires to accomplish.

Providing compensation is one of the ways that may enhance performance and harmonise the goals of a company and its employees. There are many compensation programmes in use among Indonesian companies such as profit sharing and the Employee Stock Ownership Programme (ESOP). ESOP is a stock ownership programme where companies give or sell their stocks in certain amounts to their employees. Robbins and Judge (2013) said that in the 1990s IT companies such as Cisco, Sun and Microsoft relied heavily on issuing stock options to employ and build loyalty between employees and executives.

Telephone companies in Indonesia that provide Initial Public Offerings (IPO) are known to have offered the ESOP programme to their employees in 2013. In this case, the ESOP was a substitute for annual incentives that used to be received in cash. The purpose of this programme was to strengthen employees' sense of belonging to the company so that the commitment of employees would increase and their performance would also improve. As a whole, the performance of an organisation improves when such rewards are distributed to employees. To motivate employees to take part in the ESOP programme, one telephone company offered wealth allowance to buy stocks. This was a form of aid from the company where employees who participated in the ESOP programme could receive a better reward than those who did not. Employees who did not participate in the programme received cash incentives without a wealth allowance.

Erbasi and Arat (2012) found that there was a significant correlation between financial incentives and job satisfaction. However, employee job satisfaction is influenced by not only the finance factor. Other factors also influence employee job satisfaction. Smith, Kendall and Hulin (cited in Luthans, 2011, p.141) identified five areas that can be used to measure job satisfaction, namely, the job itself, wages, promotional opportunity, supervision by superior and relationship with coworkers. The telephone company considered what factors may enhance employee job satisfaction e.g. freedom of using an appropriate method in accomplishing work, incentives, promotional opportunity for all employees etc. Wu's (2007) research in Taiwan showed that satisfaction derived from an ESOP programme could influence employee commitment to the organisation. The telephone company did not measure the satisfaction of its employees as a result of the implementation of the ESOP. To increase the effectiveness of an ESOP programme, conducting a study of ESOP implementation is indeed crucial. Accordingly, one of the purposes of this study was to analyse employee perception of the implementation of the ESOP in the telephone company. The research was also intended to measure employee job satisfaction and employee commitment and to test the extent of the

influence of the ESOP on employee job satisfaction and the extent of the influence of the ESOP and job satisfaction on employee commitment both partially and simultaneously. According to Robbins and Judge (2013), ESOPs are one of the indirect financial incentives offered to employees as compensation for their work results (output). The ESOP is a benefit received by employees as stocks. It is usually offered to employees at a price below the market price. This is done as an employee benefit. ESOPs are often conveyed not in physical stock ownership, but rather as a stock nominal i.e. it is expected that employees would not sell the stocks while still working for the company.

When ESOPs are given as an incentive, the determination of the amount to offer may use incentive indicators. According to Handoko (2001), indicators commonly used in determining the amount of an incentive are: (1) performance, tying the amount of the incentive to the performance of the employee; (2) duration of work, where the amount of the incentive is determined by the time taken by the employee to accomplish a job; (3) seniority, where length of service or seniority of the employee in an organisation is considered; (4) necessity, where the urgency level of the employee's decent living needs is taken into account; (5) justice and feasibility, where existence of relationship between sacrifice (input) and output is considered; and (6) evaluation of position, where relative value or price of a position is determined so as to set a ranking in deciding on the amount of the incentive.

With reference to the indicator number 5 above, justice and feasibility, it should be noted that the higher the sacrifice, the higher is the incentive expected. In addition to justice in providing incentives, feasibility is also considered. This refers to the relative amount of incentives that other companies in the same business are providing to their employees.

Robbins and Judge (2013) suggested that job satisfaction could be defined as a positive feeling derived from one's work as a result of evaluation of its characteristics. Someone who experiences high job satisfaction has positive feelings towards his or her job. According to Bussing et al. (cited in Luthans, 2011, p. 141), there are three dimensions that are common to job satisfaction. First, job satisfaction is an emotional response to the employment situation. Second, job satisfaction is often determined by how large the results obtained are when compared with expectations. For example, if employees feel that they are working harder than others but receive fewer rewards, then they will develop a negative attitude towards their job, boss and colleagues. They become dissatisfied. On the other hand, if employees are treated very well and paid fairly and equally, then they tend to have a positive attitude towards work. They will be satisfied with their work. Third, job satisfaction is representative of inherent attitude.

The five dimensions formulated by Smith, Kendall and Hulin (cited in Luthans, 2011, p.142) are widely used to measure job satisfaction. The validity of the listed

indicators, the job itself, wages, promotional opportunity, supervision and relationship with co-workers, has also been done. The dimension of the job itself is used to evaluate the difficulty level an employee faces when accomplishing his or her job. An interesting job offers employees the chance to learn and experience new things and offers them the opportunity to receive new responsibilities. The wages dimension is an evaluation of employees on the fulfilment of their living necessities and the suitability between the wages rate and the duties accomplished. The dimension of promotional opportunity is an evaluation of whether or not employees have the chance of advancing their career during service. The dimension of supervision is a form of evaluation to evaluate the employees' attitude towards their supervisor. The dimension of co-worker is the employee's evaluation of other workers in the same working group.

Newstrom (2011) defined organisational commitment or employee loyalty as "the degree to which an employee identifies himself or herself with the organization and wants to actively keep participating in it" (p.175). Organisational commitment can be distinguished into three, namely, affective commitment, continuance commitment and normative commitment (Allen & Meyer, 1990). Affective commitment refers to the relationship between employees and their organisation that encourages them not to leave the organisation because the relationship is based on emotional bonding. Continuance commitment depicts the need of individuals to remain in an organisation due to the recognition of related costs if he or she leaves the organisation. Meanwhile, normative commitment is a situation where an individual will remain in an organisation out of a sense of duty.

Research Model

This study employed two variables and indicators that could be measured using statistical testing, namely:

- a. The independent variable used was the Employee Stock Option Programme (ESOP) (X1). The indicator of its measurement was developed by the writer by adjusting company's needs and employees' job satisfaction (X2) by measurement indicators based on the Job Description Index (JDI) used by Smith et al. (cited in Luthans, 2011, p.145) combined with the Minnesota questionnaire.
- b. The dependent variable used was employee commitment (Y) by a threedimension breakdown from Allen and Meyer (1990).

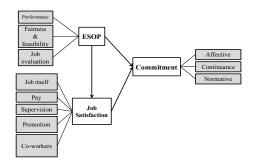


Figure 1: Research model

Research Hypotheses

- a) The Employee Stock Ownership Programme (ESOP) has a significant influence on employee job satisfaction.
- b) The Employee Stock Ownership Programme (ESOP) has a significant influence on employee commitment.
- c) Employee job satisfaction has a significant influence on employee commitment.
- d) The Employee Stock Ownership Programme (ESOP) and employee job satisfaction have a significant influence on employee commitment.

RESEARCH METHOD

The research used the causal research method because it was intended to determine the influence of the Employee Stock Ownership Programme (ESOP) and employee job satisfaction on employee commitment. The research population was the entire staff of a telephone company, numbering 155 employees in total, with 111 employees selected as a sample. The data collection techniques used were the interview and the questionnaire. The scale employed in the questionnaire was a 5-point Likert scale.

Before the questionnaire was distributed to respondents, the validity and reliability of the questionnaire were tested. The data analysis technique used was path analysis. Path analysis examines the structural causality of independent variables and dependent variables by considering the relationship between the independent variable and the model complexity (Foster et al., 2006).

RESULTS AND DISCUSSION

Respondent Profile

Type of characteristic	Aspects	Frequency	Percentage
Gender	Male	66	59.5%
	Female	45	40.5%
Age	< 30	13	11.7%
	30 - 35	24	21.6%
	36 - 40	4	3.6%
	41 - 45	18	16.2%
	46 - 50	14	12.6%
	> 50	38	34.2%
Length of service	< 5	7	6.3%
	5 - 10	33	29.7%
	11 - 20	18	16.2%
	21 - 30	43	38.7%
	> 30	10	9.0%

Table 1Respondents' Characteristics

Employees' perception of the ESOP was categorised as good with the sub-variable of performance resulting in the highest score and the sub-variable of evaluation resulting in the lowest score. This means that the employees agreed that the ESOP should be provided on the basis of job results. The highest value was for employee pride in the ESOP. Thus, the existence of the ESOP made the employees feel pride as they possessed some of the company's stocks.

The employee job satisfaction variable recorded a high value. The sub-variable of relationship among employees resulted in the highest score, while the sub-variable of wages resulted in the lowest score. This indicated that the relationship among employees resulted in satisfaction for the employees, and the wages dimension received the lowest level of satisfaction compared to other dimensions. The commitment variable was perceived by the employees as being high. Both the dimensions of affective commitment and sustainable commitment gained the same scores, while the dimension of normative commitment gained the lowest score.

Hypothesis testing was conducted in two stages. The first stage determined the influence of the ESOP on job satisfaction. The second stage determined the influence of the ESOP and job satisfaction on commitment both simultaneously and partially.

Sub-Structural 1

The results of data processing in substructural 1 using the SPSS 20 programme are given below.

Model		Unstandardised Coefficie		Standardised Coefficients	Т	Sig.
		В	Std. Error	Beta	_	
1	(Constant)	27.752	2.924			
	ESOP	0.966	0.112	0.637	8.623	0.000

Analisys of Sub-structural 1 Regression

Table 2

a. Dependent Variable: Satisfaction

Table 3	
Coefficient of Determination 1	!

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.637ª	0.406	0.400	6.44222		
a. Predictors: (Constant), ESOP						

- Ho: $\rho_{X2X1} = 0$ The Employee Stock Ownership Programme has an insignificant influence on employee job satisfaction.
- Ha: $\rho_{X2X1} \neq 0$ The Employee Stock Ownership Programme has a significant influence on employee job satisfaction

Based on Table 2, the value of Sig. ESOP is 0.000. The value of Sig. 0.00 was less than the value of probability or 0.00<0.05, so Ho was rejected and Ha accepted. Thus, it could be concluded that the ESOP had a significant influence on job satisfaction.

Table 4

Anova 2

In Table 3 the R-squared value was entered as 0.406. This means that the extent of the contribution of the influence of ESOP on job satisfaction was 40.60%, with the remaining 59.40% being influence from other variables beyond the model. Based on the data, the causal influence of the ESOP and job satisfaction could be described by a structural-1 equation as follows:

Y= 0,637 X+0,771 ε₁

Sub-Structural 2

The results of data processing in substructural 2 are given in Tables 4, 5 and 6.

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2235.208	2	1117.604	69.566	0.000b
	Residual	1735.063	108	16.065		
	Total	3970.270	110			

a. Dependent Variable: Commitment

b. Predictors: (Constant), Satisfaction, ESOP

Table 5

Analisys of Sub-Structural 2 Regression

Model	Unstandardised Coefficients		Standardised Coefficients		
	В	Std. Error	Beta	Т	Sig.
(Constant)	6.873	2.459		2.795	0.006
ESOP	0.283	0.090	0.259	3.135	0.002
Satisfaction	0.404	0.060	0.559	6.771	0.000

a. Dependent Variable: Commitment

Table 6

Coefficient of Determination 2

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	0.750a	0.563	0.555	4.00817

a. Predictors: (Constant), Satisfaction, ESOP

In the structural-2 equation, the hypothesis test was performed both simultaneously and partially as follows:

- a. Simultaneous (whole) test
 - Ho: $\rho_{YX1} = \rho_{YX2} = 0$ The Employee Stock Ownership Programme and employee job satisfaction have an insignificant influence on commitment.
 - Ha: ρ_{YX1}=ρ_{YX2} ≠0 The Employee Stock Ownership Programme and employee job satisfaction have a significant influence on commitment.

The results of the simultaneous (whole) test can be seen in Table 4 by Fcount of 69.566 and a Sig. value of 0.000. Based on the rule of the SPSS programme significance test, because the Sig. value of 0.000 was less than 0.05, Ho was rejected and Ha accepted. Thus, it could be concluded that the variables of ESOP and job satisfaction simultaneously had a positive, significant influence on employee commitment. Therefore, a partial (individual) test could be done.

Based on Table 6, the value of the R-squared was found to be 0.563. This meant that the extent of the contribution of the influence of the ESOP and job satisfaction on employee commitment was 56.3%, the remaining value being the influence

of other variables beyond the model. In Table 5, it could be seen that the value of the ESOP path coefficient on employee commitment was 0.259, while the value of the path coefficient of job satisfaction on employee commitment was 0.559. The causal influence of both ESOP and job satisfaction on employee commitment could be shown by the structural-2 equation as follows:

$$Y = 0,259 X_1 + 0,559 X_2 + 0,661 \varepsilon_2$$

b. Partial (individual) test

In the structural-2 test two hypotheses were tested individually, namely:

- 1) The influence of the ESOP on employee commitment
 - Ho: $\rho_{YX1} > 0$ The Employee Stock Ownership Programme has an insignificant influence on employee commitment.
 - Ha: $\rho_{YX1} = 0$ The Employee Stock Ownership Programme has a significant influence on employee commitment.

Partially, the results shown in Table 5 demonstrate that the t_{count} value of the influence of the ESOP on employee commitment was 3.135 and the value of Sig. ESOP 0.002<0.05. Thus, Ho was rejected and Ha accepted. Therefore, it could be concluded that the ESOP had a positive, significant influence on employee commitment. This means that

the implementation of a good employee stock ownership programme tended to enhance employee commitment.

The percentage of the contribution of direct influence of ESOP on employee commitment was $0.259 \ge 0.259 \ge 100\% = 6.70\%$. The percentage of the contribution of ESOP indirectly on employee commitment (X₁ to Y by X₂) was $0.637 \ge 0.559 \ge 100\% = 35.61\%$. Thus, the percentage of the contribution of ESOP on employee commitment was 6.70% + 35.61% = 42.31% in total.

- 2) The third hypothesis was the influence of job satisfaction on employee commitment.
 - Ho: $\rho_{YX2} > 0$ Job satisfaction has an insignificant influence on employee commitment.
 - Ha: $\rho_{YX2} = 0$ Job satisfaction has a significant influence on employee commitment.

A second partial test was conducted to find out the t-count value of job satisfaction on employee commitment, where a result of 6.771 was obtained, and the Sig. value of job satisfaction was 0.000 < 0.05. Thus, Ho was rejected and Ha accepted. Therefore, it could be concluded that job satisfaction had a positive, significant influence on employee commitment. The percentage of the contribution of job satisfaction on employee commitment was $0.559 \times 0.559 \times 100\% = 31.25\%$.

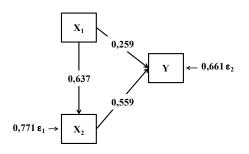


Figure 2: Diagram of the results of the path analysis

ESOP has influence on both job satisfaction and employee commitment. However, the influence of job satisfaction on employee commitment (31.25%) was greater than that of ESOP (6.70%). This means that job commitment was influenced more by employee satisfaction. Therefore, in order to enhance job commitment, the management should focus on paying attention to job satisfaction in general. Based on the result of the study descriptively, a factor that management should pay attention to in enhancing job satisfaction is wages. In terms of wages, the aspects to consider in enhancing performance are a match between the wages rate and the responsibility level of the employee and fulfilment of life needs. Accordingly, more research is needed into the effects of payroll on employee satisfaction. In addition, the research results also showed that the ESOP had influence on job satisfaction by 40.60%. Thus, the ESOP was also an aspect that needs special attention, although the extent of its direct influence on employee commitment was not particularly high.

CONCLUSION

The following conclusions were made based on the results of this research.

- Employee perception of the ESOP was good. The majority of employees perceived that the ESOP they received in 2013 matched their performance and it encouraged them to work more industriously, more actively and more self-sufficiently. The ESOP they received had upheld feasibility and fairness among all employees, and matched the position of employees.
- 2. Job satisfaction among the employees was generally already high. The majority of the employees were satisfied with their work as well as with their wages, the supervision they received and the promotional opportunities available.
- 3. In general, the employees displayed high commitment to the company, be it affective, sustainable or normative commitment.
- 4. The results of the influence test disclosed that the ESOP had a positive, significant influence on job satisfaction, meaning that the better the implementation of the ESOP, the higher the job satisfaction level of the employees. The extent of the contribution of the ESOP on job satisfaction was 40.60%, the remaining being influence from other variables beyond the model.
- Both simultaneously and partially, there was influence of the ESOP and job satisfaction on employee commitment.

Simultaneously, the ESOP and job satisfaction had a positive, significant influence on employee commitment, with a contribution of 56.30%, the remaining 43.70% being influence from other variables. Partially, the ESOP had a positive, significant influence on job satisfaction, meaning that the better the ESOP, the higher the employee commitment. The extent of the contribution of indirect ESOP influence on employee commitment was 35.61%; therefore, total contribution of ESOP to employee commitment was 42.31%. The same applied to job satisfaction, that is, partially it had a positive, significant influence on employee commitment. The extent of the contribution of the influence of job satisfaction on employee commitment was 31.25%, the remaining being influence from other variables beyond the model.

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Controlling Product Realization through ISO 9001:2008 (Case Study in R&D Unit PT. XYZ Indonesia)

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ABSTRACT

PT XYZ, although the largest telecommunication services provider in Indonesia still focusses on improving their performance and existence, not only through excellent quality, but also by controlling their workflow process in making product realisations or innovations. This research aims to evaluate several processes of product realisation. Using descriptive analysis, data gathering is divided into two phases: the quantitative and qualitative phase. the research shows that PT XYZ, through its R&D Unit, has carried out every process in product realisation in accordance with ISO 9001:2008. However, the findings show that continuous improvement and innovation in several areas are still needed. Better documentation at every stage in design and development is needed to enable better control and evaluation of the product realisation process.

Keywords: Quality management sytem, ISO 9001:2008, innovation, product realisation

INTRODUCTION

The importance of maintaining quality, whether in products or services, is not something new. Literature and research findings show us how quality can result in profit for businesses. Research that discusses how a company can maintain the quality of its products and services is always welcome. This is because quality is still considered the key strategic

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E-mail addresses: riekahutami@telkomuniversity.ac.id, rieka.hutami@gmail.com (Hutami R.F.) * Corresponding author factor in improving business performance and achieving business success, not only for a large company, but also for small companies, whether domestic or worldwide (Thai Hoang et al., 2006). The ability to deliver high-quality products consistently is considered to be one of the fundamental and substantial competencies for a company to survive global competition (Kim et al., 2011; Willar et al., 2015).

ISO 9000:2008 is an international standard for managing quality. Implementing this standard can be considered the first step in building a quality-orientated environment to produce high-quality services and products. Adopting ISO 9001:2008 can be seen as management commitment from a company to control and improve its quality of product, process, people and environment continuously. ISO 9001:2008 can be implemented not only in manufacturing but also service industries (Thai Hoang et al., 2006). The right attitude and clear communication from the people at the top to those involved in the field is essential in ensuring smooth and proper workflow (Kessler & Alok, 2010).

Many companies realise that there are many benefits in implementing ISO 9001:2008. The benefits are 1) a company's customer base can be widened from domestic to worldwide coverage; 2) there will be improved effectiveness and reliability of a company's work processes; 3) there will be improved quality of products and services; and 4) there will be improved organisational performance and competitiveness. These benefits can be optimised if a company fully understands its motivation in adopting ISO and knows how to align its strategies with its organisational goals.

Up to December 2013 there were 1,129,446 certifications published in 187 countries. The number is 3% higher than that of the previous year with an addition of 32,459 certifications. In Indonesia, the number of certification has increased from the previous year to 7,890 certifications in 2013, and this number is still growing (Boiral, 2011) (International Organisation for Standardisation, 2013). These data are summarised in Table 1.

Table 1

The Number of ISO 9001:2008 Companies in Indonesia

Year			Amount
2011			3999
2012			5392
2013			7890
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Source: International Organisation for Standardisation (2013)

PT XYZ, as the largest telecommunication network and service provider in Indonesia, implemented ISO 9001:2008 not only to beat competition but also to gain a position in the worldwide marketplace. By implementing ISO 9001:2008, they have been able to control the quality of their products. However, PT XYZ realise that quality is not the only one indicator to ensure their existence in the industry. Some organisations have shifted their strategy from quality to innovation (Thai Hoang et al., 2006) because they realise that quality is no longer brings an edge to business (Prajogo & Amrik, 2004). Therefore, PT XYZ transformed their organisation and focussed their new strategy on being more innovative. Their new goal has resulted in their being listed among The World's Most Innovative Companies. This goal is set to

motivate the company to make innovative products. The unit responsible for creating innovative products for PT. XYZ is its Research and Development (R&D) Unit. From studying this unit, we may learn how PT XYZ controls the process of product realisation. Our research is an empirical study focussed on how PT XYZ controls the process of creating innovative products using ISO 9001:2008 clause 7. Clause 7 provides guidance for product realisation.

LITERATURE REVIEW

Quality Management System (QMS)

Quality Management System (QMS) is a set of processes to control procedures and standards in delivering goods or services to the market that are documented (Gasperz, 2012). The objective of a quality management system is to provide an infrastructure for managing product/process quality (Blessner et al., 2013). Another objective of implementing QMS is to meet a company's specified quality requirements or prescribed quality (Nakeeb et al., 1998). Whatever the objective a company chooses is important for improving performance of quality in an organisation (Kung et al., 2014).

The need for a quality management system was also confirmed by Feigenbaum (1992), who pointed out that a company must have a system that is clear and wellstructured in order to identify, create documents, coordinate and maintain all the major activities necessary to ensure that quality actions run well inside the company. Without a systematic guide, the company will find it difficult to carry out activities designed to fulfil the desires of customers.

International Organisation for Standardisation (ISO) 9001:2008 as Part of Quality Management System

ISO 9000:2008 is a certification standard to develop a quality management system. It has several criteria related to quality that can be used by any organisation in any field of expertise. The standards provide guidance and tools for companies and organisations that want to ensure that their products and services consistently meet customers' requirements, and that quality is consistently improving. This standard is based on a number of quality management principles, including strong customer focus, motivation and implication of top management, employee involvement, process approach, quality management system approach and continued improvement (Gasperz, 2012; International Organisation for Standardisation, 2013). It is one of the quality management systems that can lead an organisation in achieving excellence. It is not a tool to replace Total Quality Management (TQM) but adopting it can be complementary to TQM (Willar et al., 2015). There are several benefits to implementing ISO 9001:2008 such as access to international markets, ease in communicating with foreign suppliers, improvement to the quality and uniformity of work and ultimately, improvement to productivity. In general, ISO 9001:2008 consists of eight topics or clauses that discuss: 1) the scope of ISO; 2) normative references; 3) terms and definitions; and 4) Quality Management System with subclauses highlighting general requirements, documentation requirements, management responsibility, resources management, product realisation, measurement, analysis and improvement.

Product Realisation (ISO 9001:2008: Clause 7)

The term product realisation has a close relationship with innovation. It is a new way of doing something, which may refer to the need for incremental or radical changes (Azis & Hiroshi, 2010). Organisations that compete through innovation can gain greater advantage through the use of the incremental approach to product development and improvement, rather than by searching for big breakthroughs (Flynn, 1994). In ISO 9001:2008 (2015), a regulation about product realisation is described briefly in clause 7 as follows.

Planning of product realisation (Clause

7.1). This clause explains that the organisation should plan the processes needed for product realisation, including quality objectives and product requirement, documents and processes to provide resources, standard measurement for verification, validation, monitoring and inspection related to the criteria for product acceptance and evidence that must be documented to show that the realisation processes and resulting products meet the requirements. Planning of product

realisation should suit any methods used by the organisation.

Customer-related processes (Clause 7.2). In general, this clause describes three major topics: determination of product requirement, review of requirement and customer communication. When determining product requirement, specific points that describe the desired product criteria including delivery and post delivery must be taken into account. Post-delivery activities include maintenance service and supplementary services. A second indicator describes the importance of an organisation in conducting a review of the product requirement before the product is given to the customer. When reviewing products, certain criteria must be adhered to such as submission of tenders, acceptance of contracts or orders and acceptance of changes to contracts or orders. The third subclause describes customer communication, including how to determine and implement an effective way of communicating with customers about product information, contracts, feedback and complaints from customers. The desired product review process should be documented, this can help any personnel interested to know in detail about processes and product development.

Design and Development (Clause 7.3). This clause describes requirements in the process of designing and developing products. It includes several sub-clauses that regulate in detail the stages of the design process and product development from

planning, input, output, review, verification, validation and control of changes. The goals are to produce products according to customer requirements. The first sub-clause explains design and development planning details; at these stages, managing interfaces between different groups is very important. Good communication and responsibility need to be managed in an efficient and productive way. The second refers to design and development input relating to product requirement; design and development details must be determined and records connected to them must be maintained and reviewed. The third sub-clause specifies that the generated design and development output must correspond with the input required for design and development. In addition, at this stage the characteristics of safe products and how to use them properly must be determined. The fourth sub-clause outlines that design and development review has two goals i.e. to evaluate whether the products are manufactured according to requested specifications and to identify problems early in order to take preventative action. The fifth sub-clause stipulates that design and development must be reviewed. The sixth sub-clause is concerned with design and development verification while the seventh considers design and development validation and the eighth, control design and development changes.

Purchasing (Clause 7.4). In order to satisfy customers with quality products, organisations must ensure that the raw materials are of good quality and conform

to specified purchase requirements. ISO 9001:2008 has several requirements related to the purchasing process. This process is described in detail in clause 7.4 and includes the purchasing process, purchasing information and verification of purchase products. The purchasing process outlines criteria for selecting and assessing suppliers. Purchasing information describes the product to be purchased and includes specified purchase requirements. Then, verification of the purchased product is obtained.

Production and service provision (Clause 7.5). The requirement regarding production process and service provision is described in detail in this clause. This clause regulates some activities including control of production and service provision, validation of processes for production and service provision, identification and traceability, customer property and preservation. In controlling products and services, an organisation should plan its activities, for which it needs information such as characteristics of the product, work instruction, suitable equipment, availability and use of monitoring and measuring equipment, the implementation of monitoring and measurement, implementation of product release, delivery and post-delivery activities. When the output cannot be verified by subsequent monitoring or measurement, the organisation must validate production and service provision processes. After these, identification and traceability are required so the organisation

can identify the product status with respect to monitoring and measurement requirements throughout product realisation. The organisation also must be concerned about the customer's property while it is under the organisation's control or is being used by the organisation. Customer property includes intellectual property and personal data. This activity leads to the next clause, which is preservation of product, including identification, handling, packaging, storing and protection. Preservation also applies to the constituent parts of a product.

Control of monitoring and measuring equipment (Clause 7.6). The organisation should determine the measuring tools, methods and equipment that are used to monitor and measure conformity of products to the organisation's criteria. It is also importrant to supervise the process of measuring and monitoring. All activities from determination gauges, implementation and evaluation up to problem solving must be recorded. This sub-clause regulates all these processes in detail.

This study, using six sub-clauses stated in ISO 9001:2008 are related to Clause 7 about product realisation as a variable, described briefly above. In the next section, we describe the processes of controlling product development or realisation in PT XYZ using ISO 9001:2008 Clause 7.

METHODOLOGY

This was a descriptive study to explain and describe the characteristics or perceptions of a population or phenomenon (Zikmund, 2000). This study also can be included as empirical study. This study used two approaches in gathering data or information. The first approach was the quantitative method using questionnaires. The questionnaire was made to obtain information on the realisation of products by measuring perceptions from the customer. Out of the 108 customers who participated in this research, 59.30% (64 respondents) were from the company's internal customer base while 40.7% (44 respondents) were from its external customer base. The internal respondents were diverse and came from other units such as the General Affairs Unit, Digital Lifestlye Ecosystem Unit, Product & Infrastructure Assurance Unit, Infrastructure & Development Unit and the Mobile Ecosystem Unit. Data from the questionnaires were analysed using descriptive statistics, in which the respondents' perception of product realisation was interpreted using criteria scores. The scores are documented in Table 2.

Table 2 Score Interpretation

Score	Criteria
0%-20%	Very poor
21%-40%	Poor
41%-60%	Barely acceptable
61%-80%	Good
81%-100%	Very Good

The second approach was the qualitative approach. This approach aimed to confirm, clarify and understand more deeply the process of product realisation, which was conducted by interview. Using the snowball sampling technique, the researchers gathered 19 informants from a total population of 27 employees in the R&D Unit. These interviews were chosen because the respondents understood very well the process of product realisation in the R&D Unit.

RESULTS AND DISCUSSION

The definition of product realisation used in ISO 9001:2008 matched the definition of product realization as understood by the company's R&D Unit. Product development activities of the R&D Unit also contained innovative activities, whether radical or incremental.

The analysis of information gathered from the questionnaires revealed that the process of product realisation followed by the R&D Unit was very good. This was based on the cumulative percentage score from all the questions under this variable; the total percentage was 81.62%. The results of the questionnaire data processing were also grouped by sub-variables to observe the level of implementation of each sub-variable in product realisation. The results, the percentage score from each sub-variable, are shown in Table 3 below. Table 3 shows that the sub-variable design and development obtained the lowest score among all the sub-variables. The following discussion provides deeper insight into this based on the responses collected from the questionnaires and interviews.

Table 3

Respondent Perception about Product Realisation

Sub-variable of Product Realisation	Average score per item (%)	Criteria	
Planning of product realisation	81.78%	Very good	
Customer-related processes	80.89%	Good	
Design and development	80.56%	Good	
Purchasing	82.52%	Very good	
Production and service Provision	83.70%	Very good	
Control of monitoring and measuring equipment	81.30%	Very good	

Planning of Product Realisation in R&D Unit

The process for making new products in the R&D Unit of PT XYZ is well planned. Representing this sub-variable, we asked some questions about quality objectives and product requirements, processes to provide resources, the standard measurement for verification and validation, quality criteria for product acceptance and evidence that must be documented to show the process of planning product realisation. All these activities were done well by the R&D Unit in correspondence with guidelines from ISO 9001:2008. One question received the lowest score, although the score was in the good category. The question had to do with specifications or quality criteria for products, and the score accumulated was 77.78%. This information was relevant as the R&D Unit of PT XYZ did not have a specific criterion of service quality as they defined quality in general terms. The lack of criterion for specific products made it difficult to interpret the quality criteria for several areas such as non-products and service products. PT XYZ's policy for service products was set to minimum standards. The procedures that describe a specific criterion of service was formulated by the R&D Unit itself based on present acticities.

Customer-Related Processes in the R&D Unit

Questions were also asked about customerrelated processes such as identification of customer requirements, including post-sales activities, effective ways of communicating and sharing information with customers and also handling of customer complaints. All these activities were done well by the R&D Unit, except for handling of customer complaints, which had the lowest score, 77.04 %. This was because the R&D Unit did not deal directly with the end customers, but with internal and external customers. The internal customers of PT XYZ came from its own units, while its external customer were all vendors. Complaints from both internal or external customers were relayed to the User Relation Unit (UREL) to handle. This unit was responsible for maintaining customers, handling customer complaints and gaining information about customer preferences. UREL has a specific

set of guidelines for servicing customers. All information about customer preferences or other unit requirements is gathered by UREL and then delivered to the R&D Unit. Although the R&D Unit does not make customised products, this feedback from customers is used to evaluate the quality criteria of services provided to customers. Information from the interview showed that the R&D Unit was more concerned about developing product innovation activities rather than creating custom products to fulfil specific customer requirements. However, when a new product was created, the specifications of the new product were taken from the input of other units or UREL that often intersected with customers directly.

Design and Development in the R&D Unit

Eight questions were given to the respondents related to design and development. These questions included questions on the standard for designing new products, standard for developing new products, process of evaluation, validation and documentation both for design and development. The R&D Unit managed design and development activities very well. This is shown by the high score achieved for this activity, 80.56%. All design and development activities are carried out in accordance with the procedures with constant reference to the quality standards set by the company. Every stage of the design process and product development involves planning, input, process, output and review. However, there are still deficiencies. The two questions

that received the lowest scores were on documentation activities related to the design process of new products and the documentation process of developing new products. The score for documenting the design of new products was 77.4%, while the score for documenting the development of new products was 78.52%. Although both were in the good category, the interviews showed that of all the questions relating to this variable, improvement was felt to be needed by the respondents in the R&D Unit's quality of documentation. Another expectation from the respondents was for the design and development of new products not to be done routinely. Each stage, the respondents felt, ought to be carried out separately and documentation stored separately as well.

Purchasing Activity in the R&D Unit

Purchasing activities managed by the R&D Unit were done well based on respondent perception. The percentage score for this activity was very good, with a score of 82.52 %. The purchase of goods or services performed by the R&D Unit was based on need and categorised by type of product, namely general goods, specific goods, general services and specific services. The R&D Unit had a DRP (List of Procurement Plan) that contained information about the list of goods and services of both general and specific items. When making a purchase, the principles held by the R&D Unit was to be transparent, open and seek no monopoly. In addition to these principles, there were several rules regarding the purchases,

namely: 1) Making a purchase of general products such as a computer or laptop and general services such as the provision and installation of software should not be done through partners and must be taken through a bidding process, 2) Others rules about the purchase of specific goods such as measuring tools and specific services such as consultation can be made through the direct appointment process in accordance with the needs of the R&D Unit. The purchase of goods and services must be included in the budget and will be evaluated and documented each quarter.

Production and Service Provision in the R&D Unit

The question related to the variable, production and service provision, focussed on controlling the provision of products or services, on-time delivery, accuracy of products or services and also controlling customer property. The R&D Unit were committed to delivering services to customers on time. Most of the time, delays happened when the customer did not fulfil the administration or payment requirements completely. Incompatibility related to delivery is documented, including the reasons for the discrepanct. The R&D Unit of PT XYZ also has provisions to maintain customer property based on the strictest requirements. Overall, production and service provision activities were done well, and the percentage score for this activity was in the very good category, achieving a score of 83.70%. The R&D Unit also continued to make improvements to service

and provision activities based on feedback collected through a customer satisfaction survey.

Control of Monitoring and Measuring Equipment Used by the R&D Unit

The responses to the questionnaire showed that the R&D Unit was consistent in delivering their services to their customers and always monitored and measured any inconsistencies. Inconsistencies were always documented by the R&D Unit. The percentage score for this activity was very good, having received a total score of 81.30%. Although this was in the good category, one indicator received the lowest score. The indicator was the use of the application to perform the measurement and improvement services. From the interview, it was learnt that the R&D Unit had some applications to control, but the use of the application was not optimal. Some applications owned by the R&D Unit that are used to ensure compliance with the services provided are the Online Test Report (OTR) application, the Smile Application for procurement, and the Transformer Application for project management. However, some informants believed that there was still a shortage of such applications. For example, the Transformer application was less attractive to employees because the employees were not familiar with it. Also, according to the informants, there were no applications for evaluating the overall product. All information about shortcomings when delivering services is

always communicated to the R&D Unit to be followed up with and documented.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The following are the conclusions of this study.

- Implementation of quality management system clauses of ISO 9001:2008 for product realisation was done but the system needd improvement in some areas.
- 2. The overall score for product realisation was very good, amounting to 81.62%.
- Percentage scores for the sub-variable, design and development, received the lowest score at 80.65%, while the highest score was obtained by the sub-variable, production and service provision (83.70%). Other variables received these scores: 81.78% for planning of product realisation, 80.89% for customer-related processes, 82.52 % for purchasing and 81.30% for monitoring and measuring controls.

Although all the variables were in the good category, our research showed that some areas needed improvement. This was especially true for product. In the planning for product realisation, the specifications for quality were described in general. It is a challenge for the R&D Unit, which has the responsibility of designing the service. In terms of customer processes, the handling of customer complaints was the lowest scoring indicator.

RECOMMENDATIONS

The following are the recommendations of this study.

- 1. PT XYZ must assign one person or one unit to control and maintain documentation.
- The company show be more concerned about documenting every stage of its design and development process as documentation is necessary for control and evaluation of the product realisation process.
- It would be good for the company to design a system such as a digital repository that would provide easy access to information on all aspects of production and quality to all in need of it.
- 4. PT XYZ should develop a specific set of criteria for quality for both services and products, and this must come from top down i.e. from top management to the R&D Unit to reflect the commitment of top management to quality. This will maintain the company's good performance.

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Knowledge Sharing and Implementation of Its Enabling Factors (A Case Study of Three Types of Company in Indonesia)

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ABSTRACT

This research describes how the enabling factors influence knowledge sharing in Indonesia. The samples are 267 employees from three different companies in Indonesia. The results of this research show that knowledge sharing has been well implemented in the three companies. The enabling factors that influence knowledge sharing are at the individual, organisational and technological levels. Among them, the technological factor is found to be the strongest. Employees in Indonesia are very cooperative and helpful in the implementation of knowledge-sharing activities. Although the rewards from the organisation are not high enough, knowledge sharing activities are still very well conducted. In order to increase knowledge sharing activities, more concern and appropriate follow-up are needed, especially with regards to technological factors.

Keywords: Individual factors, organisational factors, technological factors and knowledge sharing

INTRODUCTION

The information technology boom has caused enterprises to realise the shift from the economic resources of controlling land, machines, factories, raw materials and labour forces to the knowledge economy of creating business value through the utilisation of intangible knowledge (Yeh et al., 2006). According to Al-Husseini et al. (2015), knowledge is a multi-dimensional concept consisting of data, information, skills and experiences that may be used in making firm decisions. Further, Al-Husseini et al. (2015) pointed out that

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many studies have identified two types of knowledge, tacit and explicit knowledge. Tacit knowledge is difficult to communicate, unlike explicit knowledge much easier to communicate due to its nature. The classic view of knowledge indicates that knowledge is the process or action of knowing an experience or something associated with an experience through an individual's participation, while the modern view of knowledge is associated with competitiveness and power. Knowledge is valuable when it can be measured as an asset. Knowledge may help organisation because having knowledge provides ways to solve problems and engage in further innovative activities (Al-Husseini et al., 2015).

Knowledge derives from individual contribution at the workplace. Scholars have integrated individual knowledge carriers into a discourse that manages this accumulated knowledge. In recent decades, knowledge has reached remarkable growth, so that more than 90% of the world's knowledge was created in just one century, the 20th century. Currently, the volume of knowledge is said to double every five years and a half (Nejatian et al., 2013).

Current studies on knowledge management highlight the role of technology and memory systems in knowledge management, knowledge governance and the role of human capital and social factors. One of the reasons why knowledge management implementation has developed so much is that knowledge is considered the main asset for any industry today (Setiarso et al., 2009; Nejatian et al., 2013). The resources of a firm including all its assets, capabilities, organisational processes, attributes, information and knowledge, are controlled by the firm to enable it to conceive and implement strategies that improve its effectiveness and efficiency (Barney, 1991). Knowledge management implementation is considered as demands, needs and changes that take place in the world (O'Dell & Hubert, 2011; Al-Husseini et al., 2015); the most notable change in our world today is that brought by the Internet and smart devices that have introduced the dimension of the virtual into our everyday life, increased competition globally and is slowly diminishing print media while increasing digital media. All of this overwhelming change requires knowledge management. Recognising this need, many companies today are willing to develop knowledge management resources. Companies realise that knowledge management will improve their performance and increase their competitiveness (Yeh et al., 2006; Wu & Chen, 2014).

Implementing knowledge management in companies will impact the performance of the organisation. Organisational performance means the degree to which companies have achieved their business objectives. The indicators of organisational performance include organisational learning, profitability and other financial benefits (Lee & Choi, 2003). Thus, scholars agree that knowledge management is very beneficial for an organisation. This has caused knowledge management to be of crucial importance in the public sector and the private sector for both organisations and individuals, and it has grabbed people's attention and generated significant discussion. According to Massingham

(2014), knowledge management manages what the firm knows, that is, its knowledge resources. It is also about decision-making and delivering corporate governance in terms of planning, risk management and budgeting, including in knowledge management toolkits such as strategy, creation, retention and measurement. O'Dell and & Hubert (2011) defined knowledge management as a business that enables information and knowledge to grow, flow and generate value. Nejatian et al. (2013) stated that knowledge management is a discipline that promotes an integrated approach to identify, capture, assess, retrieve and share all of an enterprise's information assets. These assets can include databases, documents, policies, procedures and previously uncaptured expertise and experience of individual workers. Many researchers have emphasided three major factors for managing knowledge: enablers, processes and organidational performance (Lee & Choi, 2003: Yeh et al., 2006; Lin, 2007). Enablers are the mechanism for fostering individual and organisational learning and also facilitating employees' knowledge sharing within or across teams or work units (Lin, 2007). According to Yeh et al. (2006), knowledge management enablers are the mechanism for the organisation to develop its knowledge and also to stimulate the creation of knowledge within the organisation as well as to share and to protect it. Knowledge management is made up of four main processes are: (1) creating; (2) storing/retrieving; (3) transferring/

sharing; and (4) applying knowledge. Among the four processes, knowledge creating and sharing are the most important for conducting knowledge management (Lee & Choi, 2003; Al-Husseini et al., 2015).

However, building knowledge management in companies is not easy. Out of the four processes of knowledge management, knowledge capture, knowledge sharing, knowledge storing and knowledge application, the most difficult to implement is knowledge sharing. The fundamental problem faced by organisations is that many employees lack the desire to share knowledge with other employees in the organisation (Casimir, 2012).

Knowledge sharing can be viewed as a socialisation and learning process for workers in order to generate organisational innovations through the development of new ideas (Setiarso et al., 2009). Knowledge sharing is the main process of knowledge management in building a company's competitiveness (Sangkala, 2007; Susanty & Wood, 2011). Knowledge sharing gives huge impacts to the creation of learning organization culture, knowledge and innovation (Lin, 2007; Setiarso et al., 2009; Casimir, 2012). Al-Husseini et al. (2015) stated that knowledge sharing processes have positively influenced innovations in Iraq's public universities. Companies in Indonesia have also realised the importance of knowledge sharing implementation to create competitive advantage in business competition and in innovations.

Casimir (2012) mentioned that the social exchange theory argues that knowledge sharing occurs due to the reciprocation of favours received such as job security, status, balance of power and maintenance of future relationships. Lin (2007) stated that a company can successfully promote knowledge sharing culture not only by directly relating knowledge sharing with other business strategies, but also by changing employees' behaviour and habits to promote desire for and consistency of knowledge sharing implementation. Knowledge sharing requires a willingness to collaborate with others within an organisation because any indisposition to share knowledge may result in inaccurate, incomplete, ill-timed and, in extreme cases, false information being shared.

The integrity of shared knowledge is critical because it aggregates into organisational knowledge, which helps both employees and organisations to improve their competitiveness (Casimir, 2012). There is a lot of literature that addresses the knowledge sharing enablers. Lin (2007) addressed the three enablers of knowledge sharing, which are individual factor, organisational factor and technological factor. According to Yeh et al. (2006) people, leadership and corporate culture are enablers of knowledge sharing too. These factors will influence the work atmosphere so that learning and change can continue to take place. Lin (2007) showed that the three enabling factors have important roles in affecting knowledge sharing.

Willem and Buelens (2009) stated that the concept of knowledge sharing has focussed on one particular aspect of organisational structure: the role of networking, the impact of task structure, informal and formal coordination and incentive structures or technology. Willem and Buelens (2009) also stated that organisational structure dimensions have not explicitly clarified the relationship between structure and knowledge sharing. Lin (2007) stated that knowledge sharing can create opportunities to increase an organisation's ability to fulfil its needs, and also to be a solution and to produce efficiency in creating competitiveness. Through knowledge sharing, knowledge can be spread, implemented and developed. Sharing can stimulate individuals in an organisation to think critically and to generate new knowledge; it also can push useful innovations for the companies (Nan et al., 2013). Kam and Liew (2015) mentioned the different interpretations of frameworks that show that knowledge sharing is primarily affected by people, a knowledgesharing attitude, the organisational climate, the intention to share knowledge and knowledge-sharing behaviour. The knowledge sharing process is described as a two-dimensional process with members of staff sharing and exchanging their tacit and explicit knowledge (Al-Hussaeni et al., 2015). Lin (2007) assessed the factors causing knowledge sharing based on the knowledge sharing enablers to explain the correlation among the individual factor, the organisational factor and the technological factor. The individual, organisational and technological factors are the enablers in knowledge sharing activities.

An individual is an object and a subject that shares knowledge. Every individual in an organisation sees, hears, feels and interprets things in a unique way that will inform the sources and interpretations of knowledge. Individuals are unique, so identical clues will be interpreted diversely, leading to varying outcomes (Rechberg & Syed, 2014). Chen et al. (2012) and Nejatian et al. (2013) mentioned that in gaining the best feedback to motivate employees to participate in knowledge sharing, a company should concentrate on human resource management strategies. In this research, the individual factor consists of enjoyment in helping others and knowledge efficacy. Enjoyment in helping others is derived from the concept of altruism (discretionary behaviour that helps others with organisationally relevant tasks or problems). Previous research showed that employees are intrinsically motivated to contribute knowledge because engaging in intellectual pursuits and solving problems is challenging or pleasurable, and also because they enjoy it (Lin, 2007).

An organisation is a multi-dimensional construct that is defined differently throughout the literature. For the purpose of this research, this construct is defined as a unit that deploys strategies to encourage knowledge sharing among employees and that is a driving force in creating an environment and culture that influence the continuity of knowledge sharing. Barney (1991) stated that organisations include a firm structure, formal and informal planning and a controlling and coordination system as well as informal relations among groups in the firm, between the firm and the environment. Organisational culture is also a part of the organisational factor. Organisational culture makes a great contribution to the process of knowledge sharing due to the fact that culture determines basic beliefs, values and norms regarding the why and how of knowledge generation, sharing and utilisation in an organisation. According to Rasula et al. (2012), an organisation can achieve a competitive edge by creating and using knowledge and integrating the knowledge into business processes. It is important that organisational structure is designed to be flexible enough to encourage creating and sharing knowledge across the organisation's boundaries (Nejatian et al., 2013). According to Nejatian et al. (2013), organisational structure is one of the main knowledge management enablers that consists of two variables, centralisation and formalisation. Lin (2007) stated that the organisational factor consisted of top management support and organisational rewards. Top management support is considered one of the important potential influences in organisational knowledge.

According to the literature and the analysis of critical success factors of knowledge management, information technology is one of the three components of knowledge management (Rasula et al., 2012; Nejatian et al., 2013). In order to

support knowledge sharing activities, some organisations use technology adoption like building a portal and creating a knowledge application, among others. Many studies and journals have stated that ICT use has an important role in conducting knowledge sharing (Lin, 2007; Chen et al., 2012). Rasula et al. (2012) stated that the importance of ICT systems in being able to capture and store tacit or explicit knowledge will be stressed. Formalising and storing knowledge into applications allow us to start the knowledge transformation cycle and the process of reshaping tacit knowledge into explicit knowledge. In addition, the usage and quality of IT tools, the quality of information, user satisfaction, rate of usage and efficiency and accessibility of the system are also very important for knowledge sharing. Thus, in this study the authors enter the use of ICT as a technological factor in ongoing knowledge sharing.

In Indonesia, knowledge management has been widely known since 2005 through a programme called Most Admired Knowledge Enterprises (MAKE) Study and Award organised by a research-based institute. This great evolution brought a new perspective to knowledge in the field of business management called 'knowledge management'. Currently, many private companies, government institutions and state-owned enterprises in Indonesia have started to implement knowledge management.

This research study was felt necessary as it can help realise the ambitions of organisations in Indonesia in pushing their employees to actively engage in knowledgesharing activities and to create innovations. At least four studies (Lin, 2007; Susanty & Wood, 2011; Casimir, 2012; Al-Husseini et al., 2015) have reviewed knowledge sharing and its enablers for companies in various countries. This study is very important as it will contribute to findings by previous studies from the perspective of Indonesia as an object. The other benefits from the findings of this study are that they can help improve knowledge sharing implementation in Indonesia. This study looked into how technology, individuals and the organisation as the enabling factors influence knowledge sharing. Then companies can concentrate on the factors that have the highest influence on knowledge sharing.

Lin (2007) mentioned that there were differences in knowledge sharing activities that can be affected by individual, organisational and technological factors (Lee & Choi, 2003; Connelly & Kelloway, 2003; Taylor & Wright, 2004). This research uses three important components of knowledge sharing (Lin, 2007) or what is usually called knowledge-sharing enabling factors. They are individual, organisational and technological factors.

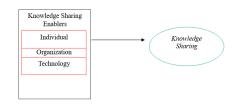


Figure 1: Evaluation Result of Structural Model

INDIVIDUAL FACTORS AFFECTING KNOWLEDGE SHARING

The individual factor refers to humans who work in an organisation. Rrezarta (2013) stated that people in an organisation are the main capital aside from materials and financial aspects. Therefore, companies should consider this carefully. Further, Rrezarta (2013) mentioned that the fundamental strategic aspect in managing human resources is to have motivated employees to achieve sustainable competitive advantages. Individuals also hold an important role because knowledge is embedded in the minds of individuals. So, the key success factor in knowledge sharing is the willingness of individuals to share their knowledge with one another. This routine process may help members of an organisation to solve problems (Al-Husseini et al., 2015).

In this study, the individual factor consisted of enjoyment in helping others and knowledge efficacy. Enjoyment in helping others shows how employees are intrinsically motivated to contribute their knowledge. Their contribution is seen in helping to solve challenging problems. Knowledge efficacy is the belief or capability of employees that their knowledge can help solve problems that are related to work and increase performance effectiveness (Lin, 2007). Employees who believe this can develop a bigger desire to contribute to and to receive knowledge.

Organisational Factors Affecting Knowledge Sharing

In a competitive environment, becoming an adaptive and flexible organisation is very important. Companies should enable employees to quickly cope with changes (Azusa & Hiroyuki, 2013). Al-Qahtani and Ghoneim (2013) mentioned that organisations have to find a system of management that can ensure the transition to a knowledge-based society. The function of an organisation is to be capable in influencing knowledge-sharing activities. The role of top management is to create a conducive knowledge-sharing culture. Top management should support the ambience and the resource providers in the organisation. Rewards may be used to appreciate employees who support knowledge-sharing activities. The rewards function as an encouragement to continue knowledge-sharing activities in the organisation. The form of the rewards does not always have to be monetary (raise of salary and bonus). Non-monetary (such as promotion and work security) rewards also have a significant impact on employees (Lin, 2007).

Technological Factor Affecting Knowledge Sharing

Gressgard et al. (2014) mentioned that technology plays a very important role in knowledge management implementation for pushing innovations. The technological impact on knowledge-sharing activities through ICT usage to speed up searches, access and get information specifically support communication and collaboration among employees (Lin, 2007).

In this study, the research questions to be answered were:

- a) How do individual, organisational and technological factors influence knowledge sharing simultaneously?
- b) How does the individual influence knowledge sharing partially?
- c) How does the organisation influence knowledge sharing partially?
- d) How does technology influence knowledge sharing partially?

Four hypotheses were formulated for this study. They are:

- H₁: Individual, organisational and technological factors simultaneously influence knowledge sharing significantly.
- 2) H₂: The individual factor significantly influences knowledge sharing.
- H₃: The organisational factor significantly influences knowledge sharing.

This study also examined the influence of each factor partially on knowledge sharing. The following explanation discusses each enabling factor that influences knowledge sharing.

Individual Factors

This factor consists of enjoyment in helping others and knowledge self-efficacy. Lin (2007) stated that workers who derive enjoyment from helping others may be more favourable towards knowledge sharing and more inclined to share their knowledge. Self-efficacy is defined as the individual judgment regarding capabilities to organise and execute action required to achieve specific levels of performance. Based on Lin's (2007) research, enjoyment in helping others and knowledge self-efficacy are found to positively influence knowledge sharing and knowledge collecting. Therefore, the authors decided to develop a hypothesis that individual factors can influence the process of knowledge sharing.

Organisational Factors

An organization is capable of influencing knowledge sharing through top management by supporting the creation of a supportive ambience and by being an adequate resource provider in the organisation. Top management support is considered one of the important potential influences on organisational knowledge (Lin, 2007). Lin and Lee (2004) proposed that the perception that top management encourages knowledge sharing is necessary for creating and maintaining a positive knowledge-sharing culture in an organisation. According to Connelly and Kelloway (2003), organisational elements such as culture, climate and collaboration have a positive impact on the elements of knowledge in the context of knowledge management. This led the authors to formulate a hypothesis that the organisation can affect the process of knowledge management.

Technological Factors

The use of Information and Communication Technology (ICT) and knowledge sharing are closely linked, because ICT can enable rapid search, access and retrieval of information, and can support communication and collaboration among an organisation's employees (Lin, 2007). Therefore, technology was assumed to be a factor that impacts knowledge-sharing activities.

METHODOLOGY

This study used the quantitative method while analysis was causal and descriptive. The data were collected by distributing questionnaires to the employees of three types of organisation. The three organisations were a bank, an insurance company and a telecommunications company. All three companies were facing tight competition in a frequently changing business environment. The total number of respondents from these three companies was 267. The model of the research was constructed from previous research by Lin (2007). Questionnaires in this research contained 37 questions consisting of 21 enabling-factor questions and 16 questions related to knowledge sharing. The scale used in the questionnaires was a 4-point Likert scale (1 = strongly) disagree, 4 = strongly agree). This scale was used to measure the responses of the respondents to every item.

Path analysis was used to analyse the pattern of relationships among the variables in order to determine the direct and indirect effects on the independent variables (exogenous) and the dependent variable (endogenous).

RESULTS

Figure 2 shows how individual, organisational and technological factors correlated with knowledge sharing based on the respondents' perception. Figure 2 shows that the execution of knowledge sharing in Indonesia in general was above average, with a score above 3. Individual factors made up two dimensions i.e. enjoyment in helping others and knowledge self-efficacy. The score as shown in Figure 2 was above 3 for both dimensions. This shows that most of the respondents enjoyed helping other employees. They felt happy with the implementation of knowledge-sharing activities. They also believed that they were competent in sharing knowledge and the knowledge they have shared was beneficial for the others.

Included in the organizational factors were top management support and organisational reward. Top management support was rated high by the employees. This means that top management of the three companies were good at encouraging the employees to share their knowledge. The top management paid adequate attention to employees, causing them to be motivated to share their knowledge. In contrast, the dimension of rewards was rated as being low in value by the employees.

Among the technological factors, the dimension measured was the use of ICT. Based on the results of the descriptive analysis, the use of ICT in knowledge sharing was considered good (agreed) by the employees. This means that the activity of knowledge sharing was facilitated by various technological tools such as an intranet, portals and technological tools. Technology was useful to the employees for sharing their knowledge.

The highest score for the enabling factors of knowledge sharing was for enjoyment in helping others. In contrast, the lowest score was for organisational rewards.



Figure 2: Results of descriptive analysis

Hypothesis Results

Based on the analysis, the value of the Sig Coefficient as seen in Table 1 was lower than 0.05, which was 0.000, thus the hypothesis of H1 was accepted. This means that the knowledge-sharing enablers consisting of individual, organisational, and technological factors simultaneously and significantly affected knowledge sharing.

The Influence of	of the Independent Variab	les on the L	Dependent Variable Simu	ltaneously	
Model	Sum of Squares	Df	Mean Square	F	Sig

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	7,570,772	3	2,523,591	46,010	0.000b
Residual	12,779,674	233	54,848		
Total	20,350,447	236			

Table 2 shows how great the impact was from the three independent variables (knowledgesharing enablers) on the dependent variable (knowledge sharing. It can be seen from Table 2 that the value of the R-squared (R^2) was 0.372, which meant that the three knowledge-sharing enablers affected knowledge-sharing activities by 37.2%.

Table 2 Model Summary

Table 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.610ª	0.372	0.364	740,597

The partial impact of each independent variable (individual, organisational and technological) on the dependent variable (knowledge sharing) can be seen from the value of the Sig recorded in Table 3. Table 3 shows the Sig values of the three factors as being 0.000 (less than 0.05). This means that Hypotheses H_2 , H_3 and H_4 were accepted i.e. individual, organisational and technological factors partially influenced knowledge sharing. The result of the path analysis model that explains the overall correlation among the variables is described in the model given in Figure 2.

Table 3

Coefficient Values of Each Enal	oung racior
---------------------------------	-------------

	Unstandard	lised Coefficients	Standardised Coefficients		
Model	В	Std. Error	Beta	Т	Sig.
	14,244	3,698		3,851	0.000
Individual (X1)	0.602	0.134	0.266	4,491	0.000
Organisation (X ₂)	0.458	0.098	0.263	4,692	0.000
Technology (X ₃)	0.925	0.207	0.273	4,476	0.000

The coefficient impact value of the individual factors on knowledge sharing was 0.266; from the organisational factors on knowledge sharing it was 0.263; and from the technological factors to knowledge sharing it was 0.273. The correlation value between the individual variables to the organisational variables was 0.272; the correlation between the organisational variables was 0.355; and the correlation between the individual variables was 0,355; and the correlation between the individual variables to the technological variables was 0,47. Thus, the structural equation for the path analysis was:

y = 0,266X1+0,263X2+0,273X3+0,628.

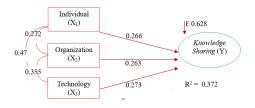


Figure 2: Results of structural model

CONCLUSION

The results showed that knowledge-sharing activities were well conducted. In this study, it was found that all knowledgesharing enabling factors significantly influenced knowledge sharing, and that the technological factor was the most affecting factor on knowledge sharing. The individual and organisational factors made contributions that were almost equal to knowledge sharing.

In this research, the individual factor was measured from two dimensions, which were enjoyment in helping others and knowledge self-efficacy. The result showed that the employees derived high enjoyment in helping others. This illustrates that the employees enjoyed sharing knowledge. On the other hand, organisational reward had only a moderate value (or not too high). This fact proved that employees truly liked helping others. Employees perceived that their contribution to knowledge sharing did not really need to be rewarded. Although the companies did not pay much attention torewarding the employees who actively shared their knowledge, knowledge-sharing activities were still implemented as an important work function. This is because the employees did not expect any reward in sharing their knowledge, but simply enjoyed helping others. This attitude bodes well for the companies. Employees are highly aware of the corporate good of sharing their knowledge. This is a good foundation for the companies to build a knowledge-sharing culture. Later, they may easily develop knowledge-management systems.

Based on the path analysis process results, the organisational factor had the least impact compared to the individual and technological factors. Since rewards are a part of the organisational factor and as discussed before, the employees did not place too high a regard on the rewards, the impact of the organisational factor dropped. However, top management support was still felt to be needed in the role of increasing knowledge sharing.

Among the three enabling factors have were tested, the technological factor obtained the highest value. In this factor, there was only one dimension involved, namely, the use of technology. In this case, the availability of technology to support knowledge-sharing activity is needed. Technology is considered the major factor in knowledge-sharing activities in Indonesia. However, this does not mean that technology is the single factor that can accelerate the formation of knowledgesharing activities within an organizstion. Two other factors need to be considered by an organisation in order to accelerate the formation of knowledge-management activities. This finding was in contrast to a previous study conducted in Taiwan, which showed that the availability of technology did not much affect knowledge sharing (Lin, 2007). In Lin's study, it was mentioned that in Taiwan knowledge sharing is largely influenced by the willingness of individuals to help colleagues.

Based on the results of this research, here are several suggestions for organisations on improving the implementation of knowledge sharing among their employees:

 Create technology-based applications to improve and facilitate knowledge sharing activities. The analysis conducted in this study indicated that the use of ICT has the greatest impact on the implementation of knowledge management.

- 2) Create a programme within the organisation to encourage employees to help one another through knowledgesharing activities. This ties in with the result of the analysis done in this study that showed that the individual factor ranked second highest in influencing knowledge sharing.
- Create an organisational and management environment that will foster knowledge-sharing activities. Although the organisational factor ranks the lowest in influencing the activity of knowledge sharing, this factor was proven to affect the activity of knowledge sharing.

The development of knowledge management will continue to grow and continue to be the subject of study. This is a good opportunity for researchers to explore and do more research in the field of knowledge management, especially within the sub-field of knowledge sharing. Further study in this area can develop this model by locating other variables of the enabling factors.

Findings from other countries can also enrich this study. Therefore, the development of samples from different countries showing differences from the Indonesian characteristics will be beneficial for the development of this model. Research into knowledge sharing in Indonesia can also consider angles researched in other countries but not as yet in Indonesia. This can enrich research references in Indonesia and provide insight into how Indonesian culture may give rise to differences in knowledge-sharing activities. One shortcoming of this study was the use of a small number of samples; it can seem especially limited considering the size of Indonesia's population.

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