



BRUNEL UNIVERSITY, LONDON

**A Transition Process from Information Systems
Acceptance to Infusion Behaviour in Online Brand
Communities:
A socialization process perspective**

**A Thesis submitted for degree of
Doctor of Philosophy
By**

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Dedication

I dedicate the degree of PhD to my honourable parents for their endless love and continual support that helped me to achieve my dream.

Declaration

I declare that this thesis is wholly written by me, and in substance, this work has not previously been accepted for any degree, or qualification, to any other university, or institution of academic learning and is not concurrently submitted in candidature for any degree.

The thesis conforms to the British Standard BS 4821: 1990, the 'British Standard Recommendation for the Presentation of the thesis and Dissertations', and follows the Harvard referencing system.

Jaehoon Lim

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Abstract

Social media such as Facebook, Youtube, Twitter, and online communities plays an important role for knowledge production and diffusion as well as discussions among people. Among social media, online brand communities (OBCs) have recently received attention from both academics and practitioners due to the practical benefits of OBCs for consumers and companies. For consumers, knowledge sharing and its collective activities help them to make purchase decisions and to protect themselves against firms' monopoly and oligopoly or collusion and anticompetitive actions. For companies, new ideas and feedback on brand products created by OBC members are useful input to develop new products and enhance existing product lines. Therefore, active content generation by community members is one of the critical success factors of OBCs. However, many scholars argue that only a few members who are more devoted to a community are tending to engage in OBC activities and many community members tend to remain in the periphery (sometimes called 'lurkers') of the community by using OBCs merely for gathering information without any contributions. Therefore, it is important to make members in the periphery of the community transit to the core to increase members' intentions and 'devoted members' to produce more valuable benefits for both consumers and firms. In spite of its importance, the literature is lacking in efforts to explain how and when community members in the periphery transit to the core of the community in a long-term perspective.

This study aims to reveal how and why OBC members transit from the periphery to the core of the community and how to increase their intention to use OBC from a long-term perspective.

OBC use behaviour is classified into, largely, two categories according to the purposes of an OBC: behaviour with a brand product consumption purpose; and behaviour with a social relationship building purpose. This study classifies OBC members as three clusters by social identity theory: tourists, minglers, and devoted members (devotees and insiders). The devoted members have valuable consumption knowledge of brand and strong social bonds in the OBC and the OBC members become a devoted member by accumulated brand knowledge and experiences through long-term OBC use. Therefore, from a socialisation aspect, this study adopts organisational socialisation theory as the theoretical lens to explain how and why the members evolve from novice members as tourist to devoted members in OBC contexts. Socialisation theories argue that there are usually three sequential stages for a member to gain full membership in a community: pre-entry, accommodation, and affiliation. In addition, this study adopts IS implementation theory to understand OBC user behaviours from an IS use behaviour perspective: acceptance in the pre-entry stage and routinisation in the accommodation stage and infusion in the affiliation stage. By reviewing socialisation theory and IS implementation theory, this study finds four significant motivations, those of information quality, trust, sense of belonging, and brand loyalty for intention of OBC use from the acceptance (pre-entry) to infusion (affiliation) stages. To integrate the socialisation perspective with the IS use perspective, this study adopts a technology acceptance model (TAM) as a theoretical framework to link to motivators in different

OBC use behaviour from the acceptance to infusion stages.

As a result, this study proposes a conceptual framework to explain the OBC members' transition process from acceptance (pre-entry) to infusion (affiliation). The aim of this study is to predict and explain the transition of motivators for OBC use from pre-entry to affiliation and how to improve members' intention of OBC use from a long-term perspective ultimately to foster 'devoted members'. This study adopts an online survey targeting 518 participants who belong to 17 OBCs in South Korea and the conceptual framework is validated. The results show that all factors (i.e. information quality, trust, sense of belonging, brand loyalty) are significant determinants to increase intention to use OBCs and the factors have a causal relationship with each other to form a transition process from the acceptance (pre-entry) to infusion (affiliation) stages. This study also reveals that brand loyalty has a significant role to explain the transition process and directly influence user intention to use OBCs. The sense of belonging also directly affects members' intention to use OBCs but has less impact than brand loyalty. In addition, the results indicate that TAM is an appropriate model to predict user behaviours in a long-term perspective to explain the change of OBC use behaviour from the acceptance to infusion stage and confirms that perceived usefulness and perceived ease of use have significant impact on the intention to use OBCs as in other IS studies.

Understanding the transition process within OBCs has theoretical and practical implications. Theoretically, it will extend our understanding of how IS end users transit from acceptance behaviour to continued use and extended use of information systems in virtual community contexts. For managers, this study will provide them with insight on how to retain potential consumers in OBCs and facilitate their activities to gain consumer feedback on existing and new products.

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List of Abbreviations

ABL	Attitudinal Brand Loyalty
AGFI	Adjusted Goodness of Fit index
AMOS	Analysis of Moment Structure
AT	Attitude
BBL	Behavioural Brand Loyalty
BI	Behavioural Intention
BIU	Behavioural Intention to Use
BL	Brand Loyalty
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CIOBC	Consumer Initiated Online Brand Community
CIS	Complex Information System
CMC	Computer Mediated Communication
C-TAM-TPB	Combined TAM and TPB
ECT	Expectation Confirmation Theory
EFA	Exploratory Factor Analysis
ERP	Enterprise Resource Planning
FIOBC	Firm Initiated Online Brand Community
GFI	Goodness of Fit
IBC	Integration in a Brand Community
ID	Identification
IDT	Innovation Diffusion Theory
IS	Information system
ISC	Information System Continuance
IT	Information Technology
KMO	Kaiser-Meyer-Olkin
MM	Motivation Model
NFI	Normed Fit Index
NPD	New Product Development
OBC	Online Brand Community
OC	Online Community
OCC	Online Communities of Consumption
OTC	Online Transactional Community
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
PIQ	Perceived Information Quality
PSOB	Perceived Sense of Belonging
RMSEA	Root Mean Square Error Approximation
SCT	Social Cognitive Theory
SEM	Structural Equation Model (Modeling)
SERI	Samsung Economic Research Institute
SFA	Sales Force Automation

SN	Subjective Norms
SPSS	Statistical Package for Social Sciences
TAM	Technology Acceptance Model
TLI	Tucker-Lewis Index
TMC	Technology Mediated Communication
TPB	Theory of Planned Behaviour
TR	Trust
TRA	Theory of Reasoned Action
UTAUT	Unified Theory of Acceptance and Use of Technology
VIF	Variance Inflation Factor
WWW	World-Wide-Web
χ^2	Chi-square

Publications

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CHAPTER 1 INTRODUCTION

1.1 Introduction

This chapter provides a brief outline of the overall study. This doctoral study is concerned with the transition process of user motivations from the acceptance to infusion stage in a long-term perspective. This research is based on socialisation theory and empirically investigates the causal relationships of motivations as a transition process in online brand communities. A brief description of the background of the study, motivation and research gap, research question, and the aim and objectives are provided in this chapter. Furthermore, this chapter explains research scope, methodology and methods, the contribution of the study, and finally, the structure of the thesis.

1.2 Background of the Study

Today, internet advancements enable easier and faster connection and communication without geographical limitations among people. It creates a space where people who have similar interests or hobbies can interact in many ways beyond simple chat or information provision. Moreover, cyber space has been used to share and accumulate people's stories, knowledge and information as a database (Jang *et al.*, 2007). Likewise, social media such as Facebook, Twitter, YouTube and similar online communities (OCs) have become an important part of our life as advanced mobile computing technologies are seamlessly integrated with fixed broadband networks to provide users with anywhere and anytime access to them. An OC is a computer-mediated space that has been developed in various forms, such as forums and social groups in social network services. Sharratt and Usoro (2003) argue that an OC has a significant role as an information system (IS) based on knowledge management because, nowadays, information technologies and systems are regarded not only as a storage, but also as a collaborative tool of knowledge. One of the differences between traditional communities and OCs is that of the exchange of valuable knowledge and information via the web without geographical limitations.

A form of OC that is rapidly growing is online brand communities (OBCs) in which users who have common interests in a particular brand share knowledge with each other (Madupu and Cooley 2010).

An OBC is regarded as important for both consumers and companies (KimBae *et al.*, 2008). For consumers, it helps them to make the right decision to choose and purchase brand products or services and gives more satisfaction to the consumers. It can also lead them to use products or services more efficiently through sharing their experiences and knowledge. Furthermore, interpersonal relationships will be improved among members who band together the same interests in brand and, therefore, the power of users will be increased, protecting them against unfair trading practices of companies such as monopolies and oligopolies or collusion and anticompetitive actions. As a result, it allows better qualities of product or services delivered from companies to consumers.

For companies, it is a time and cost effective option that helps companies to increase their profit. Different from traditional marketing, companies can reduce time and cost for market research to investigate consumers' demands (Lee *et al.*, 2009). Companies can also collect consumers' opinions regarding brand products or services such as qualities and problems with less cost and time through online brand communities. They can also explore consumers' satisfaction or dissatisfaction and even its sources. An OBC is also an efficient virtual place to collect information to develop new products (Füller *et al.*, 2009; Füller *et al.*, 2008; Thompson and Sinha, 2008) as it contains more accurate consumers' demands through cooperation with members of OBCs (Chu and Chan, 2009; Nambisan and Watt, 2011). It is a place to gain fresh ideas from consumers and give more benefits and revenue to companies. Finally, the customers' brand loyalty can be increased by a well-operated OBC and it aids consumers' decisions to repurchase branded products or services (Fournier and Lee, 2009).

As a result, the interest of OBCs has been increasing by consumers today, and also, companies have become increasingly interested in how to create and foster successful OBCs (Carlson *et al.*, 2008). In addition, academics have started to concentrate on OBC user behaviour.

To make the best use of OBCs, consumers' participation of OBCs such as sharing information and knowledge, and suggesting new ideas is a key indicator of performance (Bagozzi and Dholakia, 2002; McWilliam, 2000) and it is one of the critical success factors of OBCs (Madupu and Cooley, 2010). Active participation by members is also most likely to boost knowledge sharing and consumer power. Further, it also helps to increase consumer repurchase decisions for a new product or service from the favoured brand and decline the probability of purchasing new products or services from other brands (Thompson and Sinha, 2008), hence, providing more profits for firms. Armstrong and Hegel (1996) argue that OBCs are growing as a key instrument of a company's internet marketing strategy which help the company to build consumers' brand loyalty effectively. In addition, the members' valuable participation also contributes to the development of new products through adopting consumers' ideas and insights.

1.3 Motivation and Research Gap

Despite of the fact that members' active participation is a significant factor, unfortunately, the number of members who make a commitment and valuable contributions to OBCs are reported to be unusually small (Carroll and Rosson, 1996; Kozinets, 1999; Mathwick, 2002; Nonnecke and Preece, 1999). Some scholars argue that active participation of members is caused when an individual's commitment and contributions emerge from a long-term relationship with the OBC and its members (Kozinets, 1999; Preece and Shneiderman, 2009). They argue that the reciprocity behaviours such as commitment and contribution are established by accumulating knowledge and interpersonal relationships through OBC activities; accordingly, the individuals move from the periphery to the core of the OBC activities. Therefore, a significant issue is how to increase members' participation and contribution in long-term OBC usage. However, there is lack of empirical study regarding this issue.

Lin (2006) insists that increasing individual's intentions to participate in an OC can enhance members' participation in, and contribution to, an OC because an OC cannot achieve its potential if it is not accepted, continually used, and intended by members

similar to other ISs (Bagozzi and Dholakia, 2002, 2006; Casaló *et al.*, 2010; ChanBhandarOh *et al.*, 2004; Lin, 2006). Therefore, understanding the motivation to use an OBC can be considered as one of the significant factors to increase participation in OBC activities. Motivated on this, scholars have been studying why users accept and intend to use different types of OC including electronic games, electronic learning, and electronic transaction communities. However, most studies focus on user acceptance of OCs and, hence, have limitation to explain why and how members move from the periphery to the core for intention of OBC use in a long-term perspective as they do not consider OBC specific features related with brand products.

While there are users in different stages of OBC membership the role of core members who usually have longer membership and produce a high quality of content on brand products based on their experience and individual study is particularly important to companies. Therefore today's brand managers are confronted with a managerial problem on how to make the best use of OBCs in their brand strategies and, more specifically, how to foster the activities of core OBC members and support the members for their transition from spectators to more proactive content creators of OBCs to secure more customer feedback and new ideas.

However, while there are some efforts to explain why and how people join an OBC, it is not known how its members transit from the periphery (i.e. those who have recently joined and how sporadic users are) to the core (i.e. long term members who contribute to the group). In a broader perspective, studies in IS use behaviour can be applied to explain the activities of OBC members. As OBCs are considered as IS, the studies on IS implementation can provide an indication of the issues. For example, Cooper and Zmud (1990) classify IS user behaviour into six categories: (1) initiation, (2) adoption, (3) adaption, (4) acceptance, (5) routinisation, and (6) infusion. Among the behaviour, post IS use behaviour such as acceptance, routinisation, and infusion can be considered as the user behaviour after joining an OBC. For example, acceptance of IS can be compared with joining an OBC, continued use with repetitive visiting of the OBC, and infusion with high quality contents creation by core members.

Studies in IS use behaviour are sporadic in that most of the efforts focus on identifying motivators of user acceptance, continued use or infusion behaviour of IS and we do not understand what makes a passive IS use behaviour (acceptance) transform to more active one (repetition and infusion).

The following research questions are yet to be answered in the literature.

RQ1. What are the stages that lead to core members of OBCs from the periphery?

RQ2. What are the major factors that motivate group members to remain in OBCs in different stages?

1.4 Research Aim and Objectives

This study aims to reveal the transition process of OBC members' motivation from peripheral to core members with the intention of OBC use. In particular, this study views OBC user behaviour from IS use behaviour to explain the transition process of OBC members' motivation from acceptance to infusion stages for enhancing members' intention of OBC use and ultimately to foster members who make commitment to, and contribution for, OBCs. To achieve this purpose, this study applies organisational socialisation theory to investigate motivations on different stages and predict individual's transition behaviours from a long-term perspective.

As an OBC is concerned as an organisation, the organisational socialisation theories (OST) suggest an insinuation for the questions. For example, Haski-Leventhal and Bargal (2008) classify the socialisation stages which are sometimes sequential for an individual to be a dedicated member of an voluntary organisation: (1) pre-entry stage, (2) accommodation stage, (3) affiliation stage. The theory of Haski-Leventhal and Bargal (2008) asserts that there are stages when people move from the periphery to the core of the community and the stages are sequential. While most of the organisational socialisation models have been applied to explain the socialisation process in the

context of profit and voluntary organisations (Haski-Leventhal and Bargal, 2008), the model can also be applied to explain the socialisation processes in OBCs.

Therefore, the objectives of this study are as below.

- To identify the stages of socialisation processes in the context of OBC
- To explore the relationship between the IS use behaviour and the socialisation stages in OBCs
- To identify motivators of IS use behaviour in different socialisation stages in OBC.
- To develop a conceptual model to explain the transition process from peripheral to core in OBCs.
- To test the conceptual model through empirical data collection in real world OBCs
- To contribute to the knowledge and provide future research directions for researchers that may help improve the understanding of OBC members' behaviours
- To suggest managerial implications that should help practitioners by utilisation the results and to improve firm performance in OBCs

1.5 Research Scope

This study aims to understand the transition process of OBC use behaviour from the periphery to the core of OBCs to lead members' participation and to increase their commitment and contribution for OBC performance. This study focuses on finding user motivation to retain in an OBC in different stages and examines the relationships among the motivators based on socialisation processes. Furthermore, this study is within the

scope of investigating why and how the members' motivations influence their intention to use OBCs from an IS implementation perspective.

1.6 Research Methodology and Methods

This study takes a positivism paradigm to achieve the aims and objectives. According to Collis and Hussey (2003), the positivism paradigm in social sciences uses a quantitative and deductive approach which begins with literature to establish proper theory and construct hypotheses. The quantitative approach predicts and explains the happening in the social world by searching for patterns and causal relationships between its components. Further, positivism considers numerical data collection for investigating and understanding human behaviours based on natural sciences and objective stances in reality (Hussey and Hussey, 1997), while a phenomenological paradigm is a qualitative and inductive approach to understand human action and behaviour generated from the human mind based on social sciences.

This study has been developed on the basis of a literature review and the hypotheses have been suggested through relationships between independent and dependent variables with the support of a conceptual approach. In addition, this study is conducted to measure the relationships between the variables for understanding human nature from a realist position with an objective standpoint. Thus, the procedure of this study follows a quantitative and deductive approach for data collection and analysis.

To reach the research aim and objectives, this study conducted a survey questionnaire to collect data because the survey questionnaire can offer insight into individual perception and attitudes what the respondents of selected groups think, feel or do (Baruch and Holtom, 2008, p.1140). The survey questionnaire used a seven-point Likert scale which is commonly used to measure individuals' perceptions and attitudes (Miller and Brewer, 2003) because the Likert scales permit the greater range of answers to respondents for establishing reliability (Oppenheim, 1992, p.200).

Before data collection for the main study, a pilot study was conducted with 36

participants to establish the reliability of multi-item scale development. The reliability of scales checked applied a Cronbach's alpha value, item-to total correlation, and inter-item correlation as suggested by Hair, Black, Babin and Anderson in 2010.

The data analysis for the main study was conducted through four major stages with the following software: Statistical Package for Social Sciences (SPSS) 18.0 and Analysis of Moment Structure (AMOS) 18.0.

1. Data Screening: to check errors in data set before starting data analysis.
2. Exploratory Factor Analysis (EFA) and Reliability Assessment: EFA was conducted to explore the correlation of variables and the factors, and identify the latent factors regardless of theory. Reliability tests were adopted to test the internal consistency of factors.
3. Confirmatory Factor Analysis (CFA) and Construct Validity: CFA was conducted to define the underlying constructs among the variables by examination correlation of variables based on theory. The construct validity was adopted to confirm whether a set of variables reflects the theoretical latent construct for the accuracy of a measurement model.
4. Structural Equation Modelling: to explore and examine a set of relationships between constructs (independent variables and dependent variables).

1.7 Research Contribution and Novelties

The major contribution of this study is to develop a comprehensive theoretical framework that examines the transition process of OBC members' motivation from acceptance to infusion of OBC.

First, to the best knowledge of the author, this is one of the first efforts to develop an integrated framework and to reveal the transition process from user acceptance to

infusion behaviour through empirical verification. Prior studies (i.e. Taylor and Todd, 1995; Parthasarathy and Bhattacharjee, 1998; Karahanna *et al.*, 1999; Bhattacharjee, 2001; Legris *et al.*, 2003) have mostly concentrated on user acceptance or continued use behaviour and very few studies (i.e. Jones *et al.*, 2002; Wang and Heish, 2006; Sundaram *et al.*, 2007; Hsieh and Wang, 2007; Saeed and Abdinnour-Helm, 2008) on understanding the nature and motivations of infusion behaviour. Despite such initial studies on infusion, no study has revealed a process in which user acceptance behaviour transits to routinisation and, ultimately, to infusion behaviour in a long-term perspective. This study establishes an integrative theoretical framework that combines acceptance, routinisation, and the infusion stage to investigate user behaviour as a transition process from a long-term perspective.

Second, one of the distinctive contributions of the study is applying organisational socialisation theory to explain IS use behaviour. Previous studies on IS use behaviour assumes factors affecting based on technology acceptance model (TAM) constructs those are influenced and varied through age, gender, and previous experiences (Venkatesh *et al.*, 2003). However, unlike other ISs, this study reveals that the factors would be affected and changed by social relationship with others or brand (i.e. social tie, brand loyalty) in OBCs as social ISs.

Third, this study investigates users and their behaviour from multiple perspectives to find motivators of IS use. Despite different purpose of use behaviours and different stages of OBC use existing (Kozinets, 1999; Mathwick, 2002; Preece and Shneiderman, 2009), most previous scholars in OBC studies have regarded members as homogeneous (i.e. Carlson *et al.*, 2008; Jang *et al.*, 2008; Lin, 2006, 2008; Liu *et al.*, 2010). Therefore, prior studies could not explain the causal relations among motivators as a transition process of IS adoption from the acceptance to infusion stage.

Fourth, this is one of the first studies on motivators of user intention to use OBC.

Despite the existence of the crucial distinction between OBCs and other OCs, most previous studies focus on OCs such as for transactions (i.e. e-commerce, e-shopping), learning communities, and gaming communities (i.e. Teo *et al.*, 2003; Lee *et al.*, 2005;_

Liao *et al.*, 2006; Ahn *et al.*, 2007; Hsu and Lu, 2007; Tsai *et al.*, 2008; Liu, 2010).

Therefore, it is a lack of prediction and explanation regarding OBC users' behaviour.

Lastly, this study empirically reveals that OBCs have two important roles as both 'social community' and 'brand community'. Some scholars insist that the consumers' purposes of OBC use are largely divided for consumption and social relationship building (Kozinets, 1999; Mathwick, 2002). This study investigates if the sense of belonging based on interpersonal relationships, and brand loyalty based on brand relationship, directly impact on user intention to use OBC.

1.8 Organisation of the Thesis

This thesis has seven chapters along with references and appendices. The structure of this thesis is as below.

Chapter 1 Introduction

The first chapter discusses the background of the study, motivation and the gap of the study, research question and research aim and objectives. It continues by presenting the scope of the study, the research methodology and methods, and research contribution and novelty.

Chapter 2 Literature Review

This chapter reviews existing literature focusing on OBCs such as the definition and characteristics of the OBC and OBC use behaviours to explore how OBC members can be classified and identified in different stage according to different features. Furthermore, this review is to investigate how OBC members can transit to be a active members from novice members. Second, the socialisation process and social identification theory are discussed. This review is to explore and identify the relationship between OBC members' transition and socialisation process. Next, the IS implementation process and related researches are reviewed. Firstly, this review is to investigate the relation among OBC member's transition, socialisation process, and IS

implementation process. Secondly, this review is to confirm the justification of using TAM for this study. In addition, previous studies related in OBC are introduced to find and justify the research gap. Finally, the limitations of previous studies is identified and discussed.

Chapter 3 Research Model and Hypotheses

The purpose of this chapter is to develop research hypotheses to examine the transition process of user motivations from the acceptance to infusion stage from a long-term perspective. To address the hypotheses effectively, the first section of this chapter discusses OBC use behaviours with the socialisation process through social identification and then extracts the motivations in different stages of the socialisation process. Next, the OBC socialisation process is discussed to compare with the IS implementation process and, then, the motivations in each stage are extracted for establishing the research model and hypotheses. Finally, a conceptual and theoretical framework is developed and the relationships between variables are hypothesised.

Chapter 4 Research Methodology

This chapter introduces the research philosophy and design of this study and discusses item development, measurement scales, survey questionnaire development, the pilot study and its results. Next, the data sampling, collection and coding methods for the main study are specified. Further, the discussion of data analysis steps and ethical issues are followed.

Chapter 5 Analysis and Findings

This chapter presents the analysis and findings of the main study. The data screening, demographic characteristics, exploratory and confirmatory factor analysis, and assessment of model fit are introduced. Finally, this chapter shows the outcomes of hypotheses testing.

Chapter 6 Discussion

This chapter presents the discussion of the empirical results. Next, the theoretical and managerial implications are discussed.

Chapter 7 Conclusion

This chapter summarises the results of this study and the research limitations are discussed. Finally, further research directions are suggested.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

The aim of this study is to reveal the transition process of OBC members' motivation from being peripheral to core members for intention to use OBCs. To achieve this purpose, this chapter reviews the extant literature on the issues related with the aim of this study.

This chapter largely consists of four sections; OBC, organisational socialisation theory, IS adoption studies, and prior studies related to OBCs. First, the literature review focused on an OBC and its members' behaviour that helps us to understand the members' purposes of OBC use and predict why and how their purposes change over the course of time. Second, the literature review of organisational socialisation theory may provide to deep understanding of why and how OBC members' behaviours are evolved from pre-entry to affiliation stage from a socialisation perspective. Third, the literature review of IS adoption studies provides some knowledge to interpret why OBC members accept, continue, and infuse OBC from a utilisation perspective. Lastly, the research gap is identified and discussed from the review of previous studies related to OBCs.

2.2 Online Brand Community

2.2.1 Online Brand Community

The concept of community is historically situated in critiques of modernity. In the nineteenth and early twentieth century's, Community was a prominent concern of the great social theories, scientists, and philosophers and it also continues to be an important concern today (Muñiz and O'Guinn, 2001). One of the first studies regarding communities was undertaken by Tönnies in 1912 (Rothaermel and Sugiyama, 2001), he argues that there is a distinction between society and community. Society is "*as the communal life that is the humanity itself*" and it is mechanical, contractual,

individualistic, rational and urban. On the other hand, community is seen as private, intimate, customary, familial, emotional and rural (Rothaermel and Sugiyama, 2001).

The etymology of community originates from a word '*communis*' in Latin. The word '*communis*' is combined from the meaning of three words: '*cum*' and '*munus*' and '*unus*'. '*Cum*' means 'together' and '*munus*' means 'obligation' and '*unus*' means 'one' (Rothaermel and Sugiyama, 2001). Thus, Rothaermel and Sugiyama (2001) define that a community is "*as a group in which individuals come together based on an obligation to one another or as a group in which individuals come together to be one in purpose.*" Jang et al.(2008) also define community "*as an organisation of individuals or small groups having intention to get together with a sense of responsibility for other individuals.*"

In 1912, Tönnies categorised three distinct communities: (1) *community by kinship*, (2) *community of locality*, and (3) *community of mind*. '*Community by kinship*' and '*community of locality*' are established by nature, such as blood tie, descent, and geography and so on. On the other hand, '*community of mind*' refers to a collective that is established by collaboration and harmonized action for a common goal and it expresses the community of mental life. He argues that community of mind is truly an ultimate form of community in human life (Rothaermel and Sugiyama, 2001). Hillery (1955) also explains a community via three foremost criterion: locality, social interaction, and social tie. Karp et al. (1977) identify a community by three elements: sustained social interaction, a delineated geographical space and shared attributes and values. However, Lawrence (1995) argues that geographical boundary as a definition of community has become meaningless for individuals since modern technology development such as the internet.

The term '*virtual community*' coined by Rheingold (1993), who suggests one of the most well-known definitions of an online community is as a "*social group that appears from net when adequate people carry on those public discussions with enough time and sufficient human feelings and it is formed on the web with personal relationships in cyberspace*". He also defined that an online community is as "*a group of people who*

change words and ideas via the mediation of computer bulletin boards and networks and the people may or may not meet one another face to face". Hegel and Armstrong (1997) also define online communities as *"an collective of people who share common interests and communicate by electronic mail and chatting on the web with internet user groups using computer-mediated mechanisms."*

Tönnies (1967) argues that an online community is similar to a traditional community with the exception of the electronic communication medium which does not have a limited boundary over time and space. Some scholars argue that online communities have distinctive characteristics from traditional communities based on face to face communication (Yongjun *et al.*, 2010). Firstly, online communities are based on exchange activities via computer mediated communication (CMC) (Rothaermel and Sugiyama, 2001). Secondly, people participate voluntarily in online communities rather than arbitrary traditional communities (Bruckman, 1998) and, hence, online communities appear to be less hierarchical than traditional ones (Barney, 2004). Third, the cost of participating in online communities is lower (Sproull and Faraj, 1997) and it is free to join and drop out of online communities compared with offline based traditional communities (Barney, 2004). Further, the physical location restriction of people can be free by using online communities. (Lin, 2007) and allow participants to build their own identity in the cyber world (Turkle, 1995).

Since the twentieth century, to this day, the history of community is a magnificent tale of the modern period and consumption has a very important role in, and relation with, community; hence, the brand community is established on both classic and modern sociology as well as consumer behaviour (Muñiz and O'Guinn, 2001). Muñiz and O'Guinn (2001) define that a brand community as *"a specialised, non geographically bound community that is based on a structured set of social relationships among admirers of a brand"* and the strong consumer-brand relationships can be grown by the brand community. Bagozzi and Dholakia (2006) also define a brand community as *"a group of consumers with a shared enthusiasm for the brand and a well-developed social identity, whose members engage jointly in group actions to accomplish collective goals and/or express mutual sentiments and commitments."*

In 1991, Lasch argued that commerce is the great engine of modernity and the enhancement of consumer culture is a strong factor to be modern. Brand communities are social organism itself which help to build and maintain strong brands in the daily life of consumers and the places that make connection between brands and consumers as well as consumer to consumer (Muñiz and O'Guinn, 2001). A brand community consists of four relevant relationships: (1) *customer and product*, (2) *customer and brand*, (3) *customer and company* and (4) *customer and other customers* (McAlexander et al., 2002).

According to Muniz and O'Guinn (2001), there are the three different features between brand communities and other non-brand-related communities: (1) *consciousness of a kind*, (2) *rituals and traditions*, and (3) *sense of obligation to the community and its members*. Firstly, '*consciousness of kind*' is the main factor of a brand community and indicates an intrinsic tie that is established by members' feeling in the direction of one another. Secondly, '*rituals and traditions*' indicate the importance of help to keep and maintain on history, meanings, and culture of the brand community. Lastly, '*obligation to community*' means that community members should obligate to the brand community and its members.

McAlexander et al. (2002) suggests three additional features to explain brand communities in more detail: (1) *geographic concentration*, (2) *social context*, and (3) *temporality*. First, '*geographic concentration*' indicates the community members' location or place regarding distribution. Second, the '*social context*' explains the members' knowledge of a brand community. Thirdly, '*temporality*' depicts the durability of brand communities whether those are steady or periodic (Stokburger-Sauer, 2010).

As McAlexander et al. (2002) argue, before internet usage, brand communities existed and operated via face-to-face meeting because of geographical limitation. These are named to as offline or geographically bounded brand communities and many of them were initiated by companies. However, most brand communities have restrictions by location and accessibility constraints, therefore, the membership is limited and

members' interaction is in frequent (Madupu and Cooley, 2010).

McWilliam (2000) argues that the emergence of the internet by IT development can make the possibility to establish brand communities in cyber space without geographical constraint. The rapid development of internet technology enabled many brand communities to be settled on the World Wide Web (WWW) to bring consumers together without physical restriction. These communities are called to as virtual or online brand communities (Madupu and Cooley, 2010). The definition of an online brand community is "*a specialised and non-geographically bounded community based on a structured set of social and interpersonal relationships among consumers who admire the brand*" (Muñiz and O'Guinn, 2001). Online brand communities represent a marketplace communities where consumers or members are able to share and exchange information regarding products or services of brands as well as common interests on the web. These communities do not have any restrictions regarding geographic and temporal and physical boundaries and, therefore, consumers are able to communicate at any time regardless of their location (KimChoi *et al.*, 2008).

Lots of geographically bounded brand communities have moved to establish their communal group on the web as online community by taking advantage of rapid information technology (IT) development (Madupu and Cooley, 2010). Brand communities are not only additional communication channels between consumers and companies but also a way of linkage to devoted consumers of brand (Andersen, 2005). Therefore, some online brand communities are initiated by companies but others are created and sustained by consumers as individuals (Lee *et al.*, 2011). Some online brand communities are created on independent web sites while others are settled on portal sites such as Yahoo and Goggle and MSN Groups (Madupu and Cooley, 2010).

Hagel (1999) indicates that online brand communities have relation to four types of consumer needs: (1) *brand interest*, (2) *social relationship building*, (3) *transaction*, and (4) *fantasy*. Firstly, brand interest is a compulsory need to consumer for engaging in an online brand community. '*Communities of brand interest*' are appeared by sharing individuals' brand interest, knowledge, expertise, and brand passion. Secondly, in

communities, social and personal interaction is strongly developed by establishing relationship. *'Communities of relationships'* are also formed by individuals and the social relationship is established by sharing not merely the brand interest or passion but also life issues or experiences that not related to the brand such as healthy, love, or culture trend and so forth (Kozinets, 1999). Third, *'communities of transaction'* are focused on information exchange for facilitating economic exchange. It indicates that the members of online brand communities are sharing information regarding the brand to make purchase decisions. Lastly, *'communities of fantasy'* means that the online brand communities in virtual space provide the opportunity to establish new personal identities that provide imaginary worlds of fantasy. Individuals can make new identities that differ from the real world in online brand communities as such a fantasy world (Rothaermel and Sugiyama, 2001).

2.2.2 Classification of Online community Use Behaviours

Mcwilliam (2000) assert that Online brand communities (OBCs) offer *"a useful venue for consumers to share brand experience and information and to solve problems and to meet consumers and company representatives"*. Online brand communities provide these useful spaces on the web without geographical limitation. Similarly, an OBC has consumers as members who have different purposes for using the OBC such as gathering and sharing information, or building social relationship (Kozinets, 1999; Mathwick, 2002; Preece and Shneiderman, 2009). Preece and Shneiderman (2009) argue that an individual's behaviour can be changed according to one's purpose in daily use.

From Hagel's (1999) view, the purpose of OBC use can be divided into four types: (1) *purchase decision making*, (2) *relationship building*, (3) *recreational*, and (4) *interest sharing*. Firstly, OBC members are interested in transaction. For example, members gain information regarding a wide range of brand products or services from the OBC and also make decisions to purchase. Secondly, OBC members would like to find relationships through their shared behaviours regarding not solely their brand interests but also life experience or particular stories such as love stories, health problems, or

divorce and so on (Kozinets, 1999). Thirdly, individuals would like to build new personal identity in cyber space as with OBCs and enjoy the virtual life which differs from the real world. Finally, OBC members would like to share their interest, expertise and passion in online communities. Likewise, some scholars classify OBC members' behaviours by different purposes of OBC use.

2.2.2.1 Kozinets's Classification

In the context of online communities of consumption (OCC), Kozinets's (1999) studied online community members in terms of a marketing perspective. He classifies four different members' behaviours by relation with consumption behaviour and intensity of the social relationships: (1) *tourists* (2) *mingler* (3) *devotees* (4) *insiders*. [Figure 2.1]

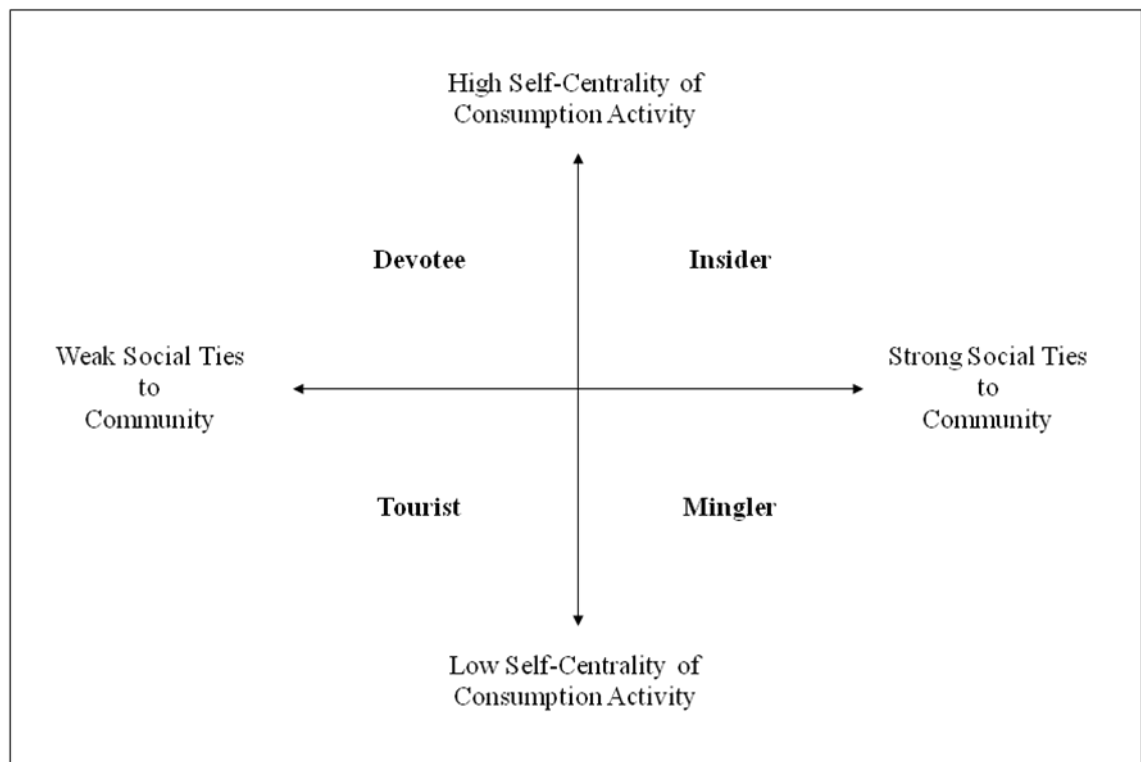
Firstly, the characteristic of '*tourists*' refers to members who lack a social relationship to the group and their consumption activities are simply for maintaining a superficial and temporary interest. Kozinets's (1999) argues that this behaviour appears from a consumption purpose of OCC use and this behaviour is most likely to emerge from members who are looking for information and, especially, by novice members of OCCs. Most novice members are likely to lack relationship and experience of consumption; hence, their purpose to use OCCs may be to gather knowledge from experiential members for purchase decision making. For this reason, their activities in OCCs are likely to be temporary without lack of contribution.

Secondly, the trait of '*minglers*' indicates members who keep strong social ties, but their interests of consumption are likely to be only perfunctory. This behaviour appears by social relationship building and emerges from members who use OCCs for establishing interpersonal relationships in OCCs. Their purpose of OCC use is also likely to be for recreation with personal identity in cyber space.

Thirdly, the feature of '*devotees*' refers to members who have a strong and enthusiastic interest in consumption activities and few social attachments to the group. This behaviour appeared as a consumption purpose of OCC use and emerges from members

who have a strong brand loyalty and passion. Kozinets's (1999) argues that members of devotees' behaviour are likely to be interested in and have interpersonal relationships with others who have the same interests of brand in OCCs.

Figure 2. 1 Types of Virtual Community of Consumption Member



(Source: Kozinets, 1999)

Lastly, the characteristic of '*insiders*' indicates members who have strong brand loyalty and social relationships in OCCs. This behaviour is likely to appear among members who have a strong interest in both consumption behaviour and social relationships and both are the purpose of OCC use for this behaviour's members. Kozinets's (1999) asserts that this behaviour also emerges from members who have experience of OCC use over a long time with strong interpersonal relationships with other members and who have sufficient knowledge of brand with a strong brand passion.

2.2.2.2 Mathwicks' Classification

Mathwick (2002) studied online transactional community (OTC) members to investigate the nature of relational behaviour in online on marketing perspectives. Mathwick's study was focused on the relationship between transactional community sponsors and their patrons. The prerequisite of this study was that online behaviours in transactional community would be appeared by different relational norms and it investigates two dimensions that are both exchange and communal relationship, similarly, consumption and social relationship of Kozinets (1999)'s study. The study developed a typology of relationship orientation by consumer online behaviours and used established measures of exchange and communal orientation and behavioural indicators of online interaction such as chat, or feedback. The behaviours of consumers in transactional online communities are classified by four behavioural clusters: (1) *lurkers*, (2) *socialisers*, (3) *personal connectors*, and (4) *transactional community members*.

Firstly, members who have '*lurkers*' behaviour tend to have low relation with exchange and communal activities. They stay on the sidelines in the community and their participation is normally for observing and buying products. They are not interested in connecting with other members regarding commercial, interpersonal or sharing interests. The '*lurkers*' behaviour is similar to '*tourists*' in Kozinets' classification (Kozinets, 1999). Secondly, '*Socialisers*' behaviours indicate members who are much more interested in communal relationships than exchange relationships. They are interested in sharing their interest such as hobbies and recreational activities and politics and religion. They are the most active members toward self-help and interpersonal relationship in a virtual environment than other clusters of members. This behaviour is similar to '*minglers*' behaviour in Kozinets classification (Kozinets, 1999). Thirdly, '*personal connectors*' means members who are not interested in intrinsic value as social interaction but they are close with other members related with their interest. This behaviour's members are significantly loyal customers to the brand as well as online retailers. Kozinets (1999) classifies this behaviour group as '*devotees*' (Kozinets, 1999). '*Transactional Community Members*' indicate members who have stronger communal

and exchange relationships than other groups. This group is more likely to provide feedback about brand products and services and to participate in online dialogue with other members as fellow patrons. This group comprises one of the most loyal customers for online community sponsors with strong brand loyalty and social relationship in online community. This behaviour is similar to *'leader'* in Kozinets' classification (Kozinets, 1999).

2.2.2.3 Preece and Shneiderman's Classification

Preece and Shneiderman (2009) classify members' behaviours of online communities in the perspective of technology mediated communication (TMC) by four types: (1) *readers*, (2) *contributors*, (3) *collaborators*, and (4) *leaders*. The study was focused on revealing what usability factors and sociability factors affect TMC of members in online communities. This study presents the *'Reader-to-Leader Framework'* which explains how people join online communities through first reading and how people contribute and collaborate and lead to online community activities.

Firstly, from a usability perspective, *'readers'* behave by gathering information related to their interest and most of this behaviour is likely to appear in novice members. Therefore, for these behaviours' members, this study indicates that clear navigation paths to easy control and interface design and attractive and well-organised layout are significant factors to encourage participating in online community for the reader. In sociability perspectives, familiar people's recognition and charismatic leaders with visionary goals can affect the readers' participation, safety, and privacy, and understandable and clear norms or polices are significant factors to lead *'readers'* participation.

Secondly, *'contributors'* indicates members who start to act in visible, but not vital online communities. Hence, from a usability perspective, the significant factors to lead contributors' participation are visibility for users' contributions and frequency of views and ratings and comments by other members and low threshold interfaces. The contribution is an individual act that adds to a larger communal effort such as adding a

picture or a comment to the online community. Therefore, from a social perspective, this study also points out that it would be important whether members are recognised by others or not, when the ‘contributors’ act in online communities. Preece and Shneiderman (2009) argue that the ‘*contributors*’ are interested in building relationships with other members through their activities; therefore, high quality and quantity of contributions would help them to acquire a strong social tie in the communities.

Thirdly, in the usability perspectives, Preece and Shneiderman (2009) indicate that collaboration tools are important to communicate within groups and visible recognition and rewards for ‘*collaborators*’ is one of the significant factors to increase their engagement in online communities via TMC. From a sociability perspective, this study claims that an atmosphere of empathy and trust can promote their sense of belonging and willingness to work within this group. Furthermore, respect and reputation from other members lead them to make more collaboration in online communities.

‘*Leaders*’ indicates members who have high visibility in an online community and their effort will be important to other members and online communities for vitalisation. From a usability perspective, ‘*leaders*’ would get special tributes or rewards from other members and the intrinsic rewards can drive leaders to make more contribution and collaboration. ‘*Leaders*’ also have special powers such as promotion agenda or expending resources and mentorship that appears from comments from other members as mentees. From a sociability perspective, ‘*leaders*’ have an honoured position as intrinsic rewards and respect from other members via the largest number of contributions and assistance to members and solving others problems.

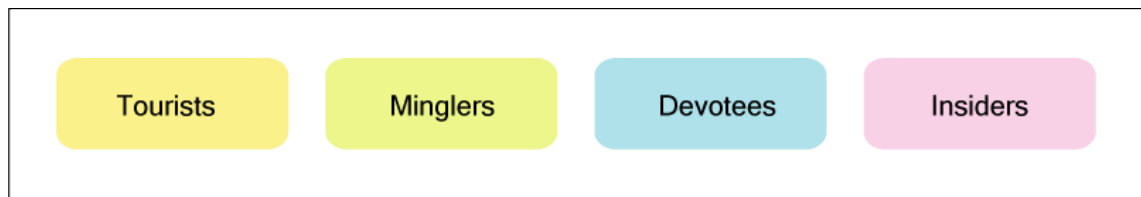
To sum up, according to previous studies, online community members can be clustered by four aspects both in marketing and TMC perspectives. Furthermore, the members’ behaviours of an online community can be classified by usability and sociability perspectives [Table 2.1]. It indicates that the members’ behaviours of OBC use should be focused on both aspects of socialisation and OBC utilization.

Table 2. 1 Types of Virtual Community of Member

Online community members' behaviours			
Researchers	Four behaviours in OBC	Criterion	Perspective
Kozinets (1999)	Tourists/ Minglers / Devotees / Insiders	Consumption behaviour/ Social tie	Marketing
Mathwick (2002)	Lurkers/ Socialisers/ Personal connectors/ Transactional community members	Exchange relationship/ Communal relationship	Marketing
Preece and Shneiderman (2009)	Reader/ Contributors/ Collaborators/ Leaders	Usability factors/ Sociability factors	Technology-mediated Communication

2.2.3 OBC Members' behaviours Classification in Marketing Perspective

In previous studies, some scholars (Kozinets, 1999; Mathwick, 2002; Preece and Shneiderman, 2009) classify online community members' behaviour from a marketing perspective and technology mediated communication (TMC) perspective. In the context of OBC, this study is categorised into four members' behaviours from prior studies (Kozinets, 1999; Mathwick, 2002; Preece and Shneiderman, 2009). The classification of members' behaviours for this study is mostly based on Kozinets' (1999) study exploring members' behaviours focused on consumption and social relationship based on consumption online communities. The context of online communities in consumption has a strong similarity with OBC today; therefore, this study classifies the terminologies of OBC members' behaviours that are adopted from Kozinets' s (1999) classification. [Figure 2.2]

Figure 2. 2 Four OBC members' behaviours

(Adapted by Kozinets, 1999)

2.2.3.1 Tourists' behaviour

'*Tourists*' behaviours represents OBC members who merely observe other members' opinions and the purpose of OBC use is to gather information but most of them may not contribute to others (Kozinets, 1999; Mathwick, 2002). Most of these behaviours are likely to be emerged by novice members who have recently joined OBCs and are looking for brand information for purchase decision making. Most members in this stage do not contribute to others; thereby, most may have no or a weak social tie in OBCs (Kozinets, 1999; Mathwick, 2002).

2.2.3.2 Minglers' behaviour

'*Minglers*' behaviour indicates members who have strong social ties or crave to build social relationships with other members in OBCs (Kozinets, 1999). Most of these behaviours are likely to appear from members who have recently purchased branded products or services because they may desire to gain more information from other members regarding usage of products and services. Furthermore, they may get more feelings of strong membership by purchasing the brand in an OBC. Therefore, they may start to contribute to share their purchase experience of the brand and crave to establish interpersonal relationship in an OBC. Members who have this behaviour are likely to help other novice members and to share information regarding life and social issues such as greetings, health and so on rather than consumption activities because they may have little knowledge of the brand and their purpose of OBC use is mostly focused on building a strong social bond in this stage (Kozinets, 1999).

2.2.3.3 Devotees' behaviour

'Devotees' are members who have a strong interest or loyalty regarding a brand which belong in an OBC (Kozinets, 1999). This behaviour of members makes concentration much more to consumption activities such as sharing brand knowledge and information rather than social activities (Kozinets, 1999; Mathwick, 2002). Even if they are not actually interested in social activities, it does not mean that they do not have social bonds. The members in this behaviour are mostly knowledgeable regarding the brand and its products or services and they are likely to have strong interpersonal relationships with other members who have strong brand interest and brand loyalty. Most of them are likely to commit and contribute by sharing their professional brand knowledge for fertilising OBCs (Kozinets, 1999; Mathwick, 2002).

2.2.3.4 Insiders' behaviour

'Insiders' behaviours indicate members who have strong brand loyalty as well as social ties with other members in an OBC (Kozinets, 1999). They have a professional knowledge and insight of brand products as well as new product development of the brand. Moreover, they have a strong interpersonal relationship with other members (Kozinets, 1999). Hence, they are likely to lead members' consumption activities and social activities in OBCs. The members of this behaviour commit and make valuable contribution to OBCs by sharing their brand knowledge but also other valuable information for social activities. Moreover, they strive to help members by replying to and explanation of inquiries regarding brand, product usage and OBC usage and so on. Therefore, most of them are likely to be known by other members as an honoured position in OBCs (Kozinets, 1999; Preece and Shneiderman, 2009).

2.2.4 Transition of Members' behaviours in Online Communities

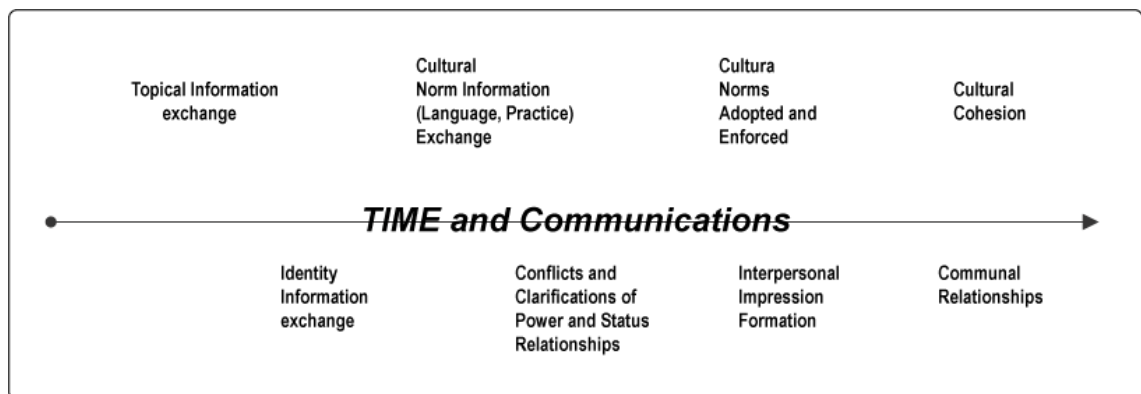
2.2.4.1 Members' transition by Time and Communication

Kozinets (1999) explain the relationship development pattern by time in online

communities of consumption and interpersonal relationship [Figure 2.3].

From the perspective of consumption, Kozinets's (1999) argues that the members' cooperation via social relations and culture can make to develop their consumption knowledge. Firstly, members start to exchange topical information from their interest of consumption. Secondly, their consumption knowledge is educated along with information of the cultural norm in groups such as particular concepts and language, or the identities of members. Thirdly, cultural cohesion grows and ripens via members' shared knowledge and sympathy.

Figure 2. 3 Developmental Progression of Individual Member Participation in Online Communities of Consumption



(Source: Kozinets, 1999)

On the other hand, in the perspective of social identification, the individual identify her/himself from their consumption activity. For example, brand interest can be seen as a personal identity and psychological self-concept (Kozinets, 1999). Next, the individual will pursue the value of relationship in a community. S/he will tend to build social relationships, then, finally will possess a strong communal relationship with other members via shared consumption and passion (Kozinets, 1999).

2.2.4.2 Members Transition by Different Modes

From a marketing perspective, Kozinets's (1999) describes OBC members' behaviours

by four different modes in online communities of consumption and Mathwick's (2002) view has many similarities with Kozinets' explanation.

Information Mode

The informational mode is the interaction of factual information in online communities in consumption (OCC) (Kozinets, 1999). Behaviour in the informational mode is that members use online communications for simply gathering information of brand products or services that are posted by experienced members as real users of the brand. This behaviour mostly appears in *'tourists'* and *'devotees'* (Kozinets, 1999). The social orientation of communication is noticeably individualistic and communications focus on short-term personal gain. It means that when they accomplish their purpose of information gathering, they normally stop using OBCs. Therefore, members in this mode are most likely to ignore other members' needs (Kozinets, 1999). In other words, they simply use resources that from other members and do not give any benefit back to others. Mathwick (2002) explains that the *'tourist'* and *'devotees'* behaviours are similar with *'lurkers'* and *'personal connectors'* respectively in online transactional communities (OTCs).

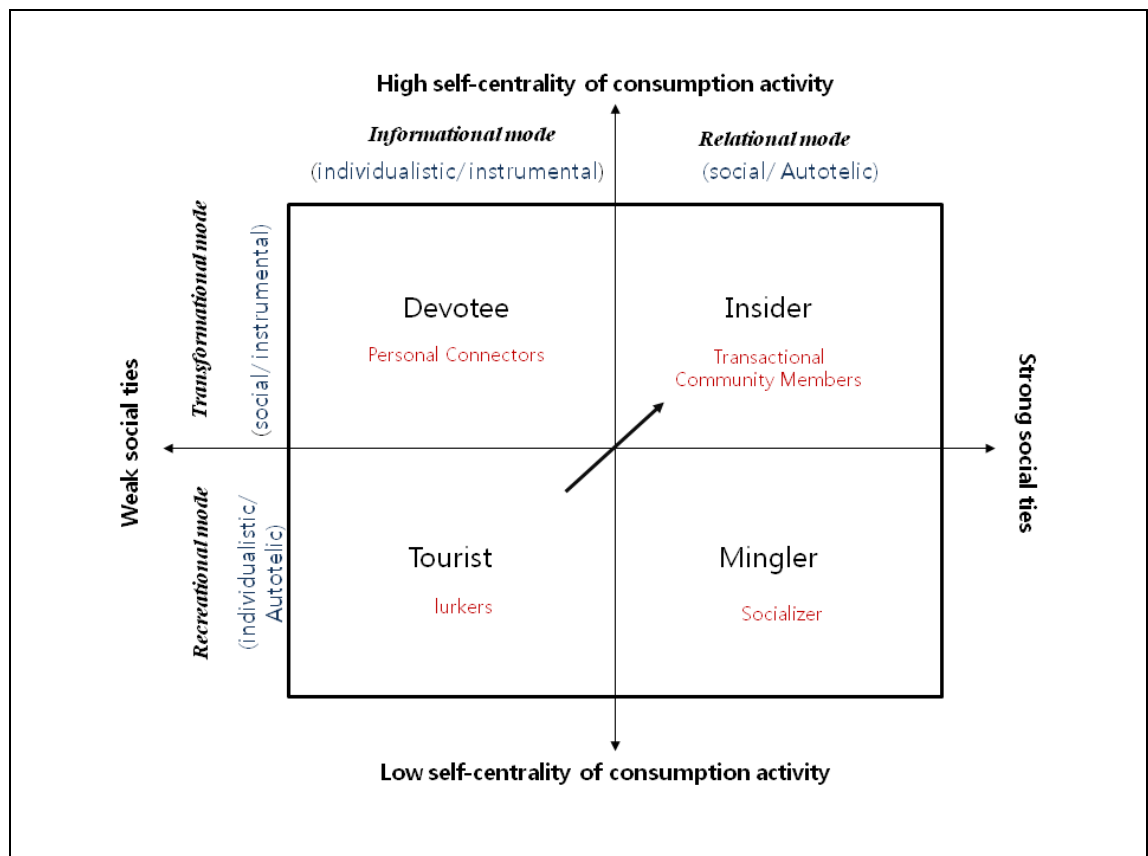
Relational Mode

The relational mode is a communication focus on developing social relationships in an OCC (Kozinets, 1999). This behaviour mostly appears in *'minglers'* and *'insiders'*. For members of the relational mode, the extension of social interaction with other members is significant and valuable in OCC use; therefore, they focus on longer-term personal benefits or achievements via cooperation and communal standards with other consumption members. They obligingly answer the questions of newcomers and post detailed information regarding inquiries on the FAQs (Frequently Asked Questions) board (Kozinets, 1999). Mathwick (2002) explains this relational mode as obligations toward others. *'Socialisers'* and *'transactional community members'* are explained as *'minglers'* and *'insiders'* in the context of OTC (Mathwick, 2002).

Recreational Mode

The recreation mode of online communication represents members' behaviours that tend to be selfish in online communities. The members' communication behaviour in the recreation mode is the objective and their purpose of community use is for short-term social gain (Kozinets, 1999). 'Minglers' and 'tourists' are most likely to use online community in this interaction mode (Kozinets, 1999). Their social intercourse and relations tend to stay on superficial levels with others. For example, they contact with other members by small talk such as greetings, asking about someone's geographical location or physical description (Kozinets, 1999). In addition, they are often doing a considerable amount of flirtation. Mathwick (2002) depicts 'minglers' and 'tourists' as 'socialisers' and 'lurkers' from an OTC perspective.

Figure 2. 4 Transition of Communication Modes in Online Community



(Source: Kozinets, 1999)

Transformational Mode

The transformation mode indicates that members communicate for achieving some other objectives and social gain with longer-term interaction (Kozinets, 1999). This behaviour mode makes members' activities appear more frequently than other behaviours. Most '*insiders*' have this behaviour and their organisational skills will give them a power of their concern about consumption activities. This transformational activity will also affect to '*devotees*' whose consumption passion are stronger than other groups such as '*minglers*' and '*tourists*'. Members who have transformation behaviour will inspire others and themselves to seek positive change regarding consumption activities (Kozinets, 1999). In the context of OTC, '*personal connectors*' and '*transactional community members*' are represented by members who belong in the transformational mode (Mathwick, 2002).

To clarify, '*tourists*' are related with the informational and recreational modes; and '*minglers*' have relationships with the recreational and relational modes. In addition, '*devotees*' are involved in the informational and transformational modes; and lastly, '*insiders*' belong with the transformational and relational modes (Kozinets, 1999) [Figure 2.4].

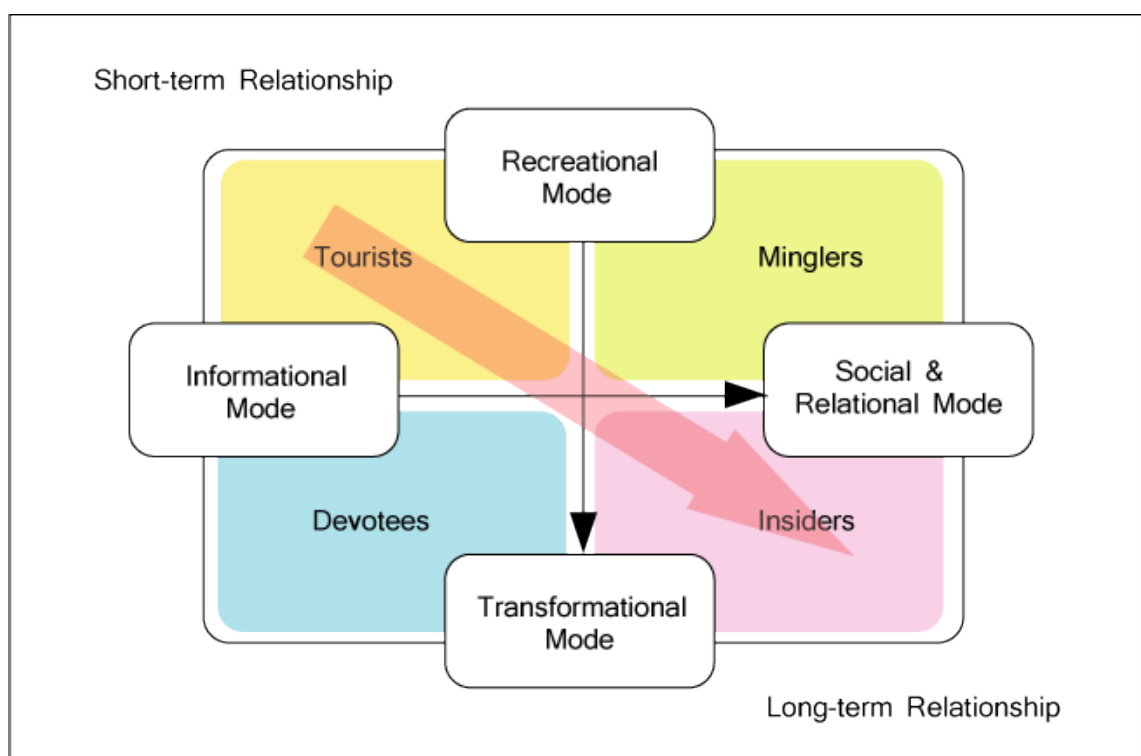
Kozinets's (1999) argues that OCC members are normally evolved from the informational mode with weak social ties to the relation mode with a strong social bond. Furthermore, OCC members are also evolved from the recreational mode with low consumption activities to the transformational mode with high consumption activities.

In other words, it can be explained that, firstly, a '*tourist*' can be a '*devotee*' by accumulation of knowledge of consumption. Secondly, a '*tourist*' can be a '*mingler*' by building social relationships. Thirdly, a '*mingler*' can be a '*devotees*' or '*insider*' by accumulation of consumption knowledge. Lastly, a '*devotee*' can be an '*insider*' by developing their social relationships with other members. To sum up, members can transit from a '*tourist*' to an '*insider*' by accumulating knowledge of consumption and establishing strong social bonds (Kozinets, 1999).

2.2.5 OBC Members' behaviours and Transition

OBC members' behaviours may transit from *'tourist'* to *'insider'* over time (Kozinets, 1999). According to Kozinets view, the transition of OBC members' behaviours can be explained as below. [Figure 2.5]

Figure 2. 5 The Transition of OBC Members' behaviours



(Adapted by Kozinets, 1999)

2.2.5.1 Factual Informational Mode to Social & Relational Mode

As Kozinets (1999) argues, some members use an OBC merely for gathering information or sharing information regarding only brand which is their interest. For these members, the quality of information would be the most important determinant for continuation of use of the OBC. Furthermore, the behaviour of these members is likely

to be individualistic because they are most likely to ignore the needs of other community members and engage in only issues that relate to the brand. Most of these behaviours are likely to appear from novice members who lack brand knowledge and social bonds as *'tourists'* in the OBC (Kozinets, 1999; Mathwick, 2002). For them, the factual information is the most significant determinant for maintaining OBC use. Furthermore, the factual information would be an important factor for *'devotees'* because most of them are interested merely in the brand and its knowledge sharing rather than social activities. On the other hand, some members use an OBC not only for the purpose of information gathering but also for social relationship building by sharing knowledge and helping other members. These activities may help to gain a strong bond in OBCs and interpersonal relationships would be one of the considerable determinants to OBC use. The members of this behaviour are most likely to contribute OBCs by obligingly answering other members' questions and sharing useful and helpful knowledge or information regarding brand but also social activities such as life issues, health, hobby, and economic and political issues. Most of these behaviours are likely to appear in experiential members as *'minglers'* and *'insiders'* in the OBC (Kozinets, 1999; Mathwick, 2002). However, *'minglers'* contributions would be much less than *'insiders'* because of the lack of brand experience and knowledge rather than *'insiders'*. As argued by Kozinets (1999), the members' behaviours of OBCs are likely to move from a factual information mode to social and relation mode over time.

2.2.5.2 Recreational Mode to Transformational Mode

The behaviours of the recreational purpose in an OBC use mostly appear from *'tourists'* who have lurking behaviours (Mathwick, 2002) and *'minglers'* who are mostly interested in social activities rather than consumption activities (Kozinets, 1999; Mathwick, 2002). Most of them are most likely to use an OBC for finding and sharing information that relates to social issues such as entertainment articles, comics, or movies. They would enjoy having a chat with others but conversation is most likely to have no correlation with the brand. They may greet others and ask geographical location, or physical description. On the other hand, the transformational mode is represented by *'devotees'* and *'insiders'* behaviours. Most of these members have a strong

interpersonal relationship and brand knowledge. The purpose of OBC use in the transformational mode is not merely for building social bonds but also sharing valuable knowledge and information to help others as an obligation (Kozinets, 1999; Mathwick, 2002; Preece and Shneiderman, 2009). As argued by Kozinets (1999) and Preece and Shneiderman (2009), OBC members' behaviour is likely to transit from the recreational to transformational mode according to accumulation of knowledge as time passes.

2.2.5.3 Consumption Purpose to Social Relationship Building Purpose

An OBC has two specific traits that consumers join and use for OBC consumption and relationship building purposes (Kozinets, 1999). For example, consumers who want to buy a brand product belonging in an OBC may want to gain information regarding the brand from experiential consumers. Hence, the consumers are likely to join and become a member of an OBC then start to investigate and collect the information of the brand for purchase decision making. This behaviour for consumption is mostly apparent in novice members who have '*tourists*' behaviour. Furthermore, when experiential members who have a strong brand loyalty want to buy new products that belong in the OBC, they would like to gain information from others who have experience in the new products' use. This also indicates the consumption purpose of OBC use (Kozinets, 1999). On the other hand, after novice members purchase the brand products or services, they may want to share their experiences. Moreover, they may have some inquiries regarding the brand usage – products or services - for more useful way. Therefore, they may participate in OBC activities to leave comments regarding consumption activities on the board and it may be a starting point to them for establishing interpersonal relationships with others. Furthermore, they also may try to share the information that is not even related with the brand such as personal description or life issues to establish interpersonal relationships. These behaviours may help to build social bonds in OBCs and it is a social relationship purpose of OBC use. In addition, experiential members who have a strong brand interest and loyalty such as '*devotees*' or '*insiders*' may want to share their brand knowledge for building more strong interpersonal relationships with other devoted members in OBCs. This is also a social relationship building purpose of

OBC use (Kozinets, 1999). As argued by Kozinets (1999), members' behaviours are likely to transit from the consumption to social relationship building purpose in OBCs.

2.2.5.4 Short-term to Long-term Relationship

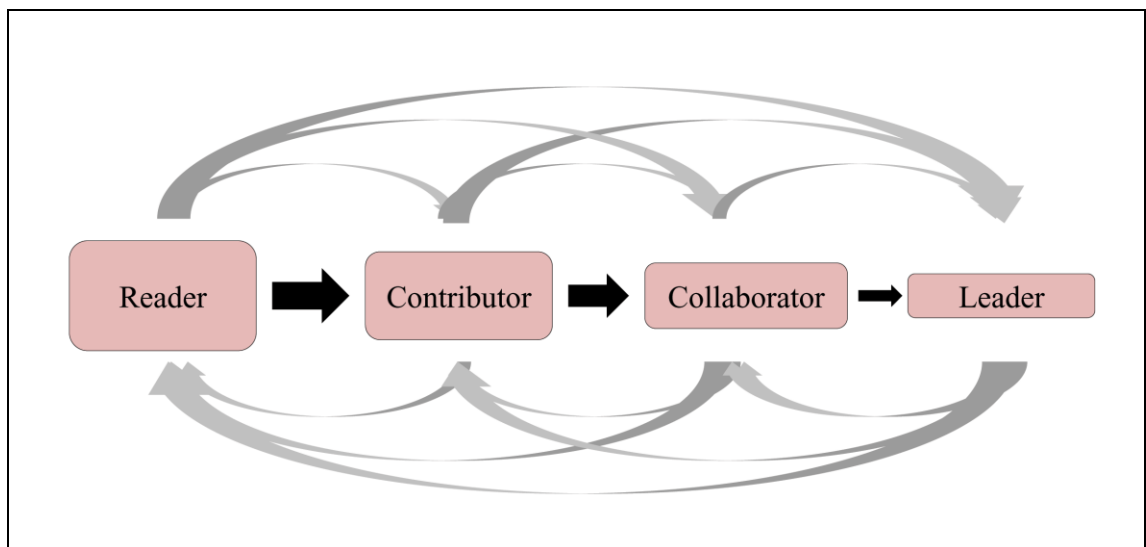
In online transaction communities, Rothaermel and Sugiyama (2001) argue that matured members who use a community with long standing are more likely to participate in e-commerce activities rather than novice members. In detail, firstly, they explain that novice members tend to be inactive and look at the community activities from peripheral line and argue that this behaviour is a rule of online internet communities. Secondly, once the novice members feel more relaxing, comfortable and adaptable within a particular community, they may start to engage in the community's activities (Preece and Shneiderman, 2009). As time goes on, thirdly, they will gain interpersonal relationships through experiential progress. Lastly, the members begin to engage in e-transaction through the community. Similarly, in the OBC context, as argued by Kozinets (1999), a member is likely to progress from a *'tourist'* to an *'insider'* by long-term usage of an OBC. At first, a person who has recently joined and become a member as a novice may want to learn how to use or gain other members' opinions regarding the brand products or services in an OBC. The novice member may also use the OBC for information gathering purposes as a *'tourist'* to make purchasing decisions of the brand. After purchase and use of the brand products or services, the novice member may want to share her/his brand experience with other members or s/he may want to learn about the brand usage – products or services - from other members. Furthermore, according to the number revisits, s/he is adapts to the community functionally and emotionally and they may start to participate in the OBC activities by posting some inquiries or greeting other members as *'minglers'* to establish interpersonal relationships in the OBC. With the progression of time, the member may start to build interpersonal relationships with other members and may become more knowledgeable as a *'devotee'* by exchange and accumulation of brand knowledge. Furthermore, s/he may get a strong brand passion or loyalty that is affected from other devoted members and begin to make contributions to the OBC. As a result, this process of behaviour ultimately enables a member to build strong bonds with other members in consumption aspects as well as from a social

relationship perspective and this behaviour is represented by ‘insiders’.

2.2.6 OC Members Transition from a Technology Mediated Communication Perspective

Preece and Shneiderman (2009) argue that members transition can be explained by the level of social participation and cooperation in the TMC (Technology Mediated Communication) perspective and the successive levels of social participation can be categorised as reading, contributing, collaboration and leading. They argue that members’ activities can generally be progressed from ‘reader’ to ‘leader’ and propose a ‘Reader-to-Leader framework’ as shown in Figure 2.6.

Figure 2. 6 The Reader-to-Leader Framework: Motivation Technology-Mediated Social Participation



(Source: Preece and Shneiderman, 2009)

Preece and Shneiderman (2009) also assert that the ‘Reader-to-Leader framework’ can be explained as members’ transition but is not a perfect or complete description, and members do not always progress from one to another. However, they argue that this simple framework is a useful and basic description regarding what many users do. The thickness of the black arrows and the size of square indicate the decreasing number of

members who transit from one form of participation to another. The thin grey arrows point out how members can also transit in a non-linear mode to participate in different ways (Preece and Shneiderman, 2009).

Preece and Shneiderman (2009) describe that a novice member as a '*reader*' begins by doing simple things such as searching and reading information that does not take much effort or require her/him to expose her/himself. They metaphorically depict this activity as 'dip their toe in'. Subsequently, the member starts to contribute by posting some comments or photos as a 'contributor'. These activities start from a growing sense of confidence regarding community use and the confidence is made by repeated visits to the communities. Furthermore, the revisit behaviour can develop interpersonal relationships with other members and it empowers the member to collaborate in a community's activities with others as a '*collaborator*'. Finally, the members can accumulate lots of knowledge and gain abilities to help and lead the other members and the community as a '*leader*'. Preece and Shneiderman (2009) assert that at least two levels as '*collaborator*' and '*leader*' occur during the maturation stages of participation in online communities.

2.2.7 OBC Members' behaviours in Technology Mediated Communication Perspective

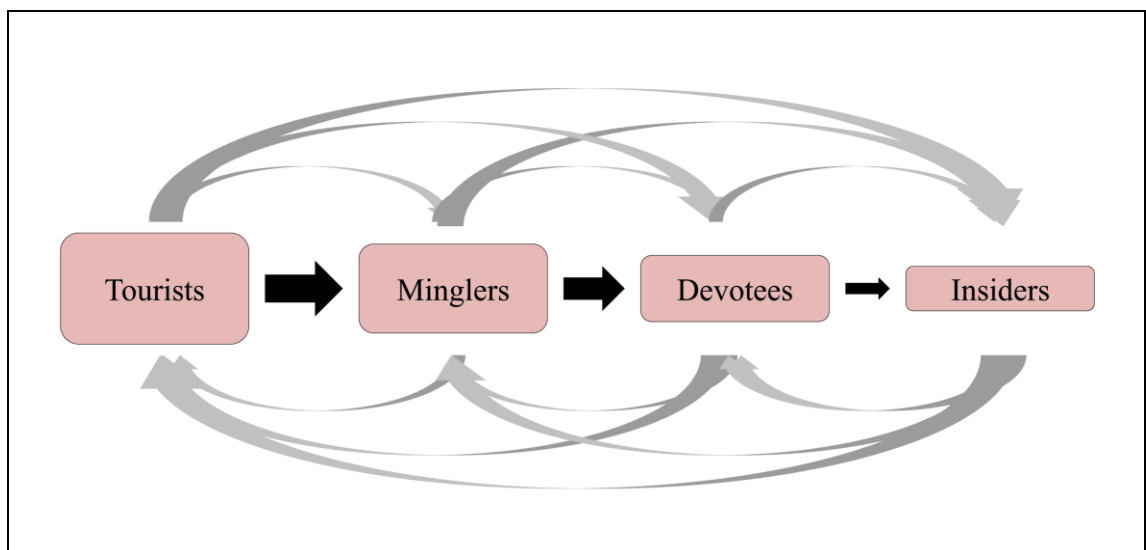
Preece and Shneiderman (2009) suggest a '*Reader-to-Leader framework*' and assert that a virtual community member will advance '*reader*' to '*leader*'. Compared to Kozinets' (1999) argument, this phenomenon can also be explained as a '*tourist-to-insider framework*' in the OBC context.

Preece and Shneiderman (2009) explain that a '*reader*' who has recently become a member of an OC behaves merely for information finding and reading as a '*tourist*' in the OBC. As time goes by, the member starts to make some contributions such as adding some comments on the bulletin board in the community and they also start to establish interpersonal relationships with other members as '*minglers*' in the OBC.

Subsequently, s/he becomes a *'collaborator'* discussing and cooperating with other members to share information regarding their interests but s/he is not likely to interact with anyone as a *'devotee'* in the OBC. *'Devotees'* mostly interact with other members who are knowledgeable regarding the brand and have a strong brand passion and loyalty in the OBC (Kozinets, 1999; Mathwick, 2002). Finally, the collaborator becomes a leader who has powerful knowledge and strong social bonds in the community and typically contributes the largest number of comments. The *'leader'* is a more active member than other types of members in the community as an *'insider'* in the OBC.

However, Preece and Shneiderman (2009) argue that members do not always progress from one to another, but these steps are a useful basis to describe what many users do. The OBC is a community of technology mediated communication via the internet; hence, *'Reader-to Leader framework'* can be transformed as *'Tourist-to-Insider framework'*. As a result, most OBC members' progress is able to be explained in Figure 2.7.

Figure 2. 7 The Tourist-to-Insider Framework in OBC



(Adapted by Preece and Shneiderman, 2009)

To sum up, prior studies show that there are different purposes for using an online community and consumers' purposes are evolved by accumulation of knowledge

regarding consumption as well as social ties in an online community. Furthermore, some scholars argue that there is a transition process to move to being a leader from a novice member. An OBC is an organisation. Therefore, for more specific investigation of this transition phenomenon, this study looked at organisation socialisation theory in the next section.

2.3 Organisational Socialisation

To understand OBC transition processes more specifically, this study investigates organisational socialisation theory because Kozinets's (1999) argues that the individual's purpose of OBC use evolves from information gathering to social relationship building to contribute to the OBC. The organisation is a social group which distributes tasks for a collective goal (Haski-Leventhal and Bargal, 2008; Maria L, 1997). An OBC is a social group that appears on the web (Rheingold, 1993) to aggregate people who share brand interest and communicate by computer-mediated mechanisms (Hagel, 1999) for collective goals such as purchase making decisions and requiring products or service quality improvement of the brand or demand new product development (Füller, 2006; Füller *et al.*, 2009; Kozinets, 1999). As a result, the OBC has an organisation role, today. Hence, the process of organisational socialisation would be helpful to understand OBC transition process.

2.3.1 The Definition of Organisational Socialisation

Scholars of organisational behaviour have been interested in understanding how individuals are socialised into organisations (Feldman, 1976; Haski-Leventhal and Bargal, 2008). Organisational socialisation is "*the process by which an individual acquires the social knowledge and skills necessary to assume an organisational role*" (Van Maanen and Shein, 1979) and "*acquires the attitudes, values knowledge and expected behaviour needed to participate as organisational members*" (Cable and Parsons, 2001; Van Maanen and Schein, 1990). Organisation socialisation guarantees the permanence of central values and norms that provide a framework to employees for

coordinating with other employees and responding to actions in their work environment (Bauer *et al.*, 1998). Therefore, organisational socialisation is fundamental to organisations (Cable and Parsons, 2001).

2.3.2 Three Stage of Organisational Socialisation

Chatman (1991) argues that individuals as newcomers are more likely to be internalised by spending more social time in the organisation. Haski-Leventhal and Bargal (2008) argue that, firstly, the individual as a newcomer may negotiate her/his roles and secondly, become a significant member in the working group. Thirdly, the individual strives to change the organisational environment via individualisation. Cable and Parsons (2001) explain organisational socialisation from the perspective of individualisation by three aspects: (1) *information acquirement*, (2) *making sense of the new environment*, and (3) *individual's commitment*. Firstly, on first entering an organisation, a newcomer may want to assure the sustainability of the value, norm and culture of the organisation through information acquirement. Secondly, s/he may try to make sense of belonging to the organisation. Lastly, s/he may become a member who has psychological and emotional attachment and feelings of obligation to the organisation.

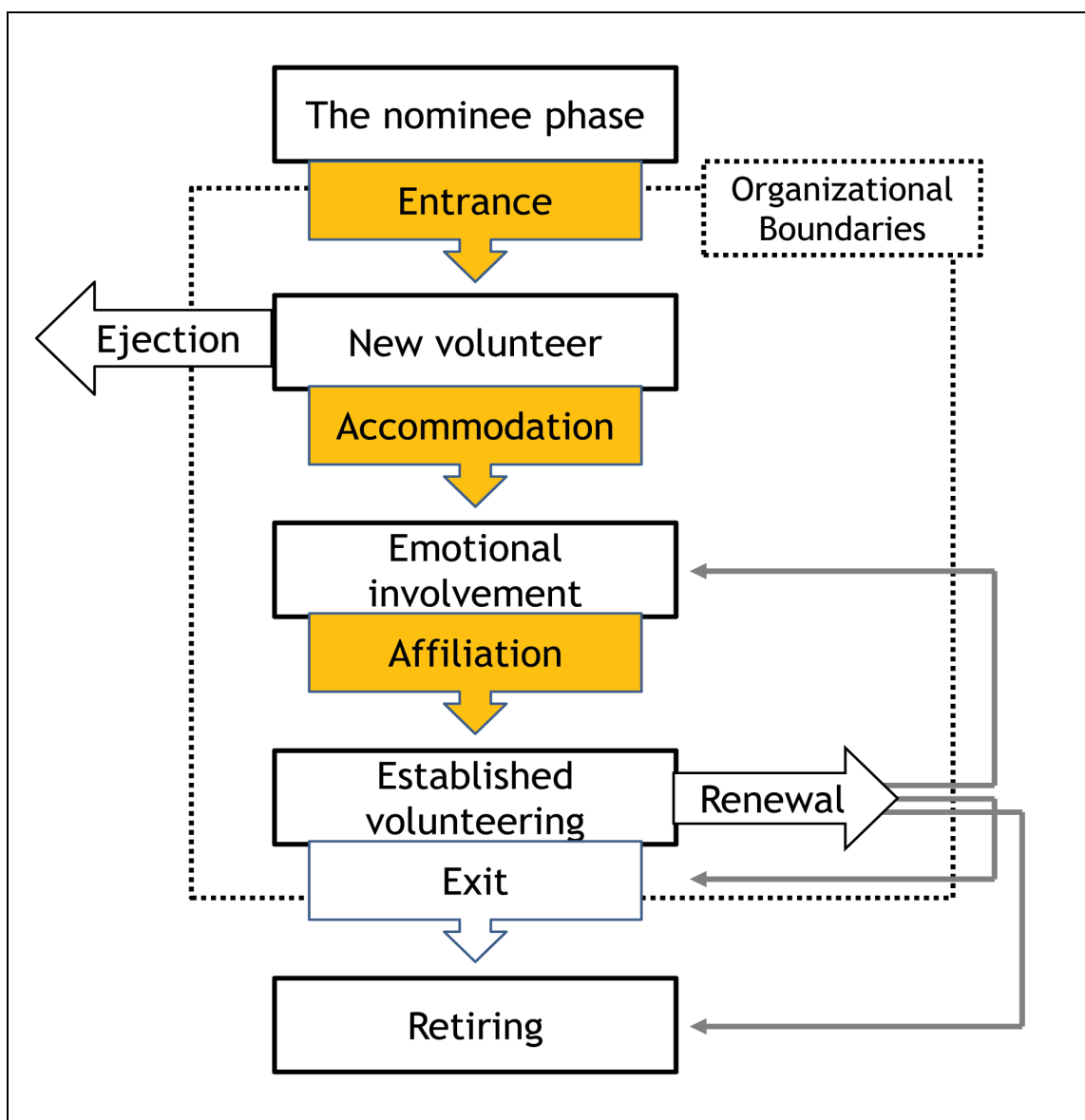
Numerous scholars classify the organisational socialisation process by three stages: (1) *anticipatory or early socialisation stage*, (2) *accommodation stage*, and (3) *adaption stage* (Bauer *et al.*, 1998). Firstly, the anticipatory or early socialisation stage refers to a pre-entry stage that individuals prepare themselves to join in an organisation. Secondly, the accommodation stage represents that people enter the organisation and learning the job and lastly adaption stage indicates that people reach as the newcomers become full members.

2.3.3 Three stage of Socialisation in Voluntary Organisation.

Haski-Leventhal and Bargal (2008) classify the socialisation stages which are sometimes sequential for an individual to be a dedicated member of an voluntary

organisation: (1) *pre-entry stage*, (2) *accommodation stage*, and (3) *affiliation stage*. The first stage is the pre-entry stage in which an individual collects information on the target organisation. In the accommodation stage, an individual has already joined the organisation and makes an effort to be part of the organisation through interaction with existing members. S/he also identifies a role in the organisation and becomes familiar with the given tasks. Finally, in the third stage of affiliation, the individual is more affiliated with the organisation and becomes a core member in its circle [Figure 2.8]

Figure 2. 8 The Volunteering Stages and Transitions Model



(Source: Haski-Leventhal and Bargal, 2008)

2.3.3.1 Pre-entry Stage

Haski-Leventhal and Bargal (2008) define the '*entrance*' stage as the pre-entry stage. The study argues that a volunteer applies to join an organisation and become a newcomer via the '*entrance*' transition. Firstly, a volunteer is likely to look for initial information on the organisation, then, compare with their expectation for the organisation (i.e. what the organisation activities will give her/him). Subsequently, s/he makes a decision to join or not. When s/he accepts and joins the organisation then a volunteer becomes a newcomer (Haski-Leventhal and Bargal, 2008). The newcomer is not a skilled member, therefore, strives to collect information for the job and start to learn the culture, knowledge, attitude, and roles and so on (Bauer *et al.*, 1998). However, if the newcomer is disappointed with the new job in the organisation, s/he may not intend to work; then, decide to leave (Haski-Leventhal and Bargal, 2008).

2.3.3.2 Accommodation Stage

An important component for the organisation socialisation process is '*sense making*' in a new environment of the group or organisation (Weick, 2001) In the accommodation stage, the newcomer may become an emotionally involved member via experienced activities and s/he starts to settle into the organisation and help others (Haski-Leventhal and Bargal, 2008). Weick (2001) refers to this process as a '*sense of organisation*'. They also become as skilled members and are accommodated to the environment of the group or organisation. They feel more confident for the job and start to understand the meaning of work, developed knowledge, and learn how to reach their purpose (Haski-Leventhal and Bargal, 2008). Louis (1980) explains that members try to cope with new environments through prior experience, their personality, attitudes, cultural assumptions and personal goals.

2.3.3.3 Affiliation Stage

In the affiliation transition, the '*established volunteering*' phase begins. It means that individuals adapt to their work, then become spontaneously and highly committed for

the work and organisation. In this stage, members become highly experienced, skilled and knowledgeable, therefore, volunteering cooperation becomes a part of life (Haski-Leventhal and Bargal, 2008). Cable and Parsons (2001) also insist that one's personal values become aligned with organisational values and her/his commitment for the organisation is increased in this stage. Furthermore, one's help to others becomes more effective and valuable (Haski-Leventhal and Bargal, 2008).

Cable and Parsons (2001) assert that one of the significant outcomes of organisation socialisation is the commitment that develops over time and it has a strong relationship with employees psychological attachment to the organisation. Ashforth and Mael (1989) explain the commitment by three characteristics. First, the commitment is an individual's faith in organisation and acceptance of the organisation's goals and value. Second, it is a willingness to strive effort for organisation and, thirdly, it is an aspiration to retain membership and behavioural intentions. Haski-Leventhal and Bargal (2008) also explain that the commitment is "*one's willingness to work hard for the organisation*" and "*an intention to stay and identification with the organisation's goals*".

Cnaan and Cascio (1998) argue that volunteering is not one's main career but most volunteers may devote and commit with psychological and emotional attachment to the organisation. Haski-Leventhal and Bargal (2008) assert that the volunteer's commitment can be measured by the length of volunteering, frequency, and desire to stay in the volunteer organisation in the future.

2.3.4 Organisation Socialisation and Social Identification

The different stages of organisational socialisation can be classified from different social identification of individuals at each stage (Haski-Leventhal and Bargal, 2008). According to social identification theory (SIT), people tend to categorize themselves and others into various social stages in the organisation. The social identifications are categorised by organisational membership, affiliation, or behaviours (Ashforth and Mael, 1989). Social identification is a self-conception that an individual vests in her/himself as

a valued persona (Adler and Adler, 1987) and it enables them to be defined by the individual's perception in the social environment. Social identification starts from the question "*who am I?*" (Turner, 1981). In social environments, individuals often retain multiple identities, hence social identification can be classified by three identities: personal identity, group identity, and organisational identity (Ashforth and Mael, 1989). Simon et al. (2000) also argue that social identification evolves from personal identification to organisational identification in voluntary organisation socialisation.

2.3.4.1 Personal Identification in the Pre-entry Stage

Personal identity encompasses an individual's peculiar characteristics such as bodily features, ability, psychological traits, and interests (Ashforth and Mael, 1989). Personal identity is established from a person's self-concept and includes peculiar characteristics such as individual's specific interest (Ashforth and Mael, 1989; Kim *et al.*, 2001a).

2.3.4.2 Group Identification in the Accommodation stage

Group identity encompasses salient group classifications. Group identification is "*the perception of oneness with, or belongingness to, some human collective such as nation or gender. It means that individuals perceive themselves as an actual or symbolic member of the group and also perceive the fate of the group as their own*" (Ashforth and Mael, 1989). Kim et al., (2001b) define group identification as a person who identifies her/himself as a member of a society and people tend to use various factors to classify themselves as belonging to a specific group. Group identification is an acceptance of the category by self-definition and it does not inevitably mean acceptance of the members' values and attitudes in a group (Ashforth and Mael, 1989).

2.3.4.3 Organisational Identification in the Affiliation Stage

Organisation identification is "*a specific form of social identification*" (Ashforth and Mael, 1989; Bhattacharya *et al.*, 1995; Kim *et al.*, 2001b) and organisational identity represent a mind as family with organisation, which include the meaning of

connectedness, empowerment, and immortality (Denhardt, 1987). Organisation identity represents individuals who identify themselves to enhance self-esteem in social categories such as organisation, her/his work group, department, union, and so on (Hogg and Turner, 1985) and it is a relational and comparative nature of social identities (Ashforth and Mael, 1989). In the organisation, an individual tends to be a person who succeeds with high status in the group and comparisons among individuals in the group have been found to influence a member's self-esteem (Wagner *et al.*, 1986). The definition of organisational identification is "*the process by which the goals of the organisation and those of the individual become increasingly integrated and congruent*" (Hall *et al.*, 1970) and as "*involvement based on a aspiration for affiliation*" (Kelman, 1961). Ashforth and Mael (1989) explain organisation identification that represents members behaviours such as sharing characteristics, loyalty, and solidarity to quote Parthen's definition in 1970.

Organisational identification is a shared identity between the organisation and individual and means that organisational goals can be personal goals (Ashforth and Mael, 1989). Reichers (1985) also insists that there is a strong relation between an individual's identification and involvement in an organisation. Wiener (1982) argues organisational identification as a component of organisational commitment; however, some theorists equate both identification and commitment (Ashforth and Mael, 1989). Shamir (1990) proposes that organisation identification has a positive influence on the willingness to contribute to communal work and Dutton *et al.* (1994) also claim that there is a positive relationship between organisation identification and group cooperation. To support these arguments, Mael and Ashforth (1992) find that there is a positive relationship between organisation identification and alumni's contribution to their school. Ashforth and Mael (1989) insist that one of the major consequences of identification is organisation or company identification.

2.4. Information Systems Studies and User Behaviours

2.4.1 Information System Implementation

According to Cooper and Zmud (1990), there are six-stages of the IS implementation process: *'initiation'*, *'adoption'*, *'adaptation'*, *'acceptance'*, *'routinisation'*, and *'infusion'* [Table 2.2]. Pre-adoption stages, including *'initiation'*, *'adoption'*, and *'adaptation'* indicate primary adoption by a firm, division or department and post-adoption stages including *'acceptance'*, *'routinisation'*, and *'infusion'* explain the secondary adoption by employees (Wang and Hsieh, 2006).

Table 2. 2 The Post-adoption Behaviours; Six-stage Model of the IS Implementation Process

Pre-adoption stages	
Initiation	
Process	Active and/or passive scanning of organisational problems/opportunities and IT solutions are undertaken. Pressure to change evolves from either organisational need (pull), technological innovation (push), or both.
Product	A match is found between an IT solution and its application in the organisation.
Adoption	
Process	Rational and political negotiations ensue to gain organisational backing for implementation effort.
Product	A decision is reached to invest resources necessary to accommodate the implementation effort.
Adaption	
Process	The IT application is developed, installed and maintained. Organisational procedures are revised and developed. Organisational members are trained both in the new procedures and in the IT application
Product	The IT application is available for use in the organisation.
Post-adoption stages	
Acceptance	
Process	Organisational members are induced to commit to IT application usage.
Product	The IT application is employed in organisational work.

Routinisation	
Process	Usage of the IT application is encouraged as a normal activity.
Product	The organisation's governance systems are adjusted to account for the IT application; the IT application is no longer perceived as something out of the ordinary.
Infusion	
Process	Increased organisational effectiveness is obtained by using the IT application in a more comprehensive and integrated manner to support higher level aspects of organisational work.
Product	The IT application is used within the organisation to its fullest potential.

(Source: Cooper and Zmud, 1990)

The last three post-adoption stages are classified by different levels of implementation for employees' activities (Hsieh and Wang, 2007; Wang and Hsieh, 2006). Moore (2002) argues that the employee users use ISs at the different levels of sophistication because of the complexity and malleability of complex ISs although employees' system use is often mandated (Wang and Hsieh, 2006).

2.4.1.1 Acceptance

The acceptance of IS refer to users' commitment to use the system at the early stage in post-adoption. In other words, this stage indicates that organisations employ the IS to work for employees' use. Therefore, from this stage, employees start to use the IS (Cooper and Zmud, 1990; Saga and Zmud, 1994). In the initial acceptance stage, employees simply use the IS with a small number of functions; however, they will use more functions according to accumulated experience over time (Hsieh and Wang, 2007; Robey *et al.*, 2002).

2.4.1.2 Routinisation

The routinisation of IS indicates that after employees accumulate knowledge and obtain experiences and skill of IS use, they progressively enter into the routine and

standardised stage (Cooper and Zmud, 1990). In the routinisation stage of IS usage, employees use the IS more potentially in a more inclusive and complicated manner (Cooper and Zmud, 1990) and they do not perceive the IS as new or unusual systems anymore but essentially becomes institutionalised (Saga and Zmud, 1994). Employees as the IS users become familiar with the systems and they may not be satisfied with their skills of IS use and may try to find more useful ways and functions to improve their work (Hsieh and Wang, 2007).

2.4.1.3 Infusion

The infusion of IS is indicated as *“the process of embedding an IS application deeply and comprehensively within an individual’s or organisation’s work systems”* (Cooper and Zmud, 1990; Saga and Zmud, 1994). In the infusion stage of IS usage, the employees may have a higher and superior level of skills for IS use beyond routinisation of IS usage and the skill would allow them to utilise the fullest potential of the IS that occurs more contribution to the organisation for reaching more positive organisational consequence (Cooper and Zmud, 1990).

2.4.2 IS Acceptance Studies

2.4.2.1 Is Acceptance Researches

Information system (IS) research is related to an individual’s IS use behaviour. During 30 decades, there have been numerous studies regarding IS acceptance and, recently, the focus of IS research has been moving to continuance of IS use and infusion of IS use beyond IS acceptance. Numerous researches of user and information system (IS) acceptance have focused on why potential users accept or do not accept information technology and many research models have been developed by empirical studies.

During the middle of 1970s to early 2000s, in the field of information systems, many researchers have found that information technology is underutilised in many organisations, causing huge economic loss to their business. As a result, many

technology acceptance theories and models have been developed or used to study information technology acceptance. These models include: The theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975), Social Cognitive Theory (SCT) (Bandura, 1986; Compeau and Higgins, 1995), Technology Acceptance Model (TAM) (Davis, 1989), Theory of Planned Behaviour (TPB) (Ajzen, 1991), Model of PC Utilisation (Thompson *et al.*, 1991), the Innovation Diffusion Theory (IDT) (Moore and Benbasat, 1991; Rogers, 1995), Motivation Model (Davis *et al.*, 1992), Combined TAM and the TPB (Taylor and Todd, 1995), extended TAM (TAM 2) (Venkatesh and Davis, 2000), and TAM 3 (Venkatesh and Bala, 2008). Venkatesh *et al.* (2003) suggest Unified Theory of Acceptance and Use of Technology (UTAUT) that combines these theories (Li, 2010). Table 2.3 shows the previous studies regarding IS acceptance.

Table 2. 3 Previous IS Acceptance Studies

Theory	Keep Performance Indicators (KPIs)	Definitions	Authors
Theory of Reasoned Action (TRA)	Attitude Toward Behaviour	“An Individual’s positive or negative feelings about performing the target behaviour”	Fishbein and Ajzen (1975)
	Subjective Norm	“The Individual’s perception that most people who are important to him think he should or should not perform the behaviour in question”	
Social Cognitive Theory (SCT)	Outcome Expectations – Performance	“The performance-related consequences of the behaviour. Specifically, Performance expectations deal with job-related outcomes”	Bandura (1986), Compeau and Higgins (1995)
	Outcome Expectations – Personal	“The personal consequences of the behaviour. Specifically, personal expectations deal with the individual esteem and sense of accomplishment”	
	Self-Efficacy	“Judgment of one’s ability to use a technology (i.e. computer) to accomplish a particular job or task”	
	Affect	“An individual’s liking for a particular behaviour (i.e. computer use)”	
	Anxiety	“Evoking anxious or emotional reactions when it comes to	

		performing a behaviour (i.e. using a computer”	
Technology Acceptance Model (TAM)	Perceived Ease of Use	“The degree to which a person believes that using a particular system would be free of effort”	(Davis, 1989)
	Perceived Usefulness	“The degree to which a person believes that using a particular system would enhance his or her job performance”	
	Attitude Toward Behaviour	Adapted from TRA	
Theory of Planned Behaviour (TPB)	Attitude Toward Behaviour	Adapted from TRA	(Ajzen, 1991)
	Subjective Norm	Adapted from TRA	
	Perceived Behavioural Control	“The perceived ease or difficulty of performing the behaviour”	
Model of PC Utilisation (MPCU)	Job-fit	“The extent to which an individual believes that using a technology can enhance the performance of his or her job”	(Thompson <i>et al.</i> , 1991)
	Complexity	“The degree to which an innovation is perceived as relatively difficult to understand and use”	
	Long-term Consequences	“Outcomes that have a pay-off in the future”	
	Affect Towards Use	“feelings of joy, elation, or pleasure, or depression, disgust, displeasure, or hate associated by an individual with a particular act”	
	Social Factors	“The individual’s internalisation of the reference group’s subjective culture, and specific interpersonal agreements that the individual has made with others, in specific social	

		situations”	
	Facilitating Conditions	“Provision of support for users of PCs may be one type of facilitating condition that can influence system utilisation”	
The Innovation Diffusion Theory (IDT)	Relative Advantage	“The degree to which an innovation is perceived as being better than its precursor”	(Moore and Benbasat, 1991; Rogers, 1995)
	Ease of Use	“The degree to which an innovation is perceived as being difficult to use”	
	Image	“The degree to which use of an innovation is perceived to enhance one’s image or status in one’s social system”	
	Visibility	“The degree to which one can see others using the system in the organisation”	
	Compatibility	“The degree to which an innovation is perceived as being consistent with the existing values, needs, and past experiences of potential adopters”	
	Results Demonstrability	“The tangibility of the results of using the innovation, including their observability and communicability”	
	Voluntariness of Use	“The degree to which use of the innovation is perceived as being voluntary, or of free will”	
Motivation Model (MM)	Extrinsic Motivation (Perceived Usefulness)	“The perception that users will want to perform an activity because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself (i.e.	(Davis <i>et al.</i> , 1992)

		improved job performance, pay, or promotions”	
	Intrinsic Motivation (Perceived Enjoyment)	“The perception that users will want to perform an activity for no apparent reinforcement other than the process of performing the activity per se”	
Combined TAM and the TPB (C-TAM-TPB)	Attitude Toward Behaviour	Adapted from TRA	(Taylor and Todd, 1995)
	Subjective Norm	Adapted from TRA	
	Perceived Behavioural Control	Adapted from TPB	
	Perceived Usefulness	Adapted from TAM	
Extended TAM (TAM 2)	Perceived Ease of Use	Adapted from TAM	(Venkatesh and Davis, 2000)
	Perceived Usefulness	Adapted from TAM	
	Subjective Norm	Adapted from TRA	
	Image	Adapted from IDT	
	Job Relevance	“The degree to which an individual believes that the target system is applicable to his or her job”	
	Output Quality	“The degree to which an individual believes that the system performs his or her job tasks well”	
Result Demonstrability	Adapted from IDT		
Unified Theory of Acceptance and Use of Technology (UTAUT)	Performance Expectancy (Perceived Usefulness / Extrinsic Motivation / Job-fit / Relative Advantage / Outcome	“The degree to which an individual believes that using the system will help him or her to attain gains in job performance”	(Venkatesh <i>et al.</i> , 2003)

	Expectations)		
	Effort Expectancy (Perceived Ease of Use / Complexity / Ease of Use)	“The degree of ease associated with the use of the system”	
	Social Influence (Subjective Norm / Social Factors / Image)	“The degree to which an individual perceives that important others believe he or she should use the new system”	
	Facilitating Conditions (Perceived Behavioural Control / Facilitating Conditions / Compatibility)	“The degree to which an individual believes that an organisational and technical infrastructure exists to support use of the system”	
TAM 3	Perceived Usefulness	Adapted from TAM, TAM2	(Venkatesh and Bala, 2008)
	Perceived Ease of Use	Adapted from TAM, TAM2	
	Subjective Norm	Adapted from TRA, TAM2	
	Image	Adapted from IDT, TAM2	
	Job Relevance	Adapted from TAM2	
	Output Quality	Adapted from TAM2	
	Result Demonstrability	Adapted from IDT, TAM2	
	Computer Self-Efficacy	Adapted from SCT	
	Perception of External Control	“The degree to which an individual believes that organisational and technical resources exist to support the use	

		of the system”	
	Computer Anxiety	“The degree of an individual’s apprehension, or even fear, when she/he is faced with the possibility of using computers”	
	Computer Playfulness	“The degree of cognitive spontaneity in microcomputer interactions”	
	Perceived Enjoyment	“The extent to which the activity of using a specific system is perceived to be enjoyable in its own right, aside from any performance consequences resulting from system use”	
	Objective Usability	“A comparison of systems based on the actual level (rather than perceptions) of effort required to completing specific tasks”	

(Adapted by Venkatesh et al., 2003 and Venkatesh and Bala, 2008)

2.4.2.2 The Importance of TAM Variables for This Study

As Table 3 indicated, there are numerous key performance indicators (KPIs) regarding IS user acceptance in many previous studies to increase behavioural intention to use of IS and actual use. Venkatesh et al., (2003) integrated the indicators of various models and suggested an integration model which is the UTAUT model with four major indicators: (1) *performance expectancy*, (2) *effort expectancy*, (3) *social influence*, (4) *facilitating conditions*. According to Venkatesh et al., (2003), the '*performance expectancy*' is related with five constructs those are perceived usefulness from TAM, TAM2, and C-TAM-TAB, extrinsic motivation from MM, job-fit from MPCU, and outcome expectations from SCT. Venkatesh et al., (2003) insists that '*performance expectancy*' mainly represents the usefulness of IS. The '*effort expectancy*' indicates three constructs of different models such as perceived ease of use from TAM and TAM2, complexity from MPCU, and ease of use from (IDT). Venkatesh et al., (2003) also assert that the '*effort expectancy*' is mostly explained about ease of use of IS. Moreover, the '*social influence*' is consisted of subjective norm from TRA, TAM2, TPB/DTPB and C-TAM-TPB, social factors in MPCU, and image from IDT. Lastly, the '*facilitating conditions*' are related with system use such as perceived behavioural control in TPB, DTPB, and C-TAM-TPB, facilitating conditions in MPCU, and compatibility from IDT (Venkatesh *et al.*, 2003).

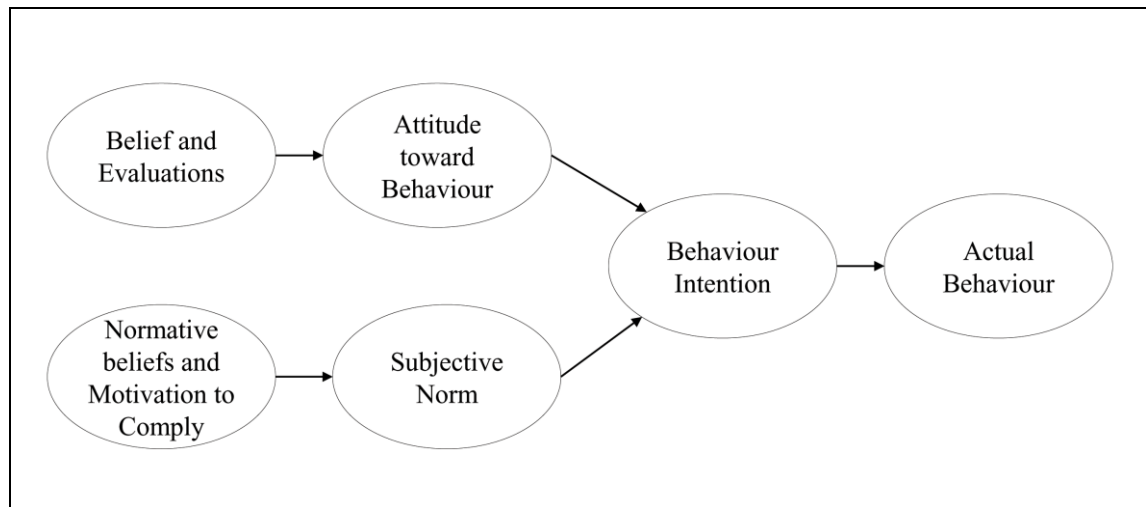
This study is focused on investigating user behaviours as voluntary in consumer initiated OBCs those are mostly established on portal sites that provide their own functions of systems for communities. Therefore, the support systems both organisational and technical functions are exactly same for all OBCs, hence, the '*facilitating conditions*' are not able to be changed by consumers themselves and it would be not a considerable factor for investigation user behaviour regarding acceptance of OBCs. Furthermore, when consumers are searching an OBC which related in consumers interests, they are likely to use web searching function in portal sites such as Google (Kozinets, 1999). Therefore, the '*social influence*' might be not a significant and proper factor for this study.

On the other hand, the '*performance expectancy*' as usefulness of IS and the '*effort expectancy*' as ease of use of IS are most mandatory factors of IS acceptance studies (i.e. TAM, TAM2, TAM3, C-TAM-TAB, MM, MPCU, SCT, IDT, UTAUT). These two factors both performance expectancy and effort expectancy represent perceived usefulness and ease of use respectively based on TAM (Venkatesh *et al.*, 2003). Furthermore, TAM has been used many of research not only for investigation user behaviours of IS acceptance but also continuation and infusion (Bhattacharjee, 2001; Hsieh and Wang, 2007; Jones *et al.*, 2002; Legris *et al.*, 2003; Saeed and Abdinnour-Helm, 2008; Sundaram *et al.*, 2007; Taylor and Todd, 1995; Wang and Hsieh, 2006). Therefore, this study is focused on TAM to explore OBC users' behaviours from acceptance to continuation and infusion.

2.4.2.2 Technology Acceptance Model

In the IS literature, the technology acceptance model (TAM) is one of the most prominent; it is broadly and effectively used by researchers for explaining and developing the relation between the user and IS acceptance. TAM was originally proposed by Davis (1989) and is used to explain users' usage of IT. Specifically TAM was developed to forecast and explain users' behavioural intentions to use of IT and is supported by the numerous recent empirical studies through validations, applications, and replications (Venkatesh, 2000).

TAM (Davis, 1989) is based on the theory of the reasoned action model (TRA) (Ajzen and Fishbein, 1977; Ajzen and Fishbein, 1980). The main purpose of TRA is to understand the motivational factors' influences on behaviour that is under volitional control over (Karahanna *et al.*, 1999). According to the TRA, one's behavioural intention (BI) affect to determine an individual's behaviour and both subjective norms (SN) and individual attitudes (AT) jointly influence to determine one's BI. In social psychology, TRA has been empirically demonstrated and is widely used to predict and explain cognitive and affective behaviour using a '*belief-attitude-intention-behaviour*' relationship. [Figure 2.9]

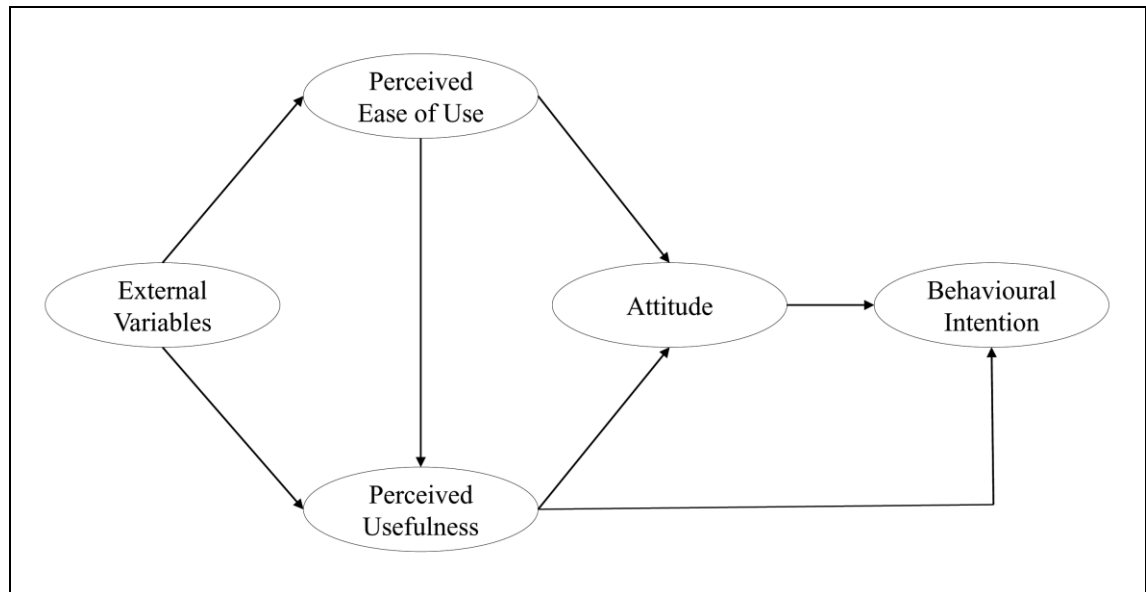
Figure 2. 9 The Theory of Reasoned Action

(Fishbein & Ajzen, 1975)

According to Ajzen (1991), In TRA, behaviour is a function of intentions. The intention is defined as *“an indication of a person’s readiness to perform a given behaviour”* and the behaviour defined as *“the manifest, observable response in a given situation with respect to a given target”*. Ajzen (1991) suggests that intentions are supposed to detain motivational factors that affect behaviour. Attitudes explain human action and are informed by behavioural beliefs (Ajzen and Fishbein, 1980) and attitude is defined as *“the degree to which performance of the behaviour is positively or negatively valued”* (Ajzen, 1991). Although people obtain their beliefs via their diverse experience, people’s cognitive capability is perceived by only a few beliefs that can be activated and consciously considered (Fishbein and Ajzen, 1975). Davis (1989) explains that activated beliefs are salient beliefs and behavioural beliefs. Ajzen (2006) argues that behavioural beliefs are affected by expected outcomes and they vary with the domain. In the context of IT and IS, Davis (1989) proposes two of the most dominant beliefs: perceived usefulness (PU); and perceived ease of use (PEOU) in the TAM. Subjective Norm (SN) is defined as *“the perceived force to perform a behaviour that comes from observing what important others say or do”* (Fishbein and Ajzen, 1975). SN is a factor which affects directly on intentions toward performing actual behaviour and it is the function of normative beliefs that represent the individual’s significant approval or behaviour (Shim *et al.*, 2001). In the IS domain, several scholars reveal that SN is not a

significant factor to influence user behaviour by empirical studies (Davis *et al.*, 1989; Shim *et al.*, 2001). Some scholars demonstrate that the direct effect of SN on users' intentions decrease over time through increasing users' experience of IS (Taylor and Todd, 1995).

Figure 2. 10 Technology Acceptance Model



(Source: Davis, 1989)

TAM adopts the TRA generic model of '*belief-attitude-intention behaviour*' to predict and explain the determinants of IT acceptance [Figure 2.10]. TAM explains the beliefs of TRA by two factors: perceived usefulness (PU); and perceived ease of use (PEOU). The definition of PU is "*the degree to which a person believes that a particular information system would enhance his or her job performance by reducing the time to achieve a task or providing timely information.*" TAM assumes that individuals act behaviourally when they have perceived and evaluated the benefits of their action and expect a certain result (Dishaw and Strong, 1999). Individuals do not use an IT or IS without benefits that drive certain value according to utility (Ahn *et al.*, 2004; Ha and Stoel, 2009). The definition of PEOU is "*the degree to which a person believes that using a particular system would be free of effort*" (Davis, 1989). Davis (1989) claims that an individual's IS acceptance is determined by two major behavioural variables: PU

and PEOU and both affect the behavioural intention (BI) and actual use (AU) particularly in IT.

The study reveals that PU powerfully influences user's intentions and PEOU affects the intention of users significantly but it has a smaller effect (Davis *et al.*, 1989) than PU. Furthermore, many studies that apply TAM to explain various types of IT reveal that PU has stronger influences on user's intentions than PEOU does. The importance of PU is also explained by UTAUT (Venkatesh *et al.*, 2003). In the UTAUT model, there are three direct determinants of BI: performance expectancy, effort expectancy, and social influence. In these three determinants, the performance expectancy is composed by five constructs: PU (TAM/TAM2 and C-TAM-TPB), extrinsic motivation (motivation model (MM)), job-fit (MPCU), relative advantage (IDT), and outcome expectations (SCT) and some authors agree that PU has similarities with four other constructs of performance expectancy. This means that performance expectancy has deep relation with PU and the study demonstrates that the performance expectancy of PU is one of the most influential determinants to behavioural intention (BI) by empirical research (Venkatesh *et al.*, 2003).

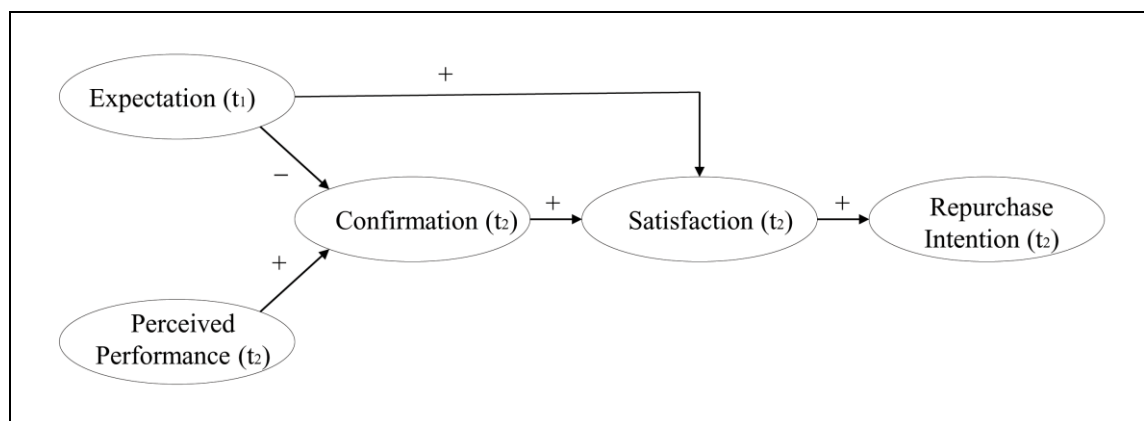
TAM further theorises that PU and PEOU will act as mediators between external variables and behavioural intention to use (Venkatesh and Bala, 2008) and many scholars recommend that TAM is able to be enhanced by incorporating additional beliefs from other theories (Cao and Mokhtarian, 2005; Davis, 1989). Karahanna and Straub (1999) also argue that exploring antecedent variables that affect to the core TAM variables such as PU, PEOU and BI is significant because the antecedents can explain more to enhances TAM as extension of TAM that make a deep and better understanding of user behaviours why individuals accept and use the existing or new IT or IS. Large number of studies extended TAM by introducing external variables as pre-implementation factors of PU and PEU and integrate with other theories to explain user acceptance from various perspectives. Moon and Kim (2001) suggest that the external variables as antecedents would be changed by the context, area or feature of IT and IS, and the target users.

2.4.3. IS Routinisation Studies

While initial acceptance of IS is an important use behaviour at the first stage for IS success, continuance of IS is also a significant factor at the routinisation stage for IS accomplishment (Bhattacharjee, 2001). Bhattacharjee (2001) argues that the continued use of IS is significant for long-term validity of an IS and its ultimate success rather than first-time use because organisation failures often occur by ineffective or unproductive long-term use of IS.

IS continuance studies have focused on why experiential users continue or do not continue use of IS and several research models have been demonstrated by empirical studies (Bhattacharjee, 2001; Hsieh and Wang, 2007; Karahanna *et al.*, 1999; Legris *et al.*, 2003; Mathieson, 1991b; Parthasarathy and Bhattacharjee, 1998; Taylor and Todd, 1995). A post acceptance stage when IS use becomes part of normal routine activity is confirmed and granted by these studies (Bhattacharjee, 2001). Rogers (1995) suggests the innovation diffusion theory (IDT) that explains five stage of adoption process: (1) *consisting of knowledge* (2) *persuasion* (3) *acceptance decision* (4) *implementation* and (5) *confirmation*. Bhattacharjee (2001) claimed that it is important to investigate use behaviour not only at the acceptance decision stage but also confirmation stage to explore why experiential users maintain use of IS or not.

Figure 2. 11 Expectation-Confirmation Theory

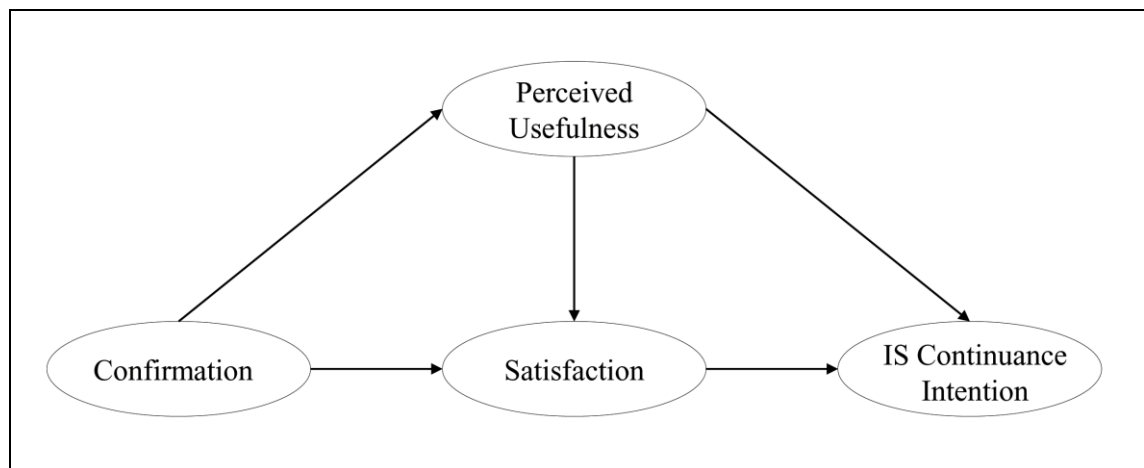


*Note: t₁ = Pre-Consumption Variable; t₂ = Post-Consumption Variable (Source: Oliver, 1980)

The fundamental Information System Continuance (ISC) model is proposed by Bhattacherjee in 2001. Bhattacherjee (2001) suggests the information system continuance (ISC) model to explain individuals' behaviour of IS use after users have exceeded their initial usage adapted expectation-confirmation theory (ECT) from consumer behaviour literature (Oliver, 1980) [Figure 2.11].

The process of the ECT framework explains consumer behaviour to reach repurchase intention (Oliver, 1980). Firstly, consumers have expectations of a specific product or service before they purchase. Secondly, the product or service is accepted by consumers' purchase decisions and they perceived the performance of the product or service. Thirdly, they assess the perceived performance to compare with their original expectation and determine to confirm whether the purchase is the correct decision or not. Next, if they are satisfied regarding their decision based on their confirmation level, they would intend to repurchase the product or services.

Figure 2. 12 A Post-Acceptance Model of IS Continuance



(Source: Bhattacherjee, 2001)

The ISC model explicates “*the existence of a post-acceptance stage when IS use becomes part of normal routine activity*” beyond conscious behaviour (Bhattacherjee, 2001). The ISC model explains the distinctive user behaviours between acceptance and continuance stage. The ISC model is based on TAM (Davis, 1989) in that it adapts ECT (Bhattacherjee, 2001). [Figure 2.12]

Bhattacharjee (2001) explains that the ISC model is only focused on IS use behaviours on the post-acceptance stage as a routinisation period. The confirmation and satisfaction include the effect of any pre-acceptance variables as external variables in TAM. The PU also includes expectation as individual beliefs or sum of external beliefs because PU is a cognitive and salient belief to IS use (Bhattacharjee, 2001; Davis, 1989). He argues that PU is an adequate expectation in an ISC context and the only belief which is verified to consistently affect user intention beyond temporary stage of IS use (Bhattacharjee, 2001; Davis, 1989). Therefore, Bhattacharjee (2001) excludes PEOU in the ISC although PEOU is also a salient belief in IS use based on TAM studies. By empirical study, the research reveals that satisfaction as attitude (affect) in TAM is the strongest predictor of users' IS continuation intention and the effect of PU on users' intention is significant to IS continuance to use (Bhattacharjee, 2001) similar to the result of IS acceptance (Davis, 1989). The study also demonstrates confirmation is a cognitive belief that affects subsequent IS use through satisfaction (affect). The study suggests that users' IS continuance behaviours also can be explained by '*belief-affect-intention-behaviour*' causality (Bhattacharjee, 2001). However, the limitation of the ISC model is that it is only focused on the post-acceptance stage.

On the other hand, some scholars argue and demonstrate that the original TAM is also a proper model to investigate users' post-acceptance behaviour even though TAM was originally proposed to predict users' initial IT acceptance. Taylor and Todd (1995) insist that the factors of TAM such as PU, PEOU and BI would be similar to the effect on IT continuance Usage and they validate that TAM is an adequate and sufficient model of IT usage for both inexperienced user in initial stage and experienced users in continuance stage by an empirical study that indicates a reasonable proportion of variance in user intention and behaviour. Moreover, Karahanna et al. (1999) demonstrates both users' acceptance behaviour and continuance behaviour adapted by TRA. The study conducted by Karahanna et al. (1999) reveals that both PU and PEOU are significant determinant of users' attitude for the pre-adoption stage (Acceptance) and only PU is a significant belief for the post-adoption stage (Continuance). In addition, Legris et al., (2003) prove a meta-analysis that the TAM is theoretically a useful model in supporting to predict and explain individuals' behaviour in the IS implementation process and varies at different

stages but they recommend that the TAM needs more additional variables as factors that related to both human and social change processes to explain user intention and behaviour more consistently and clearly. Table 2.4 shows previous studies regarding IS routinisation.

Table 2. 4 IS Routinisation Studies and TAM

Author	Application	Research methods	Sample size	Model used	Research Aim
(Taylor and Todd, 1995)	Computing resource centre	Survey (Paper)	786 students	TAM	Acceptance & Continuance
(Parthasarathy and Bhattacharjee, 1998)	Online service	Survey (Paper)	443 online service users	Multiple discriminant analysis	Continuance & Discontinuance
(Karahanna <i>et al.</i> , 1999)	Windows 3.1 software	Survey (Paper)	997 PC users	TRA	Acceptance & Continuance
(Bhattacharjee, 2001)	Online Banking service	Survey (Electronic)	122 online banking users	TAM & ECT	Continuance
(Legris <i>et al.</i> , 2003)	22 Previous studies by TAM	Meta-analysis	22 existing articles	TAM	Acceptance & Continuance

2.4.4. IS Infusion Studies

In infusion stage, IS becomes an vital and compulsory factor for the efficient work in an organisation (Saeed and Abdinnour-Helm, 2008). Cooper and Zmud (1990) argue that higher levels of system use can lead to better organisation performance and, hence, an organisation is able to entirely leverage its IS investment when employees are at the

highest level of use (Saga and Zmud, 1994). The IS infusion refers to “*the processes of embedding an IS application deeply and comprehensively within an individual’s or organisation’s work systems*” (Cooper and Zmud, 1990; Saga and Zmud, 1994). To reach the infusion stage, employees should have the ability of IS use to be fully potential and the ability can be accumulated by prior stages such as acceptance and routinisation (Wang and Hsieh, 2006).

IS infusion research has concentrated on how and why users go beyond the mandated use of IS to exploit the fullest potential of the system. Researchers have tried to propose the concepts for depicting the infusion of IS usage that go beyond routine and standardised use (Hsieh and Wang, 2007). According to Saga and Zmud (1994), ‘*extended use*’ describes how individuals apply and use IS in more comprehensive way with more technology feature for achieving more productive and successful consequence of work tasks and it occurs after routinisation stage of IS use. They propose expansion, integration, and extension as behavioural modes, explaining why users may pursue and chase at the post adoption stage. Schwarz (2003) proposes a concept of extended use namely ‘*deep usage*’, that represents the extension of IS use for using different functionalities of technology. Jasperson et al (2005) name extended use as an ‘*individual feature extension*’, which indicates that individuals develop methods to use IS which go beyond the use description provided by designers or implementers. Ahuja and Thatcher (2005) propose ‘*trying to innovate with IT*’ to represent the infusion behaviour as the concept of extended use and he argues that the goal of individual IS use can be to find novel and innovative ways at the post IS acceptance and routinisation stage. It has similarity with the notions of ‘*exploration of new uses*’ and ‘*exploratory usage*’ conceptualised by Jasperson et al (2005) and Saeed and Abdinnour-Helm (2008) respectively .

As similar to IS continuation studies, IS infusion studies have also been doing basically based on TAM and ISC model. Jones et al. (2002) study both IS intention and infusion in the context of the sales force automation (SFA) system to examine ascendances of extended use of IS infusion stages by an integration model based on TAM and TRA. The two models’ intention and infusion presents borrowed ascendances such as personal

innovativeness, PU, PEOU, attitude toward system, compatibility, facilitating conditions, and subjective norms from TAM and TRA. In the IS acceptance stage, almost all variables have significant affect on intention to use but facilitating conditions and subjective norms are rejected. However, the intention to use explains 74% by other variables. In the IS infusion stage, 38% of extended use of SFA is explained by innovativeness, attitude toward system, facilitating conditions and ease of use, whereas PU, compatibility and subjective norms are not influenced. This study suggests that PEOU, individual's innovativeness, attitude, and system's facilitating conditions have more of an effect on IS extended use as features of the infusion stage.

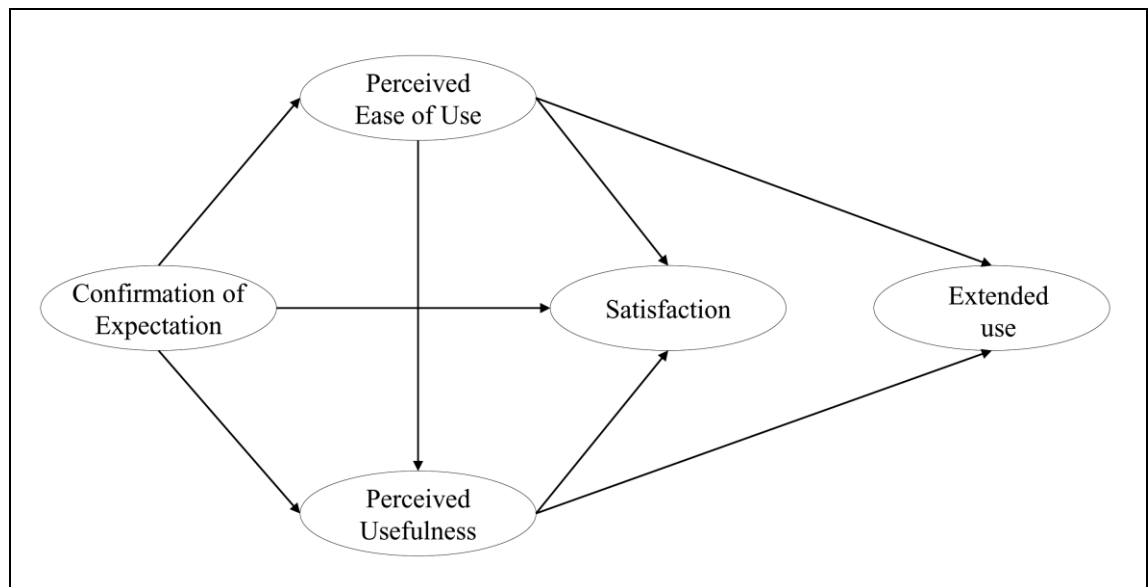
Hsieh and Wang's (2007) study investigates extended use of the complex information system (CIS) especially the enterprise resource planning (ERP) system within organisational contexts based on the TAM and ISC models. The research examines the extended use by empirical study with three ways through TAM, ISC model and the synthesised model of TAM and ISC model.

Firstly, for TAM, the study demonstrates that both PU and PEOU are as significant beliefs to affect on extended use and PEOU also influences PU. 41.8 % of extended use is explained by TAM. The most interesting result is that PEOU had a much stronger effect on extended use while PU is a stronger determinant on most IS acceptance studies (Davis, 1989). This result suggests that individuals' perception of ease of IS use is more important than their perception of IS usefulness when individuals use more features of IS to support their task performance (Hsieh and Wang, 2007). Secondly, this result shows that individuals' extended use of IS can also be explained by the ISC model. The results indicate that all relationships among variables in the ISC model are significant and both PU and satisfaction affects significantly to extended use of IS. Furthermore, the confirmation of expectation strongly affects PU as well as satisfaction and PU also significantly influences satisfaction. Similarly with the TAM result, 39.8% of extended use is explained by the ISC model (Hsieh and Wang, 2007).

Lastly, Hsieh and Wang (2007) combine the TAM and ISC model because although all variables from the TAM and ISC models play a role in predicting and explaining

extended use, there is uncertainty which one is the most significant factors for understanding individual's extended use of IS [Figure 2.13].

Figure 2. 13 The Synthesized Model



(Source: Heish & Wang, 2007)

All expected relationships among variables are significantly supported but, unexpectedly, satisfaction does not affect extended use in the synthesised model. Similar to the first results with TAM, PEOU is a strong determinant on PU to influence extended use that jointly explains 42.9% of its variance.

Although the three models explain approximately 40% of the variance in extended use, the most significant results of this study are that, firstly, the synthesised model explains to some extent more variance in extended use, PU and satisfaction than other models. Secondly, PEOU is a stronger factor than PU, which influence to extended use of IS. This result shows PEOU is a pivotal and dominant determinant in explaining extended use of IS. Lastly, extended use is consistently affected by PU across all the three models (Hsieh and Wang, 2007). As a result, Hsieh and Wang (2007) argue that the synthesised model is the most significant model that shows more insights of user's behaviour of IS

extend use and makes more comprehensively understanding regarding extended use of IS.

Saeed and Abdinnour-Helm (2008) also research the effects of IS characteristics and PU on post adoption usage of web-based student ISs based on TAM and ISC models. They define that “*the post adoption IS usage is conceptualised as extended usage and exploratory usage*”. The study reveals that PU is a significant determinant of both ‘extended usage’ and ‘exploratory usage’ but is more influenced on exploratory usage of IS. It means that PU is an important determinant to create a new way to use IS. Information quality is a good predictor of PU and ‘extended usage’ when the system integration influences directly on ‘exploratory usage’. Table 2.5 shows previous studies regarding IS infusion.

Table 2. 5 IS Infusion Studies and TAM

Author	Application	Research methods	Sample size	Model used	Research Aim
(Jones <i>et al.</i> , 2002)	Sales force automation technology	Survey (Paper)	164 salespeople	TAM & TRA	Acceptance & infusion
(Wang and Hsieh, 2006)	Enterprise resource planning (ERP) system	Survey (Paper)	385 employees	TAM & ISC	Infusion
(Sundaram <i>et al.</i> , 2007)	Sales force automation (SFA)/ Customer relationship management (CRM) tools	Survey (Electronic)	164 sales agents/ 85 sales agents	TAM	Routinization & infusion
(Hsieh and Wang,	Enterprise resource	Survey (Paper)	200 employees	TAM & ISC	Infusion

2007)	planning (ERP) system				
(Saeed and Abdinnour- Helm, 2008)	Web-based Student Information system (SIS)	Survey (Paper)	1032 students	TAM & ISC	Infusion

To sum up, previous studies of IS adoption indicate that TAM is an appropriate model to predict and explain IS user behaviours from the acceptance to infusion stage.

2.5 Use Behaviours Research in OC as an IS

Many scholars believe online communities can be used as information systems which are established based on the internet. Hence, during the last decade, many researchers have studied online communities based on TAM.

2.5.1 Internet Usage and TAM

Teo et al., (1999) studied users' acceptance of internet based on TAM as a foremost study and a user acceptance study of the World-Wide-Web (WWW) was completed by Moon and Kim (2001). Those studies were secure foundations for the studies regarding online communities that build on the WWW and are based on the internet. Li et al., (2005) studied user behaviours regarding instant messaging usage such as MSN. Hsu and Lin (2008) examined the motivations that affect an individual's intention of blog usage based on TAM. Table 2.6 shows the previous studies that relate with Internet usage and TAM

2.5.2 Online Communities and TAM

Many scholars have studied user behaviours of various online communities based on TAM. Teo et al., (2003) studied user intention of online learning communities (OLC) and reveal TAM variables that PU is a significant factor to affect intention to use. Lee et al., (2005) and Tsai et al., (2008) also validate PU and PEOU are significant beliefs of

user behaviour research based on OLC. However, these studies have not found a direct relation between PEOU and intention of use in OLC. Liu et al., (2010) found the positive and direct relationship between PEOU and intention to OLC use. Based on TAM, Hsu and Lu (2007) studied motivation factors to increase customers' loyalty of online game communities (OGCs). The study reveals that PEOU is a significant and indirect factor to increase customers' loyalty through customer preference and perceived enjoyment. Lin (2007) studied user behaviours in the context of virtual communities that are established on the portal sites such as Yahoo, Yam, and Pchome in Taiwan, those were the three highest-ranking online communities. The study demonstrates that TAM is a satisfactory model to adopt for online communities' studies, and reveals that PU and PEOU have significant roles in online communities Table 2.7 shows the previous studies that relate with online communities and TAM

2.5.3 Online Brand Community Studies

Few studies have focused on the context of OBC. Jang et al., (2008) examined what elements affect community commitment and brand loyalty in OBCs both consumer initiated online brand communities (CIOBCs) and firm initiated online brand communities (FIOBCs). The study reveals the different user behaviours between CIOBCs and FIOBCs. As a result, the study validates that information and system quality affects members' commitment to CIOBCs while this phenomenon has not appeared in FIOBCs. However, the interaction and reward for activities influence members' commitment in both CIOBCs and FIOBCs. In addition, the study demonstrates that brand loyalty is significantly affected by members' commitment. Carlson et al., (2008) also studied members' behaviours in OBCs. The study reveals that individual's identification with brand as brand identification affect on brand commitment and individual's identification with group as group identification influence brand commitment as well as psychological sense of belonging in the OBCs. Table 2.8 shows the previous studies that relate to OBC studies.

2.5.4 Other Researches related in Online Brand Communities

OBCs have a strong relation with consumption behaviours especially for purchase decision making. Today, OBC members endeavour to make a group purchase of brand products or services through participation in OBC activities. Likewise, OBCs are also related to transaction activities. Most of studies that investigate consumer transactions behaviour through websites are also based on TAM. Furthermore, other studies for investigating user behaviours in online communities focus on finding motivations to increase social participation, members' loyalty toward communities, knowledge sharing, and continuance intention in the areas of virtual programmer communities, social networking communities, and professional virtual communities and so on. Table 2.9 and 2.10 show the previous studies related to e-commerce and other online communities studies respectively.

The Previous Studies related OBC Studies

Table 2. 6 The Internet Usage

The Internet Usage and TAM							
Authors	Independent Variables	Mediators	Dependent Variables	Validated	Rejected	Categories	Methodology
Teo et al., (1999)	Perceived ease of use (PEOU)	Perceived Usefulness (PU)/ Perceived Enjoyment (PE)	Internet Usage (Frequency (FIU)/ Daily (DIU)/ Diversity (DVIU)	PU -> FIU, DIU, DVIU PE -> FIU, DIU PEOU -> FIU, DVIU PEOU -> PU, PE	PE -> DVIU PEOU -> DIU	Internet Usage (Extended TAM)	Survey (Electronic)
Moon and Kim (2001)	Perceived playfulness (PP)/ Perceived ease of use (PEOU)/ Perceived Usefulness (PU)	Attitude (AT)	Behavioural intention to use (BIU)/ Actual Usage (AU)	PP -> AT, BI PU -> AT, BI PEOU -> PP, PU, AT AT -> BI BI -> AU	None	World Wide Web (Extended TAM)	Survey (Paper)
Li et al., (2005)	Attachment Motivation (AM)/ Relationship Commitment (RC)/ Perceived Critical Mass (PCM)	Perceived Usefulness (PU)/ Perceived Enjoyment (PE)	Behavioural Intention (BI)	AM -> PE RC -> PE PCM -> PU, PE, BI PE -> PU, BI PU -> BI	AM -> PU RC -> PU	Instant Messaging (IM) (Computer- mediated communicatio n technologies) (Extended TAM)	Survey (Paper)

Hsu and Lin (2008)	Technology acceptance factors (Perceived usefulness (PU)/ Perceived ease of use (PEOU)/ Perceived enjoyment (PE))	Attitude (AT)	Intention to use (IU)	PEOU -> AT PE -> AT A -> AT RP -> AT AT -> IU CI -> IU	PU -> AT ERB -> AT TR -> AT ER -> AT SN -> IU	Blog usage (TAM)	Survey (Electronic)
	Knowledge sharing factors (Altruism (A)/ Expected reciprocal benefit (ERB)/ Reputation (RP)/ Trust (TR)/ Expected relationships (ER))						
	Social influence factors Social norms (SN) Community identification (CI)						

Table 2. 7 Online Communities

Online Communities and TAM							
Authors	Independent Variables	Mediators	Dependent Variables	Validated	Rejected	Categories	Methodology
Teo et al., (2003)	Information Accessibility (IA)/ Community Adaptively (CA)	Perceived Usefulness (PU)/ Perceived ease of use (PEOU)/ Sense of Belonging (SOB)	Intention to use (IU)	IA -> PU, PEOU CA -> PU, PEOU PU -> SOB, IU PEOU -> SOB SOB -> IU	PEOU -> PU PEOU -> IU	Virtual learning community (TAM)	Experiment (Academic)
Lee et al., (2005)	Perceived Usefulness (PU)/ Perceived ease of use (PEOU)/ Perceived Enjoyment (PE)	Attitude (AT)	Behavioural Intention (BI)	PU -> AT, BI PEOU -> PU, PE PE -> AT, BI AT -> BI	PEOU -> AT	Internet-based learning medium (Extended TAM)	Survey (Paper)
Lin (2006)	Perceived Usefulness (PU)/ Perceived ease of use (PEOU)/ Perceived trust (PT)/ Internet self-efficacy (ISE)/ Facilitating conditions (FC)	Attitude (AT)/ Subjective norms (SN)/ Perceived behavioural control (PBC)	Behavioural Intention (BI)	PU -> AT PEOU -> PU, AT PT -> AT FC -> PBC AT -> BI PBC -> BI	ISE -> PBC SN -> BI	Virtual Community (Extended TAM)	Survey (Paper)
Hsu and Lu (2007)	Perceived cohesion (PC)/ Perceived ease of use (PEOU)/ Perceived enjoyment (PE)/	Customer preference (CP)	Customer Loyalty (CL)	PC -> CP PEOU -> PE, CP PE -> CP, CL SN -> CL CP -> CL	PC -> CL	Online game community (Extended TAM)	Survey (Electronic)

	Social Norms (SN)						
Lin (2007)	Online Features (Information quality (IQ)/ System quality (SQ)/ Service quality (SVQ)) Offline Features (Offline activities (OFA))	Perceived usefulness (PU)/ Perceived enjoyment (PE)/ Sense of belonging (SOB)	Behaviour Intention (BI)	IQ -> PU SQ -> PU, PEOU SVQ -> PU, PEOU PEOU -> PU, SOB PU -> SOB OFA -> SOB SOB -> BI	IQ -> PEOU	Virtual community (Extended TAM)	Survey (Paper)
Shin (2008)	Trust/ Perceived risk (PR)/ Subjective norm (SN)	Perceived usefulness (PU)/ Perceived ease of use (PEOU) Attitude (AT)	Intention to transact (IT)	Trust -> PU, PEOU PR -> IT (Negative) SN -> IT PU -> AT, IT PEOU -> AT, IT AT -> IT	None	Virtual community (TAM)	Survey (Electronic)
Tsai et al., (2008)	Self-Reported participation (SRP)/ Perceived ease of use (PEOU)	Social ability (SA)/ Sense of community (SOC)/ Perceived usefulness (PU)	Satisfaction (S)	SRP -> SA, SOC, S PEOU -> SA, PU SA -> SOC PU -> SOC SOC -> S	None	Online learning community (Partial TAM)	Survey (Paper)
Liu (2010)	Online course design (OCD)/ User interface design (UID)/ Previous online learning experience (POLE)	Perceived usefulness (PU)/ Perceived ease of use (PEOU)/ Perceived Interaction (PI)	Intention to Use an OLC (IU)	OCD -> PU, PEOU, PI UID -> PEOU, PI POLE -> PU, PEOU, IU PU -> IU PEOU -> PU, PI, IU PI -> IU	None	Online learning community (Extended TAM)	Survey (Electronic)

Table 2. 8 Online Brand Community

The Researches related in the OBC							
Authors	Independent Variables	Mediators	Dependent Variables	Validated	Rejected	Categories	Methodology
Jang et al., (2008)	Characteristics of online brand community (Information quality (IQ)/ System quality (SQ)/ Interaction (ITR/ Reward for activities (RA))	Community Commitment (CC)	Brand Loyalty (BL)	IQ -> CC (COBC) SQ -> CC (COBC) I -> CC R -> CC CC -> BL	IQ -> CC (CMOBC) SQ -> CC (CMOBC)	Consumer-initiated online brand community(COBC)/ Company initiated online brand community (CMOBC)	Survey (e-mail)
Carlson et al., (2008)	Identification with Brand (IB)/ Identification with Group (IG)	Psychological sense of brand community (PSBC)/ Brand Commitment (BC)	Brand preference (BP)/ Will Attend Brand Event (BE)/ Word-of-Mouth Promotion (WOMP)/ Celebrate Brand	IB -> BC IG -> PSBC PSBC -> BC BC -> BP, BE, WOMP, CBH	IB -> PSBC	Online brand community	Survey (Electronic)

			History (CBH)				
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Table 2.9 . E-commerce websites

The E-commerce and TAM							
Authors	Independent Variables	Mediators	Dependent Variables	Validated	Rejected	Categories	Methodology
Childers et al., (2001)	Navigation (NV)/ Convenience (CV)/ Sub-Experience (SE)	Perceived usefulness (PU)/ Perceived ease of use (PEOU)/ Perceived enjoyment (PE)	Attitude (AT)	NV ->PEOU, PE CV -> PU, PEOU, PE SE -> PU, PE PU -> AT PEOU -> AT PE -> AT	None	Online retail shopping behaviour (www.amazon.com / www.hothothot.com) (Extended TAM)	Survey (Paper)
Koufaris (2002)	Product involvement (PI)/ Web skills (WS)/ Value-Added search mechanisms (VASM)/ Challenges (C)/ Perceived Usefulness (PU)/ Perceived Ease of Use (PEOU)	Perceived control (PC)/ Shopping Enjoyment (SE)/ Concentration (CR)/	Unplanned Purchases (UP)/ Intention to Return (IR)	PI -> SE, CR WS -> SE, CR VASM -> SE C -> SE, CR SE -> IR PU -> IR	WS -> PC VASM -> PC, CR C -> PC PC -> UP, IR SE -> UP CR -> UP, IR PEOU -> IR	Online consumer behaviour (TAM)	Survey (Electronic)

Liao et al., (2006)	Web Quality (Appearance/Content quality/ Specific content/ Technical adequacy)	Trust (web retailer)/ Perceived Usefulness (PU)	Continuance Intention	Appearance -> PU Content quality -> Trust, PU Specific content -> Trust Technical adequacy -> Trust, PU Habit -> Trust, PU Habit -> Continuance intention Trust -> Continuance intention PU -> Continuance intention	Specific content -> PU Appearance -> Trust	E-commerce web site (TAM)	Survey (e-mail)
	Habit						
Lee et al., (2006)	Trust in members (TM)/ Trust in Service providers (TP) / Perceived ease of use (PEOU)	Perceived usefulness (PU)	Intention to Use (IU)/ Intention to Purchase (IP)	TM -> IU PEOU -> PU TP -> PU PU -> IU, IP	TP-> IU	E-commerce in social network service (TAM)	Survey (Electronic)
Ahn et al., (2007)	Web quality (System quality (SQ), Information quality (IQ), Service quality (SVQ))	Perceived playfulness (PP)/ Perceived usefulness (PU)/ Perceived ease of use (PEOU)/ Attitude (AT)	Behavioural intention to use (BIU)	SQ -> PP, PU, PEOU IQ -> PP, PU, PEOU SVQ -> PP, PU, PEOU PEOU -> PP, PU PP-> AT PEOU -> AT PU -> AT AT -> BIU	None	Online retailing web site (Extended TAM)	Survey (Electronic)

<p>Hwang and Kim (2007)</p>	<p>Perceived web quality (PWQ)</p>	<p>Enjoyment/ Anxiety</p>	<p>e-Trust (Integrity/ Benevolence/ Ability)</p>	<p>PWQ -> Enjoyment PWQ -> Anxiety (Negative) PWQ -> Integrity PWQ -> Ability PWQ -> Benevolence Enjoyment -> Integrity Enjoyment -> Integrity Anxiety -> Integrity (Negative) Anxiety -> Ability (Negative)</p>	<p>Enjoyment -> Benevolence Anxiety -> Benevolence</p>	<p>e-commerce systems (Customer self-service systems: www.amazon e.com)</p>	<p>Survey (Electronic)</p>
<p>Ha and Stoel (2009)</p>	<p>E-shopping quality (ESQ)/</p>	<p>Perceived trust (PT)/ Enjoyment (PE)/ Ease of use (PEOU)/ Perceived usefulness (PU)/ Attitude (AT)/</p>	<p>Intention to use of e-shop (IU)</p>	<p>PSQ -> PT PSQ -> PEOU PSQ -> PE PT -> PU, AT PEOU -> PU PE -> PU, AT PU -> AT, IU AT -> IU</p>	<p>PEOU -> AT</p>	<p>e-shopping (TAM)</p>	<p>Survey (Electronic)</p>

Table 2. 10 Other Studies related in Online Communities

The Other Researches related in OCs							
Authors	Independent Variables	Mediators	Dependent Variables	Validated	Rejected	Categories	Methodology
Kang et al., (2007)	Voluntary behaviour (Support for member communication (SC)/ Perceived community value (PV)/ Recognition for Contribution (RC)/ Freedom of expression (FE)/ Interactive communication (IC))	Community Commitment (CC)/ Community Loyalty (CL)	Social Participation (SP)	SC -> CC PV -> CC RC -> CC FE -> CC SC -> CL (negative) CC -> CL CC -> SP	IC -> CC PC -> CL RC -> CL FE -> CL IC -> CL CL -> SP	Online community	Survey (Electronic)
Lin (2008)	System characteristics (Information quality (IQ)/ System quality (SQ))	Member satisfaction (MS)/ Sense of belonging (SOB)	Member Loyalty	IQ -> MS SQ -> MS TR -> SOB MS -> SOB, ML SOB -> ML	SU -> SOB	Virtual community	Survey (Paper)
	Social Factors (Trust (TR)/ Social Usefulness (SU))						
Lin et al., (2009)	Contextual factors (Norm of reciprocity (NR)/ Trust)	Personal perceptions (Knowledge sharing Self-Efficacy (SE)/ Perceived relative advantage (PRA)/	Member's behaviour (Knowledge sharing behaviour (KSB)/ Community	NR -> Trust Trust -> KSB Trust -> SE -> KSB Trust -> PRA -> KSB Trust -> PC -> KSB KSB -> CL	NR -> KSB	Professional virtual community	Survey (Electronic)

		Perceived compatibility (PC))	Loyalty (CL))				
Yen (2009)	Relationship Termination Costs (RTC)/ Relationship Benefits (RB)/ Shared Values (SV)/ Communication (C) / Opportunistic behaviour (OB)	Relationship Commitment (RC)/ Trust	Continuance Intention (CI)	RTC -> RC RB -> RC SV -> RC, Trust C -> Trust OB -> Trust (Negative) Trust -> RC RC -> CI Trust -> CI	None	Virtual programmer community	Survey (Electronic)
Chen and Hung (2010)	Contextual factors (Norm of reciprocity (NR)/ Interpersonal Trust)	Knowledge Contributing Behaviour (KCB 1) / Knowledge Collecting Behaviour (KCB 2)	Knowledge Utilisation (KU)/ Community Promotion (CP)	Trust -> KCB 1 SE -> KCB 1 PRA -> KCB 1	NR -> KCB 1 PC -> KCB 1 PC -> KCB2 KCB 1 -> CP	Professional virtual community	Survey (Electronic)
	Individual factors (Knowledge sharing Self- Efficacy (SE)/ Perceived relative advantage (PRA)/ Perceived compatibility (PC))			NR -> KCB 2 Trust -> KCB 2 SE-> KCB 2 PRA-> KCB 2 KCB 1 -> KU KCB 2 -> KU KCB 2 -> CP			

Kim et al., (2011)	Functional value (Price utility (PU)/ Functional quality (FQ))	Social value (Social self-image expression (SSE))	Intention to purchase digital items (IP)	FQ -> SSE A -> SSE, IP P -> IP SSE -> IP	PU -> IP FQ -> IP SRS -> IP	Social networking community	Survey (Electronic)
	Emotional Value (Aesthetics (A)/ Playfulness (P))						
	Social value (Social relationship support (SRS))						

2.6 The Limitation of Prior Research

From this chapter, this study found the limitations of previous studies.

Firstly, despite the existence of differences between OBC and other OCs, some studies focus on investigating motivation factors to increase intention to use OCs such as for transaction, learning and game communities. Therefore, there is a lack of understanding of what motivations increase members' behavioural intention to use OBCs from an IS perspective.

Secondly, prior IS studies have investigated user behaviours divided by the three stages of acceptance, routinisation, and infusion. Although those studies strive to classify members by age, gender, experience, and so on, these points of view have restriction to explain users' transition behaviours of IS usage from acceptance to infusion in the long-term perspective of an integrated point of view.

Thirdly, some scholars (Kozinets, 1999; Mathwick, 2002; Preece and Shneiderman, 2009) argue that there are different characteristics of user behaviours, evolved by experience of OBC use over time as a life cycle. The life cycle of users in OBC reflects the different purpose of use behaviours, which is the focus of this study. In the beginning users who recently joined an OBC remain on the periphery and slowly move to the core of the OBC through increased use of the OBC. Specifically, at the beginning of the acceptance stage, users' main concern is to gain required information on target brand. According to usage increase, their commitments also start to contribute in the community and then they gain full membership in the community through building interpersonal relationships. At the end, the IS infusion stage, they provide constructive opinions for future improvement or new ideas for new product development for companies. Despite the existence of different behaviours of users as heterogeneous groups in different stages in an OBC, most prior IS studies have viewed IS users as a homogenous group to find motivation in a stage.

Lastly, many scholars argue that only a few members who reach the infusion stage

commit and contribute to OBC activities such as sharing knowledge, participating in marketing performances and new product development (NPD) tasks and these devoted members (i.e. devotees, insiders) generally intend to use and lead the OBC. Hence, increasing these members is most significant for both consumers and companies to vitalise OBCs and ultimately lead the members to engage in collaboration works with firms. In spite of the significant increase of these members, most previous studies in the OC context are only focused on user behaviour in the acceptance stage. To foster the devoted members by a long-term perspective, it would be significant to investigate how and why members are evolved from one stage to another and hence, there is a need to reveal the transition of the motivations for enhancing members' intention to use OBC. However, the prior studies are not able to explain how the motivations are evolved from acceptance to infusion stage.

Therefore, this study claims and supposes that, firstly, the different motivations of OBC use appear to be different purposes of use behaviours in different stages and, secondly, the members' transition would occur from different motivations in OBCs as a socialisation process by over time. Thirdly, the different motivations may have a causal relationship to increase intention of OBC use from acceptance to infusion stage from a long-term aspect.

2.7 Chapter Conclusion

OBC members have different characteristics and OBC members' behaviour varies in terms of the depth of brand knowledge, social and brand relationship, and different experiences period. The purposes of individuals' OBC use can be largely divided into two: consumption and social relationship building. The consumption purpose of OBC use occurs from brand interests and indicates that individuals use OBC for brand knowledge gathering or sharing and purchase decision making. The social relationship building purpose represents members who use OBC to obtain strong interpersonal relationships or social bonds. The literature review shows the two purposes have a deep relationship and the members' purposes are varied by the degree of knowledge and

social bonds they are able to develop in long-term relationships with the OBC. Furthermore, the two purposes are integrated and achieved by devoted members (i.e. devotees, insiders) who are core members and lead OBC. Kozinets (1999) and Preece and Shneiderman (2009) explain this phenomenon as a transition process of members' behaviours in virtual communities.

Despite the different use behaviours that exist in the transition process in OBCs, no studies have investigated and empirically demonstrated why and how the members' behaviours evolve from the periphery to the core. Therefore, from a socialisation perspective, the researcher reviewed organisational socialisation theory to understand more fully why the transition process occurs in OBCs. The organisational socialisation theory indicates the employees' transition process in an organisation can be classified by three stages: (1) pre-entry stage, (2) accommodation stage, and (3) affiliation stage. The extant literatures explain that the employees' status from pre-entry to affiliation stage is developed by the degree of their skill and belongingness of organisation.

On the other hand, to better understand OBC members' behaviours from a utilisation perspective, the researcher reviewed prior IS adoption studies. The studies show that OBC user behaviours can be categorised by three adoption stages: (1) acceptance (2) routinisation, and (3) infusion. The literature review indicates that IS use, experience, and skill influence users' level of adoption. Furthermore, the IS adoption studies point out that TAM is one of the most appropriate models to investigate IS use behaviours of the three adoption stages.

Lastly, the researcher reviewed the prior studies regarding the internet, e-commerce, and other online communities, that focus on IS as well as being related to OBC study. Through this literature review, the research gap is identified and discussed in this chapter.

The limitations of previous researches are as follow.

- A lack of understanding of what factors increase OBC users' intention to use OBC
- A lack of understanding of IS user behaviours as a transition process from the acceptance to infusion stage as an integration view in terms of a long-term perspective
- Despite the existence of different behaviours of users as heterogeneous groups in different stages in an OBC, most prior IS studies have viewed IS users as a homogenous group to find motivation in a stage.
- Most previous research has been related to online communities and focus on the user acceptance stage. Therefore, there is a lack of understanding of user motivation of intention to use OBC in the routinisation and infusion stage.

As the result, the extant literature supports the understanding of the evolution of OBC members' behaviours from the novice member to the core member from socialisation and utilisation perspectives. Socialisation and IS adoption studies imply that individuals' behaviours in OBC can be specified by three stages which also explain a causal relationship as a transition process. For example, although previous studies classify OBC members as four clusters, social identification theory implies OBC members' behaviours are able to be classified as (1) *tourists*, (2), *minglers*, and (3) *devoted members* (i.e. devotees, insiders) from a socialisation perspective. It also helps to find and predict the motivations that lead the transition from one stage to another. Further, the literature review contributes to the establishment of a transition process model of OBC members' motivation from a long-term perspective, which is introduced in the next chapter of this study. In chapter three, a conceptual approach and a theoretical framework is developed and introduced with a hypothesis based on socialisation theory and IS adoption stages.

CHAPTER 3 RESEARCH MODEL and HYPOTHESES

3.1 Introduction

In this chapter, three theories (OBC members' behaviours, socialisation and IS adoption theory) are integrated to approach for establishing a conceptual model that explains how and why OBC members transit from the periphery to the core of the community as a socialisation process. In addition, TAM is combined with the result of conceptual approach which uses a review of extant literature and the theoretical perspective to propose a different theoretical framework for examination of OBC users' transition behaviours and intention to use OBC in the long term perspective.

For conceptual development of theories, although some scholars (Kozinets, 1999; Mathwick, 2002; Preece and Shneiderman, 2009) classify OC user behaviours as four groups, this study categorises OBC members into three clusters - tourists, minglers, devoted members (devotees and insiders) - by social identification theory in three stages of organisation socialisation process. Subsequently, the three stages of socialisation process are linked with three stages of IS adoption to investigate and discuss the similarity between two theories and to compare whether the IS adoption stages can be used as a transition process. In addition, it is also compared with three clusters of OBC members. Lastly, the three theories combine to investigate and extract motivations that can explain OBC members' behaviours in each stage, and the causal relationship as a transition process of OBC members' behaviours are identified.

For the theoretical framework, this study adopts TAM to investigate the transition process of OBC members' motivations from acceptance to infusion stages and their intention to use OBC in the long-term perspective. From literature review, TAM is identified as one of the most appropriate models to investigate IS user behaviours in three adoption stages – acceptance, routinisation, and infusion. Finally, this chapter

introduces a conceptual and theoretical framework and hypotheses. The hypotheses are developed with theoretical evidence to explain the relationships between dependent and independent variables for explanation of OBC user behaviours.

This chapter consists of five sections in, largely, two categories: conceptual development of theories for extracting motivations; and research model and hypotheses for developing the relationship between motivations.

In the first section, OBC members' behaviours are classified as three clusters adapted by social identification theory in three stages of the organisational socialisation process. Second, three IS adoption stages are compared with three stages of the organisational socialisation process and three clusters of OBC users' behaviours. Third, the OBC members' motivations of three stages are extracted in terms of the organisational socialisation and IS adoption process. Thereafter, the causal relationship of OBC members' behaviours as a transition process are investigated and identified. Finally, the research model is suggested with conceptually developed theories and TAM and then the relationships between motivations are discussed and hypothesized by theoretical evidence.

3.2 Social Identification in Socialisation Stages in OBC

3.2.1 OBC Members' Personal Identification in the Pre-entry stage

In organisation socialisation theory, the first stage is the pre-entry stage in which an individual collects information on the target organisation. In an OBC context, the pre-entry stage can be explained by a behaviour which an individual collects information in the target OBC. The novice members mostly stay on this stage for information collection regarding brand products or services to make purchase decisions in an OBC. Kozinets (1999) names members who stay in this stage as '*tourists*'.

In the pre-entry stage, personal identity is established by an individual's psychological self-conception (Kim *et al.*, 2001b). Kozinets (1999) argues that identification of an OBC member can be largely explained by two aspects: consumption and social relationship building behaviour. Among the two behaviours, the individual's consumption behaviour can affect the building of a personal identity because members have different consumption behaviour in OBCs (Kozinets, 1999). It means that individuals have different needs and interests such as function, shape, colour, price and so on. Therefore, Kozinets (1999) argues that an individual's self-image as a personal identity is influenced by their consumption behaviour; and their consumption behaviour can be a significant symbol in an OBC. Further, the individual can be a peculiar member in OBC with her/his distinct personal identity. Ashforth and Mael (1989) and Kim *et al.* (2001) explicate that personal identity includes peculiar characteristics such as an individual's specific interests. In OBCs, the individual's personal identity is likely to be established in the pre-entry stage. Kozinets (1999) insists most novice members are '*tourists*', simply interested in information gathering for consumption. They generally use OBCs to make decisions for purchasing products or services. Therefore, personal identity would emerge after purchase of particular products or services. In addition, novice members are likely to lack relationships with other members as well as brands or organisations because their activities are limited in information gathering in OBCs. Thus, the information provided by other members in the OBC would be one of the most significant determinants to novice members not only for consumption activities but also building personal identity.

3.2.2 OBC Members' Group Identification in Accommodation stage

In an organisation socialisation context, the second stage is accommodation. In this stage, an individual has already joined the organisation and makes an effort to be part of the organisation through interaction with existing members and the person also identifies a role in the organisation and becomes familiar with the given tasks or voluntary activities. Kozinets (1999) classifies this stage's members as '*minglers*' in OBCs. The trait of '*minglers*' behaviours in OBCs represents members who are

interested in attachment with others and building interpersonal relationships (Kozinets, 1999). Hence, they start to contribute to the OBC by posting messages such as greetings or replying to others' messages on bulletin boards or message boards (Kozinets, 1999; Preece and Shneiderman, 2009).

Social identification emerges from the esteemed idea of group identification and a social identity which encompasses prominent group classifications (Ashforth and Mael, 1989). Weik (2001) argues that a '*sense of belongingness*' of organisations is the most significant for members in the accommodation stage. Bergami and Bagozzi (2000) also insist that the perception of belonging to the group is an important part of identification in an organisation. Ashforth and Mael (1989) explain that group identification is "*the perception of belongingness to some human collective*". Rao et al. (2000) advocate that there is a strong relation between social interactions and social identity. Stokburger-Sauer (2010) also asserts that individual social identity is enhanced when individual social structures are developed. Stokburger-Sauer (2010) refers to this social identity as group identity. The group identification is the basis of communities (McAlexander *et al.*, 2002). Individuals who have the '*minglers*' behaviour are most likely to be OBC members who have a strong attachment and social bond in OBCs. Moreover, s/he would want to belong in social categories with group identity (Kozinets, 1999; Stokburger-Sauer, 2010). Therefore, a '*sense of belonging*' can influence to enhance individual social identity – as group identity - in OBCs.

3.2.3 OBC Members' Brand Identification in Affiliation stage

In organisational socialisation theory, the third stage is affiliation stage which individuals are more affiliated with the organisation and becomes a central members the organisation. Cable and Parsons (2001) explain the individual's value in the affiliation stage becomes aligned with organisational values and the person's commitment to the organisation is increased. Some scholars name members of this stage as '*devoted members*' in online communities (Kozinets, 1999; Mathwick, 2002; Preece and Shneiderman, 2009). Kozinets (1999) classifies this stage's members as '*devotees*' and

'insiders'.

According to social identity theory, organisation identification is a special type of social identification (Kim *et al.*, 2001b). Stokburger-Sauer (2010) asserts that organisation identification is a consequence of social identification. The definition of organisation identification is “*the process by which the goals of the organisation and people become increasingly integrated and harmonious*” (Ashforth and Mael, 1989). In the OBC context, the organisation identification is represented by brand identification in OBCs (Kim *et al.*, 2001b) because the goal of an OBC is to integrate consumers and brand. The consumer-brand identification in an OBC is established from strong ties between consumers and brand. An individual who has a strong identity to a brand becomes a brand loyal consumer who regards the brand as her/himself (Bagozzi and Dholakia, 2006; Stokburger-Sauer, 2010). Ashforth and Mael (1989) assert that when members share their identity with an organisation, the organisation goals can be personal goals. Likewise, when OBC members share their identity with an OBC, the OBC goals become as individual's goals; hence, members can be integrated with the brand. Furthermore, according to Bergami and Bagozzi (2000), membership behaviours are affected by organisation identification and a strong organisation identification has a significant effect on members' contribution and willingness to contribute to a collective work and group cooperation (Dutton *et al.*, 1994). In the affiliation stage, OBC members are able to affect brand identification and it makes them contribute to the OBC activities. Kozinets (1999) and Mathwick (2002) assert that members who have a strong brand loyalty as *'devotees'* and *'leaders'* have a physically powerful commitment to an OBC with strong brand identity rather than other groups of members. Preece and Shneiderman (2009) also argue that *'colloborators'* and *'leaders'* as loyal members provide more commitment and contribution to OBCs.

3.3 IS Use Behaviour in Socialization Stages

The three IS adoption behaviours in acceptance, routinisation, and infusion stage have a considerable relationship with three organisational socialisation stages: pre-entry,

accommodation, and affiliation. Van Maanen and Shein (1979) explain organisational socialisation as a process to be a knowledgeable and skilled person in an organisational role. Hsieh and Wang (2007) and Moore (2002) account for the three IS stage as different levels of employees' activities for IS implementation because of the complexity and malleability of complex IS. It means that the IS stage of users is varied by their skill or knowledge of IS use, similar to an organisational socialisation process.

3.3.1 Acceptance and Pre-entry Stage

In organisational socialisation theory, Haski-Leventhal and Bargal (2008) explain the pre-entry stage as the '*entrance*' stage to join an organisation. The newcomer in this stage is a not skilled member hence s/he likely to look for initial information and strive to collect information for the job and learn the culture. They also insist that if the organisation cannot reach the newcomer's expectation, they may not intend to work and finally decide to leave. It has similarity with IS acceptance behaviours because the IS acceptance stage represents the starting point of IS use by a novice member (Cooper and Zmud, 1990). Therefore, novice members are not skilled users (Hsieh and Wang, 2007) and if they are not satisfied with the IS, they may not want to continue. The behaviour in this stage also has similarity with the '*tourist*' behaviours of novice members in OBCs (Kozinets, 1999).

3.3.2 Routinisation and Accommodation Stage

In organisational socialisation theory, Weik (2001) refers to the accommodation stage as a process for '*sense of organisation*'. Newcomers feel more confident for the job and become skilled members by experience and accommodate the group's organisation (Haski-Leventhal and Bargal, 2008). This stage is similar to the routinisation stage of IS use because the novice member becomes familiar with IS and skilled people (Hsieh and Wang, 2007). Furthermore, the users in this stage progress into the routine and standardised phase (Cooper and Zmud, 1990). The behaviours of this stage have a similarity with '*minglers*' behaviours in OBCs (Kozinets, 1999).

3.3.3 Infusion and Affiliation Stage

Cooper and Zmud (1990) insist that IS users in the infusion stage may have a higher level of skill and contribute to the organisation with more positive consequences. In organisational socialisation theory, Leventhal and Bargal (2008) argue that individuals in the affiliation stage may be highly experienced, skilled and knowledgeable for the job and organisation. Furthermore, the individuals in this stage make more commitment for the organisation rather than other stages' members. Likewise, the infusion and affiliation stage have a likeness to each other. The behaviours of this stage have also a similarity with '*devotees*' and '*leaders*' as devoted members in OBCs (Kozinets, 1999).

3.4 OBC Members' behaviours and IS use

3.4.1 OBC Acceptance and Information Quality in the Pre-entry Stage

The corresponding IS use behaviour in the pre-entry stage is IS acceptance which represents users' decisions to join an OBC. Acceptance is a behaviour that leads to a state in which a user makes a commitment to use a system (Cooper and Zmud, 1990). In the OBC context, users who are in the pre-entry stage decide whether to accept (continue to stay) the OBC or not (leave the OBC and look for another). Users in this stage are mainly focused on obtaining information with regard to a brand in which they are interested from several candidate OBCs. They make a visit to each candidate OBC(s) to judge the quality of information and then decide to accept or not. If the users find the information obtained worthy, and the culture initially perceived from the OBC is tolerable, then they tend to make more frequent visits to it. Kozinets (1999) asserts that the rich information presented by an OBC can lead members to accept and stay to use by spending more time.

In the context of computer mediated communication (CMC) as an OBC, the information exchange is a significant behaviour to communicate with others and information sharing behaviours are also a compulsory reason why OBC can exist on the web. The internet is a broadly used implement for gathering information which related with consumption,

communicating with each other and purchasing of products (Stokburger-Sauer, 2010). OBC is an excellent space to combine these behaviours and to satisfy these purposes. Many researchers argue that if a fairly large number of partners who are able to communicate are not using a new medium, people are unlikely to adopt it (Zhang and Hiltz, 2003). Preece (2001) argues that an online community's success can be measured by the number of participants and posted information in the community. However, although there is much information in an OBC, people may not want to stay if the information is not abundant, useful or trustworthy. Likewise, OBC members are most likely to leave if information sharing is not vigorous or information quality is low grade. For example, from a marketing perspective, when consumers want to make a purchase decision of a brand product or services, they want to find and gather information from other consumers who are brand users and have brand experiences. However, if an OBC has a small amount of information, or if the information is not reliable or accurate or is unsatisfactory, the consumer will not stay in the OBC and leave to find another. Therefore, information and its quality would be one of the most significant determinants to accept and continue use of OBCs.

The members of this behaviour would mostly appear to be novice members who have recently become a member or OBC members who investigate information of brand products for purchase decision making. This behaviour would mostly be represented by '*tourists*' in the pre-entry stage. However, this behaviour can also be appeared in all members when they want to gather information for consumption activities. AlSajjan (2008) insists that when consumers compare products for purchase decision making, the good quality of information is helpful for them. Jeong and Lambert (2001) also claim that information quality is a crucial factor for consumers' purchasing decisions on the web. Therefore, perceived information quality would be one of the most significant determinants for novice members as '*tourists*' in the pre-entry stage to lead their acceptance of an OBC. Furthermore, perceived information quality would be a trigger for transition from the pre-entry to accommodation stage in OBCs.

3.4.2 OBC Routinisation and Sense of Belonging in Accommodation Stage

Routinisation can be linked with user behaviour in the accommodation stage. Routinisation means that the use of an information system is institutionalised rather than being out of the ordinary (Saga and Zmud, 1994). In the accommodation stage, users of OBCs try to be more active members of the OBC by increasing interactions with other members. The interactions are usually enhanced by posting articles about information of brand or brand experience (i.e. product or services) on the board in OBCs. By these behaviours, a user's role in the community changes from information seeker to information creator (Preece and Shneiderman, 2009). Preece and Shneiderman (2009) refer to this stage as an information contributor. If a user's effort to mingle with other members of the OBC turns out to be successful (that is, a user's articles are appreciated by other members therefore the user's personal identity is known in the community), then the number of user's visiting the community will be increased and institutionalised (Preece and Shneiderman, 2009). From these processes, individuals are able to gain a social bond with others and their social identities can be formed and transited from personal identification to group identification in OBCs. It is a salient feature of the accommodation stage in the socialisation process.

In the accommodation stage, a core factor that facilitates users to remain with an OBC is the sense of belonging which makes users believe they are part of the community (Kim *et al.*, 2001a). Social identification implies a sense of belonging to certain groups or organisations. This phenomenon is often called social identification as group identification (Kim *et al.*, 2001b). Group identification is "*the perception of oneness with or belongingness to some human collective*" (Ashforth and Mael, 1989). People tend to use diverse factors to categorise themselves as belonging to a specific group and this phenomenon is broadly embedded in our social life (Kim *et al.*, 2001b). Group identification indicates not merely a group to belong to but also a collective to which individuals desire to belong (Hogg *et al.*, 1995).

OBCs exist and have a socialisation role similar to *'real'* and *'traditional'* communities (Rheingold, 1993). The studies of online communities underline supportive and sociable relationships that give and make to establish a sense of belonging even if a group of people do not live in adjacent distance (Hampton and Wellman, 2001) from a social perspective. In OBCs, Kozinets (1999) explains most *'minglers'* may crave to feel more sense of belonging rather than other groups because minglers pursue and seek strong bonds with others. Minglers are likely to aspire for conversation with any issues such as greetings, health, and life stories and so on to develop social relationships in OBCs although the issues are not related with the brand and consumption activities (Rothaermel and Sugiyama, 2001). However, it does not mean that the *'minglers'* do not have interests in the consumption issues because the *'minglers'* behaviours are most likely to occur from members who have recently purchased a brand product (Kozinets, 1999). Therefore, *'minglers'* may not have professional knowledge about the brand product usage because they are less experienced, so, they may want to seek advice from experienced members. They may inquire on the bulletin board regarding their curiosity and may start to contribute through describing their brand experiences (i.e. purchase process, usage) on the bulletin board (Kozinets, 1999; Preece and Shneiderman, 2009). These activities are able to assist development of interpersonal relationships and, further, formation of social bonds with other members in OBCs. Finally, the social bond occurs in individuals feeling a sense of belonging. Furthermore, Kozinets (1999) asserts that the sense of belonging can be made from brand experiences as consumption activities because the OBC represents the brand itself. For example, a member purchases a brand product or service which belongs in an OBC, this brand experience is likely to increase the individual's feeling of belonging to the OBC. The sense of belonging that emerges through interpersonal relationships and brand experiences is treated as a vital element to participate in OBC activities and if it is absent the members would not participate and involve themselves in the online community (Lin, 2008) because social participation in OBCs is associated with interpersonal and affiliate behaviours of members (Van Dyne *et al.*, 1994). Therefore, a sense of belonging would be a significant factor to be routinised in an OBC and it may trigger the role of transition from accommodation to affiliation stage. As evidence, sense of belonging has been one of the factors most frequently referred to for the participation in OCs in previous studies.

3.4.3 OBC Routinisation and Trust in the Accommodation Stage

The sense of belonging is a feeling that members have of belonging in the group based on trustworthiness and it is developed by interpersonal relationships between members of the group (Lin, 2007). To develop social bonds, Rothaermel and Sugiyama (2001) assert that the mutual interests in the community's topic might cultivate the development of trust among its members and repeated and continual interaction with other members may also help for developing social relationships and bonds based on trust. Likewise, The pre-requisite of sense of belonging in a community is trust on other members who are a voluntary group of people to be vulnerable from another actions (Lin, 2008). Therefore, trust in an OC enable to be understood in the perspective of interpersonal relationships between people (Rotter and Stein, 1971) and is termed as personal trust (Luhmann, 1988). Trust is generally a collective level because an individual interact with not only one or two others and an individual is normally posting information to wide-ranging audiences in the OC; therefore, the notion of interpersonal trust has been studied to collective levels as the perspective of groups (Jarvenpaa and Leidner, 1999). Rothaermel and Sugiyama (2001) argue that trust develops in an OC between an individual and other members, ultimately supply a positive and common benefit for the community and its members as a whole.

Likewise, trust may be fundamental for the continuance of the community; especially remarkable in the case of OBC due to uncertainty in others (Rothaermel and Sugiyama, 2001), while traditional communities' members collaborate with others by face to face communication (Bhattacharjee, 2002). One of the most significant differences between OBCs based on the web and traditional face to face based communities meeting is whether the community has geographical limitation or not. When consumers exchange their interests and knowledge with others through computer-mediated communication, they normally consider whether the information is real and trustworthy (Bhattacharjee, 2002) because of the restriction of face to face conversation. Swan and Rosenbaum (2004) also assert that trust is significant particularly in e-business although it is important in all business. They argued that the trust in e-business is important not only '*business-to-consumer*' (B2C) but also '*business-to-business*' (B2B) because e-business

normally lacks the physical closeness of face to face interaction. Therefore, individuals are most likely to obtain interaction with the firm's website. Likewise, members of OBCs can communicate through the OBC website, hence, trust among members in the communities would be a significant determinant to make decisions for continuance of OBC use (Jarvenpaa and Leidner, 1999). Therefore, if an OBC member cannot trust others or the OBC itself, they would not want to continue and would tend to use another OBC.

3.4.4 OBC Infusion and Brand Loyalty in Affiliation Stage

Infusion appears usually in the affiliation stage when a member approaches the core of its circle. In the context of an OC, members in this stage are well known by others in the community due to contribution of good quality information as well as well-built social ties with other core members such as *'devotees'* and *'insiders'*. (Kozinets, 1999; Mathwick, 2002; Preece and Shneiderman, 2009). Their behaviours in the community make significant contribution to the companies of the brand product. Reaching to the core of its inner circle, members in the affiliation stage of the socialisation process are expected to show leadership in the operation of a community (Preece and Shneiderman, 2009) which is described as IS infusion in the OBC context.

According to social identity theory, organisation identification in the affiliation stage also indicates shared characteristics, loyalty and cohesion and it also indicate a attachment which is explained as a desire for affiliation with the organisation (Ashforth and Mael, 1989). An OBC can be a role of organisation because an OBC represents a brand, hence, the major motivator that leads to IS infusion behaviour in OBC is likely to be brand loyalty (Kozinets, 1999; Mathwick, 2002). In the context of organisational socialisation, Ashforth and Mael (1989) argue that organisational identification is "*a specific form of social identification*" and is also stated in the question "*who am I?*" in an organisation. Organisation identity refers to the mind of a family of existential motives and includes meaning, connectedness, empowerment, and immortality in an

organisation (Denhardt, 1987). Bagozzi and Dholakia (2006) define a brand community is as *“a friendship group of consumers with a shared enthusiasm for the brand and a well-developed social identity, whose members engage jointly in group actions to accomplish collective goals and/or to express mutual sentiments and commitments.”* They also explain that, firstly, brand communities are places where strong brand loyalty is emerged, fostered, and expressed and are venues to connect emotionally between brands and customers. Secondly, brand communities sustain loyal members who have *‘consumer empowerment’* that encourages companies to regard the members as partners and companies give authority to members for controlling information sharing and decision making to increase consumers competence and, ultimately, it gives mutual benefit and profit to consumers and companies (Bagozzi and Dholakia, 2006; Prahalad and Ramaswamy, 2000).

Brand loyalty is defined as the degree of a member’s attitudinal or behavioural attachment and commitment to a brand which belongs in the context of the OBC. With brand loyalty, members are likely to belong to the OBC and will become integrated. Members are also likely to share characteristics of the OBC and their brand loyalty giving them solidarity. Kozinets (1999) argues that if a person devoted to a brand has a strong social bond with OBC members, the person would like to share his consumption passion regarding the brand with other members and commit to the brand and the OBC and its members. This phenomenon normally occurs in *‘devotees’* who have a strong brand loyalty and *‘insiders’* who have strong social bonds, as well as loyalty in an OBC. Kim et al. (2001) empirically demonstrate that if a consumer is identified with the brand, the consumer will have a feeling of attachment with the brand and will commit more to the brand through strong brand loyalty.

Likewise, one of the most prominent characteristic of the OBC is the importance of brand loyalty. Without the members’ brand loyalty, the OBC would not be established and sustained. Therefore, brand loyalty from other members would be a significant determinant for continuance and intent to use the OBC.

To sum up, the above discussions can be summarised as in Table 3.1

Table 3. 1 Extracted Motivations of OBC Members in Different Stages

	OBC members' behaviours	Socialisation	Social Identification	Is adoption	Extracted motivation
Stage 1	Tourists	Pre-entry	Personal identity	Acceptance	Information quality
Stage 2	Minglers	Accommodation	Group identity	Routinisation	Trust / Sense of belonging
Stage 3	Devotees / Insiders	Affiliation	Organisational (Brand) identity	Infusion	Brand loyalty

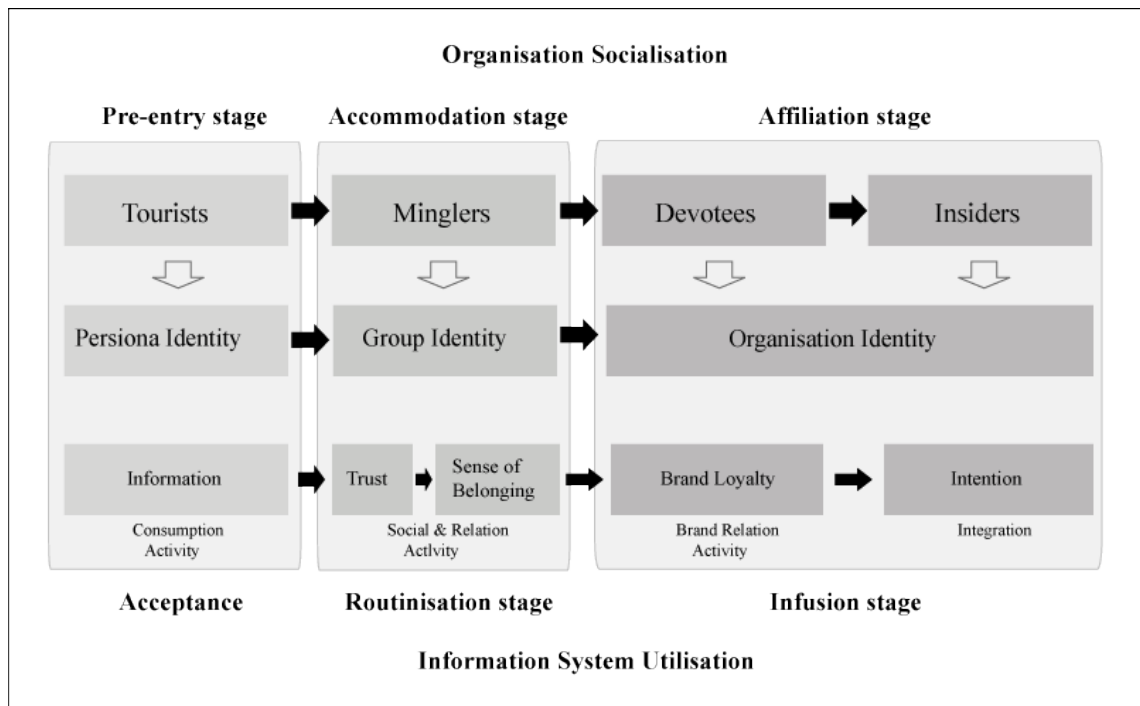
3.5 Causal Relationship among OBC Members' behaviours

In the context of the OBC, according to McAlexander et al. (2002), consumer-centric relationships with different entities are likely to be increasing and growing in forming a single construct as brand loyalty and they refer to the single construct as brand loyalty and called that as '*integration in a brand community*' (IBC). They explain that IBC is a more comprehensive concept based on a consumer's total life experience with a brand and IBC consists of the consumer's perceived relationships with (1) *their own product*, (2) *the other owners*, (3) *the brand*, and (4) *the company* as multi-way interactions (Stokburger-Sauer, 2010). It can be explained by OBC members' behaviours. Firstly, consumer-centric relationships with own product can be explained by '*tourist*' behaviours because they are mostly focused on gathering information for purchase of the brand product. Secondly, the relationship between consumer and consumers is depicted by '*minglers*' behaviours because they are likely to be interested in building interpersonal relationship with other members. Thirdly, the relation between consumer and brand or company can be described as '*devotees*' and '*leaders*' behaviours that appear from members who have a strong brand loyalty. The multi-way relationship may be formed across '*tourist*' stage to '*leaders*' stage as a transit process. As evidence,

Kozinets (1999) and Mathwick (2002) argue that *'devotees'* and *'insiders'* have multi-way interactions with other members and brands such as products, company, and managers because these members' groups are strongly interested in consumption activities as well as building interpersonal relationships.

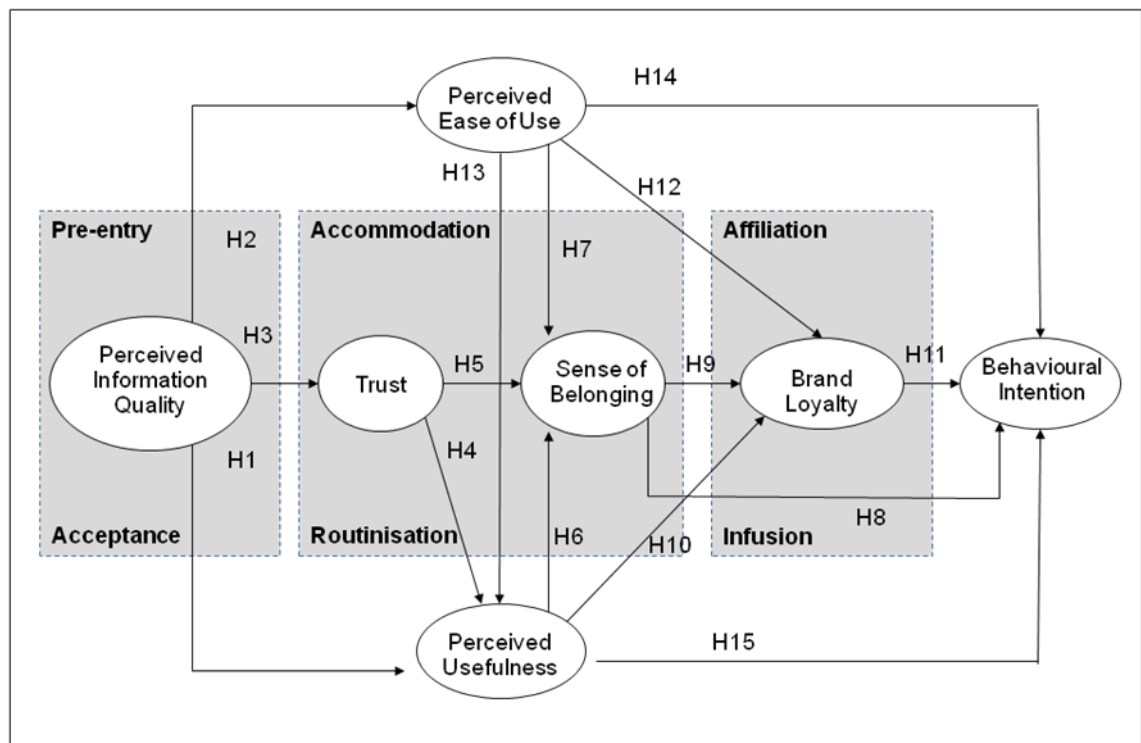
Kozinets (1999) argues that long-term relationships help to build weak ties into strong ties with members and brands in OBCs. After becoming a member, consumers use the OBC because they need information regarding brand products and services to make decisions for purchasing (McAlexander *et al.*, 2002). In this stage, the consumers' purpose of OBC usage is mainly for information gathering and the members may not, as yet, have any trust of members and sense of belonging and brand loyalty in the OBC (Kozinets, 1999). McAlexander *et al.*, (2002) argue that sharing meaningful consumption experiences increase mutual understanding and appraisal for the product and the brand. Therefore, for these stage members, information quality would be the most significant determinant to continue using the OBC because, if the information is not trustworthy or low quality, the members would hesitate to continue use and may leave the OBC for another. Likewise, the high quality of information would affect members' trust in members and the OBC, and the trust influence on willingness to maintain use of the OBC. McAlexander *et al.*, (2002) insist that credible and impactful information leads members to obtain more interpersonal bonds, increase purchase behaviour and to be loyal customers. Hence, consequentially, it would encourage members to stay in the OBC and repetitiveness of this behaviour increases the sense of belonging in the OBC. Furthermore, if the information supplied by OBC members is trustworthy and guaranteed, it would increase newcomers' purchasing decisions as well as experiential members' repurchasing; hence, it would enhance members' brand loyalty. Kozinets (1999) insists that *"brand loyalty is based on social needs that indicates the desire to believe and to belong"*. Therefore, the brand loyalty can be formed from trust and sense of belonging in OBCs. Figure 3.1 shows the causal relationship among OBC members' behaviours.

Figure 3. 1 The Transition Process of OBC Members’ behaviour



3.6 Research Model and Hypothesis

The conceptual model is established based on TAM. [Figure 3.2] Firstly, the conceptual framework is to investigate members’ intention through the transition process of motivations from acceptance to infusion behaviour in an OBC context. The motivational factors are extracted and identified from the use behaviour of OBCs in each stage of the socialisation process. The model explains the causal relationship among motivations as users go from the pre-entry stage to the affiliation stage. In addition, the model explains the relationship between motivations and TAM constructs.

Figure 3. 2 Transition Process Model for Intention

3.6.1 Information Quality for the Acceptance of an OBC

3.6.2.1 Information Quality

Information quality defines as “*the quality of the information provided by the online services*” (Lin, 2007). The information quality can be measured by several dimensions such as the accuracy, currency, completeness of information as well as information presentation format (Nelson *et al.*, 2005). Bhattacharjee (2002) asserts that the information quality is a nature and a significant factor to success of an online community which is as a social network system and it is a important determinant for online interaction to increase information sharing because online community has lack of face-to-face interaction. In the OBC context, this study defines information quality as ‘the quality of the information provided by voluntary OBC members’.

The reason why consumers participate in OBCs is motivated by information need

(ChanBhandarLih-Bin *et al.*, 2004; Kozinets, 1999; Romm *et al.*, 1997) and consumers may join a certain OBC because they are interested in the specific brand relevant to them (Shang *et al.*, 2006). In addition, if a consumer is interested in a specific brand product or services for purchasing or purchase making decisions, they would search and join an OBC to obtain information provided from other members who have experience of the brand which belongs to the OBC (Kozinets, 1999). Burnett (2000) argues that members' participation behaviour in OBCs can be largely distinguished as interactive activity or non-interactive activity. Mathwick (2002) calls members who have non-interactive behaviours '*lurkers*', and their behaviours are also referred to as lurking. Other scholars call lurkers '*tourists*' (Kozinets, 1999) and '*readers*' (Preece and Shneiderman, 2009) as passive participants (Madupu and Cooley, 2010). Lurkers' behaviours are merely to read messages posted from other members and they do not have any contribution for OBCs as '*tourists*' in this study. This behaviour is most likely to occur in consumers who want to make a decision for purchasing of brand products (Kolter and Armstrong, 2001). In this stage as consumers, or members, of the OBC, they may investigate other members' satisfaction levels or appraisal of brand products or services and would be influenced to make the decision for purchase of the brand. When consumers compare products or services and make a purchase decision, information quality assists them (AlSajjan, 2008) and Jeoug and Lambert (2001) also claim that information quality is a determinant of consumers' purchasing decisions on the internet. Therefore, accurate information quality is exceedingly significant to them to make right decision. In addition, the '*tourist*' also appears after purchase of the brand products or services because they would like to find information about usage or solutions regarding their problems of product use without contributing to the OBC (Madupu and Cooley, 2010). However, this behaviour may also appear in not only the '*tourist*' but occasionally all members of the OBC when they want to gather information from other members.

In the context of World Wide Web use, Lederer *et al.*, (2000) suggest that information quality such as '*relevance*', '*accuracy*', '*timeliness*', and '*thoroughness of information*' would be significant factors to revisit a web site and found that it has a significant relationship with perceived usefulness. Liao *et al.*, (2006) demonstrate that information

content quality is a significant determinant to the perceived usefulness of an e-commerce web site. OBCs have been used for purchase decision making and the members make a group purchase of a branded product or service sometimes because of price cutting. The OBC has a similar role to the e-commerce web site. Ahn et al., (2007) also found that information quality has a positive relationship with perceived usefulness in the context of online retailing by an empirical study. In addition, Lin (2007) studied 20 prominent virtual communities that belong in Yahoo and another portal site in Taiwan and validated that information quality is a valuable predictor to influence perceived usefulness of virtual communities. Therefore, the previous arguments support the following hypotheses linking information quality and PU.

H1. Perceived information quality would be positively related to perceived usefulness of an OBC.

The perceived ease of use dimension consists of such features as ease to use, easy to become skilful, easy to learn, and easy to clearly understandable (Ahn *et al.*, 2007). When novice members initially use an OBC, if they realise that it is difficult to find some information, they may want to know where they can obtain the information. In this case they will require more time and effort to find reasonable quality information from the OBC and may perceive the OBC as difficult to use. Therefore, if information quality about OBC usage is difficult to understand, the members do not hesitate to leave the OBC. Lederer et al. (2000) reveal that information quality significantly affects the PEOU in world-wide-web use by an empirical study. Ahn et al., (2007) also validate the positive relation between information quality and PEOU in the use of online retailing web sites. Therefore, the previous arguments support the following hypotheses linking information quality and PEOU.

H2. Perceived information quality would be positively related to perceived ease of use of an OBC.

3.6.2 Trust and Sense of Belonging for Routinised use of an OBC

3.6.2.1 Trust

According to organisation theory, trust is needed and adapted in a large range of relationships among individuals and organisations. Trust is defined as “*the willingness of a trustor to be vulnerable to the actions of a trustee*” (Chircu *et al.*, 2000) and as “*a general belief that the trustee can be trusted*” (Jarvenpaa *et al.*, 2000). Trust also refers to “*an implicit set of beliefs that the other individuals or groups will desist from opportunistic behaviour and will not take advantage of the situation*” (Gefen, 2002). Trust is also asserted as “*a defining feature of economic and social interactions in which an uncertain environment exists*” (Pavlou, 2003). In this paper, trust is defined as ‘a general belief that the members of the OBC can be trusted’.

In previous research, trust implies three distinctive beliefs: ‘*ability*’, ‘*benevolence*’, and ‘*integrity*’ in an exchange relationship (Mayer *et al.*, 1995). Ridings *et al.*, (2002) define each dimension of trust in the context of online communities. Firstly, ‘*ability*’ in trust is “*skills or competencies that enable an individual to have influence in a certain area*”. Secondly, ‘*benevolence*’ in trust is as “*the expectation that others (i.e. trusted parties) will have a positive orientation or a desire to do good to the trustee*”. Thirdly, ‘*integrity*’ in trust is as “*the expectation that another will act in accordance with socially accepted standards of honesty or a set of principles that the trustor accepts, such as not telling a lie and providing reasonably verified information*”. Ridings *et al.*, (2002) argue that all three dimensions are important in a virtual community because when the members converse with other members regarding their a specific mutual interest, hobby, or life event, they are concerned about the abilities of others with regard to respect, hence, the ‘*ability*’ of members is important. Furthermore, when members who are trustees reciprocate with appropriate advice, help and discussion for others, the community would not exist without positive reciprocation, thus, ‘*benevolence*’ is significant. They also assert that ‘*integrity*’ is also important because it represents the existence of norms of reciprocity. Ridings *et al.*, (2002) argue that ‘*integrity*’ and ‘*benevolence*’ might be combined to be the one because ‘*integrity*’ is as an expected

mode of behaviour in ‘benevolence’, hence, they united ‘*benevolence*’ and ‘*integrity*’ as a dimension in the virtual community context.

The trust is as a compulsory element in most economic and social interactions and it is especially more significant in e-commerce due to uncertain environment (Ba and Pavlou, 2002). Trust is also a significant factor to successful transactions in consumer-marketer relationships and in influencing consumer behaviour (Schurr and Ozanne, 1985). In addition, some scholars demonstrated that the trust is the most significant determinant to increase individual’s engagement from uncertainty in the internet-based e-commerce context (Gefen and Straub, 2003; Moon and Kim, 2001). Pavlou (2003) defines trust in e-commerce as “*a salient belief which includes goodwill trust (benevolence) and credibility (honesty, reliability, and integrity)*”. Pavlou (2003) argues that there are two uncertainties: behavioural uncertainty and environmental uncertainty in e-commerce. Behavioural uncertainty and environmental uncertainty indicate that when consumers use e-commerce websites, they deliberate regarding the web retailer’s characteristics and related technological infrastructure respectively whether both are trustworthy or not. Therefore, two targets of trust are requested in e-commerce websites: ‘*party trust (trust in another party)*’ and ‘*control trust (trust in the control mechanisms)*’ (Pavlou, 2003).

The environment of OBCs is based on the internet and OBCs are related to consumer behaviour. Gefen (2000) defines trust is as “*an essential element in the acceptance of internet technologies*”. Therefore, trust would be a significant role in an OBC for making consumer purchase decisions and building interpersonal relationships because OBCs are established in uncertain environments of the web. This study focuses on the behavioural uncertainty because this study focuses on consumer-initiated OBCs and most of all investigates OBCs belonging in a portal site (www.naver.com), therefore, the system has environmental uncertainty as system and service quality cannot be controlled by members, even operators of the OBC. The behavioural uncertainty of the OBC refers to consideration of the characteristics of OBC members in this study. Gefen and Straub (2003) argue that lack of trust is as “*one of the main reasons for consumers not engaging in e-commerce*”. The OBCs are strongly related with e-commerce activities especially product purchase making decisions, hence, the lack of trust would

influence consumers' engagement in OBC activities.

When consumers exchange their interests and knowledge with others through computer-mediated communication (CMC), they normally consider whether the information is real and trustworthy (Bhattacharjee, 2002). Content quality in web quality represents information's usefulness, accuracy, and completeness as similar with the information quality which argued comprehensively in previous research (Liao *et al.*, 2006). When consumers perceive that the information of a website is not reliable, the trust will disappear rapidly (McKnight *et al.*, 1998). Liao *et al.*, (2006) also argue that if the information that is provided by the web retailer is inaccurate, unclear, or incomplete, the consumers will doubt and think the information is harmful and the trust in the web retailer will be decrease. In the same manner, when consumers or members use the OBC, the trust would be increased by information quality provided voluntarily by members because the reliability of content is a significant factor to maintain OBC use for not only purchase decision making of products but also sharing knowledge. Good quality of information obtained from an OBC provides visitors with positive perceptions of other members. This relationship is particularly significant in OBCs as the information may be used for making purchase decisions of the product or service. Anderson (2005) asserts that brand communities are established and maintained by buyer-seller relationships as well as member's relationships through professional knowledge exchange and good quality of information, thereby increasing the behavioural involvement of community members. Hence, information quality would be a significant factor to increase the trust in the community. Liao *et al.*, (2006) used empirical study to validate that information quality positively influences to the consumers' trust in the web retailer who provides information and content. Likewise, the information quality provided by other members voluntarily is likely to be a significant determinant effect on the trust in the OBC. Therefore, the previous arguments support the following hypotheses linking information quality and trust.

H3. There will be a positive relationship between perceived information quality and trust of the OBC.

For members in the accommodation stage, the major task is to mingle with other members to create social (group) identity within an OBC. Interaction with other members is a major tool to position themselves in a community and interaction can be the final part of the accommodation stage where they trust the interacting parties. Trust is *“one of the determinants of perceived usefulness, especially in an on-line environment, because part of the guarantee that consumers will gain from their expected usefulness from the web interface depends on the people behind the web site”* (Chircu *et al.*, 2000; Gefen and Straub, 2003). Gefen *et al.* (2003) also argue that trust can also increase the perceived usefulness of the web site and trust reduces behavioural uncertainty on e-service web sites, especially online shopping sites. Pavlou (2003) argues that if the web retailer is not trustworthy, consumers might give up the transaction and not use the web site. Similarly, if the members of the OBC are not honest and trustful, members as consumers may suffer loss of time from OBC usage and might feel that the OBC is not useful then leave to find other trustful OBCs. Some scholars validate the relationship between trust and TAM variables by empirical studies. Pavlou (2003) and Ha and Stoel (2009) and Lee *et al.*, (2006) confirm that trust has a positive relation with perceived usefulness in e-commerce and e-shopping respectively. Shin (2008) also validates that trust affects significantly on perceived usefulness in virtual communities that relate to transactions using virtual currency. OBCs have deep relationships with transaction activities, especially purchase decision making (Kozinets, 1999; Mathwick, 2002). Therefore, following those studies, this study posits that individuals perceive that members are trusty and the OBC is trustful, the OBC is perceived more useful by them.

H4. Trust would have a positive relationship with perceived usefulness of an OBC.

3.6.2.2 Sense of Belonging

Social psychologists believe that interpersonal relationship is strongly at the heart of human existence and is the foundation of social behaviours (Hinde, 1979). Online communities establish and maintain social and interpersonal relationships, which is a similar role with real communities (Rheingold, 1993). To sustain a community on the

web, interpersonal relationships through supportive and sociable relations are important and make available to establish a sense of belonging (Hampton and Wellman, 2001). The sense of belonging indicates as a psychological experience which consists of both cognitive and affective components and it is a precious concept when studies are conducting with regard to involvement in community activities (Hagerty *et al.*, 1996).

In the context of community, the sense of belonging refers to a sense of community. Mcmillan and Chavis (1986) define that sense of community (SoC) within a group is “*a feeling that members have of belonging*” and “*a shared faith that members’ needs will be met through their commitment to be together*”. In this paper, sense of belong is defined ‘as the experience of personal involvement in an OBC by supportive, sociable relations beyond closeness to each other so that persons feel themselves to be an integral part of the OBC’. The sense of belonging is treated as a vital element to participate in online communities’ activities and if it is absent the members would not participate or be involved in an online community (Lin, 2008) because social participation in online communities is associated with interpersonal and affiliate behaviours of members (Van Dyne *et al.*, 1994).

Trust means “*the willingness of one party to be vulnerable to the actions of another*” (Lin, 2008). Consumers who communicate with unknown others on the web are understandably concerned whether the others say something is true or not (Bhattacharjee, 2002). Bhattacharjee (2002) argues that trust helps to build long-term relationships among members and the lack of trust among members of an online community is a major obstacle in establishing that online community (Lin, 2008). The long-term attachment among consumers in online community provides the results of successful relationships (Sheth and Parvatiyar, 1995). Trust can facilitate long-term attachment and relationship building (Bouhleb *et al.*, 2009) and also affect the consumers’ desire to maintain the commitment and successful relationship (Ganesan, 1994). The relationship characterised by trust can create consumer desire for more commitment, themselves, to keep the relationship (Bouhleb *et al.*, 2009). However, the connection between trust and relationship is not only for interpersonal relationships

among people but also between consumers and firms. Bouhlej et al.,(2009) argue that once a consumer has established brand trust, the consumer is likely to have a long-term relationship with the brand. In addition, Jarvenpaa et al.,(2000) insist that trust has a positive determinant on building and continuation of the relationship with other consumers and web-retailers or companies of a web site.

As a result of this argument, Lin (2008) used empirical study to validate that trust positively influences the sense of belonging of the online community. From the OBC aspect, trust would be a prerequisite for communication because the activities of an OBC lack real face to face contact, therefore, trust would be an essential factor for successful operation of the online community and it would improve the sense of belonging of the OBC. Therefore, the previous arguments support the following hypotheses linking trust with a sense of belonging.

H5 Trust would have a positive relationship with the sense of belonging in an OBC.

Lin (2007) argues that perceived usefulness (PU) expresses “*a member’s belief in their ability to obtain information and services*” in the context of online community and it reinforces user performance regarding information exchange. Lin (2007) also asserts that members tend to engage in the activities in online community when they perceive usefulness of information that exchanged by themselves. Further, An OC which is perceived to be useful by its members enables to obtain more members’ participation and encourage a higher sense of belonging because PU represents individuals’ belief in their ability for gathering information and services and sharing their experiences with others. Lin (2007) also validates that PU is a noteworthy influence to increase members’ sense of belonging in a online community, by an empirical study. Similarly, Rovai and Lucking (2003) argue that a useful system encourages better engagement in the system for more exploration and the sense of belonging can be increased by the perception of usefulness of the system. Teo et al. (2003) also validate that PU is a vital factor to increase members’ sense of belonging in a online community through an empirical study. Therefore, the previous arguments support the following hypotheses linking PU with

sense of belonging.

H6. Perceived usefulness would positively affect the sense of belonging in an OBC.

The sense of belonging in an OBC is enforced through increased interactions among community members. A user friendly designed OBC lowers barriers for its members to post articles and seek information easily, therefore, increases their interactions (van Iwaarden *et al.*, 2004). When a consumer as a member perceives ease of OBC use, it encourages her/him to act more comfortably and aggressively in the OBC and it helps her/him to be recognised by other members. Ultimately, this behaviour will increase interaction with other members and help to establish interpersonal relationships. In addition, although a consumer as a novice member does not have any relationship with others, the perception of ease of OBC use may give them the feeling of being a skilled person as other experienced members; hence, it is likely to provide a sense of belonging in the OBC. Lin (2007) asserts that in the context of virtual community, perceived ease of use indicates whether members can use a community easy to operate and also argues that when individuals perceive ease to use of a virtual community, they would feel more belonging in the community. Teo et al. (2003) demonstrate that a web site with high perception of ease to use encourages increased user engagement and a sense of belonging in online learning communities. Lin (2007) also validates that the members' sense of belonging is significantly increased by perceived ease of use in online communities. Therefore, the previous arguments support the following hypotheses linking PEOU with a sense of belonging.

H7. Perceived ease of use would positively affect sense of belonging in an OBC.

In the original TAM, PU has direct and indirect impact to individual's intention of a technology or system use (Davis, 1989). Attitude toward the technology is supposed to mediate the indirect impact between PU and user intention (Davis, 1989). The definition of attitude toward usage is "*the degree of user's feeling of favourable or unfavourable*

toward a specific application system” (Davis, 1989). However, in the context of OC, Lin (2007) argues that the sense of belonging is a considerable and more appropriate indicator in the context of online community instead of attitude toward usage in TAM because unlike office information systems whose use is mandatory to the employees, the use of OC is voluntary and a sense of belonging has bigger impacts than attitude toward community usage. Lin (2007) also insists that the sense of belonging is a distinguishing determinant in the context of virtual community, and it is as a critical element to lead members’ participation in online communities hence, it would be replaced with attitude toward usage in virtual community research with TAM.

Hagerty et al (1992) defined that sense of belonging is as *“the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of the system of environment”*. Therefore, Lin (2007) assumes that sense of belonging is able to be a more prominent and appropriate indicator to explain virtual community involvement. Robert (1998) asserts that a higher sense of belonging makes people engaged in online activities spend more time and effort. Lin (2007) verified that sense of belonging is a strong determinant to directly affect behavioural intention to use virtual communities. Therefore, the previous arguments support the following hypotheses linking sense of belonging with behavioural intention to use of OBC.

H8. Sense of belonging would have a positive relationship with intention to use an OBC.

3.6.3 Brand Loyalty for Infusion of an OBC

3.6.3.1 Brand Loyalty

Brand loyalty is extremely related to commitment to repurchase the brand products or services and indicates a consistent preference of a brand in the future regardless of marketing efforts that occur to switch consumer’s behaviour (Oliver, 1997). In the OBC context, this study defines brand loyalty as ‘the degree of a member’s attitudinal or

behavioural attachment and commitment to a brand which belongs in the OBCs’.

Supphellen and Nysveen (2001) argue that brand loyalty consists of two aspects: cognitive and affective. Firstly, cognitive brand loyalty indicates that positive beliefs that are formed to support the favourite brand. If other brands suggest better selling points such as price, services, design and so on, consumers can be switched to another brand. It is called attitudinal brand loyalty (Aaker, 1991; Chaudhuri and Holbrook, 2001). Secondly, affective brand loyalty indicates the preference for the brand which occurs by repeated brand experiences when the individual is satisfied with the brand. It is called behavioural brand loyalty (Aaker, 1991; Chaudhuri and Holbrook, 2001). Hence, a sense of commitment is developed by affective / behavioural brand loyalty. Supphellen and Nysveen (2001) also suggest that these cognitive and affective beliefs become integrated and emotionally highlighted.

The sense of belonging is as a feeling that members have of belonging in the group based on trustworthiness and it is develop by interpersonal (social) relationship with members or groups (Mcmillan and Chavis, 1986). Social relationships are at the heart of human existence and foundations of social behaviours (Hinde, 1979). The social relationships from individuals consist of attachment and commitment. The attachment motivation means to keep in constant contact with other people; and relationship commitment means to retain established relationships. Both attachment and commitment are the primary elements to interpersonal relationships (Dahui *et al.*, 2005). Relationship commitment can be classified as two types: attitudinal and behavioural commitment. Attitudinal commitment refers to emotional attachment while behavioural commitment refers to actual behaviour (Staw, 1980) and emotional attachment is a hedonic essence when it corresponds to a desire to belonging to the brand or the brand firm (Allen and Meyer, 1993). Behavioural commitment is a rational and cognitive essence when the consumer adopts a behaviour based on purchase decision by the change costs (Bouhleb *et al.*, 2009). The definition of commitment is mutual trust that has need of efforts to maintain a sustainable relationship and it appears when community members trust in their relationship is valuable (Morgan and Shelby, 1994). Oliver (1999) reveals that consumer loyalty emerges from a consumer’s high level of

relationship commitment, which leads to repurchase of a product or service and Aaker (1991) refers to it as a brand loyalty. Bouhlej et al.,(2009) also argue that attachment allows prediction of brand loyalty. Jang et al.(2008) demonstrate that OBC commitment positively and directly influences increased brand loyalty and OBC commitment measured by '*sense of belonging*', '*degree of emotional attachment*', '*degree of trust*', '*degree of satisfaction*' and '*degree of need to participate*'. Gusfield (1975) stresses the significant difference between geographical and relational communities. Geographical communities as traditional communities refer to a sense of belonging to a specific area such as a neighbourhood, region, or town however, relational communities as OBCs refer to a sense of community which establishes and develops among members regardless of geographical limitation. Carlson et al. (2008) define a psychological sense of brand community as "*the degree to which an individual perceives relational bonds with other brand users*". He reveals that a psychological sense of brand community is a positive determinant to influence on brand commitment by an empirical study. Kang et al.,(2007) found that the members' commitment increases members' loyalty for OCs and Jang et al., (2008) demonstrate that the members commitment positively influences members' brand loyalty in OBCs. Kozinets (1999) argues that the bonding among members through trust makes perfect sense of belonging in OBCs that include significant numbers of brand loyal members. Kim (2004) also found that a sense of belonging is a considerable determinant to increase members' loyalty in communities. The most difference of OBCs with other OCs is that consumers join in and members come together for sharing brand interest and OBC represents the brand itself. Thus, the sense of belonging in OBCs would be a significant factor to increase members' brand loyalty. Therefore, the previous arguments support the following hypotheses linking sense of belonging with brand loyalty.

H9. Sense of belonging in OBC has a positive relationship with brand loyalty in an OBC.

When consumers as members of an OBC gather rich and trusted information regarding brand products or services from other members, they feel that the OBC is useful and it

encourages consumers to purchase or repurchase the brand. Some previous research argues that the ratio of lurkers-to-posters (as tourists-to-insiders in OBC) run as high as 100:1 in the online community although accurate statistics are not available (Carroll and Rosson, 1996; Nonnecke and Preece, 1999). Takahashi et al., (2003) insist that OBC members who use community simply for information gathering as lurkers are still active members in online communities. Shang et al.,(2006) argue that the reason of lurking is to find information with regard to brand products or services and found that those members' lurking behaviours in online communities contribute to brand loyalty such as emotionally attached with the brand and purchasing behaviours. It would seem that information quality may influence perceived usefulness of the OBC and brand loyalty would be directly affected by perception of usefulness of the OBC from members who purpose to use the OBC for information gathering. In the context of OC research, Lin (2007) applies a sense of belonging as an attitude in TAM because sense of belonging is an important variable that determines behavioural intention to the use of OCs. In the same manner, therefore, brand loyalty seems to be another important component that determines behavioural intention to use OBC to have a role as attitude toward usage of OBC. Thus, the researcher proposes that the perception of usefulness of OBC boosts members' brand loyalty and it has a positive relationship between perceived usefulness and brand loyalty in the OBC. Therefore, the previous arguments support the following hypotheses linking perceived usefulness of OBC with brand loyalty of members.

H10. Perceived usefulness would positively affect brand loyalty in an OBC.

A higher level of sense of belonging by commitment can influence consumers to prefer a brand and it makes them purchase the brand product or service because there is a substantial sense of belonging of the brand as well as the community (Bouhleb *et al.*, 2009). Therefore, the sense of belonging would increase the brand loyalty of OBC members and brand loyalty positively affects the intention to permanently maintain and keep a relationship (Petty, 2003). The sense of belonging by commitment possesses two key behavioural consequences. Firstly, it emotionally changes consumers' preference of brand (Crosby *et al.*, 1990) as affective and attitudinal brand loyalty. Secondly, it

improves brand loyalty and repurchasing and intention to maintain the relationship (Fournier and Yao, 1997) as cognitive and behavioural brand loyalty. Oliver (1997) argues that attitudinal and behavioural brand loyalty implies consumers' intention that occur consumers' purchase of the brand in the future. According the Oliver's argument, Supphellen and Nysveen (2001) also argue that brand loyalty is likely to influence behavioural intention to revisit a company's brand website and also insist that loyal consumers will determine to revisit the website more frequently than non-loyal consumers. Furthermore, Kozinets (1999) argues that members who have a strong brand loyalty as *'devotees'* and *'insiders'* use the OBC intensively regardless of other circumstance such as weakness of social ties. As Supphellen and Nysveen (2001) empirically demonstrated, corporate brand loyalty is a significant determinant of the consumer's intention for revisiting the firm's brand website. Furthermore, Thorbjørnsen and Supphellen (2004) demonstrate brand loyalty is a greatly stronger determinant of website usage than conventional determinants, such as motivations for visiting a web site and internet experience. Therefore, the previous arguments support the following hypotheses linking brand loyalty with behavioural intention to use an OBC.

H11. Brand loyalty would positively affect to behavioural intention to use of OBC.

In an OBC, most of the population of members are *'lurkers'* (Carroll and Rosson, 1996; Kozinets, 1999; Mathwick, 2002; Nonnecke and Preece, 1999). If the OBC is difficult to use for finding information, they would leave the OBC to find others. However, if the members purchase a branded product or service through superior functionality where information is found very easily, they may revisit the OBC to find information regarding re-purchase if they want to buy another brand product or service. As a result, these repeated behaviours would increase members' brand loyalty although they stay at the level of *'tourists'* or lurkers. Therefore, the previous arguments support the following hypotheses linking PEOU with brand loyalty of OBC.

H12. Perceived ease of use has a positive relationship with brand loyalty in an OBC.

3.6.4 TAM

Davis (1989) provides TAM that uses the *belief-attitude-intention* paradigm to predict user behaviour that originally how individual accept new technologies as IS systems. TAM is the most used and validated model to investigate user behaviour based on TRA. However, the proposed model of this study excludes attitude and replaces sense of belonging and brand loyalty because Ajzen and Fishbein (1980) argue that attitude is not necessarily a determinant that operates for all behaviours. Venkatesh et al. (2003) also argue that attitude is not a straightforward variable to intention and other scholars argue that attitude is as “*a partial mediation between beliefs and intention*”. In addition, many scholars insist that PU and PEOU are the more dominated variables to affect intention of IT usage rather than attitude (Cao and Mokhtarian, 2005). Davis et al., (1989) also recommend to drop attitude from TAM and focus on only three variables such as PU, PEOU, and BI and many scholars follow it and ignore attitude (Hsieh and Wang, 2007; Igarria and Tan, 1997; Lucas and Spitler, 1999). Following those studies as evidences this study omitted attitude from the research model.

TAM has also been used to investigate user behaviour of continued use in the routinised stage (Bhattacharjee, 2001; Legris *et al.*, 2003; Taylor and Todd, 1995) and extended use in the infusion stage (Hsieh and Wang, 2007; Jones *et al.*, 2002; Saeed and Abdinnour-Helm, 2008; Sundaram *et al.*, 2007; Wang and Hsieh, 2006). Although TAM was originally proposed to predict users' acceptance of IT in initial stage, some scholars have believed and supposed that variables of TAM would affect continued usage of IT as similar in the initial acceptance stage (Mathieson, 1991a; Taylor and Todd, 1995). For evidence, Taylor and Todd (1995) demonstrate that TAM is an adequate model which can explain individual's behaviours of IT usage for both skilled and novice users by an empirical study that indicates a reasonable proportion of variance in intention and behaviour. In addition, some previous research adopts existing technology acceptance theories to predict and explain the continuance behaviour of IT usage (Karahanna *et al.*, 1999; Parthasarathy and Bhattacharjee, 1998). Furthermore, Legris et al., (2003) verify the capability of TAM that is able to predict and explain users' behaviours not merely at

the initial IS usage stage but also long after initial usage (Hsieh and Wang, 2007). These studies suggest that TAM is extraordinarily appropriate to this study for investigation of the transition process of users' motivation from the acceptance to infusion stage regarding users' behavioural intentions to use OBCs. Furthermore, TAM is also a well-validated measurement model to examine the determinants for sustainability of online communities (Lin, 2007; Liu *et al.*, 2010). Following those studies as evidence, this study adopted TAM as the frame of work.

3.6.4.1 Behavioural Intention to Use

This study defines behavioural intention as 'the strength of one's willingness to use OBC'. Members who have '*devotees*' and '*leaders*' behaviours are significantly important members who contribute in the OBC and brand companies and they exhibit more behavioural intention to use OBCs rather than other behaviours members such as '*tourists*' and '*minglers*'. However, the numbers of these members who have intention of use are very few in an OBC (Carroll and Rosson, 1996; Kozinets, 1999; Mathwick, 2002; Nonnecke and Preece, 1999). Therefore, increasing these members is significant for both consumers and companies (Carroll and Rosson, 1996; Kozinets, 1999; Mathwick, 2002; Nonnecke and Preece, 1999; Preece and Shneiderman, 2009). Lin (2006) suggests that members' behavioural intention of OC use can enhance members' participation and contribution of OC activities. The aim of this study is to validate a transition process of members' motivations from acceptance to infusion behaviour in OBC ultimately to increase members' behavioural intention to use of OBC. The finding and understanding of the transition process would foster '*devotees*' and '*leaders*' as members who intend and commit to OBCs. In addition, behavioural intention includes the meaning of one's willingness that is for the future OBC usage. Legris *et al.*'s (2003) study shows that intention of IS use can be adopted as a dependent variable of some factors at different stages in the IS implementation process. Karahanna *et al.*, (1999) demonstrate that the behavioural intention of IT usage can be as a dependent variables for both studies, acceptance and continuance by empirical studies. They also verify that PU and PEOU are common variables that predict users' acceptance behaviours as well

as continuance behaviours of IS use. Hence, behavioural intention would be an appropriate variable to predict OBC members' usage behaviours from the acceptance to infusion stage. Therefore, this study adopts behavioural intention as a dependent variable.

3.6.4.2 Perceived Ease of Use

Davis (1989) defines PEOU as “*the degree to which a person believes that using a particular system would be free of effort*”. This study defines PEOU as ‘the strength of one's belief that interacting with OBC would be free of effort’. Moon and Kim (2001) explain that when a user perceives ease of IT application use, the user will have a positive perception of usefulness because ease of use of the application would be less threatening to the individual. Eriksson et al., (2005) also argue that PEOU is an antecedent to PU and PEOU indicates a state while PU explains a process. Davis (1989) proposes a direct relationship between PEOU and PU. Teo et al. (1999) demonstrate that PEOU has a direct effect to PU on internet usage and Moon and Kim (2001) also validate the significant relationship between PEOU and PU in WWW use. In addition, the direct relationship between PEOU and PU is revealed by empirical studies in the area of e-commerce (Ahn *et al.*, 2007; Ha and Stoel, 2009; Lee *et al.*, 2006; Lin, 2006) and OC (Lee *et al.*, 2005; Lin, 2007; Liu *et al.*, 2010; Tsai *et al.*, 2008). In the field of OC studies, Lee et al. (2005) found that PU is significantly and directly influenced by PEOU in OLC. Lin (2007) demonstrates that PEOU exerts a direct effect on PU and indirectly influences behavioural intention to use of online community by an empirical study. Therefore, the previous arguments support the following hypotheses linking PEOU and PU.

H13. Perceived ease of use would positively affect perceived usefulness of an OBC.

Zeithaml et al., (2002) suggest that PEOU is one of the significant determinants to a successful website. Davis (1989) proposes and found an indirect relationship between PEOU and intention to use, mediated by PU. Later, many researchers found a direct

relationship between PEOU and intention to use was validated (Liu *et al.*, 2010; Shin, 2008; Venkatesh, 2000; Venkatesh and Bala, 2008; Venkatesh and Davis, 2000; Venkatesh and Morris, 2000). Nowadays, OBCs have much complex functionality such as not only information sharing but also participation promotion and NPD of firms, and OBCs are conducting group purchase programs because of price cutting. Shin (2008) also found that PEOU has a positive impact on intention to transact in online communities. Liu *et al.* (2010) found that PU and PEOU have significant impact on intention to use an OLC. Therefore, the previous arguments support the following hypotheses linking PEOU and behavioural intention of OBC use.

H14. Perceived ease of use would positively affect behavioural intention to use an OBC.

3.6.4.3 Perceived Usefulness

Davis (1989) originally defines PU as “*the degree to which a person believes that a particular information system would enhance his or her job performance*”. This study defines perceived usefulness as ‘the strength of one's belief that using OBC will enhance his or her work performance’. Davis *et al.* (1989) reveals that PU is a significant and direct belief to influence intention and other extensive studies prove the significant relation between PU and intentions (Ha and Stoel, 2009; Lee and Kozar, 2006; Li *et al.*, 2005; Liao *et al.*, 2006; Liu *et al.*, 2010; Shih, 2004a; Shin, 2008; Venkatesh and Bala, 2008; Venkatesh and Davis, 2000; Venkatesh and Morris, 2000).

Furthermore, many studies prove that PU is the most significant variable influencing BI in IS research areas (Agarwal and Karahanna, 2000; Hu *et al.*, 1999; Jackson *et al.*, 1997; Moon and Kim, 2001). In addition, Moon and Kim (2001) found that PU is a significant and direct determinant to affect behavioural intention in WWW use. In the areas of e-commerce, many scholars also validate that PU is a salient belief to increase users' behavioural intention (Ha and Stoel, 2009; Koufaris, 2002; Lee and Kozar, 2006; Liao *et al.*, 2006). In the context of OLCs, numerous researchers demonstrate the significant relationship between PU and behavioural intention to use (Lee *et al.*, 2005;

Liu *et al.*, 2010; Shin, 2008; Teo *et al.*, 2003).

H15. Perceived usefulness would positively affect behavioural intention to use an OBC.

3.7 Chapter Conclusion

The hypothesised model should offer a better prediction of the user motivations' transition process as well as users' intention to use OBCs from a long-term perspective. Hence, to hypothesise the model, it is important to understand the literature that lies behind it. Therefore, this chapter started from a literature review. The review of the literature focuses on understanding OBC members' different behaviours and its transition from being peripheral to core members as 'devoted members' in the OBC. To obtain more understanding of transition, organisational socialisation theory and IS adoption studies were reviewed. Hence, this study found that the three stages of socialisation (pre-entry, accommodation, affiliation) and IS adoption (acceptance, routinisation, infusion) exist as a transition process. Furthermore, the literature review implies that the OBC members' behaviours can be largely classified as three groups of different behaviour: tourists, minglers, and devoted members (core members) applied by social identification theory from an organisational socialisation perspective.

In this chapter, this study identified the considerable relationship between three different OBC use behaviours and three stages of socialisation and IS adoption as a transition process. Thus, research question 1 (what are the stages that lead to core members of OBCs from the periphery?) was included to develop the conceptual framework. Furthermore, from investigation of the three behaviours in three stages, this study found four major motivations (information quality, trust, sense of belonging, and brand loyalty). Therefore, research question 2 (what are the major factors that motivate group members to remain in OBCs in different stages?) was contained in the theoretical framework. Finally, TAM was adopted to establish the conceptual framework and the 15 hypotheses were developed to reveal the transition process of OBC members' motivation from the acceptance to infusion stage for intention to OBC use.

In the next chapter, the research methodologies and methods specified for this study will be discussed.

CHAPTER 4 RESEARCH METHODOLOGY

4.1 Introduction

In the previous chapter, the conceptual approach and the theoretical framework for the research has been developed and proposed on the basis of a literature review. This chapter will describe the methods for this research and the result of pilot studies. The method of the research is concerned with the choice of appropriate methodology for validity of research. Thus, it requires an obvious and comprehensive rationalisation of how the research is to be done and why particular procedures were chosen. This chapter introduces the research philosophy, design, instrument and measurement scale, and questionnaire. Furthermore, the methodology for the main study is specified in this chapter such as population and sampling, data collection procedure, data coding and cleaning, and data analysis steps. Lastly, the ethical issue of this study will be discussed.

4.2 Research Philosophy

Research philosophy means the way in which a researcher considers how research should be conducted to develop knowledge (Collis and Hussey, 2003). To select an appropriate research methodology, understanding of research philosophy is significant and has to be preceded. Therefore, firstly, this section will explain two main research philosophies: (1) positivistic paradigm, (2) phenomenological paradigm; secondly, the philosophical stance of this study and why the method for the research was selected and adopted will be discussed.

4.2.1 Positivist Paradigm and Phenomenological Paradigm

The overview and understanding of the research paradigms is a significant step for researchers to make the right decision of research methodology. In the other words, when a researcher knows about the philosophical issues of different research fields, the correct methodology (the overall approach to the research process) and research methods (the way of data collection and analysis) (Collis and Hussey, 2003, 52p) can be

chosen. There are two main research paradigms as philosophies, the positivist paradigm and phenomenological paradigm (Collis and Hussey, 2003; Saunders *et al.*, 2009).

The positivist paradigm in social sciences is a quantitative approach and is based on natural sciences such as biology, botany and physics. This paradigm is founded on the study of human behaviour (Collis and Hussey, 2003, 52p). Positivism can be applied to gain understanding of human attitudes and behaviours.

The phenomenological paradigm is a qualitative approach based on social sciences. It appears as an argument against positivism. This paradigm can be applied to gain deep understanding of human actions and behaviours which are generated from within the human mind, whereas positivism in physical sciences deals with objectives lying outside the study of people. (Collis and Hussey, 2003)

Table 4. 1 Alternative Terms for the Main Research Paradigms

Positivistic paradigm	Phenomenological paradigm
Quantitative	Qualitative
Objectivist	Subjectivist
Scientific	Humanistic
Experimentalist	Interpretivist
Traditionalist	

Source: Collis and Hussey (2003, p.47)

4.2.2 Research Approach adopted for This Study

The positivism paradigm is a scientific and quantitative research method (Collis and Hussey, 2003). Positivism uses a deductive technique which begins with literature to establish proper theories and construct hypotheses to collect data (Creswell, 2003; Saunders *et al.*, 2009) The positivistic paradigm is considered with numerical data collection for investigating and understanding human behaviours in an objective stance (Blumberg *et al.*, 2005; Saunders *et al.*, 2009). Collins and Hussey (2003, 48p) insist that if a researcher accepts the positivistic paradigm, they should try to maintain and objective and independent stance from social phenomenon.

This study started by reviewing a large amount of literature and developed hypotheses and a conceptual framework for the empirical theory test. The conceptual framework is to measure and examine the relationship between independent and dependent variables. Hence, this study adopts a positivist approach with deductive and qualitative methods for data collection and analysis.

There are several reasons to adopt a deductive and quantitative approach for data collection from OBCs. First, from the methodological issue perspective, this study develops the hypotheses from literature to explain causal relationships between variables. Hence, this study needs to employ the quantitative method to test the hypotheses through collected data (Saunders et al, 2009, p.125). Second, in the perspective ontology, this study is concerned with the nature of reality; hence, it requires social fact. Therefore, the researcher needs to take the view that the objective aspects for observation user behaviours of OBC use is based on an axiology aspect (Saunders *et al.*, 2009). Third, as the epistemology perspective in a positivist approach, this study is focused on observable and measurable social phenomena in OBCs hence, the phenomena can be validated to be knowledge (Collis and Hussey, 2003; Saunders *et al.*, 2009).

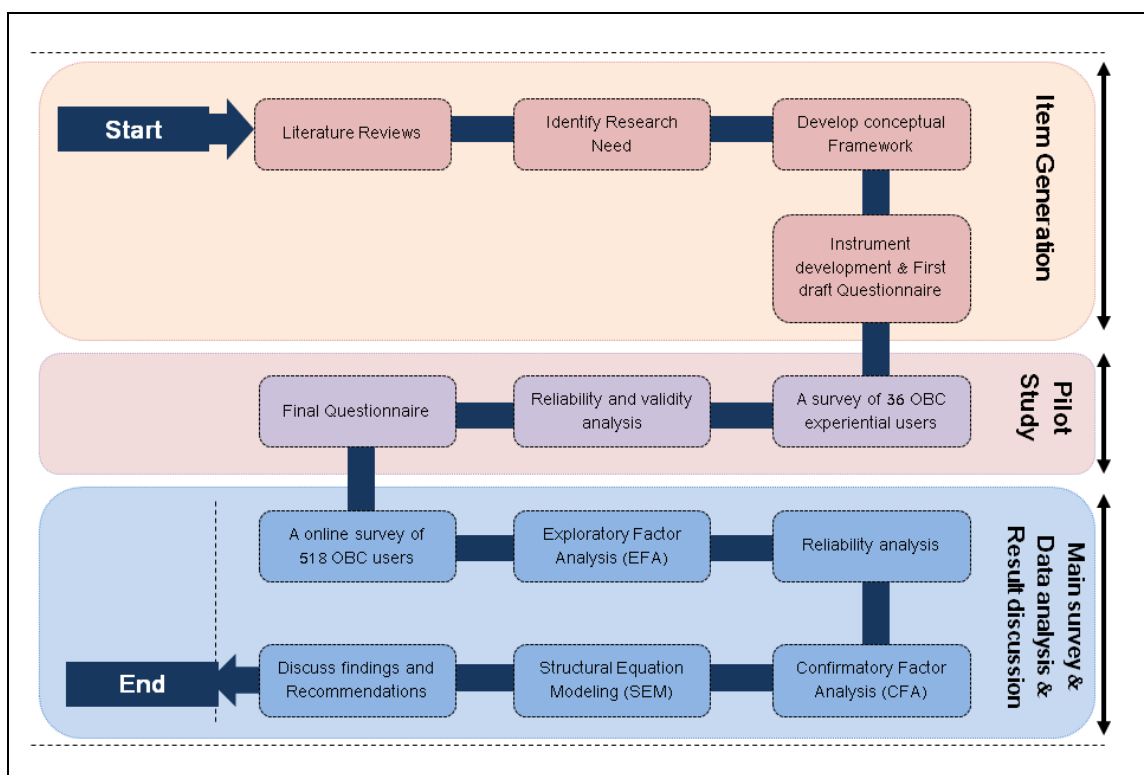
4.3 Research Design

This research attempts to examine user behaviour from pre-entry stage to affiliation stage in OBCs especially for investigation of the motivation transition as a process from acceptance to infusion of OBC use. Ultimately, this study is to increase users' behavioural intention of OBC use for obtaining members' valuable contribution through participation in various OBC activities. Initially, the literature was reviewed to examine the gap in the research and develop an understanding of the research domain. It observed four factors information quality, trust, sense of belonging and brand loyalty would be significant determinants to explain the transition process of OBC use and TAM is a proper model to investigate OBC user behaviour from acceptance to infusion in the aspect of IS use. From that point of view, the researcher empirically examined the transition process and found positive and valuable results. This research has been

conducted in 17 OBCs that relate to IT products brands in South Korea, which is a developed country in the use of the internet in addition to being a country of vigorous OBC activities in the world.

For this research, a research design has been established to focus the research step by step. The research design should be the general plan to reach and gain the answering of the research questions (Saunders *et al.*, 2009).

Figure 4. 1 Research Design



4.4 Research Instrument and Measurement Scale

In chapter three, the hypotheses were developed for empirical test of this study. Data for this study was collected from members of seventeen OBCs by an online survey questionnaire. According to Collis and Hussey (2003), the purpose of the survey questionnaire is to discover what the respondents of selected groups think, feel or do. This research study is concerned to know the OBC members’ behaviours as perceptions.

The perceptions are influenced by various motivations and beliefs that include respondents' feelings about particular objects. Furthermore, this researcher takes a positivist stance philosophical aspects. As discussed in the second section of this chapter, a positivistic approach can be applied to a quantitative method of data collection to examine social phenomena that occur from individuals' behaviours. Thus, this study has adopted a survey questionnaire for data collection to investigate OBC members' behaviours.

4.4.1 Item Development

The items were selected to predict and examine OBC users' behaviours. Firstly, the items selected to investigate user motivations in different stages such as pre-entry stage, accommodation stage, and affiliation stage based on a socialisation perspective. Secondly, the selected items were expected to examine the transition of user motivation from pre-entry stage to affiliation stage. Thirdly, the items were chosen to observe user behaviour such as why individuals have intention to use OBC from acceptance to infusion stage. Following Churchill's (1979) suggestion the item developed by two steps. Firstly, for specifying the domain of the construct, the items were adopted from previous studies to ensure content validity. Secondly, for generation of item scales, the measurement items for each construct were selected by literature reviews. TAM (Davis et al., 1989) was selected as the frame model for this study. The measurement items were derived from prior research in the contexts of virtual community, e-commerce, IS studies and social science. Therefore, the wording of items was changed to be appropriate for the OBC research context.

4.4.1.1 Items Scales for Perceived Information Quality

Five items were selected to measure perceived information quality which were measures of the perception of information provided by OBCs. Items were adopted from the previous study undertaken by Nelson et al., (2005) and Lin (2008).

Table 4. 2 Items Scales for Perceived Information Quality

Variable	Items	References
Perceived Information Quality	PIQ1: The information provided by the virtual community is accurate.	Nelson et al., (2005); Lin (2008)
	PIQ2: The virtual community provides me with a complete set of information.	
	PIQ3: The information from the virtual community is always up to date.	
	PIQ4: The virtual community provides me with all the information I need.	
	PIQ5: The information provided by the virtual community is well formatted.	

4.4.1.2 Items Scales for Trust

Five items were selected from prior literature in the context of virtual community to measure trust, which were measures of the perception of trust in OBCs and its members. Items were adopted by the prior literatures provided by Ridings et al. (2002), Lin (2008), and Hsu and Lin (2008).

Table 4. 3 Items Scales for Trust

Variable	Items	References
Trust	TR1: The OBC members are concerned about what is important to others.	Ridings et al. (2002); Lin (2008); Hsu and Lin (2008)
	TR2: The OBC members will do everything within their capacity to help others.	
	TR3: The OBC members try hard to be fair in dealing with each other.	
	TR4: I would trust the OBC members to do the work right even if not monitored.	
	TR5: People on the OBC are trustworthy.	

4.4.1.3 Items Scales for Sense of Belonging

Five items were selected to measure sense of belonging, which were measures of perception of belongingness in OBCs. Items were adopted from the previous studies completed by Teo et al. (2003), and Lin (2008).

Table 4. 4 Items Scales for Sense of Belonging

Variable	Items	References
Sense of belonging	SOB1: I feel a strong sense of being part of this OBC.	Teo et al. (2003); Lin (2008).
	SOB2: I have complete trust of others in this OBC.	
	SOB3: I enjoy myself as a member of this OBC.	
	SOB4: I am very committed to this OBC.	
	SOB5: Overall, there is a high level of morale in the OBC.	

4.4.1.4 Items Scales for Brand Loyalty

To measure brand loyalty, seven items were selected. These were adapted from Zeithaml et al. (1996), Quester and Lim (2003), McLure Wasko and Faraj (2005), Ellison et al. (2007), Steinfield et al. (2008), Hsu and Lin (2008), and Horppu et al. (2008).

Table 4. 5 Items Scales for Brand Loyalty

Variable	Items	References	
Brand Loyalty	Attitudinal Brand Loyalty	Zeithaml et al. (1996); Quester and Lim (2003); McLure Wasko and Faraj (2005); Ellison et al. (2007); Steinfield et al. (2008); Hsu and Lin (2008); Horppu et al. (2008)	
			ABL1: I pay more attention to this particular brand of products than to other brands.
			ABL2: I say positive things about the WSM brand to other people.
	Behavioural Brand Loyalty		ABL3: I encourage relatives and friends to buy the OBC's brand.
			BBL1: It is very important for me to buy this particular brand of magazine rather than another brand.
			BBL2: I am going to use the OBC's brand in the future
			BBL3: I always buy the same brand from the OBC because I really like this brand
BBL4: I am going to purchase the OBC's brand in the future			

4.4.1.5 Items Scales for Perceived Ease of Use

Five items were selected for measuring perceived ease of use. These were derived from studies conducted by Davis (1989), Lou et al. (2000), Moon and Kim (2001), Teo et al. (2003), Shih (2004b), Lai and Li (2005), and Hsu and Lin (2008).

Table 4. 6 Items Scales for Perceived Ease of Use

Variable	Items	References
Perceived Ease of Use	PEOU1: Learning to use the OBC is easy for me.	Davis (1989), Lou et al. (2000); Moon and Kim (2001); Teo et al. (2003); Shih (2004b); Lai and Li (2005); Hsu and Lin (2008).
	PEOU2: I find it easy to get the OBC to do what I want to do.	
	PEOU3: My interaction with the OBC is clear and understandable	
	PEOU4: It is easy for me to become skilful at using the OBC.	
	PEOU5: In general, I find the OBC easy to use.	

4.4.1.6 Items Scales for Perceived Usefulness

Six items were selected for measuring perceived usefulness from previous studies provided by Davis (1989), Lou et al. (2000), Moon and Kim (2001), Teo et al. (2003), Shih (2004b), Lai and Li (2005), and Hsu and Lin (2008).

Table 4. 7 Items Scales for Perceived Usefulness

Variable	Items	References
Perceived Usefulness	PU1: Using the OBC would enable me to accomplish my purpose for purchase decision making and knowledge sharing of the brand product more quickly.	Davis (1989), Lou et al. (2000); Moon and Kim (2001); Teo et al. (2003); Shih (2004b); Lai and Li (2005); Hsu and Lin (2008).
	PU2: Using the OBC would improve my performance for purchase decision making and knowledge sharing of the brand product.	
	PU3: Using the OBC would increase my productivity for purchase decision making and knowledge sharing of the brand product.	
	PU4: Using the OBC would enhance my effectiveness on purchase decision making and knowledge sharing of the brand product.	

	PU5: Using the OBC would make it easier to make purchase decision and share knowledge of the brand product.	
	PU6: I would find the OBC useful in purchase decision making and knowledge sharing of the brand product.	

4.4.1.7 Items Scales for Behavioural Intention to Use

Three items were selected to measure behavioural intention of OBC use and these items were adapted from studies by Lou et al.(2000), Agarwal and Karahana (2000), Moon and Kim (2001), Li et al. (2005), Lai and Li (2005), and Hsu and Lin (2008).

Table 4. 8 Items Scales for Behavioural Intention to Use

Variable	Items	References
Behavioural Intention to Use	BIU1: I will frequently use the OBC in the future.	Lou et al.(2000); Agarwal and Karahanna (2000); Moon and Kim (2001); Li et al. (2005); Lai and Li (2005); Hsu and Lin (2008).
	BIU2: I always try to use the OBC to do a task whenever it has a feature to help me perform it.	
	BIU3: I intend to continue using the OBC in the future.	

As a result, 36 items in seven constructs were extracted for data collection by survey and analysis.

4.4.2 Measurement Scale

For the survey questionnaires, a Likert scale is commonly used to measure perception and attitudes (Saunders *et al.*, 2009). Lehmann and Hulbert (1972) argue that if the research focuses on individual's behaviour, five to seven-point Likert scales can be adopted to measure the items. Therefore, all items of this study are measured by a seven-point Likert scale measurement method with anchors ranging from 'strongly disagree' to 'strongly agree' being employed in the survey questionnaires. In addition 10 demographic questions were included for exploratory purposes. [See. Appendix A]

4.5 Questionnaire Translation

The survey questionnaire was necessary to translate for gathering accurate data from English to Korean. Most people in the South Korea are familiar with the English language because they learn English from middle school. However they rarely use English in day to day life. Furthermore, the questionnaire contained English words considerably above the average English language skills but most of Korean would not normally possess. Without translation, the questionnaire would not have been accessible to many Korean people and even if it would be accessible, the response time would be too long and many people would be likely to abandon completion of the questionnaire in mid stream. Therefore, it was necessary to translate the questionnaire from English to Korean.

4.5.1 Back Translation Method

To achieve the best results, this research employed a back-translation method as recommended by Harkness et al. (2004). The back-translation method requires that the items in the questionnaire should be translated back and forth between English and Korean by several bilingual experts until both versions converge. Harkness et al. (2004) recommend that three different people are required to achieve the final version of a translated questionnaire such as translators, translation reviewers, and translation adjudicators. Translators should be skilled practitioners; the reviewers' language abilities should be as good as the translators but they should also be familiar with the questionnaire design and the study topic. The adjudicators should be able to make decisions for the final version.

Accordingly, the translation of the questionnaire for this study was undertaken in three steps. The first translated version from English to Korean was provided by a skilled, experienced practitioner in translation and who works for SISA which is the biggest English centre in South Korea. Next, the translation was corrected and verified by a specialist who is a bilingual person and studying information systems at Brunel University. Next, the Korean questionnaire was translated back to English by a lecturer

who is a bilingual person working at Brunel University. Thus, there were two English versions. However, the two versions were similar but not equal. Therefore, the researcher discussed with the lecturer who translated the first Korean version to the second English version for decentring. Decentring is an important process of translation for ensuring the English source language and the target language, Korean, are equal (Harkness and Schoua-Glusberg, 1998). After decentring, the lecturer translated the second English version to the second Korean version and both versions were finally converged.

4.5.2 Pre-test Approach

Although the translation was carefully done, pre-testing was required because nonsensical answers could occur by respondents (Bryman and Bell, 2003). Thus, this study adopted a random-probe technique suggested by Schuman (1966). For this technique, the random questions from the questionnaire were selected to ask for respondents to explore whether the respondent understood the exact meaning of the questions. To conduct the pre-testing, seven bilingual candidates (English and Korean) were invited; then six of them were approved to participate in the pre-testing. All items were investigated and the probe was done by both English questions and Korean questions. The result of pre-testing demonstrated that the Korean questionnaire was comprehensible to Korean readers. As a result, the questionnaire translation for this study was done by empirical validation through the back translation method and pre-test approach.

4.6 Pilot Studies

The pilot study was conducted for test reliability and validity of the questionnaire on April 04th to 15th, 2011. 50 questionnaires were distributed and 36 were returned from people who use OBCs or have experience of using at least one OBC. There were 23 males and 13 females, and 58.3% of participants have used OBCs for more than one year. After answering the questions, the respondents recommended their thoughts and suggestions, such as design or structures, and those were helpful to improve the quality

of questionnaire. [Table 4.9]

Table 4. 9 Reliability Analysis by Cronbach's alpha Values

Variable		Reliability	
Perceived Information Quality		$\alpha = 0.827$	
Trust		$\alpha = 0.889$	
Perceived Sense of Belonging		$\alpha = 0.934$	
Brand Loyalty	Attitudinal	$\alpha = 0.780$	$\alpha = 0.882$
	Behavioural	$\alpha = 0.934$	
Perceived Ease of Use		$\alpha = 0.882$	
Perceived Usefulness		$\alpha = 0.992$	
Behavioural Intention to use		$\alpha = 0.781$	

Data was encoded using SPSS 18.0. Reliability analysis and factor and regression analysis were undertaken. The results of the pilot study were satisfactory. Cronbach's alpha values of all variables tower above the threshold value of 0.7. In factor and regression analysis, the value of the item-to-total scale correlation exceeded 0.5 as a threshold for all items but one item (PIQ5) showed less than 0.5 (0.365). The result indicated that if PIQ5 is deleted, the Cronbach's alpha value of PIQ construct would increase from 0.827 to 0.852. Thus, the researcher decided to omit the PIQ5. For more detail, Appendix B provided the complete results of the pilot study. Moreover, Appendix A showed the final version of the questionnaire that was used for data collection of main study.

4.7 Main Study

The main study was accomplished with the final version of the questionnaire which was assessed and confirmed by reliability and validity test of survey instrument through the pilot study. The main study was conducted with OBC members in South Korea. In this section, the population and sample, data collection procedure, data coding and cleaning are discussed.

4.7.1 Population and Sampling

Sampling, which refers to obtaining a sample, is important and necessary because collecting data from the whole population is practically impossible. The main purpose of sampling is to attain representativeness of the population. Two approaches exist for sampling: the probability and non-probability approach. Probability sampling is more commonly used when issues have generalisability and/or when statistical conclusions can be drawn, while the non-probability method is used for the exploratory phases and/or pre-testing of the survey questionnaire (Hair et al., 2010). According to Hair et al. (2010), researchers should consider three principal questions for sampling, whether the sample should be used, which sampling approach to use, and how large the sample should be.

The primary goal of quantitative research is to collect sample data which can be a representation of population. In quantitative studies, the aim of researchers is to collect a small unit of cases from large groups of population and accurate generalisations can be provided from researches to be representative of the large group (Collis and Hussey, 2003). Therefore, 17 OBCs were considered as an application area for this study. Accordingly, the research data were collected from South Korea. The reasons for choosing South Korea are, first, in terms of internet usage maturity, South Korea holds a leading position and the highest broadband penetration ratio. According to an International Data Corporation finding (Miniwatts, 2011), South Korea was ranked as the leading nation of internet usage. In South Korea, the internet penetration rate is 80.9%, with 39,440,000 internet users researched by Nielsen online and the International Telecommunications Union (Miniwatts, 2011). The second reason is the Republic of Korea is the most activated country for online community usage. According to a report by the Samsung Economic Research Institute (SERI) in 2009, more than half of internet users in the Republic of Korea use online communities that are increasing approximately 2,700,000 per year on average after 2006. In 2008, 15,000,000 online communities existed in the Republic of Korea (Lee *et al.*, 2009). More detail of the reason of why this study chooses the South Korea is introduced by Appendix C.

4.7.1.1 Targeted Samples

This study's aim is to investigate the OBC members' motivation to transit from acceptance to infusion stage to increase their intention of OBC use. One of the traditional and commonly used sampling approaches is to distribute surveys in random and this sampling method has been validated as a good representation of large populations. Although the traditional method is a good method, this study could not adopt that approach because if the survey is conducted with normal people randomly, the lack of OBC members' observations in the sample and people who do not have experience of using OBCs may be less likely to respond to the survey questionnaire for this study. Thus, the traditional one is likely to present the lack of statistical research results (Cao and Mokhtarian, 2005; Collis and Hussey, 2003). Therefore, this study used a choice-based sampling approach for the OBC members' behaviour survey because this approach assumes that a small population of all members undertake and represent all members (Collis and Hussey, 2003). Accordingly, choice-based sampling is probably more appropriate for OBC members' behaviour surveys.

Data were collected directly from OBC members belonging to 17 OBCs through online survey questionnaires. Therefore, the survey collected data directly from users of OBCs for gathering more accurate data. Cao and Mokhtarian (2005) argue that customers' intentions are best assessed through information from the users themselves. Accordingly, the respondents of this study are internet users who belong to OBCs by their own name or ID (identification).

A minimum sample size of 200 is required to guarantee forceful structural equation modelling (Hair *et al.*, 2010). Therefore, it was important to gather responds over this number for sample. Data were collected from 17 OBCs related to IT products chosen from Naver (<http://www.naver.com>), DC inside (<http://www.dcinside.com>) and SLR club (<http://www.slrclub.com>). The three web sites host the largest numbers of OBCs in the South Korea. The selected OBCs are mostly on mobile phones (i.e. Apple iPhone and Samsung Galaxy) and digital single-lens reflex camera (DSLR) such as Sony, Cannon, Nikon, and Samsung.

4.7.2 Data Collection Procedure

The researcher started the procedure by establishing the questionnaire on a survey website, surveymonkey (<http://www.surveymonkey.com>). After that, the researcher selected 25 of the most popular OBCs which have highest population of members; then sent a cooperation mail to operators of OBCs. The operators of the 17 OBCs agreed to conduct the survey with their members using only freeboard in OBCs. Hence, an invitation message containing the URL of the survey website was posted on a freeboard of each OBC. In total 584 respondents participated in the survey. The participation was voluntary and the survey was conducted over one month from 24th May 2011 to 28th June 2011. Among the 584 respondents, 65 responses were omitted based on two criteria: (1) the respondents did not complete all the questions (2) the questionnaire demonstrated non-serious answers from the respondent. For example, although respondents answered all the questions, if the answers indicate only same answer from the beginning to the end of questions, the questionnaire were regarded as non-serious answers. Therefore, finally, 519 questionnaires were valid. The respondents had absolute freedom in deciding whether to participate in survey.

4.7.3 Data Coding, Cleaning and Entry

Data coding is a process for translation of the questionnaire to letters or numbers. The coded data has a role as guidance for response translation. After data coding, the researcher can easily record the responses. Data recording is also a procedure for transferring the responses to computer files and is a significant work to apply the questionnaire for analysis programmes such as the Statistical Package for Social Sciences (SPSS) or analysis of moment structure (AMOS). Furthermore, those processes can provide an easy way to find objectives from the data. However, researchers have to be sure to avoid any errors in these procedures (Pallant, 2010). Therefore, this study conducted the data coding and recording process and the coded and recorded data were more than double checked on the computer files for data cleaning.

4.8 Data Analysis Steps

This study went through several steps to ensure reliable and valid results. The actual data analysis and applications for this study are introduced in the next chapter. This section explains an overview of the data analysis for the main study which consists of four major steps: (1) Data screening (2) Exploratory factor analysis and Reliability Assessment (3) Confirmatory factor analysis and Scale Validity (4) Structural equation modelling and hypotheses testing.

4.8.1 Data Screening

Pallant (2010) explains that data screening is essential to check errors in a data set before starting data analysis. Hence, this study is concerned to build accuracy of data. After encoding the data, firstly, this study conducted univariate and multivariate test methods to investigate potential outliers because the existence of outliers may distort an estimation of regression coefficients and representation of the relationships in a sample (Hair *et al.*, 2010). Next, this study conducted normality, linearity, homoscedasticity, and multicollinearity testing to detect and prevent negative effects that influence the relationships of variables or the outcome of variables. Hair *et al.* (2010) insists that the negative effects that are not apparent can be easily overlooked by data screening. For the normality test, this study used Kurtosis and Skewness tests as well as Kolmogorov-Smirnov and Shapiro-Wilk tests. The kurtosis test confirms normal distribution and the Skewness test is used to describe the balance of the distribution (Hair *et al.*, 2010). The Kolmogorov-Smirnov and Shapiro-Wilk tests are for finding the normality of data. In order to examine the linearity of data, Pearson's correlations measurement was adopted to examine the linear association between variables and nonlinear effects and this study also adopted Levene's test of homogeneity of variances to confirm the variance relationships between dependent and independent variables. Lastly, the variance inflation factor (VIF) and tolerance value were tested for finding multicollinearity which means a strong correlation of two or more independent variables. Thus the two tests explain the degree to which each independent variable is affected by the set of other independent variables (Hair *et al.*, 2010, p.200). For these tests, this study used

SPSS 18.0 for Windows. [Table 4.10]

Table 4. 10 Tests for Data Screening

Test	Measurement	Value
Outliers	Inbox Plot (Univariate test)	Case with standard values exceeding + 2.5
	Mahalanobis D^2 measurement (Multivariate test)	Case with a value of D^2/df Greater than 3
Normality	Kurtosis and Skewness test	2.58
	Kolmogorov-Smirnov and Shapiro-Wilk test.	> 0.05
Linearity	Pearson's correlations measurement	P-value < 0.05
Homogeneity	Levene's test of homogeneity of variances	> 0.05
Multicollinearity	the variance inflation factor (VIF) and tolerance value	$10 < VIF < 0.1$

(Adapted from Hair *et al*, 2010)

4.8.2 Exploratory Factor Analysis and Reliability Assessment

Exploratory Factor Analysis (EFA) is a statistical procedure used to analyse interrelationships among large numbers of variables and it is used to extract these variables in terms of their common underlying latent factors (Hair *et al*, 2010). EFA is for examination the correlation of the variables and the factors regardless of the theory. It is widely used in social science not only to identify the latent factors but also to reduce a large number of variables to a smaller set of factors (Hair *et al*, 2010). Thus, this study initially adopted EFA to investigate variables in latent factors regardless of theory and then apply CFA to confirm the latent factors based on theory before examining the hypotheses.

SPSS version 18.0 was applied for EFA to extract factors. The principal component extraction method was used to extract a minimum set of latent factors that account for co-variance in the data (Pallant, 2010). Before extraction of the factors, it is significant to investigate the variance among variables because factor analysis examines the high correlations among variables (Hair *et al*, 2010, p.105). Thus, firstly, this study

conducted a communality test to investigate how much of a variable's variance is shared with other variables. Secondly, eigenvalues were used to explore how many factors can be extracted and scree plots were adopted to confirm the maximum number of factors and to identify the optimum number of factors (Hair *et al*, 2010).

Next, the varimax rotation method was conducted to improve the interpretability and scientific utility of the solution. This method helps to maximise high correlation and minimise low correlation between variables and factors (Hair *et al*, 2010). Specifically, Tabachnick and Fidell (2007, p.620) explain that this method is used for maximising the variance of factor loading by making high loadings higher and low loadings lower for each factor. This study also adopted a varimax of orthogonal techniques which is most generally used in rotation for maximising variances. The factor loading above 0.50 from EFA was considered significant as an acceptable value (Hair *et al*, 2010) with these methods. In addition, the Kaiser-Meyer-Olkin (KMO) value from EFA was investigated to examine sampling adequacy and Bartlett's test of sphericity was conducted to explore whether using factor analysis is appropriate for the study (Norusis, 1992).

The suggested rules of thumb for each method in EFA are as below. [Table 4.11]

Table 4. 11 Tests for EFA

Test	Value
Communality	≥ 0.6
Eigenvalues	greater than 0.7
Scree plot	See Chapter 6.5.1.3
Factor loading	≥ 0.5
Kaiser-Meyer-Olkin (KMO)	≥ 0.5
Bartlett's test of sphericity	≤ 0.05

(Adapted from Hair *et al*, 2010)

Lastly, reliability assessment was conducted to test the internal consistency of factors. The item to total correlation was examined to measure the correlation of items to the

summated scale score. Further, inter-item correlation was investigated to calculate correlation among items and Cronbach's alpha value was explored to confirm the factors' reliability coefficient which assesses the consistency of the whole scale (Hair *et al*, 2010, p.125). The suggested rules of thumb for each method in reliability tests are as below. [Table 4.12]

Table 4. 12 Reliability Tests

Test	Measurement	Value
Reliability	Item-to total correlation	≥ 0.5
	The inter-item correlation	≥ 0.3
	Cronbach's alpha	≥ 0.70

(Adapted from Hair *et al*, 2010)

4.8.3 Confirmatory Factor Analysis and Construct Validity

Confirmatory factor analysis (CFA) is also to define the underlying structure among the variables by examination of the correlation of variables and to reduce a data set for establishing a more manageable size of data similar to exploratory factor analysis (EFA). However, it is quite different in philosophical perspective (Hair *et al*, 2010, p.693). CFA is used to provide a confirmatory test of measurement theory and to confirm the relationship between a set of measurement items and their respective factors based on theory. Ultimately, the purpose of this study is for the empirical theory test, hence this study applied CFA as a compulsory analysis.

According to Hair *et al*. (2010), a unidimensionality measure is needed before conducting CFA with an overall measurement model. The unidimensionality measure is to confirm whether a set of measured items can be explained by only one underlying construct and it is extraordinarily important for construct validity. In other words, it confirms whether there exists any cross-loading among items or constructs. Therefore, two unidimensionality tests based on CFA were conducted for this study. Firstly, the test for each construct was conducted to refine a set of measured variables (indicators)

which can be explained by only one underlying construct. Second, a unidimensionality test with all individual constructs was conducted to confirm whether the entire individual constructs can come together to form an overall measurement model (Hair *et al.*, 2010, p.696).

To measure the unidimensionality and to validate the overall measurement model for hypotheses testing, Hair *et al.* (2010) recommend that the CFA should follow five steps as diagnostic rules to confirm whether any cross-loading exists among items or constructs and remove the items. Therefore, this study followed the five steps and its diagnostic rules as below. [Table 4.13]

Table 4. 13 Five Measure Steps of Unidimensionality

Test	Measurement based on CFA	Value
1. Model fit	Various	See Table 4.16
2. Standardized Regression Weights	Confirmatory Factor loading	$\geq .50$
3. Regression Weights	Critical ratio (t-value)	≥ 1.96
4. Standardized Residual Covariances	CFA	$ 2.5 \sim 4 $
5. Modification indices	CFA	-

(Adapted from Hair *et al.*, 2010)

4.8.3.1 Construct Validity

One of the significant purposes of CFA is to assess construct validity based on the proposed measurement theory. The construct validity is “*the extent to which a set of measured items actually reflects the theoretical latent construct and those items are designed to measure*” (Hair *et al.*, 2010, p.708) and for accuracy of measurement (Hair *et al.*, 2010, p.709). Therefore, this study conducted construct validity.

According to Hair *et al.* (2010), four type of validity were conducted in this study. [Table 4.14]

Table 4. 14 The Four Validity

Validity	
Content validity	Assessment of the degree of correspondence between the items selected to constitute a summated scale and its conceptual definition.
Face validity	Extent to which the content of the items is consistent with the construct definition, based solely on the researcher's judgment.
Convergent validity	Extent to which indicators of a specific construct converge or share a high proportion of variance in common.
Discriminant validity	Extent to which a construct is truly distinct from other constructs

(Adapted from Hair et al, 2010)

The content and face validity was assessed in the pilot study with 36 participants being asked about the items that were extracted by previous study. Those were also validated by literature reviews and researchers. The convergent and discriminant validity were examined by CFA. The convergent validity can be assessed by factor loading, average variance extracted, and construct (composite) reliability test (Hair *et al*, 2010). The suggested rules of thumb for each validity tests are as below. [Table 4.15]

Table 4. 15 The Measurement of Convergent and Discriminant Validity

Test	Measurement based on CFA	Value
convergent validity	Confirmatory Factor loading	$\geq .50$
	Average variance extracted	$\geq .50$
	Construct (composite) Reliability	$\geq .70$
discriminant validity	the square of the correlation	Less than the squared root of average variance extracted

(Adapted from Hair *et al*, 2010)

4.8.4 Structural Equation Modelling and Assessment of Model Fit

4.8.4.1 Structural Equation Modelling

Structural equation modelling (SEM) is “*a family of statistical models that seek to explain the relationships among multiple variables*” (Hair *et al*, 2010, p.634). It explores and examines a set of relationships between independent and dependent variables. The structural equation model is established by measurement model and structural model to find overall model fit for confirmation of the consistency of a theoretical model and the estimated model (Hair *et al*, 2010).

4.8.4.2 Assessment of Model Fit

In statistics, there are many methods to examine the overall model fit. However, many scholars insist that there is no one method which can provide an absolute assurance of model fit and recommend that at least four tests of model fit should be used for CFA and structural equation modelling (SEM) (Hair *et al*, 2010, p.671). The most commonly used fit indices are Chi-square (χ^2), Goodness of Fit (GFI), Adjusted Goodness of Fit index (AGFI), Comparative Fit Index (CFI), and Root Mean Square Error Approximation (RMSEA). Further, Normed Fit Index (NFI) and Tucker-Lewis Index (TLI) are also frequently used to measure model fit (Hair *et al*, 2010). Therefore, this study conducted seven model fit indices for CFA and SEM. The definition and suggested rules of thumb for seven model fit indices are as below (Hair *et al*, 2010). [Table 4.16]

Table 4. 16 Assessment of Model Fit

Model fit indices	Definition	Rules of thumb (P < .05)
CMIN/DF Chi-square (χ^2)	A statistical test to observe and estimated the difference between covariance matrices which is the key value in assessing the good of fit of SEM model.	< 2.83
GFI	An early attempt to produce a fit statistic and only guidelines to fit. The role of GFI and AGFI are close and both classified as absolute indexes of fit.	≥ .90
AGFI		≥ .80
NFI	One of the original incremental model fit indices.	≥.90

CFI	An incremental fit index that is an improved version of the NFI.	$\geq .90$
TLI	It is conceptually similar to the NFI, but not normed. It is a comparison of the normed chi-square values for the null and specified model, which to some degree takes into account model complexity.	$\geq .90$
RMSEA	One of the most widely used measures that attempts to correct for the tendency of the χ^2 GOF test statistic to reject models with a large sample or a large number of observed variables.	$< .08$

(Adapted from Hair *et al*, 2010)

4.8.5 Hypothesis Testing

The hypotheses were examined using the structural equation modeling (SEM). According to Hair et al. (2010, p.634), SEM is a unique combination of techniques for multiple regression equations and multivariate technique because SEM based on two familiar multivariate techniques such as factor analysis and multiple regression analysis. It examines the structure of interrelationships to explain a series of equations, similar to a series of multiple regression equations. The equations depict the relationships between independent and dependent variables, and the constructs (variables) are latent or unobservable factors that represented by multiple variables (Hair *et al*, 2010.p.634). SEM is the most vigorous method in the social science based on psychological domain for investigating the relationship among variables underlying statistical theory (Kine, 2011). Therefore, based on the SEM, the hypotheses were tested from the standardised estimate, critical ratio (t-value) and critical value (p-value). For SEM, AMOS 18.0 for Window was employed to examine the hypothesised model.

Table 4. 17 Hypothesis Testing

Hypothesis Testing	
Standardised Estimate	-
Critical ratio (t-value)	> 1.96
Critical value (p-value)	< 0.05

4.9 Ethical Consideration

Ethical issues are significant when research is to be conducted among human subject. The researcher must consider and inform regarding participants' privacy, confidentiality and accuracy and also it is important to obtain participants' consent (Collis and Hussey, 2003). The researcher must protect human rights and also guide and supervise the participants of the research (Saunders *et al.*, 2009). This study followed all ethical requirements through all phases of the research. Before data collection, permission was granted by seventeen OBCs' operators through e-mail and then the researcher posted an invitation which includes the domain of the survey on the freeboard of seventeen OBCs. The participants were engaged in the survey voluntary and if they do not want to participate in the survey, they can simply ignore the invitation. Furthermore, during the answer of the questions, if they do not want to continue or change their mind for answer, they were able to leave anytime. It means that if any participant could not consent the survey or accept any question, it was immediately possible to refuse and leave from the survey.

Furthermore, Brunel University Ethics Committee guided the issues for this study. According to the Ethics Policy Guidelines, an Ethics Form of Brunel Business School must be confirmed and signed by the researcher and followed by the research supervisor. Therefore, the researcher and supervisors signed the form then the Ethics Form was submitted to the Academic Programme Office and approved. The questionnaires contained the title of the study, the name of the researcher and school, the e-mail address of the researcher and the purpose of the research.

4.10 Chapter Conclusion

In this chapter, the methodologies for the main study and pilot study were discussed. This study approached the positivism paradigm, and the quantitative research method. The items for questionnaire were developed from literature to measure seven constructs of user motivations and behaviours such as information quality, trust, sense of belonging, brand loyalty, perceived usefulness, perceived ease of use and behavioural intention to

use. Seven-point Likert scale was used to measure the items of seven constructs. The questionnaire transited from English to Korean by back translation method and it is validated by pre-test approach with seven bilingual candidates. From pilot study, one item (PIQ5) was omitted because the value of item-to-total correlation showed less than 0.5 (0.365). The methods of sampling, data collection procedure, and data coding were discussed by this chapter. Lastly, the data analysis steps for main study also discussed with four steps: (1) data screening (2) Exploratory factor analysis and Reliability Assessment (3) Confirmatory factor analysis and Scale Validity (4) Structural equation modelling and hypotheses testing.

In the following chapter, the data analysis using by these methodologies for the main study introduced and results of the main study is provided.

CHAPTER 5 ANALYSIS and RESULTS

5.1 Introduction

This chapter consists of analysing the data with subsequent discussions. This chapter is concerned with analysing and revealing the relationships between independent and dependent variables to achieve the research objectives. The research methodologies that indicated the details of methods for the study were provided in the previous chapters. Quantitative methods were adopted for this study and a survey questionnaire was conducted to obtain the data.

Based on quantitative data, the data analysis consisted of various statistical techniques based on the Statistical Package for Social Sciences (SPSS) Version 18.0 and Structural Equation Modelling (SEM) used by AMOS software Version 18.0. This chapter consists of the following sub sections: data management, data screening, demographic characteristics, exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and hypotheses testing.

5.2 Data Management

The survey questionnaire was established on the web (www.surveymonkey.com) for data collection of the study and was undertaken from April 2011 to June 2011. The survey took place in South Korea which is one of the developed countries that have the highest broadband penetration ratio and have long history of OBCs. Data was collected from members of seventeen IT products related OBCs chosen from Naver (<http://www.naver.com>), DC inside (www.dcinside.com) and SLR club (<http://www.slrclub.com>). The three web sites are hosting the largest numbers of OBCs in South Korea. The selected OBCs are mostly related on mobile phones (Apple's iPhone and Samsung Galaxy) and Digital single-lens reflex camera (DSLR) such as Sony, Cannon, Nikon, and Samsung. To induce participation in the survey, firstly the researcher sent e-mail to operators of twenty five OBCs for cooperation then finally

seventeen OBCs' operators were allowed to use their free-boards to inform the survey. Secondly, an invitation message which contains the URL of the survey website was posted on a freeboard of each OBC. The invitation message was posted every one week, totally four times for each OBC. Participation of survey was entirely voluntary. No any participants were forced to engage in the survey at the particular time or in a particular place. All participants were free to respond at anytime and anywhere.

This study is primarily based on the Statistical Package for Social Sciences (SPSS) Version 18.0 for Windows to assess the descriptive statistics and exploratory factor analysis (EFA). After EFA, the confirmatory factor analysis (CFA) on the basis of structural equation modelling (SEM) was undertaken to confirm the factors by analysis of moment structure (AMOS), Version 18.0. Next, AMOS was applied to assess the model fit and to test hypotheses of this study.

The SPSS programme is to run the objects for analysis of quantitative data, hence all respondent answers were entered according to the numeric response value before starting analysis. The SPSS spreadsheet columns and rows were established by coding of survey question items. Thus, the responses can be identified across the data editor. After entering data, the variables were coded as grouped question items. These variables are presented as independent and dependent variables.

5.3 Data Screening Prior to Analysis

Accurate data is significant and necessary for analysing the responses of the survey questions because some errors can utterly disrupt analysis. Hence, data screening and cleaning is essential to check data set for errors before starting to analyse data (Pallant, 2010). Many issues exist that are concerned with the accuracy of data such as checking missing data and outliers, testing normality, linearity, homoscedasticity, multicollinearity. Those issues influence on the relationships of variables or the outcome of variables. Hair et al. (2010) explain that data screening helps to reveal the hidden negative effects that are not apparent, hence, the hidden effects can be easily overlooked by data screening. Therefore, Hair et al. (2010) recommend that these issues should be a

considered and conducted before main data analysis.

5.3.1 Missing Data

Missing data can be one of the most persistent problems in data analysis and affect the results of research objectives. Missing data occur for various reasons but mostly occur because of long questionnaires, hence, the respondents miss the questions out (Hair *et al.*, 2010). This survey was conducted via an online survey service (www.surveymonkey.com), therefore, the missing data can be identified easily by a function of the web service. As a result, total 584 respondents participated in the survey. The participation was voluntary and the survey lasted over one month from 24th May 2011 to 28th June 2011. Among the 584 responses, 65 responses were filtered out as a very small number of questions were answered and the questionnaire demonstrated non-serious answers from the respondent. Therefore, finally 519 responses were used for the analysis. Male respondents made up 80.3% of the sample. About 56.9% of the respondents were between 18 and 29 years old. 32.8% and 51.2% of the respondents were students and employed respectively. 69.7% of the respondents had been using OBCs more than six months while 54.5% of the respondents bought more than one product which was related to the OBCs.

5.3.2 Outliers

Outliers are “*observations with a unique combination of characteristics identifiable as distinctly different from the other observations*” (Hair *et al.*, 2010, p.64). Typically, outliers are judged to sort out defective combinations such as high or low value on a variable or a unique combination of values across several variables that make the observation stand out from the others and it should be removed as either beneficial or problematic (Hair *et al.*, 2010, p.64-65).

Hair *et al.* (2010, p.66-68) explain that outliers can be sorted out by three perspectives based on the number of variables considered: (1) univariate, (2) bivariate, and (3)

multivariate. First, the univariate identification examines the outliers by the distribution of observations for each variable in the analysis. The outliers can be selected and detected with those cases falling at the outer ranges of the distribution. Outliers are typically identified as cases with standardised variable values exceeding ± 2.5 . For comparing the distribution of scores on variables, box plots are useful to explore outliers in SPSS (Pallant, 2010). Next, the bivariate outliers can be examined by a scatter plot which compares pairs of variables. If a case falls obviously outside the range of the other cases, it will be a candidate as outliers to be removed from data (Hair et al., 2010, p.66). However, most multivariate analyses are conducted with more than two variables. Therefore, Hair et al. (2010) argue that the bivariate method has limitations because it measures only two dimensions (variables) at a time. Lastly, the multivariate identification of outliers is for a multivariate assessment of each observation across a set of variables. (Hair et al., 2010, p.66). The multivariate outliers appear as a combination of scores on two or more variables and, hence, the multivariate methods are able to compensate the defect of bivariate outliers. Hair et al. (2010) explain the multivariate outliers can be identified by Mahalanobis D^2 measurement and this method can measure each observation's distance in multidimensional space. By this test, if D^2/df (degree of freedom) value exceeds 2.5 in small samples (80 or fewer observations) and 3 or 4 in large samples, they can be considered as outliers (Hair *et al*, 2010, p.67).

According to the recommendation by Hair et al. (2010) this study applied a graphical method by box plot for detecting the univariate outliers and Mahalanobis D^2 measurement was applied for finding multivariate outliers to confirm their effect on the objectives of the study.

As the result, two univariate outliers, marked with an asterisk, were found by box plot test [Figure 5.1] and eight multivariate outliers were explored from Mahalanobis's distance test [Table. 5.1]. However, Hair et al. (2010, p.69) recommend that before eliminating outliers, researchers must compare the results between univariate diagnosis and multivariate diagnosis then make a decision to remove the outliers that appear by both diagnoses. Therefore, this study decided to omit only one outlier - the case of 468 -

for main data analysis.

Figure 5. 1 Inbox Plot

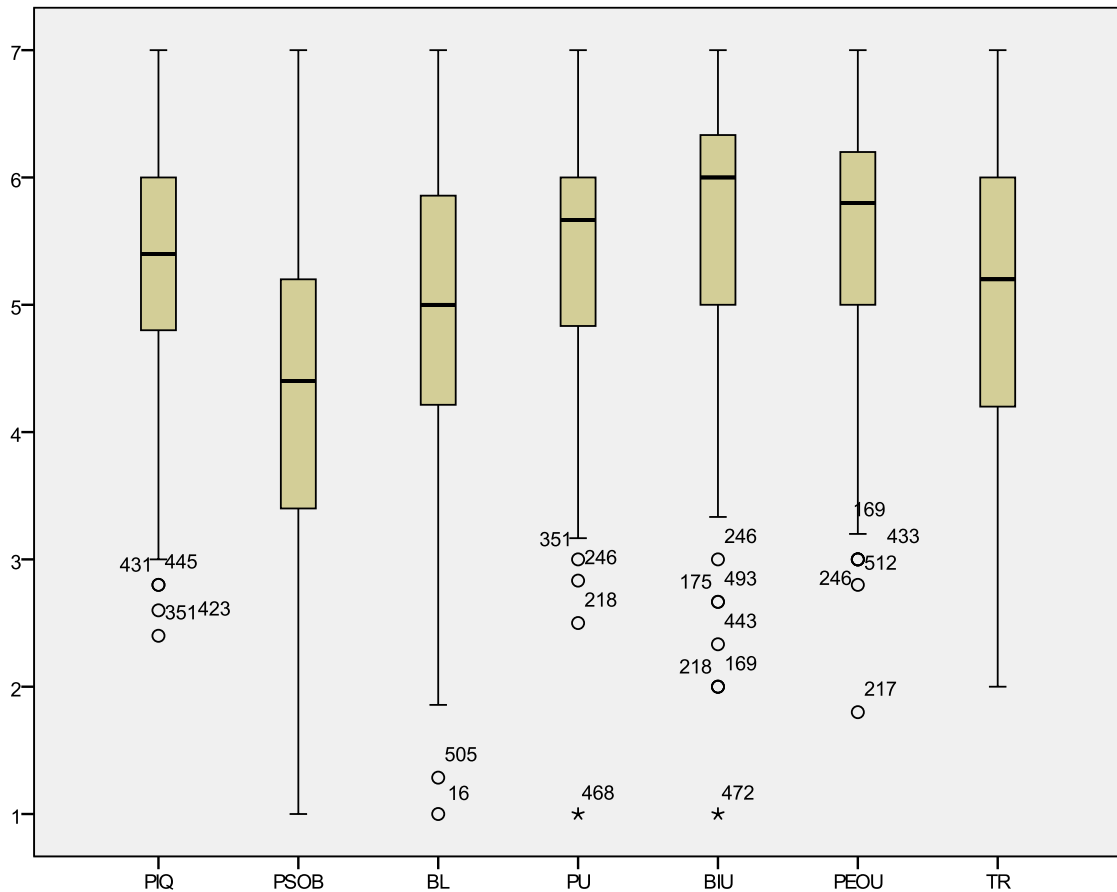


Table 5. 1 Univariate and Multivariate Outliers Results

Univariate Outliers		Multivariate Outliers		
Case with standard values exceeding + 2.5		Case with a value of D2/df Greater than 3 (df = 7) a		
Marked with an asterisk		Case	D2	D2/df
PIQ	No cases	512	38.29	5.470
PSOB	No cases	468	33.71	4.815
BL	No cases	217	31.08	4.440
PU	468	449	28.57	4.081

BIU	472	99	24.86	3.551
PEOU	No cases	67	22.69	3.241
TR	No cases	107	22.07	3.152
		165	21.50	3.071

a. Mahalanobis D2 value based on the 7variable perceptions.

Note: PIQ = Perceived Information Quality, PSOB = Perceived Sense Of Belonging, BL = Brand Loyalty, PU = Perceived Usefulness, BIU = Behavioural Intention to use, PEOU = Perceived Ease of Use, TR = Trust

5.3.3 Normality, Linearity, Homoscedasticity and Multicollinearity

5.3.3.1 Normality

In multivariate analysis, normality is the most fundamental assumption and refers to the shape of the data distribution for an individual metric variable (Hair *et al.*, 2010, p.71). Hair *et al.* (2010) insist that the normality test is not always required for structural equation modeling but if the metric variables are normally distributed, it is better to analyse the data. They also suggest that the researcher can be less concerned about abnormal variables when the sample sizes become large because the results of statistical tests would be invalid. However, they also recommend that although large sample size tends to reduce the concern of normality, the researcher should always measure the normality for all metric variables in the analysis process.

The normality test of data distribution can be assessed by two statistical methods: (1) Kurtosis and Skewness test, (2) Kolmogorov-Smirnov and Shapiro-Wilk test. For these tests, this study used SPSS 18.0 for Windows. First, the most commonly used critical value of Kurtosis and Skewness test is ± 2.58 (Hair *et al.*, 2010). Kurtosis test confirms normal distribution; and Skewness test is used to describe the balance of the distribution (Hair *et al.*, 2010). For this study, all variables were found normally distributed by Kurtosis and Skewness test [Table. 5.2]. Next, Kolmogorov-Smirnov and Shapiro-Wilk test was applied to find the normality of data. Park (2008) suggests that the significant value of both tests should be above 0.05 then it means that the data is normally distributed. Park (2008) argues that the Kolmogorov-Smirnov test is useful when the

data (N) is larger than 2,000 and Hair et al. (2010) insisted that the both tests are quite sensitive in large samples which N is more than 1,000. The results of this study showed that all the univariate variables have a non-normal distribution by Kolmogorov-Smirnov and Shapiro-Wilk test [Table. 5.3]. It might be due to sample size (n=518) as recommended by Park (2008) and Hair et al. (2010). The normality test of each item is introduced in Appendix D.

Table 5. 2 Kurtosis and Skewness test

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PIQ	518	2.40	7.00	5.3533	.92340	-.441	.107	-.123	.214
PSOB	518	1.00	7.00	4.2672	1.38864	-.098	.107	-.599	.214
BL	518	1.00	7.00	5.0127	1.16695	-.452	.107	-.100	.214
PU	518	2.50	7.00	5.4636	.89289	-.399	.107	-.209	.214
BIU	518	1.00	7.00	5.6268	1.04740	-.786	.107	.660	.214
PEOU	518	1.80	7.00	5.5537	.95428	-.608	.107	-.073	.214
TR	518	2.00	7.00	5.0988	.97431	-.191	.107	-.561	.214
Valid N (listwise)	518								

Note: PIQ = Perceived Information Quality, PSOB = Perceived Sense Of Belonging, BL = Brand Loyalty, PU = Perceived Usefulness, BIU = Behavioural Intention to use, PEOU = Perceived Ease of Use, TR = Trust

Table 5. 3 Kolmogorov-Smirnov and Shapiro-Wilk test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PIQ	.094	518	.000	.976	518	.000
PSOB	.042	518	.030	.987	518	.000
BL	.060	518	.000	.979	518	.000
PU	.128	518	.000	.965	518	.000
BIU	.189	518	.000	.923	518	.000
PEOU	.152	518	.000	.946	518	.000
TR	.094	518	.000	.977	518	.000

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PIQ	.094	518	.000	.976	518	.000
PSOB	.042	518	.030	.987	518	.000
BL	.060	518	.000	.979	518	.000
PU	.128	518	.000	.965	518	.000
BIU	.189	518	.000	.923	518	.000
PEOU	.152	518	.000	.946	518	.000
TR	.094	518	.000	.977	518	.000

a. Lilliefors Significance Correction

Note: PIQ = Perceived Information Quality, PSOB = Perceived Sense Of Belonging, BL = Brand Loyalty, PU = Perceived Usefulness, BIU = Behavioural Intention to use, PEOU = Perceived Ease of Use, TR = Trust

5.3.3.2 Linearity

Linearity means the straight correlation and relationship between variables. An implicit assumption of all multivariate techniques such as multiple regression, logistic regression, factor analysis and structural equation modelling is linearity because those are based on co-relational measures of association (Hair et al., 2010, p. 76). Thus, it is important to examine the linear association between variables and nonlinear effects are not able to be represented in the correlation value (Hair *et al.*, 2010). In statistics, the linearity can be calculated by Pearson's correlations or scatter plot (Hair *et al.*, 2010; Pallant, 2010). This study applied Pearson's correlations test and the results indicate that all independent variables have significant and positive correlation (P-value < 0.001) with the dependent variable [Table. 5.4]. The results show that all variables have linear relationship with others.

Table 5. 4 Pearson's correlations

		PIQ	PSO B	BL	PU	BIU	PEO U	TR
PIQ	Pearson Correlation Sig. (2- tailed) N	1 518						
PSO B	Pearson Correlation	.464**	1					

	Sig. (2-tailed)	.000						
	N	518	518					
BL	Pearson Correlation	.483**	.502**	1				
	Sig. (2-tailed)	.000	.000					
	N	518	518	518				
PU	Pearson Correlation	.537**	.436**	.430**	1			
	Sig. (2-tailed)	.000	.000	.000				
	N	518	518	518	518			
BIU	Pearson Correlation	.466**	.558**	.485**	.589**	1		
	Sig. (2-tailed)	.000	.000	.000	.000			
	N	518	518	518	518	518		
PEOU	Pearson Correlation	.510**	.458**	.387**	.633**	.677**	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.000		
	N	518	518	518	518	518	518	
TR	Pearson Correlation	.509**	.544**	.381**	.545**	.492**	.513**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	518	518	518	518	518	518	518

** . Correlation is significant at the 0.01 level (2-tailed).

Note: PIQ = Perceived Information Quality, PSOB = Perceived Sense Of Belonging, BL = Brand Loyalty, PU = Perceived Usefulness, BIU = Behavioural Intention to use, PEOU = Perceived Ease of Use, TR = Trust

5.3.3.3 Homoscedasticity

The assumption of homoscedasticity is that dependent variables exhibit equal levels of variance across the range of predictor variables (Hair et al., 2010, p.74). Homoscedasticity assessed the variance of dependent variables with independent variables. Hair et al. (2010) explain that the variance of the dependent variable values must relatively be equal as each independent variable and if the relationships between dependent and independent variables are unequal, it is called heteroscedastic. They insist that the presence of unequal variances can also generate problems for multivariate analysis. Homoscedasticity can be measured by Levene's test of homogeneity of

variances when data are grouped as homogeneity (Pallant, 2010). Therefore, this study adopted Levene's test of homogeneity of variances to confirm the variance relationships between dependent and independent variables. Hair et al. (2010, p.85) suggest that the significant value should exceed 0.05 to validate the homogeneity.

Table 5. 5 Levene's test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
PIQ1	.000	1	516	.999
PIQ2	3.330	1	516	.069
PIQ3	.487	1	516	.486
PIQ4	.206	1	516	.650
PSOB1	.214	1	516	.643
PSOB2	.290	1	516	.591
PSOB3	.016	1	516	.900
PSOB4	.378	1	516	.539
PSOB5	.346	1	516	.557
ABL1	.620	1	516	.431
ABL2	.867	1	516	.352
ABL3	.119	1	516	.730
BBL1	5.669	1	516	.018
BBL2	.547	1	516	.460
BBL3	.472	1	516	.492
BBL4	.002	1	516	.962
PU1	.874	1	516	.350
PU2	.368	1	516	.545
PU3	.205	1	516	.651
PU4	.197	1	516	.657
PU5	.159	1	516	.690
PU6	1.479	1	516	.224
BIU1	13.587	1	516	.000
BIU2	10.269	1	516	.001
BIU3	2.745	1	516	.098
PEOU1	6.852	1	516	.009

PEOU2	5.052	1	516	.025
PEOU3	14.381	1	516	.000
PEOU4	6.429	1	516	.012
PEOU5	12.574	1	516	.000
TR1	.883	1	516	.348
TR2	3.532	1	516	.061
TR3	.047	1	516	.828
TR4	.012	1	516	.913
TR5	.219	1	516	.640

Note: PIQ = Perceived Information Quality, PSOB = Perceived Sense Of Belonging, BL = Brand Loyalty, PU = Perceived Usefulness, BIU = Behavioural Intention to use, PEOU = Perceived Ease of Use, TR = Trust

The result of homogeneity test shows that most of variables have not been violated but some variables indicate a lack of homogeneity [Table. 5.5]. However, Field (2005) argues that Levene's test is sensitive to sample size, therefore, the homogeneity can be significant when the sample size is large. The test of this study consisted of 518 samples which indicate a large sample size (Hair *et al*, 2010).

5.3.3.4 Multicollinearity

Multicollinearity may exist due to a strong correlation of two or more other independent variables (Hair *et al.*, 2010). Therefore, a measurement is needed to explain the degree to which each independent variable is affected by the set of other independent variables (Hair *et al.*, 2010, p.200). A method to check the multicollinearity is investigation of the variance inflation factor (VIF) and tolerance value. The VIF indicates whether an independent variable has a strong linear relationship with other variables. If the value of VIF is larger than 10, it indicates that the variables have a serious problem (Pallant, 2010). In addition, if the tolerance value is below than 0.1, it also is problematic (Pallant, 2010). Therefore, this study examined the multicollinearity by SPSS which provides collinearity diagnostics used by VIF and tolerance value. The results show that the VIF value of all variables was less than 10 and no tolerance value was below 0.1. Therefore, it was confirmed that there is no concern over multicollinearity in this study [Table. 5.6].

Table 5. 6 Multicollinearity Diagnostic

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-.128	.217		-.589	.556		
PIQ1	-.089	.038	-.078	-2.369	.018	.524	1.909
PIQ2	.061	.039	.063	1.563	.119	.350	2.860
PIQ3	.056	.034	.056	1.652	.099	.491	2.038
PIQ4	-.022	.033	-.025	-.659	.510	.397	2.519
PSOB1	.071	.032	.107	2.200	.028	.242	4.141
PSOB2	.009	.032	.011	.278	.781	.389	2.570
PSOB3	-.068	.034	-.089	-1.972	.049	.281	3.557
PSOB4	.018	.030	.028	.612	.541	.273	3.669
PSOB5	-.012	.028	-.018	-.434	.664	.322	3.105
ABL1	.011	.028	.013	.384	.701	.519	1.929
ABL2	-.019	.036	-.021	-.532	.595	.353	2.835
ABL3	-.006	.033	-.007	-.186	.853	.363	2.758
BBL1	-.012	.028	-.017	-.426	.670	.377	2.651
BBL2	.125	.038	.151	3.283	.001	.267	3.750
BBL3	.052	.033	.075	1.586	.113	.254	3.943
BBL4	-.070	.042	-.087	-1.665	.097	.209	4.792
PU1	.066	.038	.065	1.738	.083	.408	2.452
PU2	-.108	.047	-.097	-2.283	.023	.315	3.178
PU3	-.014	.046	-.013	-.293	.769	.310	3.226
PU4	.098	.049	.088	1.997	.046	.293	3.411
PU5	.001	.050	.001	.027	.978	.257	3.895
PU6	.011	.049	.010	.227	.820	.301	3.324
BIU1	.211	.034	.243	6.258	.000	.375	2.664
BIU2	.504	.040	.465	12.607	.000	.416	2.402
PEOU1	.001	.040	.001	.033	.974	.340	2.944
PEOU2	-.021	.041	-.021	-.505	.614	.313	3.192
PEOU3	.024	.043	.024	.562	.574	.323	3.094
PEOU4	-.016	.041	-.015	-.390	.697	.367	2.727
PEOU5	.081	.045	.079	1.806	.072	.297	3.368
TR1	.024	.037	.024	.637	.524	.383	2.608
TR2	.041	.040	.038	1.018	.309	.412	2.426
TR3	.051	.034	.056	1.511	.131	.417	2.397
TR4	.059	.032	.068	1.835	.067	.415	2.408
TR5	-.083	.039	-.083	-2.130	.034	.373	2.684

a. Dependent Variable: BIU3

Note: PIQ = Perceived Information Quality, PSOB = Perceived Sense Of Belonging, BL = Brand Loyalty, PU = Perceived Usefulness, BIU = Behavioural Intention to use, PEOU = Perceived Ease of Use, TR = Trust

To sum up, these preliminary analyses indicated that most test results were satisfied. The initial analyses conducted for data screening with 519 samples and one sample – data number 468 – was omitted through outliers test. Therefore, 518 samples were used for factor analysis and hypotheses testing in this study.

By the next section, the descriptive statistics of the respondent characteristics will be introduced and the factor structures of the constructs and the result of reliability test will be discussed.

5.4 Demographic Characteristics and Relationships

The main survey was completed within two months with interest of participants in the issue being studied. As mentioned in the previous chapter, the data for the main study were collected by online survey with OBC members in South Korea. 584 members from 17 OBCs participated in the online survey and 65 responses were filtered out due to incomplete answers on the questionnaire. The initial data was recorded by coding and cleaned by preliminary analyses before inferring findings. One sample was found by outlier test and removed from analysis of the main study. Therefore, 518 data were used for analysis in the main study.

The characteristics of the 518 participants such as gender, age, occupation, and other activities were asked in the questionnaire [Table 5.7]. Demographic details of the respondents show that 80.3 % (n=416) of participants were male and 51.2% (n=265) were between 18-29 years of age. A majority (53.9%, n=279) of participants were workers and 81.5% (n=422) of participants were using OBCs which belong in a portal site (www.naver.com). 53.1% (n=275) of them have used OBCs for more than one year and 58.1% (n=301) of participants were visiting OBCs almost every day. 409 (79%) of participants have purchased the brand products which belong in the OBCs and 38.6% (n=200) of them have used the brand products more than one year. 39% (n=202) of participants purchased the brand products before joining the OBCs and similarly 40% (n=207) of respondents made the purchase decision of brand products after becoming a

member of an OBC. In addition, the individuals' perception of their stages in an OBC indicates that tourists (42.3%), minglers (25.2%), devotees (12.7%), and leaders (6.8%), and 12.7% was operators of OBCs.

Table 5. 7 Descriptive Statistics of the Respondent Characteristics

Category	Item	Frequency	Percentage
1. Gender	Female	102	19.7
	Male	416	80.3
2. Age (years)	Under 18	30	5.8
	18-29	265	51.2
	30-39	186	35.9
	40-49	31	6.0
	>50	6	1.2
3. Occupation	Student	170	32.8
	Worker	279	53.9
	Housewife	5	1.0
	Other	64	12.4
4. Type of OBC	Belong in portal	422	81.5
	Own website	96	18.5
5. The period of activity in OBC	< 1 month	25	4.8
	1 ~ 3 months	55	10.6
	4 ~ 6 months	77	14.9
	7 months ~ 1 year	86	16.6
	Over than 1 year	275	53.1
6. Visit frequency Of OBC	Almost every day	301	58.1
	More than once a week	124	23.9
	More than once a month	21	4.1
	More than once in 3 months	5	1.0
	Whenever I need	67	12.9
7. The number of brand products if own	None	109	21.0
	One	127	24.5
	two	115	22.2
	three	67	12.9
	four	19	3.7
	More than five	81	15.6
8. Purchase time	None	109	21.0
	Before joining OBC	202	39.0
	After joining OBC	207	40.0

9. Brand Product Usage experience	None	109	21.0
	< 1 week	7	1.4
	< 1 month	14	2.7
	1 ~ 3 months	48	9.3
	4 ~ 6 months	69	13.3
	7 months ~ 1 year	71	13.7
	More than 1 year	200	38.6
10. Individual's perception for the stages.	Tourist	219	42.3
	Mingler	132	25.2
	Devotee	66	12.7
	Insider	35	6.8
	Operator	66	12.7
Total	518	100.0	

5.5 Factor Loading and Data Analysis

Factor analysis is an interdependence technique principally suitable for analysing complex patterns when multidimensional relationships are encountered by researchers (Hair *et al.*, 2010, p.91). Factor analysis is used, firstly, to observe the underlying relationship or patterns for a large number of variables and, secondly, to determine whether a large number of variables can be combined in a smaller set of constructs or components (Hair *et al.*, 2010). In other words, factor analysis defines the underlying structure among the variables (Hair *et al.*, 2010, p.94). Pallant (2010) explains that another purpose of factor analysis is to reduce a data set for establishing a more manageable size of data. To find the sets of variables, the factor analysis indicates the highly correlated variables in a factor loading as a construct of the variables. Likewise,

the factor analysis is a tool to provide the structure of correlations among a large number of variables by defining sets of variables (Hair *et al.*, 2010).

Two methods of factor analysis techniques exist: (1) exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Both used to investigate the set of groups of variables and data reduction. However, the EFA and CFA are not the same. The EFA technique is conducted without knowing how many factors really exist or which variables belong with which construct, whereas the CFA technique is based on the theory used to examine how well theoretical specification of the factors matches with actual data (reality) (Hair *et al.*, 2010, p.693).

This study applied both EFA and CFA techniques. The EFA was to explore how many constructs appeared in the data of this study regardless of the theory. Next, CFA was conducted to confirm how the groups of measurement variables express the theoretical specification for examining the hypotheses. For EFA, SPSS Version 18.0 for Windows was applied and for CFA, analysis of moment structure (AMOS) Version 18.0 for Windows was adopted.

5.5.1 Exploratory Factor Analysis

Exploratory factor analysis was conducted to examine interrelationships among large numbers of items and to extract these items in terms of their common underlying constructs (Hair *et al.*, 2010).

5.5.1.1 Communality

To measure the number of factors and to assess adequacy of extraction, the most common methods are eigenvalues and scree plot. However, before extraction of the factors, it is important to understand how much of a variable's variance is shared with other variables because factor analysis investigates high correlations among variables (Hair *et al.*, 2010, p.105). Communality refers to the "*total amount of variance an original variable shares with all other variables included in the analysis*" (Hair *et al.*, 2010, p.92). If a variable has no variance with others, the communality would be 1,

whereas if the variable shares nothing with other variables, it would be 0. The communality can be measured from EFA and it should exceed 0.6 for most variables (Hair *et al.*, 2010, p.108). The results of this study for communality test showed that most of variables have high variance with others but PIQ1 and ABL1 indicated less than 0.6 [Table 5.8].

Table 5. 8 Communalities

	Initial	Extraction		Initial	Extraction
PIQ1	1.000	.573	BIU1	1.000	.784
PIQ2	1.000	.796	BIU2	1.000	.837
PIQ3	1.000	.687	BIU3	1.000	.854
PIQ4	1.000	.769	PEOU1	1.000	.701
PSOB1	1.000	.831	PEOU2	1.000	.765
PSOB2	1.000	.644	PEOU3	1.000	.758
PSOB3	1.000	.785	PEOU4	1.000	.689
PSOB4	1.000	.830	PEOU5	1.000	.759
PSOB5	1.000	.772	TR1	1.000	.727
ABL1	1.000	.537	TR2	1.000	.667
ABL2	1.000	.644	TR3	1.000	.698
ABL3	1.000	.646	TR4	1.000	.716
BBL1	1.000	.687	TR5	1.000	.692
BBL2	1.000	.759			
BBL3	1.000	.773			
BBL4	1.000	.799			
PU1	1.000	.651			
PU2	1.000	.722			
PU3	1.000	.754			
PU4	1.000	.766			
PU5	1.000	.775			
PU6	1.000	.758			

Extraction Method: Principal Component Analysis.

Note: PIQ = Perceived Information Quality, PSOB = Perceived Sense Of Belonging, BL = Brand Loyalty, PU = Perceived Usefulness, BIU = Behavioural Intention to use, PEOU = Perceived Ease of Use, TR = Trust

By the result of communality, this study decided to omit PIQ1 and ABL1 those which indicated less than 0.6. After removing the two items, the communality of all variables were satisfied with higher value than 0.6 [See. Appendix E].

5.5.1.2 Eigenvalues

Eigenvalues were used to examine how many factors (constructs) can be extracted (Hair et al., 2010) and the result of eigenvalues reported as a part of an initial method in principal component extraction (Pallant, 2010). Hair et al. (2010, p.109) explain that eigenvalues greater than 1 are considered significant but Jolliffe's (2002) criterion calls for factors with eigenvalues greater than 0.7 to be retained.

The eigenvalue test was conducted by principal component analysis [Table 5.9]. According to Jolliffe's (2002) suggestion, this study found that seven factors have an eigenvalue greater than 0.7. The first factor was a high value then successively smaller eigenvalues followed.

Table 5. 9 Eigenvalues

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.730	41.607	41.607	13.730	41.607	41.607	4.627	14.023	14.023
2	3.069	9.299	50.905	3.069	9.299	50.905	4.536	13.746	27.768
3	2.292	6.945	57.850	2.292	6.945	57.850	3.884	11.770	39.539
4	1.803	5.463	63.313	1.803	5.463	63.313	3.813	11.555	51.094
5	1.471	4.458	67.772	1.471	4.458	67.772	3.500	10.605	61.699
6	1.376	4.171	71.942	1.376	4.171	71.942	2.372	7.186	68.886
7	.884	2.680	74.622	.884	2.680	74.622	1.893	5.736	74.622
8	.708	2.145	76.767						
9	.618	1.873	78.640						
10	.564	1.710	80.351						
11	.549	1.665	82.016						
12	.473	1.432	83.448						
13	.407	1.234	84.682						
14	.400	1.214	85.896						
15	.363	1.101	86.996						
16	.357	1.082	88.079						
17	.329	.998	89.077						
18	.317	.961	90.038						
19	.304	.922	90.960						
20	.297	.900	91.860						
21	.267	.810	92.670						
22	.265	.803	93.473						
23	.251	.760	94.233						
24	.234	.710	94.943						
25	.226	.683	95.627						
26	.220	.666	96.293						

27	.205	.621	96.914					
28	.200	.607	97.521					
29	.193	.585	98.106					
30	.169	.512	98.618					
31	.168	.508	99.126					
32	.153	.465	99.591					
33	.135	.409	100.000					

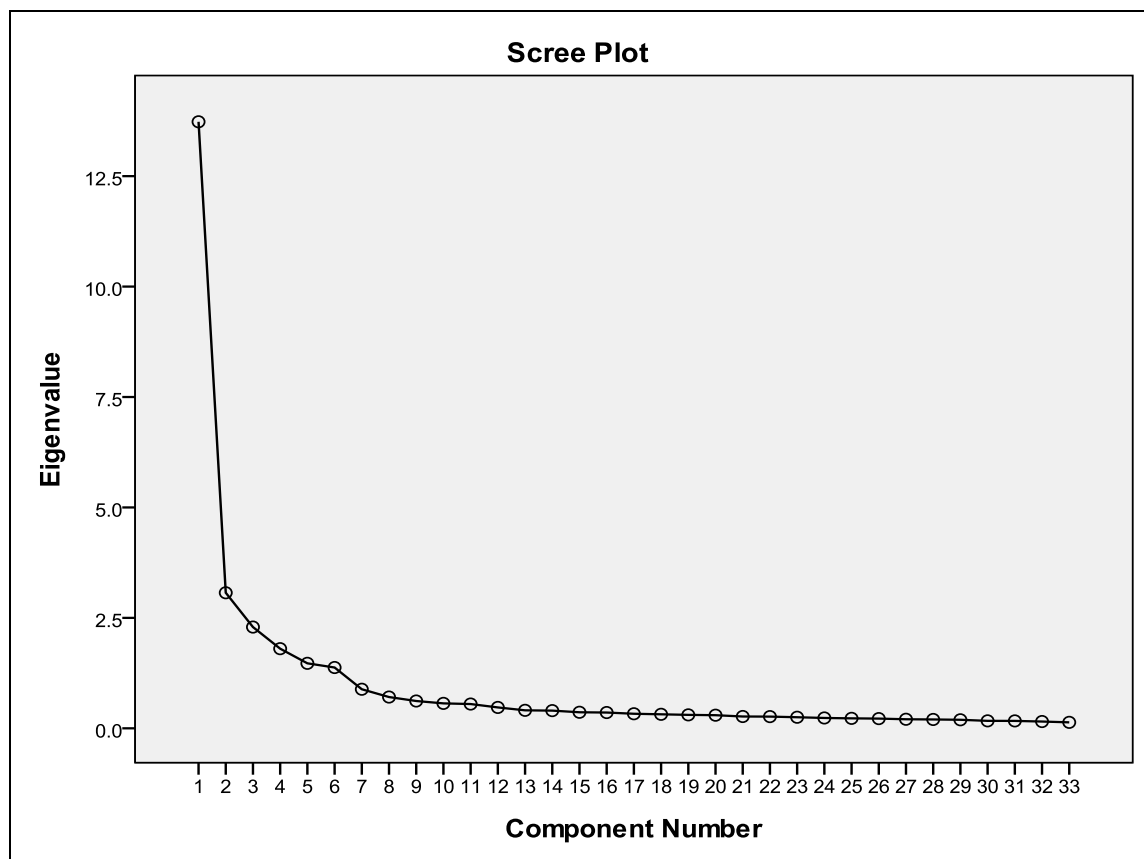
Extraction Method: Principal Component Analysis.

5.5.1.3 Scree Plot

The scree test is commonly used to confirm the maximum number of factors and to identify the optimum number of factors (Hair *et al*, 2010, p.110). The factors should be extracted with high eigenvalues; however, the scree test makes the decision of the number of factors by plotting a scree graph. The plot of the first factors sharply decreases initially and then slowly becomes, approximately, a horizontal line (Hair *et al*, 2010, p.110). Hair *et al*. (2010, p.110) insist that even if ‘n’ factors were examined in eigenvalues, the scree test results in at least one and sometimes two or three factors being considered for inclusion.

The scree plot test was performed by a varimax rotation. By applying a scree plot test, this study confirmed seven extracted factors, the same as the eigenvalues test [Figure 5.2].

Figure 5. 2 Scree Plot



5.5.1.4 Exploratory Factor Loading

EFA examines the correlation of the variables and the factors regardless of the theory. Exploratory Factor Analysis (EFA) is a statistical procedure used to analyse interrelationships among large numbers of variables and it is used to extract these variables in terms of their common underlying latent factors (Hair *et al*, 2010). It is widely used in social science not only to identify the latent factors but also to reduce a large number of variables to a smaller set of factors (Hair *et al*, 2010). Thus, this study initially adopted EFA to investigate variables in latent factors regardless of theory and then apply CFA to confirm the latent factors based on theory before examining the hypotheses.

The factor loading of 0.30 of a variable indicates that the variable is explained by approximately 10%. The 0.50 and 0.70 loadings indicate that 25% and 50% of the variance is accounted for by the factor respectively (Hair *et al*, 2010, p.116). Hair *et al*. (2010, p.117) insist that factor loadings ± 0.50 or greater are considered as significant and exceeding ± 0.70 are considered as well-defined structures and are the goal of any factor loading. Furthermore, they recommend that low factor loading ($<.50$), and high cross-loading ($>.40$) should be deleted after EFA. In addition, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity can be conducted from EFA using SPSS. The Kaiser-Meyer-Olkin (KMO) from EFA examines sampling adequacy and Bartlett's test of sphericity explores whether using factor analysis is appropriate for the study (Norusis, 1992). The KMO value of near 1.0 indicated excellent adequacy and it should be above 0.5 and the significant value of Bartlett's test of sphericity should be less than 0.05 (Hair *et al.*, 2010; Pallant, 2010). The result of factor loading by EFA for this study is introduced below in table 5.10.

Table 5. 10 Exploratory Factor Analysis**Rotated Component Matrix^a**

	Component						
	1	2	3	4	5	6	7
PU5	.794						
PU4	.791						
PU6	.783						
PU3	.754						
PU2	.733						
PU1	.710						
BBL4		.845					
BBL3		.844					
BBL2		.810					
BBL1		.778					
ABL3		.750					
ABL2		.724					
PSOB4			.870				
PSOB1			.814				
PSOB5			.803				
PSOB3			.777				
PSOB2			.602				
PEOU2				.782			
PEOU3				.766			
PEOU5				.740			
PEOU1				.732			
PEOU4				.694			
TR4					.791		
TR1					.769		
TR3					.747		
TR5					.704		
TR2					.666		
PIQ4						.813	
PIQ2						.807	

PIQ3						.728	
BIU2							.739
BIU3							.729
BIU1							.631

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Note: PIQ = Perceived Information Quality, PSOB = Perceived Sense Of Belonging, BL = Brand Loyalty, PU = Perceived Usefulness, BIU = Behavioural Intention to use, PEOU = Perceived Ease of Use, TR = Trust

The KMO test resulted in a value of 0.944, which indicated an excellent adequacy of this study. In addition Bartlett's test indicated that the factor analysis is appropriate for this study (significant value $p < 0.01$) [Appendix F].

The result of EFA showed that most of the factor loadings exceeded 0.70 but four factors (i.e. PSOB2, PEOU4, TR2, and BIU1) were not exceeded. However, the loading values of all the four variables were more than 0.50. Therefore, the result of factor loading indicates that this study has a considerably well-defined structure of variables. Moreover, the results showed that there was no cross-loading, hence no items were deleted by EFA. As a result, although the EFA is not related with theory as CFA, the exploratory factor loading result was as expected by theory.

5.5.1.5 Scales Reliability Testing

Reliability is “an assessment of the degree of consistency between multiple measurements of a variable” (Hair *et al*, 2010, p.125). The most commonly used measure of reliability is internal consistency, which applies consistency among variables in a summated scale (Hair *et al*, 2010, p.125). For the rationale of internal consistency, the individual items or indicators of the scale should be measured in the same construct and it means that the individual variables should be highly correlated (Hair *et al*, 2010).

There are three diagnostics for reliability measure: (1) item-to-total correlation, (2) inter-item correlation, (3) Cronbach's alpha. First, the item-to-total correlation measures

the correlation of the item to the summated scale score and the rule of thumb suggests that it should exceed 0.50. Second, the inter-item correlation calculates the correlation among items and it should be more than 0.30. Lastly, Cronbach's alpha is a diagnostic measure of reliability coefficient which assesses the consistency of the whole scale. The rule of thumb suggests that the lower limit for Cronbach's alpha is 0.70 (Hair *et al.*, 2010, p.125). Hair *et al.* (2010) recommend that the internal consistency must be measured with the three diagnostics as a series of diagnostics for examining the reliability because no single item is a perfect measure of a concept.

The results of reliability test for this study were satisfied by rule of thumb. All item values for item-to-total correlation and inter-item correlation exceeded 0.50 and 0.30 respectively [Appendix. G]. Cronbach's alpha value of all factors indicated more than 0.70 [Table 5.11]

Table 5. 11 Cronbach's alpha Test for Reliability

Factor and Related Items		Factor Loading	Cronbach's Alpha
Factor 1			
PU1	Using OBC would enable me to accomplish my purpose for purchase decision making and knowledge sharing of the brand product more quickly.	.710	.926
PU2	Using OBC would improve my performance for purchase decision making and knowledge sharing of the brand product.	.733	
PU3	Using OBC would increase my productivity for purchase decision making and knowledge sharing of the brand product.	.754	
PU4	Using OBC would enhance my effectiveness on purchase decision making and knowledge sharing of the brand product.	.791	
PU5	Using OBC would make it easier to make purchase decision and share knowledge of the brand product.	.794	
PU6	I would find OBC useful in purchase decision making and knowledge sharing of the brand product.	.783	
Factor 2			
ABL2	I say positive things about the OBC's brand to other people.	.724	.916
ABL3	I encourage relatives and friends to buy the OBC's brand.	.750	
BBL1	It is very important for me to buy this particular brand of magazine rather than another brand.	.778	

BBL2	I am going to use the OBC's Brand in the future	.810	
BBL3	I always buy the same brand of the OBC because I really like this brand.	.844	
BBL4	I am going to purchase the OBC's brand in the future	.845	
Factor 3			
PSOB1	I feel a strong sense of being part of OBC.	.814	.919
PSOB2	I have complete trust of others in this OBC.	.602	
PSOB3	I enjoy myself as a member of this OBC.	.777	
PSOB4	I am very committed to this OBC.	.870	
PSOB5	Overall, there is a high level of morale in OBC.	.803	
Factor 4			
PEOU1	Learning to use OBC is easy for me.	.732	.903
PEOU2	I find it easy to get the OBC to do what I want to do.	.782	
PEOU3	My interaction with the OBC is clear and understandable	.766	
PEOU4	It is easy for me to become skilful at using the OBC.	.694	
PEOU5	In general, I find the OBC easy to use.	.740	
Factor 5			
TR1	The OBC members are concerned about what is important to others	.769	.881
TR2	The OBC members will do everything within their capacity to help others.	.666	
TR3	The OBC members try hard to be fair in dealing with each other.	.747	
TR4	I'd trust the OBC members to do the work right even if not monitored.	.791	
TR5	People on the OBC are trustworthy.	.704	
Factor 6			
PIQ2	The OBC provides me with a complete set of information.	.807	.846
PIQ3	The information from the OBC always up to date.	.728	
PIQ4	The OBC provides me with all the information I need.	.813	
Factor 7			
BIU1	I will frequently use the OBC in the future.	.631	.878
BIU2	I always try to use the OBC to do a task whenever it has a feature to help me perform it.	.739	
BIU3	I intend to continue using the OBC in the future.	.729	

The reliability measures are also available from confirmatory factor analysis (CFA) by composite (construct) validity and the average variance extracted (AVE). Both are discussed in the next section.

To sum up, by the EFA, this study validated the factorial structure of the scales and also reliability of this study. EFA was performed on all scales using SPSS 18.0. By the communality test two items – PIQ1 and ABL1 – were omitted from this study. In the next section, confirmation factor analysis (CFA) is discussed and the following section

discusses hypothesis testing by structural equation modelling (SEM). The CFA and hypothesis testing were conducted by analysis of moment structure (AMOS) 18.0 Version for Windows.

5.6 Instrument Refinement and Validation

Since the 35 item scales were adapted from the areas of IS research in order to test OBC members' behaviour, two items were omitted in the stage of EFA. However, for further examinations of the factor stricter, measurement purification and validation are necessary. EFA examined the factors that are derived from statistical results regardless of theories.

This study is a quantitative and deductive research which begins with literature to establish proper theory and construct hypotheses to collect data in objective stance (Collis and Hussey, 2003). This study started from a large amount of literature reviews and developed hypotheses and a conceptual framework for the empirical theory test. Therefore, for the hypothesis test, CFA should be conducted. CFA is similar to EFA in some respects, but it is quite different in philosophical perspective (Hair *et al*, 2010, p.693). CFA is used to provide a confirmatory test of measurement theory. With CFA, researchers must specify the number of factors in a set of variables (constructs) and which factors each variable will load on before the result can be computed. The CFA statistics indicate how well theoretical specification of the factors matches reality (actual data). Thus, the CFA is a tool which enables examination of preconceived theory through 'confirm' or 'reject' (Hair *et al*, 2010, p.693). The measurement theory identified by CFA can be combined with a structural theory to fully specify a framework as a structural equation model (SEM) (Hair *et al*, 2010).

For these reasons, CFA was conducted for this study. According to the suggestion of Hair *et al*. (2010), first, a unidimensionality test for each construct was conducted by CFA to refine a set of measured variables (indicators) which can be explained by only one underlying construct. Second, a unidimensionality test with all individual constructs was conducted by CFA to confirm whether the entire individual constructs can come

together to form an overall measurement model (Hair *et al.*, 2010, p.696). Several items were omitted in several cases based on unidimensionality which is measured by model fits, factor loading, regression weights, standardised residual covariances and modification indices. After examination of unidimensionality, the refined model was run for CFA. After CFA, two more tests were conducted for validation of constructs for the measurement model: (1) convergent validity, (2) discriminant validity.

5.6.1 Confirmatory Factor Analysis from EFA result.

Before the unidimensionality test for each construct, the overall model was measured by CFA to check the overall model fit. The first run of CFA was conducted by 33 items, seven constructs and 518 samples from EFA results. The result for the measurement model indicated that CMIN/DF = 3.176 (Chi-square (χ^2) = 1505.52, Degree of freedom (df) = 474, p-value = .000, GFI = .847, AGFI = .819, NFI = .889, CFI = .921, TLI = .912 and RMSEA = .065. According to Hair *et al.* (2010), in a data analysis with large samples ($n > 250$, $m \geq 30$)¹, generally, 3:1 ($\chi^2:df$ ratios) or less are associated with better-fitting models and the suggested normed χ^2 (CMIN/DF) value is within at 2.83 as a good fit. In this case, the CMIN/DF is 3.176 indicating it is not acceptable. P-value (< .05), AGFI (< .80), CFI (<.90) and TLI (<.90) are acceptable with good fit level. RMSEA is also acceptable because of a cut-off value of 0.8. However, GFI and NFI are not acceptable with 0.870 and 0.889 respectively. Both values are less than the cut-off point which is above 0.90.

Hair *et al.* (2010) assert that researchers should not run the overall CFA models that include covariances between error terms or cross-loadings, hence they recommend the unidimensionality test for investigation of the covariance.

5.6.2 Developing the Overall Measurement Model

The results of the first run of the overall CFA indicate that the measurement model must

¹ Note: N applies to number of observations per group when applying CFA to multiple groups and the same time. M = Number of observed variables.

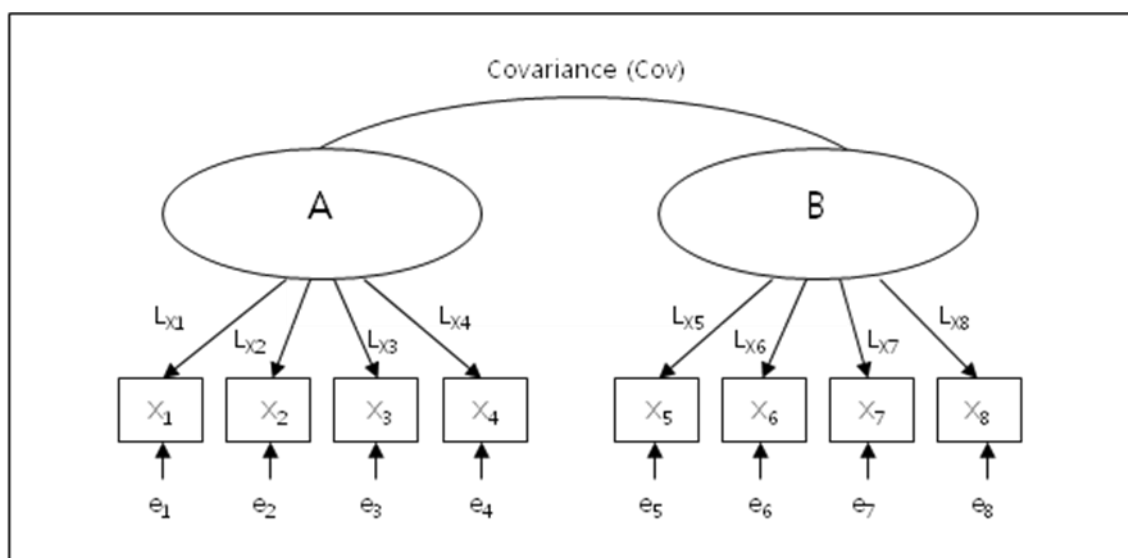
be sought to produce a good fit (Hair *et al.*, 2010). It can occur in some relationships such as within-construct error covariance, between-construct error covariance and cross-loading among constructs (Hair *et al.*, 2010). Therefore, this study conducted unidimensionality test based on CFA to investigate the significant cross-loading among variables and constructs.

5.6.1.1 Unidimensionality

Unidimensional measures mean that “*a set of measured variables (indicators) can be explained by only one underlying construct*” (Hair *et al.*, 2010, p.696). The unidimensionality test is critically important because the existence of significant cross-loadings is evidence of a lack of construct validity (Hair *et al.*, 2010, p.697). According to Hair *et al.* (2010), when unidimensional constructs exist, all cross-loadings are hypothesised to be zero (Hair *et al.*, 2010).

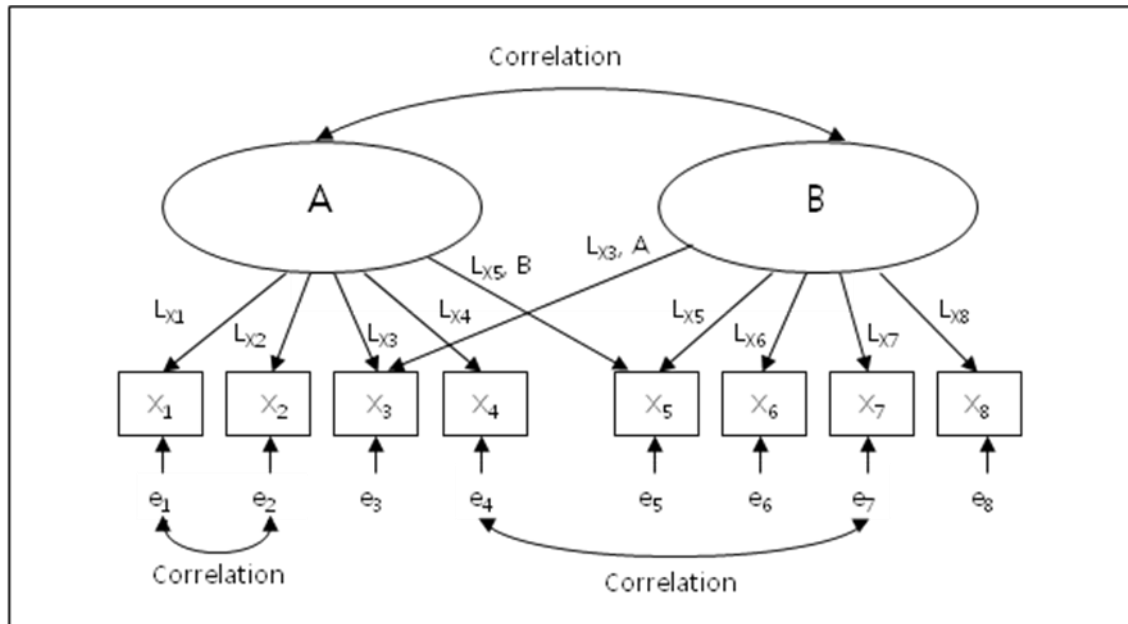
Figure 5.3 shows unidimensional constructs. Both constructs indicate that no measured item is determined by more than one construct. It indicates that all cross-loading of items is fixed at zero.

Figure 5. 3 Unidimensional constructs [Visual Representation (Path Diagram) of a Measurement Theory]



(Source: Hair *et al.*, 2010, p.695)

Figure 5. 4 Measurement Model with Hypothesised Cross-Loadings and Correlated Error Variance



(Source: Hair *et al.*, 2010, p.697)

Figure 5.4 is similar to Figure 5.3; however, neither construct is hypothesised to be unidimensional. Several additional relationships are hypothesised. Figure 5.4 shows correlation among some of the error terms and between measured variables and different constructs. First, the relationship X_1 and X_2 shows the correlation with items in one construct. The correlation between two error terms of items indicating the same construct is referred to as '*within-construct error covariance*' and it is a threat that decreases construct validity (Hair *et al.*, 2010). Second, the relationship X_4 and X_7 indicates correlation between two error terms of indicator variables loading on different constructs. The correlation between two error terms of items indicating different constructs, referred to as '*between-construct error covariance*', make a risk to construct validity (Hair *et al.*, 2010). Third, additional relationships are hypothesised between X_3 which is a measured variable and the latent construct B, and between X_5 and the latent construct A. These relationships are represented by $L_{x3, A}$ and $L_{x5, B}$, respectively. As a rule, although these additional paths lead to significantly better fit, the research should

not free and hypothesise cross-loadings because the significant cross-loadings occur from a lack of construct validity (Hair *et al.*, 2010).

As a result, the three additional relationships such as within-construct error covariance, between-construct error covariance and between a measured construct and the different latent construct will influence construct validity. Therefore, this study was concerned with the unidimensionality test to identify constructs and the overall model. Accordingly, in this study, two unidimensionality tests were conducted based on CFA. Firstly, the unidimensionality test for each construct was conducted for each construct to refine the scales, which gives an idea about whether the different assumed variables truly measure the constructs identified in the research model. Secondly, the unidimensionality test for overall construct was conducted to check whether all the items load satisfactorily on the respective construct, and whether they give a satisfactory model fit for the overall measurement model for CFA and SEM.

5.6.3 Unidimensionality for Items per Construct

According to Hair *et al.* (2010), the unidimensionality test based on CFA should follow five diagnostics to confirm which items or constructs have cross-loading. After checking the result of all steps, researchers have to carefully consider which items should be omitted for construct validity. The five diagnostics are model fit, standardised regression weights, regression weights, standardised residual covariances and model fit indices.

5.6.3.1 Items identification for Perceived Information Quality

A total of three items were selected from previous studies to measure perceived information quality for unidimensionality test based on CFA. The table 5.12 shows the result of model fit.

Table 5. 12 Fit Model Fit CFA Indexes for Perceived Information Quality

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	-	1.000	-	1.000	1.000	-	-

The Chi-square (χ^2) and Degree of freedom (df) was zero as perfect fit. The goodness of fit index (GFI), the normed fit index (NFI) and the comparative fit index (CFI) were perfect fit as 1. The reason for the perfect fit is explained below.

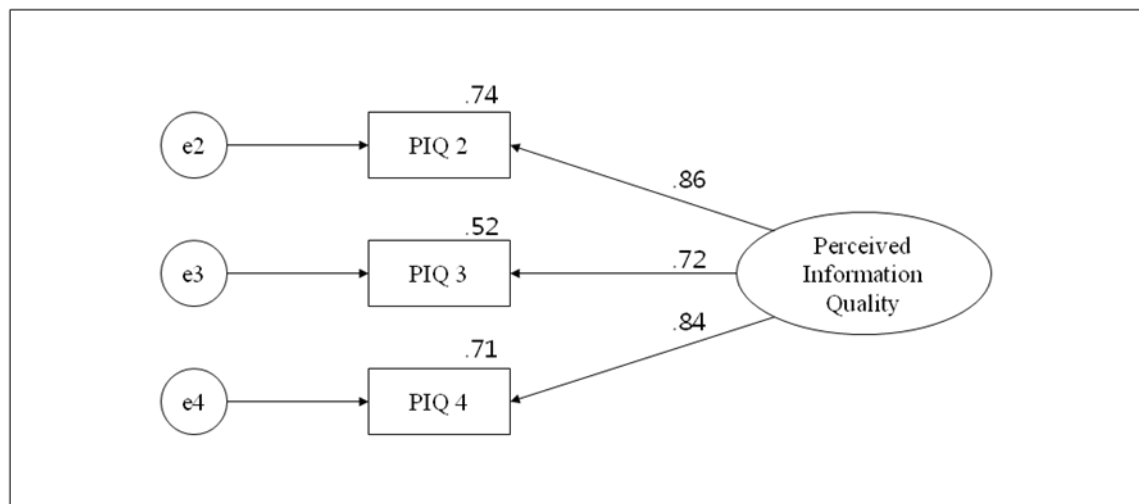
Figure 5. 5 CFA model for Perceived Information Quality

Figure 5.5 indicates the measurement model for perceived information quality. This three-item indicator mode is referred to as a just-identified model (Hair et al., 2010) and it means that there are just enough degrees of freedom to assess all free parameters. The just-identified model uses all information of the measurement model, which means that the CFA analysis will reproduce the sample covariance matrix identically as a perfect fit (Hair et al., 2010, p.699).

When a measurement model has no covariance between or within construct error variances, it means that the model is all fixed at zero as a perfect fit model. The measurement model is said to be congeneric. In SEM terminology, a model with zero

degrees of freedom is referred to as saturated (Hair et al., 2010, p.698). In the CFA, a just-identified model can be regarded as a fixed model at zero because if there are p measured items, then it can calculate the number of unique variances/covariances as below (Hair *et al.*, 2010, p.698);

$$1/2[p(p+1)] = \text{the number of unique variances/covariance}$$

Furthermore, in the CFA or SEM model, one parameter can be estimated for each unique variance and covariance in the observed covariance matrix (Hair et al., 2010, p.698). Therefore, the degree of freedom can be calculated with the number of unique variances/covariance and the number of measurement parameters as below:

$$1/2[p(p+1)] - \text{the number of measurement parameters} = \text{degree of freedom}$$

Therefore, the degree of freedom for the construct of PIQ with three items would be zero. The reason is as below;

$$1/2[3(3+1)] - 6 = 0 = \mathbf{df} \text{ (degree of freedom)}$$

Hair et al, (2010) assert that good practice dictates a minimum of three items per construct (preferably four) to provide minimum coverage of the construct's theoretical domain as well as adequate identification for the latent construct (p.698).

Hair et al. (2010) argues that the final decision of CFA should be made based not only on model fit improvement but also through several diagnostic measures such as standardised loadings (factor loadings), regression weights, standardised residual covariances, and modification indices (Hair et al, 2010, p.715). Therefore, the model of PIQ was investigated with other diagnostic measures; See Table 5.13.

Table 5. 13 Estimated Values for Perceived Information Quality

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
PIQ4 <- PIQ	1000			.840	.736
PIQ3 <- PIQ	.754	.045	16.846	.721	.520
PIQ2 <- PIQ	.915	.049	18.611	.858	.705

The researcher began by looking at the standardised loadings. All of the loading estimates were statistically significant above 0.5 (see. standardised regression weight) thus providing initial evidence of convergent validity, and the critical ratios (t-value) of all items were more than 1.96. Therefore, these results indicated acceptable fit.

In terms of other diagnostic measures, the researcher next examined the standardised residuals covariance and modification indices. All standardised residuals were less than ± 2.5 and there is no suggestion in modification indices. These results indicate that no change is needed.

5.6.3.2 Items Identification for Trust

A total of five items were selected from previous studies to measure trust. With these five items, the first run of CFA was conducted to determine whether the items load satisfactorily to measure this construct. After running the first test, it was found that model fit was a slight problem. Different criteria were used to determine the overall fit of the models. The goodness of fit index (GFI) should be greater than 0.90, and the adjusted goodness of fit index (AGFI) preferably greater than 0.80. In this case, GFI is 0.948 and AGFI 0.884. Both values were more than the cut-off point. Two reliable indicators were the Tucker-Lewis Index (TLI) and the Comparative fit index (CFI), which should preferably be greater than 0.90 and 0.95 respectively In this case, TLI and CFI are 0.905 and 0.953 respectively, which is more than the acceptable level. The RMSEA value is 0.156, which indicates model fit is not good. Hair et al. (2010) assert that values between 0.03 and 0.08 indicate an acceptable fit for the large samples as

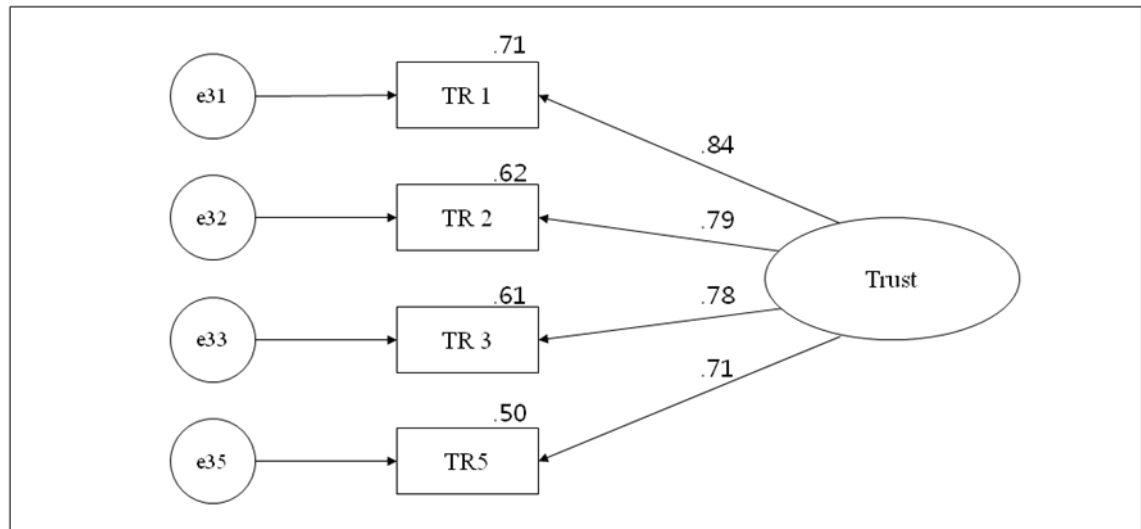
consisting of more than 500 respondents. The normed χ^2 (CMIN/DF) was 13.662 indicating much higher than cut off-value below 2.83 suggested by Hair et al. (2010) [See Appendix H].

To investigate problems, firstly, the researcher began by looking at the standardised loadings. According to Hair et al., (2010), all of the latent variable measures must have a high loading ($>.50$) and must be significant (critical ratio = C.R. = t-value > 1.96). From the analysis, it was found that all of the item loadings were over 0.5. All critical ratios were more than 1.96 to obtain good model fit [See Appendix H].

All of the factor loadings were satisfied with the value over 0.5; hence it indicates no items could be removed. Therefore, the researcher decided to examine the other criteria to find the items to affect on the model fit. Standardised residual covariance and modification indices were examined for the investigation. Through investigation of the standardised residual covariance, it was examined that all values were between - 2.5 and + 2.5 (Hair *et al*, 2010, p.715) [See Appendix H]. No items were investigated to remove. Next,

the researcher has looked at the modification indices associated with each of the loadings of the indicators. In looking at the modification indices for the error terms, the researcher found that value for the high covariance between e31 and e32, e34 and e35, and e34 and e32, those error terms are 16.071, 43.149 and 15.349 respectively. These relationships (between e31 and e32, e34 and e35, and e34 and e32) are not recommended adding to the model, it does indicate a high degree of covariance between two items (Hair *et al.*, 2010). Removing the e34 error term in item TR4 67.217 (43.149 + 15.349 +8.719) and the e35 error term in item TR5 55.483 (43.149 + 5.970 +6.319) decreases the chi-square value and RMSEA value. Therefore, based on the modification indices, TR4 and TR5 were chosen as candidates to remove from the model.

Firstly, the researcher decided to remove TR4 which has the biggest correlation with other items then run CFA again.

Figure 5. 6 CFA Model for Perceived Trust**Table 5. 14** Model Fit CFA indexes for Trust

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	.789	.998	.992	.998	1.000	1.001	.000

When the researcher look at overall model fit, the results indicate that all values of model fit were a good fit [Table 5.14]. The norm of χ^2 (CMIN/DF) was 0.789. Other model fit were GFI (0.998), AGFI (0.992), and NFI (0.998), those values almost approached 1 as perfect fit. Tucker-Lewis Index (TLI) was 1.001 that indicates over 1. Hair et al, (2010) assert that TLI is similar to the NFI, but TLI is not normed, and thus its values can fall below 0 or above 1. Hence, the TLI value of 1.001 was accepted. The CFI is normed so that values range between 0 and 1 (Hair *et al.*, 2010). Hence, CFI value of 1 indicates a perfect fit. The RMSEA value also indicates zero which is a perfect fit.

Table 5. 15 Estimated Values for Perceived Trust

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
TR 5<- TR	1.000			.707	.499
TR 3<- TR	1.201	.075	15.955	.778	.605
TR 2<- TR	1.025	.064	16.004	.785	.617
TR 1<- TR	1.236	.074	16.699	.845	.713

Based on the results, we found that all of the standardised loadings were over 0.5, and the critical ratios were more than 1.96 [Table 5.15]. Considering the standardised residual covariance, all values were less than ± 2.5 and there were no modification indices. Therefore, this result is acceptable and can be a final model fit of CFA for trust.

5.6.3.3 Items Identification for Perceived Sense of Belonging

For measuring sense of belonging, five items were selected from prior studies. The CFA begins with five items and four items were found to be satisfactorily loading to measure sense of belonging construct.

After running the first test of confirmatory analysis for this construct, model fit was not good. The overall model fits of CMIN/DF (6.511) and RMSEA (0.103) were not acceptable although GFI (.975), AGFI (0.925), NFI (0.983), CFI (0.985), and TLI (0.971) were within the good fit [See Appendix H].

The standardised regression weight for PSOB1, PSOB2, PSOB3, PSOB4, and PSOB5 were 0.817, 0.522, 0.735, 0.737, and 0.692, respectively. Examining these loadings, PSOB2 was low loading but above 0.05 and an acceptable level. All of the latent variable measures must be significant (critical ratio = C.R. = t-value > 1.96). The critical ratio for all items was over 1.96. Thus, these results indicate that all items are acceptable by standardised regression weight and critical value [See Appendix H].

In terms of other diagnostic measures, the standardised residuals covariance and modification indices are then examined. Firstly, considering the standardised residual covariance, no items were found to be over ± 2.5 . All items were acceptable. Secondly, in looking at the modification indices for the error terms, the value for the high covariance was between e14 and e15, and e14 and e12, those error terms are 16.420 and 11.312 respectively. These relationships are not recommended adding to the model, it does indicate a high degree of covariance between two items (Hair *et al.*, 2010). Removing the e14 error term item PSOB4 27.732 (16.420 + 11.312) decreases the chi-square value and RMSEA value. Therefore, based on the modification indices, it was decided to remove an item PSOB4 and run again to investigate model fit [See Appendix J].

Figure 5. 7 CFA Model for Perceived Sense of Belonging

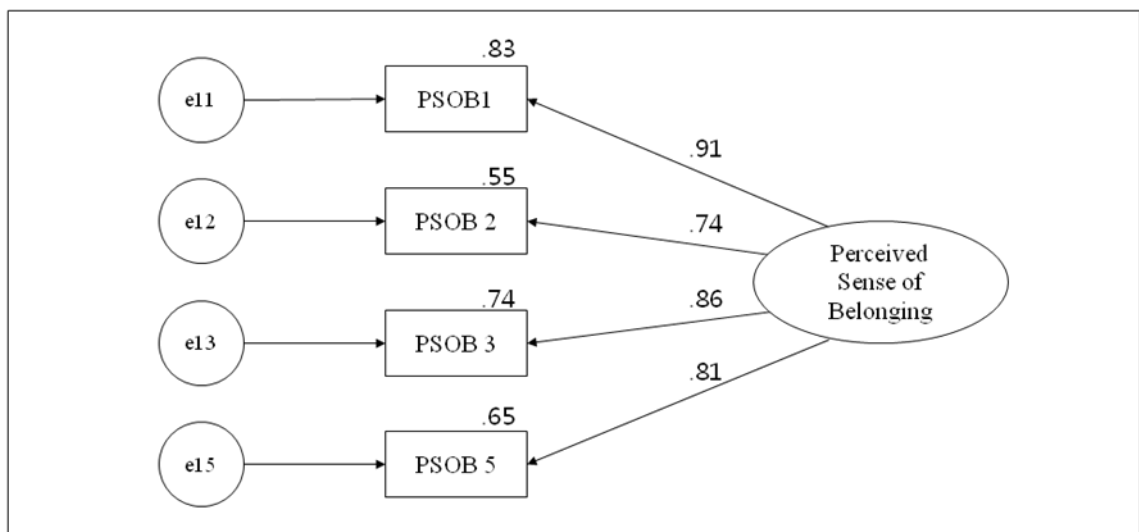


Table 5. 16 Estimated Values for Perceived Sense of Belonging

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
PSOB 5<- PSOB	1000			.808	.653
PSOB 3<- PSOB	.932	.042	22.269	.858	.736

PSOB 2<- PSOB	.722	.039	18.329	.739	.547
PSOB 1<- PSOB	1.139	.047	24.145	.913	.833

From the results, this study confirmed all of the standardised loadings were above 0.50 and the critical ration (t-value) was more than 1.96. In addition, All of the standardised residual values were less than ± 2.5 [See. Appendix J]; therefore, model fit was good. CMIN/DF (1.444) and RMSEA (0.016) values were acceptable. The goodness of fit index (GFI) value is 0.997 and the value adjusted goodness of fit index (AGFI) is 0.986, which is also greater than the acceptable value 0.90 and 0.80 respectively. The two reliable indicator Comparative fit index (CFI) and Tucker-Lewis Index (TLI) values were 0.998 and 0.999, respectively, and the values were at more than the acceptable level. RMSEA value was also good fit with 0.029.

Table 5. 17 Model Fit CFA Indexes for Perceived Sense of Belonging

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	1.444	.997	.986	.998	.999	.998	.029

5.6.3.4 Items Identification for Brand Loyalty

The brand loyalty measured by six items provided by previous studies. The results of CFA for brand loyalty indicate that four items were found to be satisfactorily loading to measure brand loyalty construct.

After running the first analysis with six items, the value of model fits indicates that many of them were not acceptable. Only the NFI (0,913) was acceptable but the CMIN/DF is 22.595, RMSEA value is 0.204, Goodness of fit index (GFI) value is 0.894, adjusted goodness of fit index (AGFI) value is 0.754, Comparative fit index (CFI) is 0.916 and Tucker-Lewis Index (TLI) value is 0.861, hence, not acceptable fits. [See. Appendix H].

Looking at the standardised regression weight, it was found that all items' loading were acceptable. Factor loading should be larger than 0.5. The factor loading items were BBL4 (0.918), BBL3 (0.876), BBL2 (0.867), BBL1 (0.772), ABL3 (0.698), and ABL2 (0.681). The critical ratio (t-value) for all items was over 1.9 and all items were acceptable [See. Appendix H]. Therefore, the researcher decided to observe another diagnoses. In terms of other diagnostic measures, the standardised residuals covariance and modification indices were examined [See. Appendix H]. All standardised residuals were less than ± 2.5 except between ABL 3 and ABL2 (5.263). To investigate which item was problematic more accurately, we looked at modification indices.

In looking at the modification indices for the error terms, the value for the high covariance between e23 and e22 (138.578), e24 and e27 (17.428), and e24 and e26 (16.985), e22 and e26 (14.044) was seen. The most problematic error terms were e22 152.622 (138.578 + 14.044), e23 145.632 (138.578 + 7.054) respectively. Both error terms of e22 and e23 were seriously and highly correlated with other items. However, the correlation between e22 and e23 showed the most serious value 138.578. Therefore, it was estimated that the model fit would increase if one were deleted. Accordingly, firstly the e22 error term in item ABL2 was omitted which indicates the biggest correlation with other items.

After running the second test, the model fit was improved significantly. The GFI (0.972), AGFI (0.915), NFI (0.978), CFI (0.980), and TLI (0.961) indicated good value of fit. However, CMIN/DF (8.340) and RMSEA (0.119) still remained as unacceptable levels. All of the critical ratios indicate over 1.9, and all factor loadings were satisfied with acceptable value more than 0.5. Therefore, there was no reason to remove any items. Next, the researcher decided to observe standardised residual covariances but all standardised residuals were less than ± 2.5 ; therefore, it was also acceptable. In terms of other diagnostic measures, the modification indices were then examined. Through investigation of the modification indices, the researcher found that if the relationship between e24 and e27 is omitted, it would be decrease the chi-square value but improve model fit. Base on it, the following calculation was completed.

e24 (BBL1): $(21.286 + 14.341) = 35.627$

e27 (BBL4): $(21.286 + 5.853) = 27.139$

Although two items indicated high covariance with another item, the researcher decided to remove only BBL1 because BBL4 was not problematic with other items if BBL1 is removed. Therefore, it was expected that if BBL1 was deleted, the model fit would be increased.

Figure 5. 8 CFA Model for Perceived Brand Loyalty

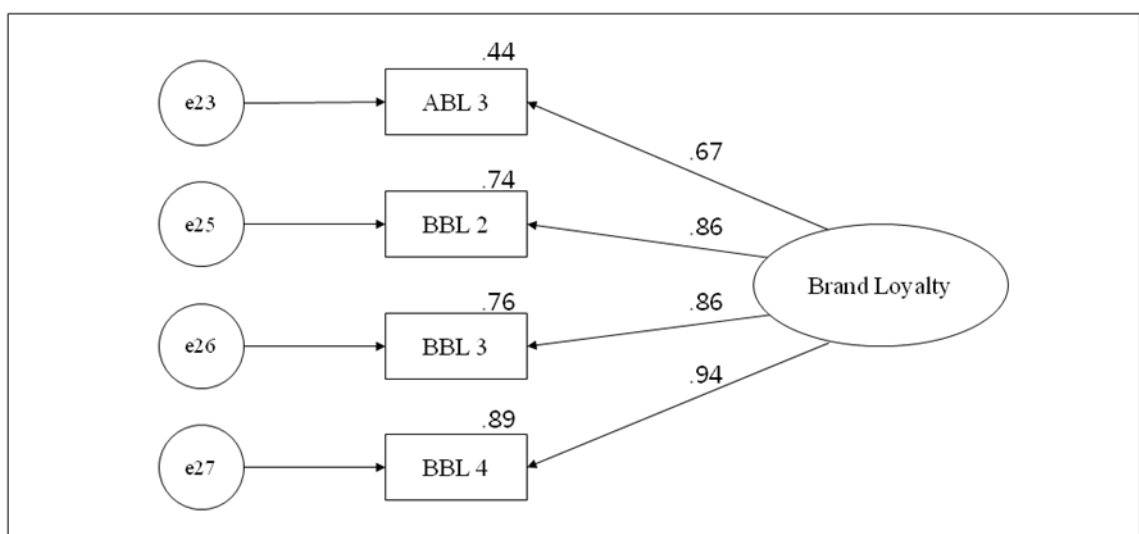


Table 5. 18 Model Fit CFA Indexes for Brand Loyalty

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	.933	.998	.991	.999	1.000	1.000	.000

Looking at overall model fit, the results indicated that all values of model fit were a perfect fit except CMIN/DF. The goodness of fit index (GFI) value was 0.998, which almost reached to perfect level of 1, and the value of the adjusted goodness of fit index (AGFI) was 0.991, which was also much greater than the acceptable value of 0.80. The normed fit index (NFI) was 0.999, which was much more than acceptable value of 0.90. The two reliable indicators Tucker-Lewis Index (TLI) and Comparative fit index (CFI)

values were 1.000 and 1.000, respectively. Both of them indicate a perfect value of fit. The RMSEA value also indicates zero which is a perfect fit.

Table 5. 19 Estimated Values for Brand Loyalty

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
BBL 4 <- BL	1.000			.945	.893
BBL 3 <- BL	1.059	.035	29.887	.865	.747
BBL 2 <- BL	.887	.030	29.752	.860	.740
ABL 3<- BL	.679	.037	18.280	.666	.444

Based on the results, all the standardised loadings were found to be over 0.5, and the critical ratios were more than 1.96. Considering the standardised residual covariance, all values were less than ± 2.5 and no modifications were recommended.

5.6.3.5 Items Identification for Perceived Ease of use

Five items were chosen from prior studies to measure perceived ease of use. The confirmatory factor analysis began with five items, and four items were found to be satisfactorily loading to measure brand loyalty construct at the end of the analysis.

After running the first test of confirmatory factor analysis for this construct, model fit was found to be not good. All of the criteria that determine the overall fit of the model CMIN/DF (28.337), GFI (0.898), AGFI (0.694), TLI (0.837), CFI (0.919), and RMSEA (0.230) were not acceptable model fit. Only NFI (0.916) were within the acceptable range [See. Appendix H].

The confirmatory factor loading for PEOU1, PEOU2, PEOU3, PEOU4 and PEOU5 were 0.752, 0.785, 0.848, 0.796, and 0.856, respectively. Examining these loadings, all factors' loading was found to be more than 0.50 hence, all were an acceptable range. Moreover, critical ratio for all items was over 1.96. Therefore, standardized residual covariances and modification indices to increase model fit was investigated [See.

Appendix H].

Hair et al., (2010) assert that typically, standardised residuals less than ± 2.5 do not suggest a problem however, standardised residuals for any pair of items between ± 2.5 and ± 4.0 deserve some attention but may not suggest deletion if no other problems are associated with those two items. In the case of PEOU, attention should be given between PEOU1 and PEOU2. The standardised residuals between them were 3.348, which is detained between 2.5 and 4.0. Therefore, the two items were considered as candidates for deletion. To obtain more a detailed idea about these items, the value of the modification indices was judged [See. Appendix H].

Calculations were made from the modification indices, and based on this calculation error term, e41 in item PEOU1 was a candidate for deletion that was the most correlated item with others. It was expected that if PEOU1 was deleted, the chi-square would be decrease and the model fit would be increased.

The following calculations were performed based on the modification indices to omit items:

$$e41 (117.869 + 4.513 + 14.066 + 12.954) = 149.402$$

As a result, item PEOU1 was removed from the model, and the analysis was run again. The results are given below. [Figure 5.9] [Table 5.20]

Table 5. 20 Model Fit CFA Indexes for Perceived Ease of Use

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	2.144	.996	.979	.996	.998	.994	.047

After the second run of CFA for PEOU, finally, all model fit indicated as good fit. CMIN/DF (2.144) was below 2.83, GFI was 0.996, and AGFI was 0.979 and those

explain the model fit as exceedingly good. NFI (0.996), CFI (0.998) and TLI (0.994) also show that the model was greatly acceptable. In addition the value of RMSEA was 0.047, which indicated a good fit of the model.

Figure 5. 9 CFA Model for Perceived Ease of Use

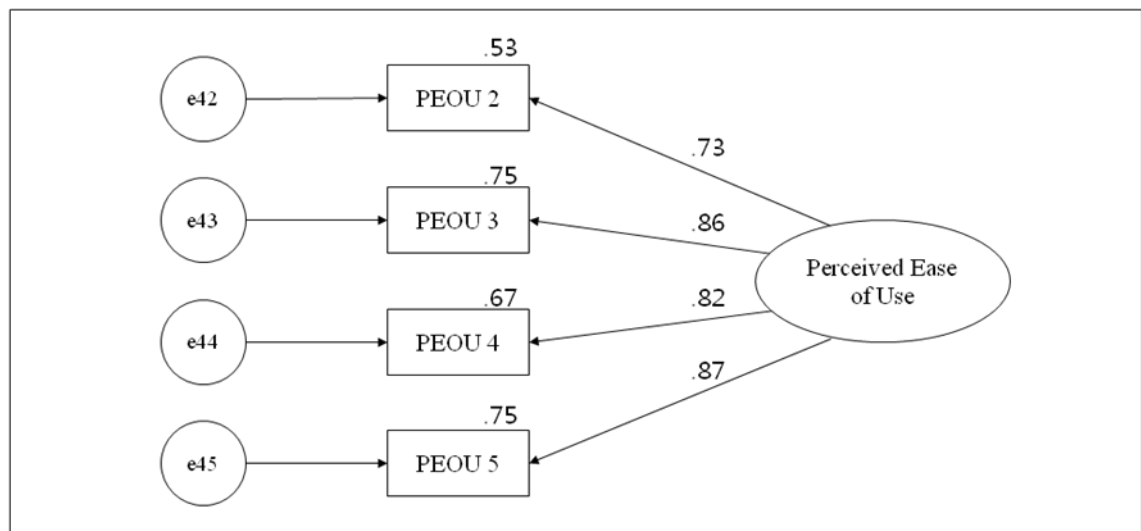


Table 5. 21 Estimated Values for Perceived Ease of Use

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
PEOU5 <- PEOU	1.000			.867	.752
PEOU4 <- PEOU	.936	0.41	22.564	.816	.665
PEOU3 <- PEOU	.991	0.41	23.921	.864	.747
PEOU2 <- PEOU	.898	0.47	18.905	.730	.532

The standardised regression weight showed that all the items' loadings were over 0.5, and the critical ratios (t-value) were more than 1.96. Both values showed goodness of model fit. In terms of the standardised residual covariance, all values were less than 2.5, which indicated no problematic items and no modification indices showed from the CFA [Table 5.21].

5.6.3.6 Items Identification for Perceived Usefulness

Six items were chosen from previous researches for measuring perceived usefulness. From the CFA, the researcher found that four items were to be satisfactorily loading to measure perceived usefulness construct.

After running the first analysis with six items, it was determined that some of model fit was not enough to be accepted. Goodness of fit index (GFI) value was 0.924, adjusted goodness of fit index (AGFI) value was 0.823, normed fit index (NFI) was 0.947, Tucker-Lewis Index (TLI) value was 0.918, and comparative fit index (CFI) was 0.951. All of these values indicate acceptable model fit. However, the CMIN/DF was 13.597, RMSEA value was 0.156 hence, these values suggested problems with fit [See Appendix H].

Factor loading should be more than 0.5. Considering the standardised regression weight, it was found that all item loadings were acceptable. The loading items were PU1 (0.735), PU2 (0.800), PU3 (0.839), PU4 (0.850), PU5 (0.865), and PU6 (0.847). The critical ratio for all items is over 1.96. The standardised regression weight for all items was acceptable. In terms of other diagnostic measures, the researcher decided to examine the standardised residual covariances. In the table all standardised residuals greater than ± 2.5 were shown. The covariances of all items were also satisfactory [See Appendix H].

Finally, in looking at the modification indices for the error terms, it was seen that the value for the covariance between e51 (PU1) and e52 (PU2), and e55 (PU5) and e56 (PU6) error terms were 61.457 and 33.996, which indicated a high degree of covariances. Hair et al., (2010) suggest that this relationship of the model should be removed. Removing the items decreases the chi-square value and improves model fit. Therefore, by making the decision to omit some items, the researcher calculated the sum of error terms to remove the particular items associated with the error term. The researcher found that if the e52 error term in item PU2 is removed, it decreased the chi-square value 90.808 ($61.475 + 17.231 + 5.094 + 7.008$) and the e56 error term in item

PU5 decreased the chi-square value 77.586 (33.996 + 17.231 + 14.023 + 6.875 + 5.461). Therefore, based on the modification indices, it was decided to remove items PU2 and PU5 to get a good model fit [See Appendix H].

Firstly, only PU2 was removed, which was the biggest correlation with other items, then simulation was run as the second test because if the model fit was acceptable PU2 would be omitted, PU5 did not need to be removed from the model (Hair *et al.*, 2010). The result of the second CFA for PU indicated that almost of all model fit were good fit. However, CMID/DF (7.821) and RMSEA (0.115) still remained an unacceptable fit. The all factor loadings in standardised regression weight were higher than 0.05 and critical ratios of all items (t-value) were over 1.96. The all standardised residuals greater than 2.5 were shown [APPENDIX J]. However, as in the first test, PU5 still indicated a high value of covariance with other items as below [See Appendix H].

$$\text{PU5: } e_{55} (15.215 + 7.410 + 8.115) = 30.74$$

Therefore, secondly, PU5 was removed to get acceptable fit. After omitting PU5, all model fits indicated acceptable values except CMIN/DF and RMSEA. The GFI was 0.970 and AGFI was 0.910 as goodness of fit. The NFI, CFI and TLI were satisfied by the value of 0.978, 0.981 and 0.962 respectively. However, CMIN/DF and RMSEA fit were unacceptable values at 7.821 and 0.115. Hair *et al.*, (2010) suggest that the CMIN/DF value and the RMSEA value should be below 2.83 and 0.80 respectively. To finding problematic items, standardised regression weight and critical ratio of all items was then examined. The standardised loading of all items were over 0.5 and the critical ratio (t-value) of all items were more than 1.96, those results indicated that all items had adequate values for the model [See Appendix H].

For more specific diagnosis, the standardised residual covariances and modification indices was observed. All standardised residuals were greater than ± 2.5 and this result indicated that the standardised residual covariances of all items were satisfactory [See Appendix H]. However, by observing the modification indices for the error terms, it was seen that value for the high covariance between e55 and e56 and e54 and e56, those

error terms were 16.420 and 11.312 respectively. These relationships were not recommended to be added to the model (Hair *et al.*, 2010). Removing the e55 error term in item PU5 30.74 (15.215 + 7.410 + 8.115) and e56 error term in item PU6 26.219 (15.215 + 11.004) would be decreased the chi-square value and RMSEA value. Therefore, based on the modification indices, it was decided to remove only an item PU5 which had the most correlation with other items even PU6 and run again to investigate model fit. [See Appendix H]

After omission of PU5, the third CFA for PU was conducted.

Figure 5. 10 CFA Model for Perceived Usefulness

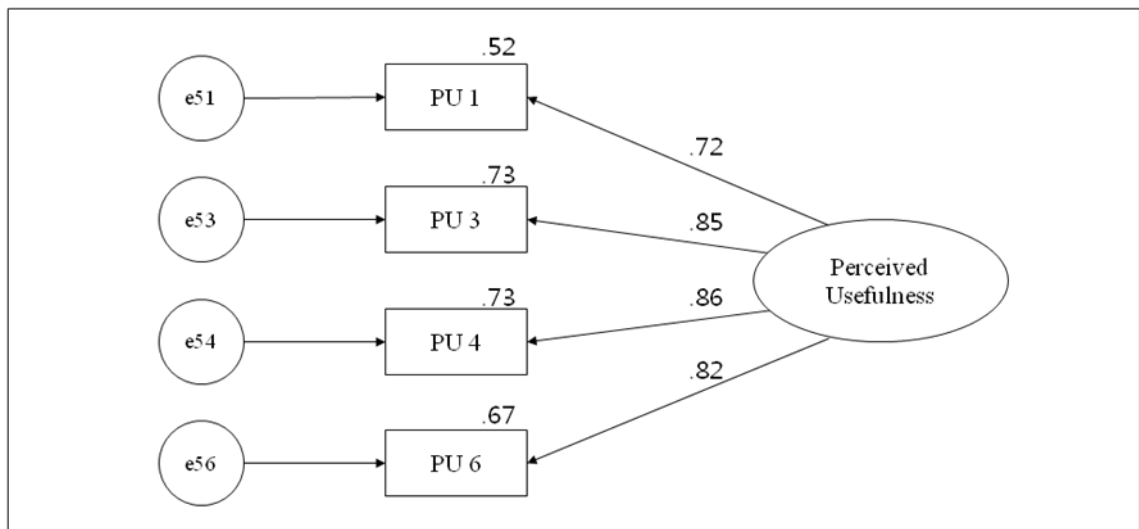


Table 5. 22 Model Fit CFA Indexes for Perceived Usefulness

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	.818	.998	.992	.999	1.000	1.001	.000

Looking at overall model fit, the results showed that all values of model fit were a perfect fit. The norm of χ^2 (CMIN/DF) was 0.818, goodness of fit index (GFI) value was 0.998, which almost reached a perfect level 1, and the value of the adjusted goodness of fit index (AGFI) was 0.992, which was also much greater than the

acceptable value of 0.80. The normed fit index (NFI) was 0.999, which was just below perfect fit of 1. The two reliable indicators Tucker-Lewis Index (TLI) and comparative fit index (CFI) values were 1.001 and 1.000, respectively. Hair et al., (2010) assert that TLI is similar to the NFI, but TLI was not normed, and thus its values can fall below 0 or above 1. Therefore, the TLI (1.001) were accepted. The CFI was normed so that values ranged between 0 and 1 (Hair *et al.*, 2010). Hence, CFI value of 1 indicated a perfect fit. The RMSEA value also indicated zero which is a perfect fit.

Table 5. 23 Estimated Values for Perceived Usefulness

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
PU6 <- PU	1.000			.816	.666
PU4 <- PU	1.052	.048	21.748	.856	.733
PU3 <- PU	1.088	.050	21.556	.854	.730
PU1 <- PU	.972	.055	17.630	.721	.521

Based on the results, it was found that all of the standardised loadings were over 0.5, and the critical ratios were more than 1.96. Considering the standardised residual covariance, all values were less than 2.58. To investigate further evidence, the standardised residuals covariance and modification indices were examined. All standardised residuals were less than ± 2.5 and there was no suggestion in modification indices [See. Appendix H]

5.6.3.7 Items Identification for Behavioural Intention to Use

Three items were chosen from prior studies to measure behavioural intention to use. The table 5.24 shows the result of model fit.

Figure 5. 11 CFA Model for Behavioural Intention to Use

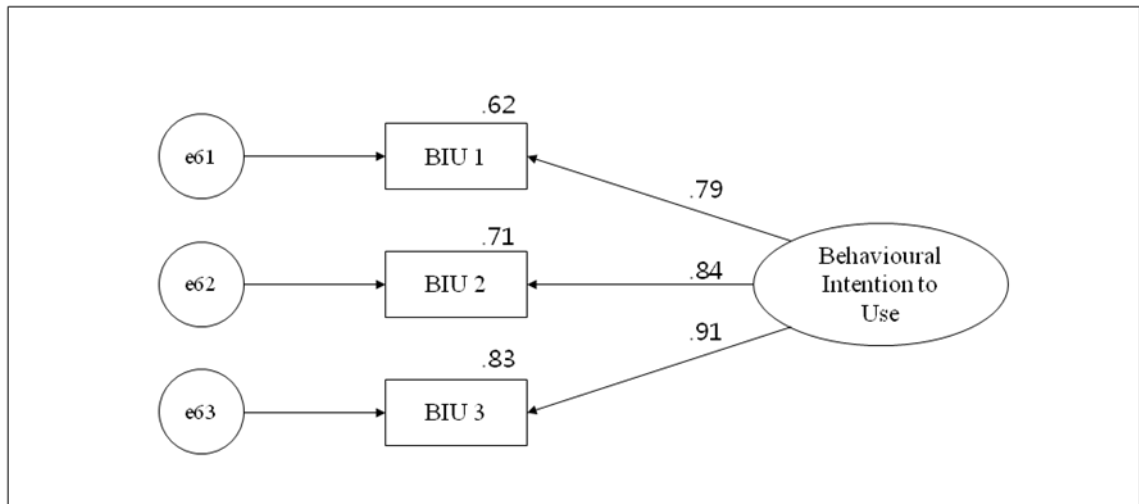


Table 5. 24 Model Fit CFA Indexes for Behavioural Intention to Use

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	-	1.000	-	1.000	1.000	-	-

The Chi-square (χ^2) and Degree of freedom (df) was zero as perfect fit. The goodness of fit index (GFI), the normed fit index (NFI) and the comparative fit index (CFI) were perfect fit at 1. The reason for perfect fit was the three-item indicators model which referred to just-identified CFA model, the same as PIQ and the last model fit of TR. Therefore, the degree of freedom for the construct of BIU with three items would be zero. The reason is as below:

$$1/2[3(3+1)] - 6 = 0 = df \text{ (degree of freedom)}$$

Table 5. 25 Estimated Values for Behavioural Intention to Use

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
BIU 3<- BIU	1000			.912	.831

BIU 2<- BIU	.854	.037	23.001	.884	.713
BIU 1<- BIU	.997	.047	21.267	.778	.621

Based on the results, all of the standardized loadings were found to be over 0.5, and the critical ratios (t-value) were more than 1.96. Therefore, these results indicated acceptable fit. In terms of other diagnostic measures, the standardised residuals covariance and modification indices were then examined [Table. 5.25].

5.6.4 Confirmatory Factor Analysis for Measurement model with all constructs

Through CFA for each construct in unidimensionality test, six items: TR4, PSOB4, ABL2, BBL1, PEOU1, PU2, in addition to PU5 were omitted.

5.6.4.1 Confirmation Measurement Model with All Construct.

To investigate covariance among constructs, confirmatory factor analyses for all latent variables (perceived information quality, trust, perceived sense of belonging, brand loyalty, perceived ease of use, perceived usefulness and behavioural intention to use) were conducted to confirm the factor structure for each individual variable. After running the CFA with all constructs, all model fit was good, all standardised loading of items were greater than 0.05. In addition, all item critical ratios (t-value) was more than 1.96 [APPENDIC I] but when the researcher was looking at the standardised residual covariances, it was found that six relationships between items were more than ± 2.5 [Table 5.26]. Hair et al., (2010) assert that the standardised residuals less than ± 2.5 do not suggest a problem. However, they also insist that even if the standardised residuals for any pair of items indicate between ± 2.5 and ± 4.0 , it may not suggest any changes for the model if those two items have no other problems. However, Table 5.26 shows that the covariance between TR5 and PSOB2 indicates 3.979 almost closed 4. Therefore, the researcher decided to investigate which one has the problem.

Table 5. 26 The Problematic Covariances by CFA

Standardized residual covariances	
PIQ4 <> PEOU2	2.841
ABL3 <> PEOU2	2.556
ABL3 <> PU1	3.231
PSOB2 <> TR5	3.979
PSOB3 <> BU1	2.649
PIQ2 <> TR5	3.474

Looking at modification indices, TR5 (e35) had problems with PSOB2 (e12) by 24.235 covariance. By standardised residuals and modification indices, TR5 (e35) was removed because TR5 was the most highly correlated with other items which were PSOB2 (e12) and PIQ2 (e2).

5.6.5 Confirmed Measurement Model

After accomplishing unidimensionality test, the overall CFA was conducted [Figure 5.12]. The final CFA results for confirmation of measurement model were satisfactory.

Table 5. 27 Fit Indexes for Measurement Model with All Constructs

Model fit index	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .90	Above .90	<.80
Default model	2.066	.923	.902	.943	.970	.964	.045

The measurement model developed with a very good fit. The CMIN/DF was 2.066, which indicated good model fit (rules of thumb < 2.83) and goodness of fit index (GFI) indicates 0.923 which also showed as an excellent model fit (rules of thumb > 0.90). The adjusted goodness of fit index (AGFI) should be greater than 0.80. In this case, the AGFI is 0.902. Two reliable indicators those are comparative fit index (CFI) and the Tucker-Lewis Index (TLI) were 0.970 and 0.964 respectively, which was more than the acceptable level. The RMSEA value was 0.045, which indicated very good model fit. Hair et al, (2010) indicate that RMSEA value less than or equal to 0.05 indicate a good fit especially for the large sample with more than 500 respondents.

Figure 5. 12 The Overall Confirmatory Factor Analysis Model

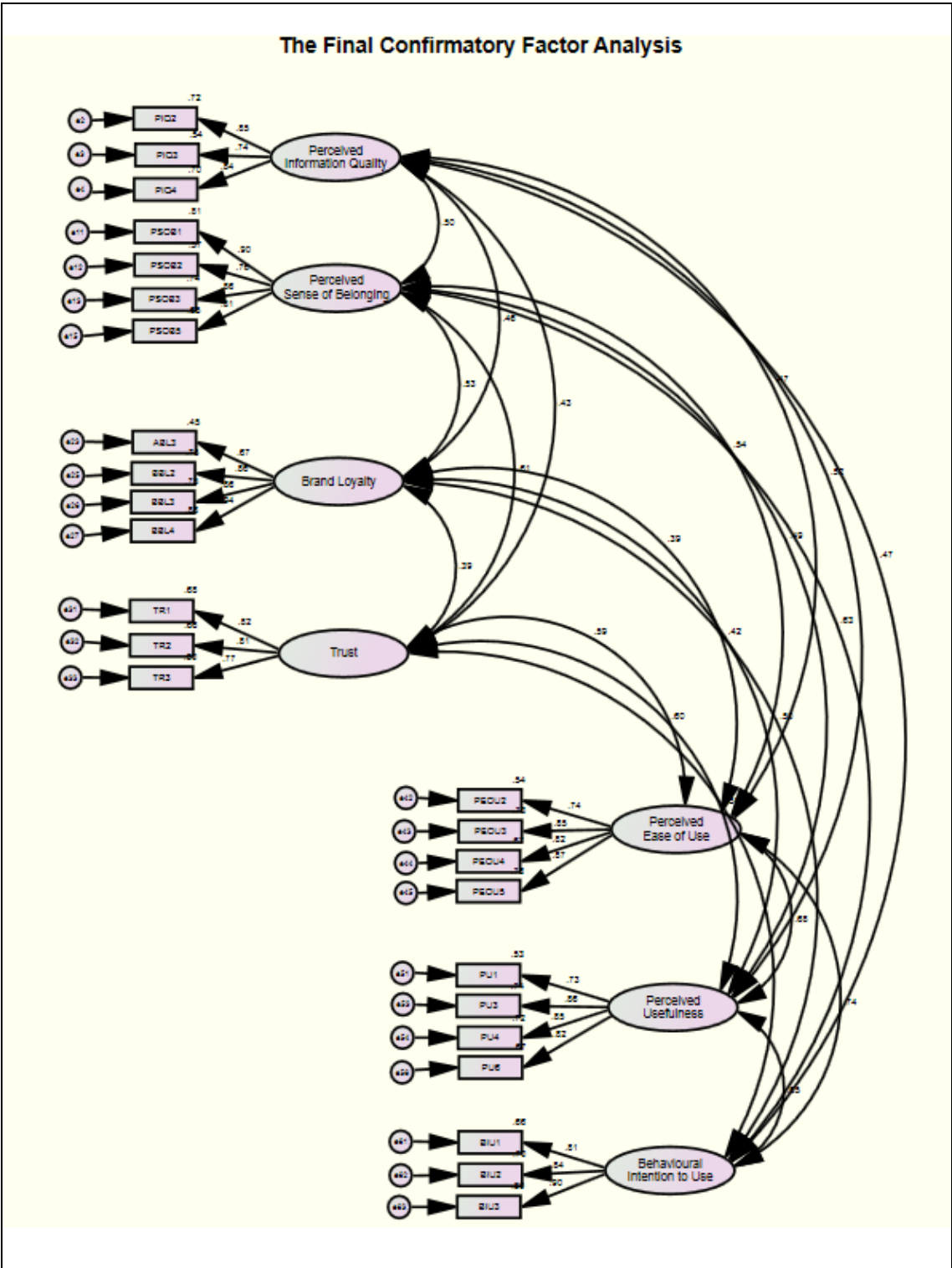


Table 5. 28 Path Loadings, Critical Ratios and R square Values in the Measurement Model

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation (R ²)
Significant value	-	-	Above 1.96	Above .5	-
PIQ4 < PIQ	1.000			.836	.699
PIQ3 < PIQ	.772	.044	17.454	.735	.541
PIQ2 < PIQ	.911	.044	20.575	.851	.724
TR3 < TR	1.000			.774	.599
TR2 < TR	.884	.050	17.574	.809	.655
TR1 < TR	1.009	.054	18.619	.823	.678
PSOB5 < PSOB	1.000			.806	.650
PSOB3 < PSOB	.938	.042	22.417	.861	.742
PSOB2 < PSOB	.743	.039	18.871	.758	.575
PSOB1 < PSOB	1.127	.047	24.136	.901	.812
BBL3 < BL	1.000			.864	.747
BBL4 < BL	.940	.031	30.239	.940	.884
BBL2 < BL	.843	.032	26.132	.865	.748
ABL3 < BL	.646	.037	17.528	.671	.451
PEOU5 < PEOU	1.000			.870	.756
PEOU4 < PEOU	.936	.040	23.210	.818	.669
PEOU3 < PEOU	.978	.039	24.814	.855	.731
PEOU2 < PEOU	.906	.046	19.572	.738	.544
PU4 < PU	1.000			.846	.716
PU6 < PU	.965	.044	22.129	.819	.671
PU3 < PU	1.050	.044	23.725	.858	.736
PU1 < PU	.942	.051	18.539	.727	.529
BIU3 < BIU	1.000			.895	.801
BIU2 < BIU	.864	.034	25.166	.839	.704
BIU1 < BIU	1.050	.046	23.017	.814	.663

All standardised regression weight values were more than 0.5, and all values were over 0.7 except ABL3 (.671) which was over 0.5, hence, also acceptable. All of the critical ratios were more than 1.9. According to Hair et al., (2010), all the constructs measures must have a high factor loading (>0.50) and significant t-value (critical ratio= C.R. = t-value > 1.96). Therefore, as the results, the measurement model confirmed with good consequences.

After confirmation the measurement model, the next steps were validity and reliability test for the constructs. The following section introduces the taken steps to ensure the validity and reliability of the latent variables (constructs).

5.6.6 Construct Validity for Assessing Measurement Model Validity

Before testing the final structural equation model, the convergent and discriminant validity were conducted.

5.6.6.1 Convergent Validity

According to Hair et al. (2010), convergent validity indicates “*a specific construct converge or share a high proportion of variance in common.*” Three different ways exist to calculate convergent validity: (1) Factor loading, (2) Average variance extracted (AVE), and (3) The squared root of Average variance extracted (SQRTAVE).

(1) Factor Loadings

The first way to confirm convergent validity is factor loading. All the critical ratio (t-value) should be more than 1.96 and all standardised regression weight (coefficients) should more than 0.50 (Hair et al., 2010). All factor loading and critical ratio for this study were satisfied [Table 5.28]. Most of the factor loading indicated very high value at over 0.7 and the value range of the critical ration was between 17.454 and 30.239. As the result, the convergent validity was identified by standardized regression weight and the critical ratio.

(2) Average Variance Extracted (AVE)

Average variance extracted (AVE) can be calculated as the total of all squared standardised factor loadings (squared multiple correlations) divided by the number of factors. The rule of thumb is that AVE value should be greater than 0.5, which means that more than half of the variances are observed.

AVE = (the total of squared multiple correlations)/ (the number of indicator measurement error)

Average variance extracted (AVE) calculations for this study are as below.

Table 5. 29 Average Variance Extracted for Constructs

Construct	Squared Multiple correlation	Average variance extracted
Perceived Information Quality		
PIQ4 < PIQ	.699	0.65
PIQ3 < PIQ	.541	
PIQ2 < PIQ	.724	
Sum	1.934	
Trust		
TR3 < TR	.599	0.64
TR2 < TR	.655	
TR1 < TR	.678	
Sum	1.932	
Perceived Sense of Belonging		
PSOB5 < PSOB	.650	0.69
PSOB3 < PSOB	.742	
PSOB2 < PSOB	.575	
PSOB1 < PSOB	.812	
Sum	2.779	
Brand Loyalty		
BBL3 < BL	.747	0.71
BBL4 < BL	.884	
BBL2 < BL	.748	
ABL3 < BL	.451	
Sum	2.830	
Perceived Ease of Use		
PEOU5 < PEOU	.756	0.68
PEOU4 < PEOU	.669	
PEOU3 < PEOU	.731	
PEOU2 < PEOU	.544	
Sum	2.700	
Perceived Usefulness		
PU4 < PU	.716	0.66
PU6 < PU	.671	
PU3 < PU	.736	
PU1 < PU	.529	
Sum	2.652	
Behavioural Intention to Use		
BIU3 < BIU	.801	0.72
BIU2 < BIU	.704	
BIU1 < BIU	.663	
Sum	2.168	

(3) The squared root of Average variance extracted (SQRTAVE)

The squared root of average variance extracted (SQRTAVE) can be calculated as the total of all squared standardised factor loadings (squared multiple correlations) divided by the number of factors. The rule of thumb is that SQRTAVE value should be greater than 0.5 and the result is also used for discriminant validity (Hair et al., 2010).

SQRTAVE = (the total of standardised regression weight) / (the number of indicator measurement error)

The squared root of average variance extracted (SQRTAVE) calculations for this study is as follows.

Table 5. 30 The Squared Root of Average Variance Extracted for Constructs

Construct	Standardized regression weight	The squared root of Average variance extracted
Perceived Information Quality		
PIQ4 < PIQ	.836	0.81
PIQ3 < PIQ	.735	
PIQ2 < PIQ	.851	
Sum	2.422	
Trust		
TR3 < TR	.774	0.80
TR2 < TR	.809	
TR1 < TR	.823	
Sum	2.406	
Perceived Sense of Belonging		
PSOB5 < PSOB	.806	0.83
PSOB3 < PSOB	.861	
PSOB2 < PSOB	.758	
PSOB1 < PSOB	.901	
Sum	3.326	
Brand Loyalty		
BBL3 < BL	.864	0.84
BBL4 < BL	.940	
BBL2 < BL	.865	
ABL3 < BL	.671	
Sum	3.340	
Perceived Ease of Use		
PEOU5 < PEOU	.870	0.82
PEOU4 < PEOU	.818	

PEOU3 < PEOU	.855	
PEOU2 < PEOU	.738	
Sum	3.281	
Perceived Usefulness		
PU4 < PU	.846	0.81
PU6 < PU	.819	
PU3 < PU	.858	
PU1 < PU	.727	
Sum	3.250	
Behavioural Intention to Use		
BIU3 < BIU	.895	0.85
BIU2 < BIU	.839	
BIU1 < BIU	.814	
Sum	2.548	

BIU has largest factor loadings of 0.85; they appear to be the best indicators of values. R^2 is a squared standardised factor loading (Squared Multiple correlation) that means the extent that a factor can explain the variance in a manifest variable. For example, the latent variable values explains about 72 percent ($=0.85$) of variance in BIU.

5.6.6.2 Discriminant Validity

Discriminant validity is “*the degree to which two conceptually similar concepts are distinct*” (Hair et al, 2010, p. 126). This validity validates that the summated scale is sufficiently different from the other similar concept (Hair et al, 2010, p.126). Firstly, the correlation between any two latent variables can specified as equal to one. Secondly, if the correlation of two-construct model is significantly distinct from that of the one-construct model, then the discriminant validity is supported (Hair et al, 2010, p.710).

Following this, a discriminant validity calculation was completed, and the results are as below [Table 5.31].

Table 5. 31 Discriminant Validity for Constructs

Discriminant Validity							
	PEOU	BL	BIU	PU	TR	PSOB	PIQ
PEOU	0.82						
BL	0.39	0.84					
BIU	0.74	0.50	0.85				

PU	0.68	0.42	0.65	0.81			
TR	0.60	0.39	0.58	0.60	0.80		
PSOB	0.54	0.53	0.63	0.49	0.61	0.83	
PIQ	0.47	0.46	0.47	0.52	0.43	0.50	0.81

As the result, the square of the correlation between any two latent variables (constructs) was less than the squared root of average variance extracted (SQRTAVE). Therefore, the discriminant validity for all the constructs has been demonstrated.

5.6.6.3 Composite Reliability (composite reliability)

The formula for composite reliability is as follows:

Composite reliability = $(\sum \text{standardized loadings})^2 / (\sum \text{standardized loadings})^2 + \sum \text{measurement errors}$

Composite reliability should be larger than 0.70. The researcher found that composite reliability was satisfied for structural equation modelling and hypothesis testing.

Table 5. 32 Path Loadings, Critical Ratios and R square Values in the Measurement Model

Structural relation	Standardized regression weight	Squared multiple correlation (R^2)	1 – Squared multiple correlation ($1-R^2$)	Construct reliability
Perceived Information Quality				
PIQ4	.836	.699	.301	5.86 / (5.86 + 1.04) = .85
PIQ3	.735	.541	.459	
PIQ2	.851	.724	.276	
Sum	2.42		1.04	
Sum square	5.86			
Trust				
TR3	.774	.599	.401	5.80 / (5.80 + 1.07) = .84
TR2	.809	.655	.345	
TR1	.823	.678	.322	
Sum	2.41		1.07	
Sum square	5.80			
Perceived Sense of Belonging				
PSOB5	.806	.650	.350	11.00 / (11.00 + 1.22) =
PSOB3	.861	.742	.258	

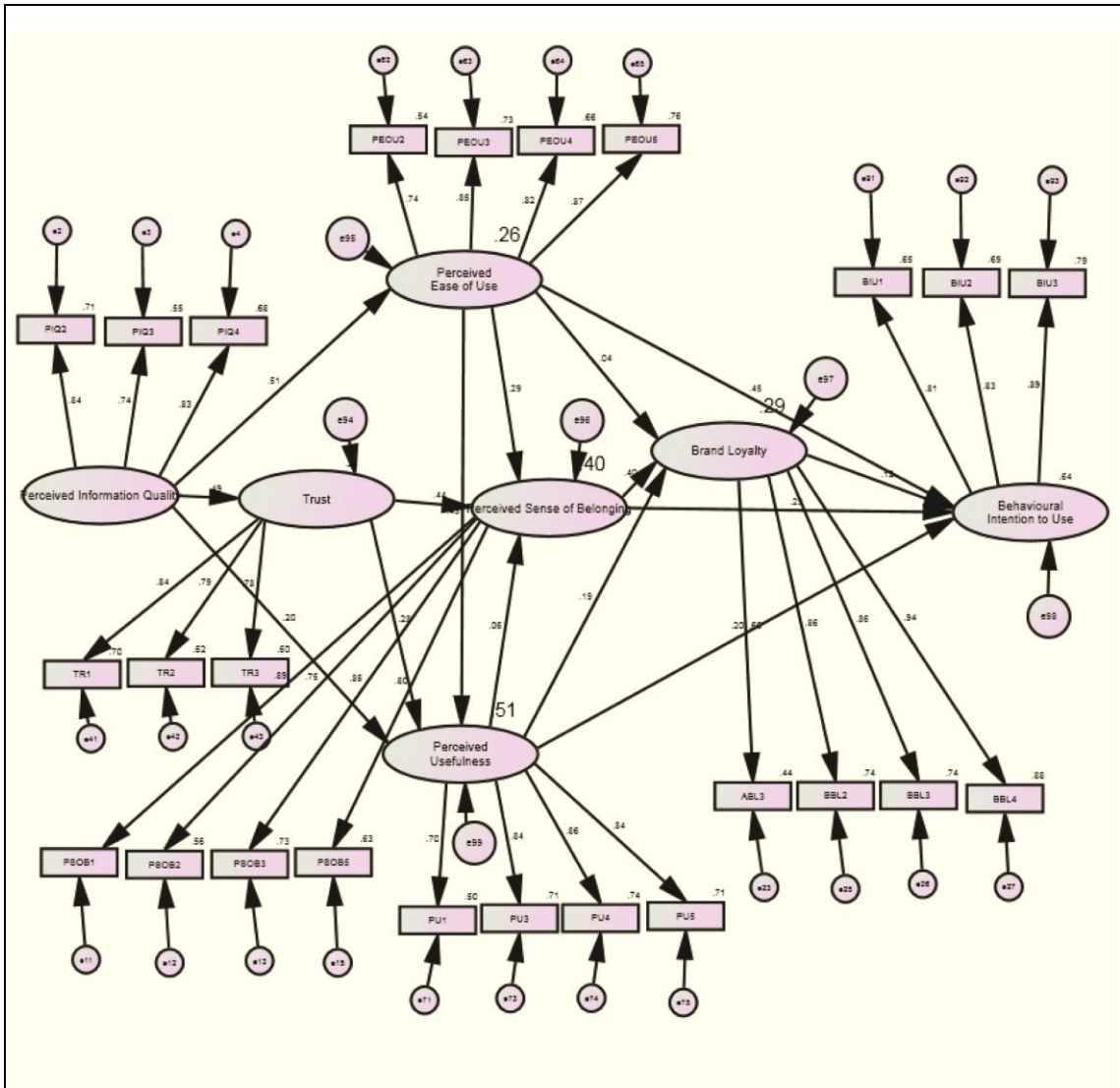
PSOB2	.758	.575	.425	.90
PSOB1	.901	.812	.188	
Sum	3.33		1.22	
Sum square	11.00			
Brand Loyalty				
BBL3	.864	.747	.253	11.16 / (11.16 + 1.17) = .91
BBL4	.940	.884	.116	
BBL2	.865	.748	.252	
ABL3	.671	.451	.549	
Sum	3.34		1.17	
Sum square	11.16			
Perceived Ease of Use				
PEOU5 < PEOU	.870	.756	.244	10.76 / (10.76 + 1.30) = .89
PEOU4 < PEOU	.818	.669	.331	
PEOU3 < PEOU	.855	.731	.269	
PEOU2 < PEOU	.738	.544	.456	
Sum	3.28		1.30	
Sum square	10.76			
Perceived Usefulness				
PU4	.846	.716	.284	10.56 / (10.56 + 1.35) = .89
PU6	.819	.671	.329	
PU3	.858	.736	.264	
PU1	.727	.529	.471	
Sum	3.25		1.35	
Sum square	10.56			
Behavioural Intention to Use				
BIU3	.895	.801	.199	6.50 / (6.50 + 0.83) = .89
BIU2	.839	.704	.296	
BIU1	.814	.663	.337	
Sum	2.55		0.83	
Sum square	6.50			

Next, the results of structural equation modelling and hypothesis tests are introduced.

5.7 Structural Equation Model

5.7.1 Path Model

Figure 5. 13 The Result of Hypothesis Testing from Structural Equation Model



5.7.2 Hypothesis Testing from Structural Equation Result

5.7.2.1 Assessment of Model Fit

Table 5. 33 Assessing the Structural Model Validity

Model fit index	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .90	Above .90	<.80
Default model	2.579	.905	.881	.928	.954	.947	.055

The structural equation model was verified with a very good fit. The CMIN/DF was 2.579 which indicated below than 2.83 (rule of thumb). The goodness of fit index (GFI) indicates 0.905 which also showed as an excellent model fit (rules of thumb > 0.90) and the adjusted goodness of fit index (AGFI) indicates 0.881 (rule of thumb > 0.80) as a good fit. Two reliable indicators those are comparative fit index (CFI) and the Tucker-Lewis Index (TLI) were 0.954 and 0.947 respectively, which was more than the acceptable level. The RMSEA value was 0.055 (rule of thumb <.80), which indicated very good model fit.

5.7.2.2 Hypothesis Testing from Structural Equation Result

Based on the structural model, the research hypotheses were tested from the standardised estimate and t value (critical ratio). Using path estimates and critical ratio (t-values), 15 hypotheses were examined in this study. 13 of the t values were above the 1.96, critical values (P-value) were less than at the 0.01 significant levels. The remaining two constructs in relation on perceived usefulness and sense of belonging, and perceived ease of use and brand loyalty, the critical ratios (t-values) were not found significant (t value = 1.004, p = 0.315 and t value = 0.719, p = 0.472 respectively).

From the analysis, it can be seen that 64% of the variance among the factors of perceived information quality, trust, sense of belonging, brand loyalty, perceived ease of use, and perceived usefulness was explained by behavioural intention to use.

Figure 5. 14 The Result of Hypotheses Test

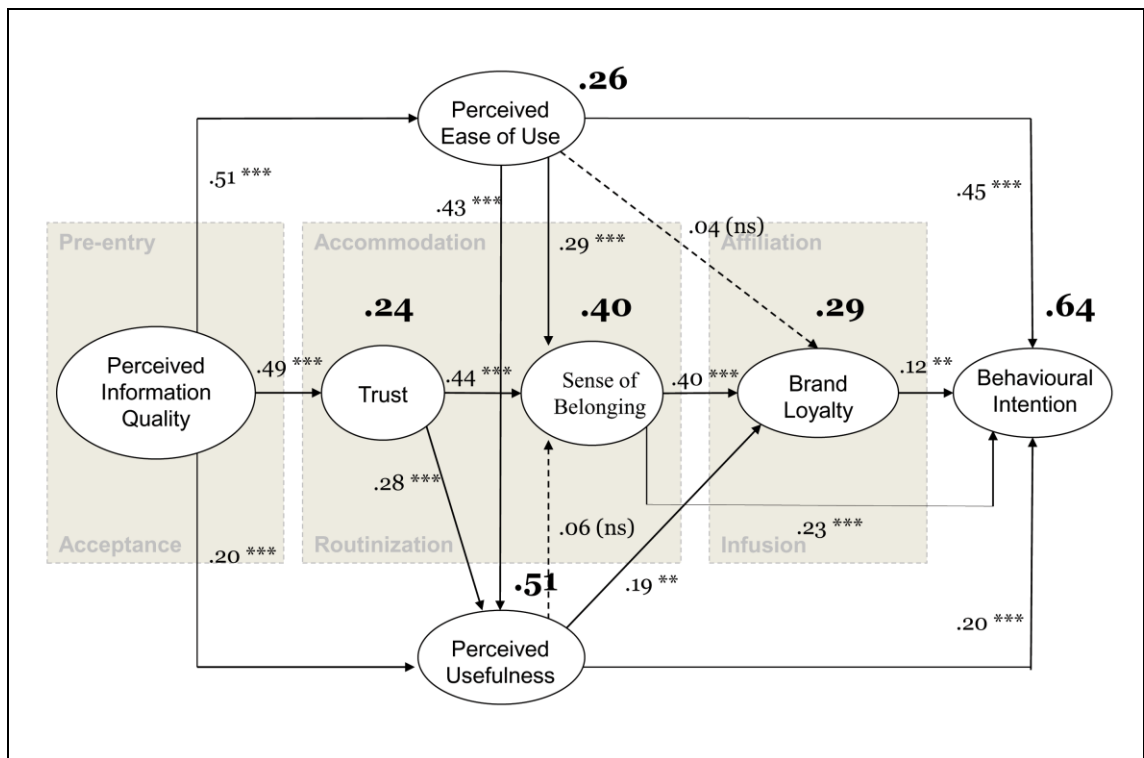


Table 5. 34 Hypotheses Test

	Variables	Estimate	S.E	C.R	P
H1	Perceived information quality ---> Perceived usefulness	.201	.040	3.969	***
H2	Perceived information quality ---> Perceived ease of use	.511	.044	10.347	***
H3	Perceived information quality ---> Trust	.490	.048	9.168	***
H4	Trust ---> Perceived usefulness	.280	.045	5.516	***
H5	Trust ---> Sense of belonging	.443	.081	7.500	***
H6	Perceived usefulness ---> Sense of belonging	.061	.094	1.004	.315
H7	Perceived ease of use ---> Sense of belonging	.294	.081	4.993	***
H8	Sense of belonging ---> Behavioural intention	.233	.034	5.128	***
H9	Sense of belonging ---> Brand loyalty	.398	.056	7.529	***
H10	Perceived usefulness ---> Brand loyalty	.192	.095	3.268	.001
H11	Brand loyalty ---> Behavioural intention	.123	.029	3.023	.003

H12	Perceived ease of use ---> Brand loyalty	.045	.090	.719	.472
H13	Perceived ease of use ---> Perceived usefulness	.431	.045	8.466	***
H14	Perceived ease of use ---> Behavioural intention	.448	.053	8.636	***
H15	Perceived usefulness ---> Behavioural intention	.198	.056	4.043	***

Note: Estimate = Standardized Regression Weights (path estimate), S.E = standard error, C.R =critical ratio (t-value), P = critical value = significance value (p-value)

Table 5. 35 Squared Multiple Correlations (R^2)

Constructs	R squared estimate (R^2)
Trust	.240
Perceived Ease of Use	.261
Perceived Usefulness	.509
Perceived Sense of Belonging	.400
Brand Loyalty	.293
Behavioural Intention to Use	.636

The relationship between perceived information quality and perceived usefulness was significant, since the critical ratio (t-value) was 3.969 which is more than 1.96, and the p value was less than 0.001, and path estimate was 0.201. Hence, hypothesis 1 was accepted. (*H1 accepted*). The perceived information quality was found to be positively and significantly related to the perceived usefulness ($\beta = 0.511$, t-value = 10.347, $p < 0.001$). The perceived information quality was also positively and significantly related to trust ($\beta = 0.490$, t-value = 9.168, $p < 0.001$). Therefore, hypothesis 2 and 3 were accepted. (*H2 and H3 accepted*).

Trust and perceived usefulness were found to be significant: the path estimate was 0.280, critical ratio (t-value) of 5.516 and significance at less than a $p < 0.001$ level. Therefore, hypothesis 4 was accepted. (*H4 accepted*). From the analysis, it was found that trust was positively related to sense of belonging at a significance level less than $p < 0.001$, with a path estimate of 0.443. The critical ratio is 7.500, which was over the recommended level 1.96. Therefore, the hypothesized relationship (H5) was accepted (*H5 accepted*).

The relationship between perceived usefulness and sense of belonging was not significant, since the critical ratio (t-value) was 1.004, which is less than 1.96, and the p-value was 0.315. Thus, this hypothesised relationship was not found to be valid in this context. Therefore, hypothesis 6 was rejected (*H6 rejected*). The relationship between perceived ease of use and sense of belonging was found to be significant, with the path value of 0.294 and a critical ratio (t-value) of 4.993 and p-value was significantly less than 0.001. Hence, hypothesis 7 was accepted (*H7 accepted*).

Sense of belonging was also found to be positively and strongly related to behavioural intention to use ($\beta = 0.233$, t-value = 5.128, $p < 0.001$). Therefore, hypothesis 8 was accepted (*H8 accepted*). Sense of belonging was positively and significantly related to brand loyalty ($\beta = 0.398$, t-value = 7.529, $p < 0.001$). Hence, hypothesis 9 was accepted (*H9 accepted*).

Perceived usefulness was positively and significantly related to brand loyalty, with path estimate of 0.192, critical ratio (t-value) of 3.286, and significance at less than a $p < 0.01$ level. Therefore, hypothesis 10 was supported (*H10 accepted*). From the analysis, it was also found that there was a significant relationship between brand loyalty and behavioural intention to use ($\beta = 0.123$, t-value = 3.023, $p < 0.01$). Therefore, hypothesis 11 was accepted (*H11 accepted*).

However, the relationship between perceived ease of use and brand loyalty was not significant: the critical ratio (t-value) was 0.719 which is less than 1.96, and the p-value was 0.472. Therefore, hypothesis 12 was rejected (*H12 rejected*).

The relationship between perceived ease of use and perceived usefulness was positively related to each other at a significance level less than < 0.001 with a path value of 0.431. The critical ratio (t-value) was 8.446, which is more than the recommended level. Thus, hypothesis 13 was supported (*H13 accepted*). Perceived ease of use was found to be positive and significantly related to the dependent variable such that behavioural intention to use ($\beta = 0.448$, t-value = 8.636, $p < 0.001$). From the analysis, it was also found that perceived usefulness was positively and significantly related to behavioural

intention to use: the path value was 0.198, and the critical ratio (t-value) was 4.043, and p-value was less than 0.001. Therefore, hypothesis 14 and 15 were supported (*H14 and H15 accepted*).

From the structural equation analysis, it was found that most of the hypothesised relationships were supported by the empirical data.

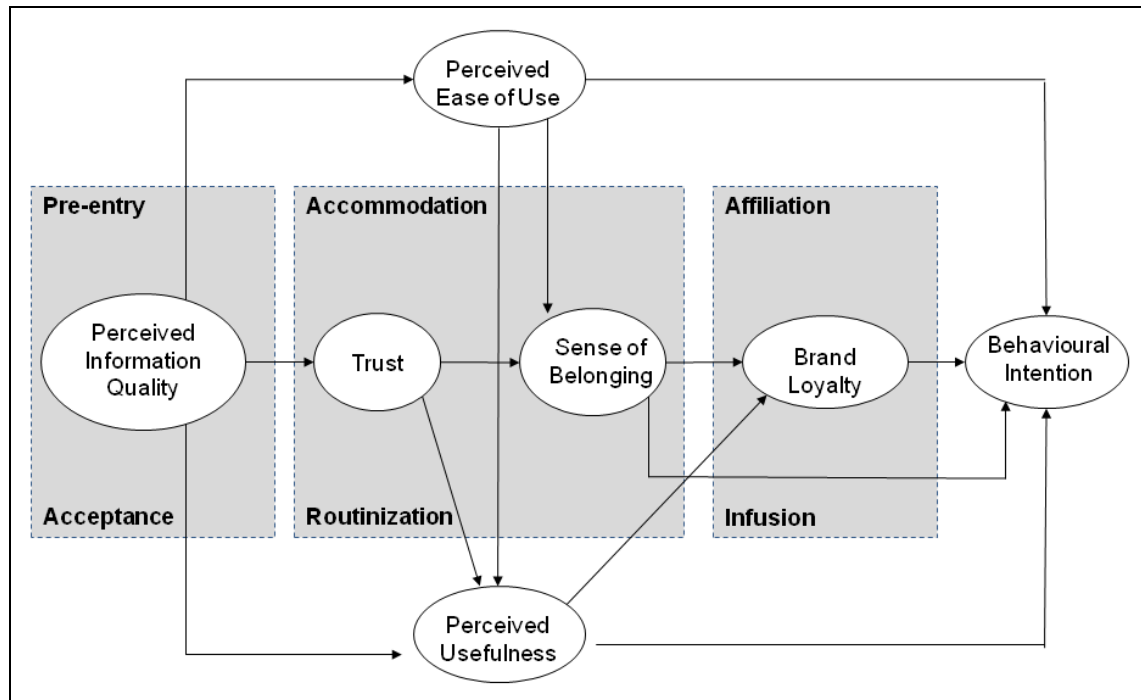
5.7.3 Summary of the Proposed Hypothesis Status and Final Proposed Research Model

Table 5. 36 The Result of Proposed Hypothesis

Hypothesis	Relationship	Empirical support
H1	Perceived information quality would positively be related to perceived usefulness of an OBC.	Supported
H2	Perceived information quality would positively be related to perceived ease of use of an OBC.	Supported
H3	There will be positive relationship between perceived information quality and trust of OBC.	Supported
H4	Trust would have positive relationship with perceived usefulness of an OBC.	Supported
H5	Trust would have positive relationship with the sense of belonging in an OBC.	Supported
H6	Perceived usefulness would positively affect on sense of belonging of OBC.	Not Supported
H7	Perceived ease of use would positively affect sense of belonging of OBC.	Supported
H8	Sense of belonging in OBC has positive relationship with behavioural intention to use in OBC.	Supported
H9	Sense of belonging would have positive relationship with brand loyalty an OBC.	Supported
H10	Perceived usefulness would positively affect to brand loyalty of OBC.	Supported
H11	Brand loyalty has positive relationship with behavioural intention to use in an OBC.	Supported
H12	Perceived ease of use would positively affect to brand loyalty in an OBC.	Not Supported
H13	Perceived ease of use would positively affect to perceived usefulness of OBC.	Supported
H14	Perceived ease of use would positively affect to behavioral intention to use OBC.	Supported
H15	Perceived usefulness would positively affect to	Supported

	behavioral intention to use OBC.	
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Figure 5. 15 The Final Validated Relationships in Transition Process model of OBC members' behaviours



5.8 Chapter Conclusion

The analysis of main study was started with 519 samples that were collected from 17 OBCs in South Korea. The analysis with 36 items in seven constructs was conducted largely by four steps: (1) Data screening (2) Exploratory factor analysis and Reliability Assessment (3) Confirmatory factor analysis and Scale Validity (4) Structural equation modelling and hypothesis testing. Firstly, 1 data (case 468) was regarded as a potential outlier through univariate and multivariate test then omitted from the samples. Secondly, 2 items those are PIQ 1 and ABL1 were omitted by communality test in EFA because of the values of Communality were less than 0.6. Next, 8 items (TR4, PSOB4, ABL2, BBL1, PEOU1, PU3, PU5, TR5) were removed by unidimensionality test because those were highly correlated among items or between measured items and different constructs. Lastly, based on the structural model, the all model fits such as χ^2 (CMIN/DF), GFI,

AGFI, NFI, CFI, TLI, and RMSEA were statistically satisfied as a good fit and, in the hypothesis testing, the results of analysis show 13 hypotheses were accepted, while two of them (hypothesis 6 and 12) were rejected among 15 hypotheses. The next chapter details discussions about the relationships discussed relative to the theoretical discussions.

CHAPTER 6 DISCUSSION

6.1 Introduction

The aim of this study is to predict and explain a transition process of OBC members' motivations from the acceptance to infusion stage from a long-term perspective. The theoretical framework, with 15 hypotheses, was built by reviewed and conceptually developed extant theories. The data for examination hypotheses in the theoretical framework was collected and analysed in previous chapters.

The 15 hypotheses for this study were developed and examined on the basis of relationship between independent and dependent variables. The results of analysis show 13 hypotheses were accepted, while two of them were rejected. The main findings of this study are, firstly, the OBC members' motivations provided from each stage evolve from acceptance to infusion as a transition process. Furthermore, the OBC members' intention to use the OBC is significantly affected from the transition process. Third, TAM is a proper model to examine the transition process of OBC members' motivation for intention to use an OBC from a long-term perspective. However, this research found that perceived usefulness and perceived ease of use do not have a considerable relationship with sense of belonging and brand loyalty respectively. These unexpected results will be discussed in this chapter.

This chapter consists of three main sections. First, the result of empirical study is discussed with two rejected results. Second, the theoretical implication is discussed with theoretical contribution of this thesis in terms of gaps in the field. Lastly, the practical or managerial implications of the study' findings are presented.

6.2 Discussion of Empirical Findings

Apart from the theoretical findings summarised in the previous section, this study revealed the roles of motivators of OBC use behaviour along with a socialisation process. The following sub sections discuss the findings in more detail.

6.2.1 The Role of Information Quality at the Acceptance Stage

This study revealed that the information quality at the acceptance stage plays a significant role on members' behavioural intention to use OBCs. This study also demonstrated that the information quality of an OBC directly influences trust in OBCs from the acceptance to routinisation stage. As argued by other scholars (Kozinets 1999; Mathwick 2002; Preece and Shneiderman 2009), the reason why consumers decide to join and use an OBC is most likely the need of information for purchase decision making or obtaining information on the product or services. Shang et al. (2006) also argue that consumers may accept a consumer community because they share the issues regarding the specific brand. Therefore, the high-quality of information can make members as consumers trust the OBC. Based on the worthy information, the consumers become faithful to the information as well as the brand and then they are likely to make decisions to purchase or repurchase the brand products and services.

According to Fishbein and Ajzen (1975), external variables affect peoples' attitude toward behaviour indirectly through salient beliefs (i.e. PU and PEOU) for the consequences of performing the behaviour. In TAM, external variables vary according to the context and many different variables were used. Likewise, in the context of OBCs, this study revealed that information quality has a significant role as an external variable to influence the salient beliefs. When a novice or existing member looking for others' opinion regarding a brand (i.e., products, services), if s/he realises that information quality in the OBC is inaccurate or out-dated, then they would not stay in the OBC and are likely to leave to find another OBC because they regard the OBC is less useful. Moreover, when a novice member initially uses an OBC, if they realise that it is difficult to find some information, they may feel it is difficult to use. Hence, they may want to know where the information can be obtained from. Therefore, the quality of information about OBC usage is also significant to the intention to use the OBC.

However, the researcher argues that this result not only applies to novice members but to experiential members because although a member has experience of OBC use, if the

information quality suddenly drops, they also would not trust others or the OBC and may then think it is no longer useful. In ECT, when consumers make a re-purchase decision, they have an expectation about the products and services because they already have an experience of the brand. Therefore, if the quality of the product does not reach their expectations, the consumer may not re-purchase the brand. Similarly, at the stage of IS continuation, the information quality plays a significant role for experienced members of the OBC to influence re-purchase of the brand as well as to continue OBC use. If the quality of information is not satisfied by experienced members in terms of being low quality, inaccurate, or untruthful, they would not be willing to remain. In other words, information quality is also an extremely significant determinant to re-accept the OBC for experiential members.

6.2.2 The Role of Trust in the Routinisation Stage

Trust is a prerequisite in OBC use because an OBC is for computer mediated communication established on the web (Gefen, 2000) and there is uncertainty of an individual's identity because of lack of face to face communication (Pavlou, 2003). Likewise, this study revealed that trust is an essential and compulsory motivator to use an OBC as suggested in numerous previous studies (Ha and Stoel, 2009; Lin, 2008; Pavlou, 2003; Shin, 2008). Trust is one of the most significant external variables to directly influence perceived usefulness and sense of belonging. Firstly, the results of this study indicate that if members trust in other members regarding shared information or their experience, they feel that the OBC is useful. Secondly, as suggested by Lin (2008), the trust helps to establish OBC members' relationships and promotes a strong sense of belonging. This study also exposes the significant mediator role of trust on boosting the sense of belonging in an OBC. As stated by Anderson (2010), the perception of good information quality can make individual's trust in an OBC as well as its members and the trust can enhance a strong relationship in the OBC. A strong relationship based on trust enables the exchange of more professional knowledge and accurate information, thereby increasing the behavioural involvement of community members in OBCs.

6.2.3 The Role of Sense of Belonging in the Routinisation Stage

This study revealed that the role of sense of belonging is significant in OBC usage. This study demonstrated that sense of belonging has a significant relationship with brand loyalty. As reported by Lin (2007), this study confirmed that the sense of belonging directly influences behavioural intention to use OBCs. However, PU does not have any effect on sense of belonging, while PEOU has a significant relationship with sense of belonging.

Firstly, one of the contributions of this study is to reveal a significant relationship between sense of belonging and brand loyalty. In the context of online community, Lin (2008) revealed that sense of belonging increased the members loyalty toward the community however, it was not regarding brand loyalty. OBCs are established and maintained by consumers who are interested in brands or a branded firm and it would not be sustained without brand and brand interest or consumers' loyalty because an OBC represents a brand itself. Therefore, in the OBC context, the results of this study showed that the sense of belonging in an OBC is a significant determinant to increase the brand loyalty of members. It indicates that the sense of belonging of an OBC may represent not merely sense of belonging in people but also in brands.

Secondly, previous studies (Kozinets, 1999; Mathwick, 2002) regarding members' behaviour in OCs argue that there are '*minglers*' who are interested in developing their social relationship rather than brand relationship on OBCs. The minglers develop interpersonal relationships by exchanging information such as mutual interest, hobby, or life event regardless of brand or brand issues. They want to have fun with people and want to be emotionally attached with other members in OCs. Hence, by this behaviour, the sense of belonging can affect the intention to use OBCs. Furthermore, the sense of belonging is a prerequisite for the survival of a community. Therefore, the sense of belonging plays a significant role for members' intention to use OBCs. In the same manner, Lin (2007) found that sense of belonging is a strong determinant to positively and directly affect behavioural intention to use OBCs.

Third, this study confirmed that PEOU has a significant relation with sense of belonging. Lin (2007) argued that when members perceive an OBC easy to use, the members would feel more like a member of a community. Similarly, when OBC members perceive ease of OBC use, they feel more comfortable to accommodate OBC use and feel belonging in the OBC as routinised members.

However, this study validated that PU does not affect sense of belonging. This finding is also meaningful because it is contrary to many previous studies. According to Teo et al., (2003), PU positively affects the sense of belonging in online learning communities. Tsai et al., (2008) also found that there is a positive and significant relationship between PU and sense of belonging. In the context of OC, Lin (2007) argued that the sense of belonging can play the role of attitude toward usage in TAM and demonstrate it by empirical study. The study found that PU positively and significantly affects members' sense of belonging in OCs. The different result between this study and prior studies may occur because the different characteristic of OBCs compared with OCs. The main purpose of establishing OBCs is that sharing a brand knowledge and information with other consumers who have brand loyalty (Jang *et al.*, 2008; McAlexander *et al.*, 2002). OBC has a distinct prerequisite for establishing and maintaining of the OBC, namely, brand loyalty. An OBC is a community related to a brand or brand firm and built on the web (McAlexander *et al.*, 2002). Consumers join and use OBCs because of the brand. If an OBC seems to be no relation to the brand, the members may no longer be willing to use the OBC although the OBC is useful for building social relationships because the OBC seems to be an online social community. As evidence, this study revealed that PU has a significant belief to influence members' brand loyalty in OBCs. It indicates that when members perceive usefulness of an OBC, their brand loyalty will be increased.

6.2.4 Brand Loyalty in Infusion Stage

Previous research focused on OBCs to investigate the determinants that affect brand loyalty (Carlson *et al.*, 2008; Jang *et al.*, 2008). However, this study doubted whether brand loyalty can increase behavioural intention to use an OBC because there are no studies regarding this relationship. Theoretically, brand loyalty may improve purchasing

of a brand product or service but it is not clear whether the members' brand loyalty increases behavioural intention of OBC use. Firstly, this study revealed that brand loyalty plays a significant role to increase members' behavioural intentions to use OBCs. This result is supported by Kozinets's (1999) and Mathwick's (2002) studies in the context of consumption of online community members' behaviour. Those studies argue that members who have a strong brand loyalty as '*devotees*' make commitment and contribution to OBCs regardless of the degree of social bond. However, none demonstrated the relationship between brand loyalty and intention by empirical study; hence, this study is the first study to validate the positive and significant relation.

Secondly, this study also validated that brand loyalty is a significant mediator between sense of belonging and behavioural intention of OBC use. It shows that members' transition from the accommodation to affiliation stage in OBCs. According to the mediation test of the role of brand loyalty, the result showed that if sense of belonging does not have a relationship with brand loyalty, the overall model fit significantly drops; hence, the model fit will be not satisfied as a good model [Appendix J]. On the other hand, although sense of belonging does not have a direct relationship with behavioural intention to use, the overall model fit is not significantly changed [Appendix J]. These results highlighted the importance of brand loyalty in OBCs. The results indicate that brand loyalty is a compulsory factor for behavioural intention to use OBCs and also a prerequisite to establish and maintain OBC use. It is a remarkable distinction between OBCs and other OCs.

However, this study revealed that there is no relationship between PEOU and brand loyalty. Many scholars insisted and demonstrated that PEOU is more important for the acceptance stage rather than routinisation and infusion stages because of use experience (i.e. Davis, 1989; Karahanna *et al.*, 1999; Bhattacharjee, 2001; Venkatesh *et al.*, 2003). For example, in the pre-entry stage, when consumers have recently joined and started to use an OBC as novice members, they may not have brand loyalty although they perceive ease of OBC use because they are likely to use the OBC to make purchase decisions from others' opinions. Hence, as in the results of this study, when they perceived ease of OBC use, it may affect sense of belonging and their intention of OBC

use. On the other hand, when experienced members use OBCs, the ease of use may not affect their OBC usage because they are already skilled and routinised members of OBC use; hence, they are likely to neglect the perception of function for OBC usage and may consider only whether it is useful or not. Furthermore, the perception of usefulness may increase routinised members' brand loyalty and intention to OBC use as shown in the results of this study.

6.2.5 TAM Variables

One of the important findings of this study is regarding the role of perceived ease of use. Similar to prior studies using TAM, this study found that both PEOU and PU were significant to affect behavioural intention of OBC use. However, the result of this study showed that PEOU (path estimate: 0.448) is much stronger rather than PU (0.198), while most prior studies in IS acceptance research revealed that perceived usefulness is more significant than perceived ease of use to intention to use (Davis, 1989). This phenomenon may also occur because this study investigated behavioural intentions not only at the acceptance stage but also routinisation as well as infusion stage. TAM has been generally used to predict user acceptance of IT and IS and recently explains user behaviours at the routinisation and infusion stages. Hsieh and Wang (2007) studied user behaviours of IS, especially EPR systems, on the infusion stage by using TAM and a synthesised model (combined TAM and ISC model). The result of TAM showed that PEOU (0.399) more strongly influenced extended use rather than PU (0.302). Furthermore, the result of the synthesised model showed that PEOU (0.334) has much stronger affection on extended use than PU (0.233). The synthesised model is a combined model of the acceptance stage by TAM and routinised stage by the ISC model to explore user behaviours of IS use on the infusion stage. This study predicts and explains user behaviours regarding intention of OBC use from the acceptance to infusion stages. Therefore, the result can be supported by Hsieh and Wang's (2007) study and it is a valuable result of this study.

Many scholars suggest that TAM should be modified to include other variables in order to explain consistently more than 40% of system use (Agarwal and Prasad, 1997; Legris

et al., 2003; Lucas and Spitler, 1999; Szajna, 1996). The result of this study showed that 64 % of behavioural intention of OBC use is explained by other components and indicates that the OBC transition process model is a proper model to explain OBC use.

6.2.6 Transition Process from Pre-entry Stage to Affiliation Stage

Kozinets (1999) argued that members usually tend to move from 'tourist' to 'insider' and also from a factual information exchange type to mixed type which includes factual information exchange and social relationship behaviours. To support Kozinets' argument, one of the most important discoveries of this study is causal relationships as a transition process among information quality, trust, sense of belonging, and brand loyalty in an OBC.

This study defined OBC consumers who have brand interests are willing to establish and maintain interpersonal relationships with other members through information sharing on the web. To establish and maintain an OBC, the first prerequisite is information quality. OBCs are places sharing information of brand or other interests by members. Therefore, without exchange information, OBCs cannot be sustained on the web. The second prerequisite is trust. OBCs do not have geographical limitation because they are established on the web; therefore, the OBC has a lack of face-to-face contacts. In addition, OBCs are based on computer mediated communication, hence, uncertainty exists in members in the OBC environment. Therefore, without trust of members, OBCs cannot be sustained. The third prerequisite is sense of belonging. As Hegerty *et al.*, (1996) argue, sense of belonging is a valuable element for study in the context of OBCs. Sense of belonging is established by interpersonal relationships through supportive and sociable relations among members and it is a required factor for OBCs to sustain the web (Hampton and Wellman, 2001). Likewise, OBCs cannot be sustained without a sense of belonging because members' commitment which forms from a strong sense of belonging based on superior interpersonal relationship and emotional attachment will disappear. The fourth prerequisite is brand loyalty. As Muñiz and O'Guinn (2001) argue, brand community can be established and maintained by consumer-brand relationships and the main purpose of OBC use is sharing information

about brand. If members do not have interests of brand and brand loyalty, they may not want to share information of brand. Likewise, if brand loyalty does not exist, the OBCs have no reason to sustain the web.

The results of this study showed that there are causal relationships as a transition process among information quality, trust, sense of belonging, and brand loyalty. Firstly, the result indicates that the information quality significantly affects trust in the OBC. Secondly, trust from information quality positively influences sense of belonging. Thirdly, sense of belonging significantly and directly affects brand loyalty.

To be specific, if the information quality is ambiguous, inaccurate, or incomplete, the members will not trust an OBC or its members in the pre-entry stage. For example, when members found information provided by other members, they judged whether the information was trustworthy. When they trust the information, they make a decision for purchasing the brand products or services then they keep and continue to use the OBC.

Next, when members trust in other members' skills or competencies, and other members' benevolence, and reciprocity, it increases members' sense of belonging and accommodation in the OBC. For example, when the members continue to use an OBC after purchase of the brand products or services, their activities in the OBC increase with trust because, firstly, they may have a sense of belonging in the OBC simply by possession of the brand products or services. Moreover, they may want to establish interpersonal relationships with others to share their experiences and gather useful information from others' experiences. Finally, these behaviours of OBC use will help to build a strong social relationship, hence, they feel more strong belongingness in the OBC.

Further, as the result of this study showed, the established sense of belonging in OBCs will improve members' brand loyalty and, finally, brand loyalty can increase behavioural intention to use the OBC. For example, according to increasing social relationships, they may also accumulate and develop their knowledge of the brand (i.e. product or services) because they have shared and exchanged their experience with

other members. Therefore, these activities are also likely to influence them to be a loyal consumer of the brand as knowledgeable and devoted people in the affiliation stage.

Finally, as Kozinets (1999) and Mathwick (2002) insist, devoted members will have a strong and consistent intention to use OBCs in the long-term perspective.

In sum, good quality information provided by OBC members will develop mutual trust in the OBC and the established mutual trust among members is important for increasing members' social relationships that affect sense of belonging. The sense of belonging increased by mutual trust also enhances members' brand loyalty. Finally, brand loyalty reinforces members' behavioural intention to use the OBC. The causal relationships are the transition process of compulsory factors for OBC existence.

6.3 Theoretical Implication

The theoretical contributions of the findings in this paper are five fold.

Firstly, to the author's best knowledge, this is one of the first efforts to develop an integrated framework that addresses the transition process from user acceptance to IS infusion behaviour. Among the three use behaviours of information technology, the largest amount of efforts have been concentrated on acceptance behaviour and very little studies focus on understanding the nature and motivators of routinisation and infusion behaviour (Sundaram *et al.*, 2007). Despite such initial studies on routinisation and infusion, no study has revealed a process in which user acceptance behaviour transits to routinisation and ultimately to infusion behaviour. Most previous studies have focused on each stage of IS adoption and looked for motivations. As in the empirical results, this study found that user behaviours of social ISs such as OBCs are able to predict and explain the integrated framework from a long-term perspective.

Secondly, another distinct contribution of this study is that it classifies OBC users into heterogeneous groups according to their consumption behaviour and linked to IS use behaviour. Kozinets (1999) insists that user behaviour is changed according to the

different purposes of OBC use which vary over time. Despite this, most previous researches regarded IS users as homogenous and studied only one stage of user behaviour (acceptance, routinisation, or infusion) over a short term period. Hence, previous studies could not explain the causal relationships between motivators of IS use behaviour in different stages; therefore, none study the transition from acceptance to infusion behaviour over time. Through an empirical study, this study revealed that there are causal relationships between motivators in different stages of use behaviour. Information quality, trust, sense of belonging and brand loyalty were identified as the major motivators for IS use behaviour in different socialization stages and this confirms the stage model of consumer behaviour in OBCs as Kozinets (1999) and Preece and Shneiderman (2009) argued.

Thirdly, the findings in this study indicate that the motivators of IS use behaviour may change over time as a user increases social interactions with other members and have strong ties with brand as a result of the social interactions. Most existing studies on IS use behaviour assume factors affecting TAM constructs are universal over the IS users though moderating effects by age, gender, and previous experiences of IS use (Venkatesh *et al.*, 2003). However, unlike other ISs, social media like OCs and OBCs are for supporting social activities of their users and the use behaviour of such an IS is tightly coupled with the socialisation process of the users. Therefore, the decision to continue using OCs needs to be understood considering the users' stages in a socialisation process as any failure during the process will trigger leaving their bound communities and, therefore, the discontinuation of using the systems. The finding in this study suggests that the transition process can be explained through a socialisation process for social media. Based on the socialisation process, motivators that affect the use behaviour of members in different stages have been identified and the results support significant relationships among the motivators through the process. The findings from this study indicate that the quality of information is important for increasing perceived usefulness of OBCs for users at the pre-entry stage while it is trust and sense of belonging for the accommodation stage, and brand loyalty for the affiliation stage.

Fourthly, the finding makes a theoretical contribution to OBC literature as the findings indicate that brand loyalty and sense of belonging are significant motivations to the use of OBC. However, the role of brand loyalty is more significant than sense of belonging although both do important roles to increase members' intention to use OBCs. The brand loyalty of OBC members plays a role to directly influence behavioural intention to use an OBC similarly to perceived ease of use and usefulness. As argued by Kozinets (1999), members who have a strong brand loyalty are using OBCs intensively regardless of emotional attachment. The members desire the sense of belonging to the brand or the brand firm and they would generally focus on building a relationship with retailers or marketers as well as members who are devoted to the brand (Mathwick, 2002). On the other hand, if members feel a strong interpersonal relationship and social bond in an OBC, this seems to improve their loyalty to the OBC and the brand. In addition, such a strong relationship would improve members' sense of belonging in the OBC. Kozinets (1999) and Mathwick (2002) also insist that members who have both strong brand loyalty and social bond make more commitment and contribution to the OBC. Based on this argument, this study revealed that the sense of belonging to an OBC indirectly influences the behavioural intention to use an OBC through brand loyalty. It is also worth noting the mediating role of brand loyalty between perceived usefulness and behavioural intention. Sense of belonging also has a direct effect on behavioural intention of OBC use although the role of brand loyalty is dominated. It indicates that the OBC has, largely, two roles of community both 'brand community' and 'social community'. In other words, the OBC has two purposes of use: 'consumption for brand' and 'social relationship building' as scholars argued (Kozinets, 1999; Mathwick, 2002; Preece and Shneiderman, 2009).

Lastly, to the best knowledge of the researcher, this is the first study that has focused on user intention of OBC use. Despite the existence of the distinction between OBCs and other OCs, most previous studies focus on OCs for transactions (i.e. e-commerce, e-shopping), learning communities, and game communities. This study revealed that brand loyalty is a significant and distinct factor to understanding user behaviour in OBCs and it is a valuable finding to fill the gap between OBC and other OC studies.

6.4 Managerial Implications

Maintaining members' behavioural intention to use OBCs is very important for sustaining the OBC in the long term. Hence, it is important to understand user behaviour from the pre-entry to affiliation stages. Along with theoretical contributions, there are some practical implications of the research findings. The practical implications for OBC operators and firm managers can be derived from this study's findings.

6.4.1 The Implication for OBC Operators and Managers

First, for novice members at the initial stage of a socialization process, managers should concentrate on increasing information quality that has accuracy, completeness, currency and, also, reliability. OBCs are sustained by exchange of information provided by members. They may need to filter out inaccurate materials from their site in order to make the community more useful for potential new members. In addition, providing accurate information and updating information regarding brand issues, new products and the answer of inquiries are crucial factors for members continuing to use the OBC because the precious quality of information will affects members' trust in the OBC. Moreover, the high quality of information builds trust among members because the information is mostly provided by OBC members. However, keeping the information quality is significant not merely for obtaining new members but also maintaining existing members because if, eventually, they cannot be satisfied by the overall information quality, they may not want to strive to make a contribution and stay in the OBC anymore.

Second, for members at the accommodation stage, operators and managers should be focused on increasing members' trust and sense of belonging in OBCs. OBCs are places for computer-mediated communication on the web; hence, there is uncertainty among members as well as operators. Hence, the reciprocity behaviours such as solving problems or replying to inquiries for members are significant to improve members' trust. In addition, reciprocity will enhance members' emotional attachment and sense of

belonging and, ultimately, lead to members' commitment. Therefore, operators and managers should be focused on members' requirements and communication to fertilise OBC activities. This may be done by providing more functions that promote member interactions, such as chat or messenger services since interactions among members strongly influences community commitment (Jang et al., 2008). Further, offline meetings or a unique identity would help to increase members' social identity in OBCs.

Trust is also a significant factor for members' perception of whether the OBC is useful and it would aid members' decisions whether they continue to use the OBC. Therefore, trust is likely to be a more significant determinant to influence members who use OBCs for consumption purposes and it would increase brand loyalty. Sense of belonging from a strong emotional attachment also affects members' brand loyalty because OBCs consist of members who have brand interest and loyalty and it represents the brand itself. Kozinets (1999) and Mathwick (2002) insist that cultivating devoted members who have a strong brand loyalty is one of the most significant to sustain OBCs because they make valuable commitments and contributions not merely for OBCs but also firms. Therefore, operators and managers should be focused on enhancing members' trust and sense of belonging for more contribution and commitment

Finally, for members at the affiliation stage, managers may have to consider and concentrate on how to integrate members within the brand. As the findings of this study indicated, information quality, trust and sense of belonging can help to increase the brand loyalty in an OBC. The members who have a strong brand loyalty with a strong social bond are likely to engage in OBC activities related with the brand. They assume themselves to be the brand and associate with the brand identity (Bagozzi and Dholakia, 2006; Stokburger-Sauer, 2010). This consumer-brand identification in OBCs is established from strong ties between consumer and brand and the members share their identity with the brand in the OBC and look upon the OBC's goals as personal goals (Ashforth and Mael, 1989). The membership of OBCs can be enhanced by consumer-brand identification (Bergami and Bagozzi, 2000) that effect on members contributions and willingness to contribute to a collective work and group cooperation (Dutton *et al.*,

1994). Therefore, in the affiliation stage, the members who have a strong brand loyalty are able to affect brand identification in OBC and contribute to the OBC activities. As evidence, Kozinets (1999) and Mathwick (2002) assert that members who have a strong brand loyalty as *'devotees'* and *'leaders'* have a physically powerful commitment to an OBC with strong brand identity rather than other groups of members. Moreover, the members' brand loyalty can be enhanced by a strong sense of belonging which encourages members' commitment and it is also improved by the perception of usefulness of OBC. It can be explained that members with a sense of belonging established by emotional attachment may influence attitudinal brand loyalty as a desire to belonging to the brand or brand firm (Allen and Meyer, 1993) and perceived usefulness as extrinsic motivation may affect behavioural brand loyalty to make purchase and repurchase decisions. Therefore, it indicates that OBC operators and managers should consider how to enhance members' sense of belonging and perception of usefulness of OBCs and these efforts will foster members who have a strong brand loyalty. Ultimately, consumer-brand integration will improve members' intention of OBC use to encourage their valuable commitments and contributions not only for OBCs but also firms.

6.4.2 The Implication for Firms

Today, consumer power is increasing because of developing the internet. The internet demolished geographical restriction to establish brand communities. These circumstances make consumers are easily able to be together for exchange information regarding brand or brand firm in a place on the web and OBCs have been established by that purpose. Furthermore, it is easy to become a member of an OBC compared with traditional brand communities. OBC members as consumers exchange their knowledge and information in OBCs and, sometimes, they make demands to the companies. They also have a role as a consumer watchdog against unfair trade or collusion by companies. Likewise, the OBCs are becoming powerful and strengthened by consumers and provide valuable benefits for consumers. On the other hand, OBCs are a place for marketing to promote sales and advertise brand products or services. In addition, Using OBCs can reduce time and cost to explore consumers' demands. Moreover, OBCs play

significant roles to improve the quality of brand products and services and further, to contribute to new product development. Likewise, OBCs provide precious profits for firms. However, even if an OBC has lots of members, if the number of devoted members is few, the benefits cannot reach both consumers and companies because only a few members are willing to engage in the OBC activities with intention. Therefore, it is an extremely significant fact to increase devoted members.

To encourage OBC members, intentionally, to engage in the OBC activities, marketers and project managers in firms have to focus on how to increase members' brand loyalty in OBCs because members who have a strong brand loyalty in the OBC are most likely to be engaged in the OBC activities. In the same manner, in the context of customer relationship management (CRM), many studies reveal that brand loyalty is the most significant prerequisite to maintain relationships between consumers and firms. Building brand loyalty in OBCs is the most significant factor which firms must consider because brand loyalty affects consumers' desire to belong to the brand or brand firm attitudinally and it makes consumers purchase and repurchase the brand behaviourally, regardless of price. Furthermore, strong brand loyalty can increase behavioural intention to use the OBC and the increasing intention is likely to improve the number of members who are willing to collaborate in firms' tasks such as marketing promotion or new product development. Moreover, it is very important to develop consumers' power which can be reflected in consumers' demands in the companies.

To build strong member brand loyalty in OBCs it needs plans and practices for the long term. The firms should think and focus on how the firms are attached with consumers more emotionally in OBCs. Emotional attachment with the brand or retailer can build a sense of belonging in the brand and the sense of belonging leads consumers' commitment for the brand and finally, these relationships build strong brand loyalty. In the same manner, the firm must support the OBC members' trustful information and the firm should focus on building trust among OBC members and between members and firm. The built trust will forge emotional attachment; then the attachment will also improve OBC members' sense of belonging. The sense of belonging can improve members' commitment for the brand and, then lastly, brand loyalty will be increased.

Finally, the established brand loyalty can increase members' intention to use the OBC and lead to more members' contributions and willingness to be engaged in OBC activities such as firm performance. It is a transition process.

6.5 Chapter Conclusion

In this chapter, the results of all hypotheses developed in the theoretical framework were discussed and two rejected hypotheses were identified with previous literature. Further, theoretical and managerial implications were presented for academics and OBC operators, managers and firms. In the next chapter, the study is summarised and the research limitation and future potential research directions will be discussed in more detail.

CHAPTER 7 CONCLUSION

7.1 Research Summary

As the importance of OBCs increase in practice for companies and consumers, scholars have been putting more efforts to understand OBC members' behaviour. Although there are a meaningful amount of studies to understand the motivators of IS use behaviour in acceptance, routinisation, and infusion stage, we still do not understand why and how IS users transit from acceptance to infusion stage. Therefore, this study shed a light on understanding the evolution of use behaviours as transition process from acceptance to infusion stages. It applied organisational socialisation theory to investigate user behaviours more specifically in 3 different stages: pre-entry stage, accommodation stage, and affiliation stage. Furthermore, this study also found the core motivators such as information quality, trust, sense of belonging, and brand loyalty as significant factors to explain the transition process from acceptance to infusion stage through OC members' classification (e.g. Kozinets, 1999, Mathwick, 2002, Preece and Shneiderman, 2009) and organisational socialisation theory (e.g. Feldman, 1976, Cable and Parsons, 2001, Haski-Leventhal and Bargal, 2008) and IS implementation theory (Cooper and Zmud, 1990, Saga and Zmud, 1994).

In particular, this study adopted TAM as a theoretical framework to specify IS use behaviour from acceptance to infusion stages. Socialization process model has also been adopted to understand the IS use behaviour from socialisation perspective. Social identity theory has been adopted to identify core motivators of IS use behaviour in different stages. There are two reasons to adopt TAM in this study. Firstly, although TAM was originally proposed to predict user acceptance behaviour of IS usage, TAM has been used and demonstrated to investigate user continuance behaviour of IS usage as routinised and infusion stage (e.g. Taylor and Todd, 1995, Parthasarath and Bhattacharjee, 1998, Legris *et al.*, 2003, Hsieh and Wang, 2007). Secondly, TAM is also a well-validated measurement model to examine the determinants of sustainability of online communities (Lin, 2007; Liu *et al.*, 2010).

The results of this study demonstrate that the proposed transition model of OBC use behaviour is a valid model to explain the user motivations movement from pre-entry stage to affiliation stage in OBC contexts. More importantly, this research argues that the members' motivation to participate in an OBC varies according to their current stage of a socialisation process. Further, the motivators in each stage have a significant causal relationship along the process. Another finding from the empirical study is that OBCs have two important roles as social and brand community. The results show that sense of belonging established by interpersonal and social relationship based on trust within an OBC directly lead to the intention to use OBCs. The trust in OBC and its members is built through good quality of information provided by the members. In addition, this study reveals that the brand loyalty is affected by sense of belonging. Perceived usefulness also directly influences members' intention to use OBCs. The transition process model of the motivators to use OBCs from the pre-entry stage to the affiliation stage was verified through an empirical data collection. The model can be used to improve members' intention to use OBCs in long-term perspective.

The contributions of this study are as follows. For academics, the transition of motivators of IS use behaviour from acceptance to infusion were proposed and validated for the first time in the literature. Secondly, the study revealed that the brand loyalty is one of the significant determinants to increase the intention to use OBCs. For practitioners, the transition process can give a hint on how to foster devoted members in OBCs so that companies can get more idea and feedbacks on brand products. Furthermore, for both academics and practitioners, the transition process model provides them with better understanding of OBC users' behaviour from long-term perspective.

7.2 Research Limitations

The limitations of this study are as follows.

Firstly, the transition process from acceptance and infusion behaviour has been identified under only OBC context which is a specialized information system to support social relationship and brand knowledge exchange. However, the insights obtained from

this study can be used to develop the transition process for other types of information system.

Second, the study focused on only consumer initiated OBCs. According to a market research reported by Samsung Economic Research Institute (Lee et al, 2009), consumers tend to be more active in consumer initiated OBCs rather than firm initiated OBCs because they do not want to be exploited for the profits of companies. Hence, it was recommended that the collaboration with consumer initiated OBC is a good strategy for companies to build relationship with consumers and their brand loyalty. The results in this study need to be carefully interpreted for firm initiated OBCs.

Thirdly, the study adopted TAM as the representative IS use behaviour model because it has been most widely used in explaining the motivators of acceptance, routinisation, and infusion. However, TAM has only focused on two beliefs perceived usefulness and ease of IS use. Therefore, the proposed process model should be interpreted within TAM context, i.e. planned theory of behaviour, UTAUT.

Fourth, the study conducted to examine user intention of OBC use in long-term perspective because, Lin (2006) suggested that members' behavioural intention of OC use can enhance members' more participation and contribution of OC activities. Another reason of adoption the intention is that Legris et al. (2003)' study shown that intention of IS use can be adopted as a dependent variable of some factors at different stages in the IS implementation process. Karahanna et al., (1999) demonstrated that the behavioural intention of IT usage can be as a dependent variables for both studies, acceptance and continuance by empirical studies. They also verified PU and PEOU are common variables that predict users' acceptance behaviours as well as continuance behaviours of IS use. However, there are other indicators to be dependent variables for investigation user intention of routinisation and infusion behaviours such as '*IS Continuance Intention*' (Bhattacharjee, 2001) for routinisation intention and '*extended use*' (Saga and Zmud, 1994), '*deep usage*' (Schwarz, 2003), and '*exploratory usage*' (Abdinnour-Helm, 2008) for infusion intention to use of IS.

Fifth, the study regarding user behaviour of OBC use is also significant for improving quality of products and developing new products. Some of scholars have studied about the role of OBC members for innovation and new product. (Füller *et al.*, 2006; Füller *et al.*, 2008; KimBae *et al.*, 2008). They focused on how can lead the OBC members to participate in new product development (NPD) and how to gather their innovative idea for developing new products. Some of researchers argued that the number of lead users who participate in NPD tasks with a strong brand loyalty and innovative ideas for brands are very few in an OBC. This study explored the motivation factors to increase OBC members' intention to use of OBC and demonstrate a causal relationship of motivations from acceptance to infusion stage. However, it is not sure whether the intention can be lead OBC members' participation in NPD.

Lastly, the data collection was conducted in South Korea which holds a leading nation in terms of internet usage maturity as well as online community usage in the world reported by Nelson online and the International Telecommunications Unions (Miniwatts, 2011) and Samsung Economic Research Institute (Lee et al, 2009). Therefore, the results of this study, in particular the behavioural motivation, need to be interpreted considering Korean cultural values like collectivism and high uncertainty avoidance trends. However, it may not represent and explain for other countries which have got different cultural value, issues, or trend.

7.3 Further Research Directions

Firstly, the different motivations and transition process should be explored in other IS areas because different use behaviours exist in different IS use contexts. For examples, the other information systems such as e-government systems, bank systems, transaction systems, e-commerce systems, or learning communities would have different motivations' transition process to increase user intention to use of IS. Therefore, the further studies are needed to explain user behaviours from acceptance to infusion stage for increasing productivity of IS use.

Secondly, in the OBC context, other transition process with other variables should be

considered from different perspectives. For example, transition process with social identification can be a further research aim. In social identity theory, there are different perspectives of identification such as personal, group or organisational identification and it would be explained as a transition process. Likewise, further study can be conducted with other theories to investigate the motivations' transition process from IS acceptance to infusion stage.

Thirdly, this study extracted four motivation factors that are from voluntary behaviours and affect most significantly to user intention in consumer initiated OBCs based on organisational socialisation theory. The forced factors that consumers are not able to control by themselves such as system quality or service quality (DeLone and McLean, 2003) and the influenced factors those consumers are affected from others such as subjective norm, critical mass or one's reputation have not been investigated yet. Therefore, the further research should be focused on revealing other factors with a strong background of different theories.

Fourth, the similar study referred this study is needed to be conducted targeting firm initiated OBCs and can be compared with the results in this study which targeted consumer initiated OBCs. The firm initiated OBCs are similar with consumer initiated OBCs. However, some of researcher argued that consumers tend to avoid for acceptance of firm initiated OBCs because they are afraid of provide and spreading their personal information to the firms (Lee *et al.*, 2009). Therefore, the motivations regarding security or privacy would be most significant factors to increase consumers' intention for using firm initiated OBCs.

Fifth, similar studies can be conducted for different dependent variables such as knowledge sharing, intention to purchase or re purchase, or participation in new product development (NPD) in the context of OBC. This study conducted based on technology acceptance model (TAM) suggested by Davis in 1989. Therefore, this study focused on only increasing users' intention to use of OBCs. However, the user intention may or may not affect to increase consumers' knowledge sharing, intention to purchasing the brand, sharing their innovative ideas, or participation in NPD task for brand. Therefore,

further studies are needed to investigate the other consequences for consumers as well as companies.

Sixth, the further studies should be conducted with other consumers in other countries. This study was conducted with seventeen OBCs in South Korea. However, the result may or may not be different in other countries because there are different people, life style, consciousness, and culture. Therefore, the further researches are needed to be generalised for the result of this study.

Lastly, as some of scholars suggested (Venkatesh *et al.*, 2003), the result of motivations' transition process in this study would be different by sex, age, and experience, and so on. Therefore, further studies are needed to investigate whether the result of this study can be explained with different demographic perspectives. Furthermore, if the results cannot be explained by different demographic perspective, the different motivations should be explored to explain the reasons of why different consumers are intended to OBC use and why the different motivations exists in different consumers.

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APPENDIXES

Appendix A

Survey Questionnaire

Research on Layered Motivation Model for User Acceptance and Continued Use of Online Brand Community

Thank you for participating in this survey which is conducting research into a Layered Motivation Model for User Acceptance and Continued Use of Online Brand Community. The results will be used only for statistics and academic purposes. Please fill in the questionnaire according to your opinion. However, if you do not want participate in the survey, it is not compulsory and whenever you are able to leave it.

Brunel Business School
Jae Hoon Lim
cbpgjhl@brunel.ac.uk

If you do not mind, please complete your e-mail address.
We will give gifts to participants who will be randomly selected after this survey comes to an end.
However, if you do mind, please skip it.

Email Address:

Online Brand community

An online brand community is a social group to which people voluntarily become a member and participate in interaction activities with other members who have same brand interest. It is not only for information sharing and exchange of ideas about a brand but also for connecting people with a brand interest regardless of time and location limitation on the web. An online brand community is focused on either brands or consumption activities and based on a structured set of social relations among admirers of a brand as online brand community members.

A brand community from a customer experiential perspective has critical relationship s including those between the customer and the brand (brand loyalty), between the customer and the firm (new product development), between the customer and the product in use (knowledge sharing), and among fellow customers (social relationship).

SONY ALPHA CLUB

iPhone & iPad Users' Community

Please read the following issues carefully and draw “√” on your answer.

I . Members’ classification

(1) Gender : M F

(2) Age : Under 18 18-29 30-39 40-49 More than 50

(3) Occupation: Student Worker Housewife Etc

(4) What type of OBC do you belong in?

- OBC which belongs in a portal site
- OBC which has its own domain

(5) How long have you participated in the online brand community?

- Less than a month
- 1-3 month
- 4-6 months
- 6-12 months
- More than 1 year

(6) How often do you visit the OBC which you belong in ?

- Almost every day
- More than once a week
- More than once a month
- More than once in 3 months
- Whenever I need

(7) How many products belong in the OBC that you belong to?

(If you answer ‘None’, Please go to the question No. 10)

- None
- One
- Two
- Three
- Four
- More than five

(8) When did you purchase the brand products?

- Before joining the OBC
- After joining the OBC

(9) How long have you used the brand products?

- Less than 1 week
- Less than 1 month
- 1 ~ 3 months
- 4 ~ 6 months
- 7 months ~ 1 year
- More than 1 year

The classification of online brand community

The members of an online brand community are able to classify 5 groups in OBC usage behaviours.

1. Tourists

'Tourists' are consumers who have recently become members of an OBC to investigate a particular brand product for decision making to purchase. They are only interested in information gathering.

2. Minglers

'Minglers' are members who purchased and use the brand product related with an OBC. They are not knowledgeable for product usage hence they are interested in learning how to use from other members who are knowledgeable. They are also interested in social relationships.

3. Devotees

'Devotees' are members who purchased and use the brand products and have a strong brand loyalty. They may have good knowledge of the brand products or may not. They have a strong interest of brand products but they are not really interested in social relationships.

4. Insiders

'Insiders' are members who have strong brand loyalty and OBC loyalty and they are also interested in social relationships.

5. Operators

'Operators' are members who establish OBCs or engage in OBC managerial works.

(10) To which group do you feel you belong in the OBC?

- Tourists
- Minglers
- Devotees
- Insiders
- Operators

I. Information Quality

1. Here are questions for information quality traits that may or may not apply to you. For all the questions, please answer using a seven-point scale.

Question	Please Select						
	Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
(1) The information provided by the virtual community is accurate.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(2) The virtual community provides me with a complete set of information.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(3) The information from the virtual community is always up to date.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(4) The virtual community provides me with all the information I need.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(5) The information provided by the virtual community is well formatted.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

II. Trust

2. Here are questions for trust traits that may or may not apply to you. For all the questions, please answer using a seven-point scale.

Question	Please Select						
	Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
(6) The OBC members are concerned about what is important to others.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(7) The OBC members will do everything within their capacity to help others.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(8) The OBC members try hard to be fair in dealing with each other.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(9) I would trust the OBC members to do the work right even if not monitored.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(10) People on the OBC are trustworthy.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

III. Sense of belonging

3. Here are questions for sense of belonging traits that may or may not apply to you. For all the questions, please answer using a seven-point scale.

Question	Please Select						
	Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
(11) I feel a strong sense of being part of this OBC.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(12) I have complete trust of others in this OBC.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(13) I enjoy myself as a member of this OBC.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(14) I am very committed to this OBC.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(15) Overall, there is a high level of morale in the OBC.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

IV. Brand Loyalty

4. Here are questions for brand loyalty traits that may or may not apply to you. For all the questions, please answer using a seven-point scale.

Question	Please Select						
	Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
Attitudinal Brand Loyalty							
(16) I pay more attention to this particular brand of products than to other brands.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(17) I say positive things about the WSM brand to other people.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(18) I encourage relatives and friends to buy the OBC's brand.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Behavioural Brand Loyalty							
(19) It is very important for me to buy this particular brand of magazine rather than another brand.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(20) I am going to use the OBC's brand in the future	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(21) I always buy the same brand from the OBC because I really	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

like this brand							
(22)I am going to purchase the OBC's brand in the future	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

V. Perceived Ease of Use

5. Here are questions for perceived ease of use traits that may or may not apply to you. For all the questions, please answer using a seven-point scale.

Question	Please Select						
	Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
(23) Learning to use the OBC is easy for me.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(24) I find it easy to get the OBC to do what I want to do.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(25) My interaction with the OBC is clear and understandable	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(26) It is easy for me to become skilful at using the OBC.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(27) In general, I find the OBC easy to use.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

VI. Perceived Usefulness

6. Here are questions for perceived usefulness traits that may or may not apply to you. For all the questions, please answer using a seven-point scale.

Question	Please Select						
	Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
(28) Using the OBC would enable me to accomplish my purpose for purchase decision making and knowledge sharing of the brand product more quickly.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(29) Using the OBC would improve my performance for purchase decision making and knowledge sharing of the brand product.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(30) Using the OBC would increase my productivity for purchase decision making and knowledge sharing of the brand product.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

(31) Using the OBC would enhance my effectiveness on purchase decision making and knowledge sharing of the brand product.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(32) Using the OBC would make it easier to make purchase decision and share knowledge of the brand product.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(33) I would find the OBC useful in purchase decision making and knowledge sharing of the brand product.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

VII. Behavioural Intention to Use

7. Here are questions for behavioural intention to use traits that may or may not apply to you. For all the questions, please answer using a seven-point scale.

Question	Please Select						
	Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
(34) I will frequently use the OBC in the future.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(35) I always try to use the OBC to do a task whenever it has a feature to help me perform it.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
(36) I intend to continue using the OBC in the future.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

Thank you for your participation.

Appendix B

Pilot Study Result

1. Descriptive statistics of the respondent characteristics

Category	Item	Frequency	Percentage
1. Gender	Female	13	36.1
	Male	23	63.9
2. Age (years)	Under 18	0	0
	18-29	19	52.8
	30-39	15	41.7
	40-49	2	5.6
	>50	0	0
3. Occupation	Student	15	41.7
	Worker	18	50.0
	Housewife	2	5.6
	Etc	1	2.8
4. Type of OBC	Belong in portal	21	58.3
	Own website	15	41.7
5. The period of activity in OBC	< 1 month	1	2.8
	1 ~ 3 months	3	8.3
	4 ~ 6 months	7	19.4
	7 months ~ 1 year	4	11.1
	Over than 1 year	21	58.3
6. Visit frequency Of OBC	Almost every day	13	36.1
	More than once a week	12	33.3
	More than once a month	4	11.1
	More than once in 3 months	1	2.8
	Whenever I need	6	16.7
7. The number of brand products if own	None	1	0
	One	13	37.1
	two	7	20.0
	three	4	11.4
	four	1	2.9
	More than five	10	28.6
8. Purchase time	None	1	0
	Before joining OBC	12	34.3

	After joining OBC	23	65.7
<hr/>			
9. Brand Product Usage experience	None	1	0
	< 1 week	1	2.8
	< 1 month	0	0
	1 ~ 3 months	7	19.4
	4 ~ 6 months	5	13.9
	7 months ~ 1 year	2	5.6
	More than 1 year	20	55.6
<hr/>			
10. Individual's perception for the stages.	Tourist	16	44.4
	Mingler	9	25.0
	Devotee	6	16.7
	Insider	4	11.1
	Operator	1	2.8
Total		36	100.0

2. Reliability Test

Case Processing Summary

		N	%
Cases	Valid	36	100.0
	Excluded ^a	0	.0
	Total	36	100.0

a. Listwise deletion based on all variables in the procedure.

2.1 Perceived Information Quality

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.827	.819	5

Inter-Item Correlation Matrix

	PIQ1	PIQ2	PIQ3	PIQ4	PIQ5
PIQ1	1.000	.341	.613	.527	.268
PIQ2	.341	1.000	.602	.738	.292
PIQ3	.613	.602	1.000	.713	.309
PIQ4	.527	.738	.713	1.000	.344
PIQ5	.268	.292	.309	.344	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PIQ1	20.9722	13.513	.570	.412	.808
PIQ2	21.1667	13.343	.662	.570	.785
PIQ3	21.1111	11.016	.760	.606	.749
PIQ4	21.1111	10.444	.789	.679	.739
PIQ5	20.8611	16.123	.365	.135	.852

2.2 Trust

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.889	.894	5

Inter-Item Correlation Matrix

	TR1	TR2	TR3	TR4	TR5
TR1	1.000	.577	.650	.778	.614
TR2	.577	1.000	.553	.575	.609
TR3	.650	.553	1.000	.766	.473
TR4	.778	.575	.766	1.000	.692
TR5	.614	.609	.473	.692	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
TR1	19.5556	13.854	.786	.638	.857
TR2	19.1389	15.037	.666	.479	.882
TR3	19.5278	12.885	.723	.629	.868
TR4	19.6111	10.644	.857	.777	.838
TR5	19.2778	13.463	.692	.572	.874

2.3 Perceived Sense of Belonging

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.934	.936	5

Inter-Item Correlation Matrix

	PSOB1	PSOB2	PSOB3	PSOB4	PSOB5
PSOB1	1.000	.680	.768	.840	.811
PSOB2	.680	1.000	.641	.633	.692
PSOB3	.768	.641	1.000	.737	.773
PSOB4	.840	.633	.737	1.000	.867
PSOB5	.811	.692	.773	.867	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PSOB1	16.4444	29.340	.873	.772	.910
PSOB2	16.1389	36.980	.718	.531	.940
PSOB3	16.2222	33.549	.810	.663	.922
PSOB4	17.1944	30.390	.872	.807	.910
PSOB5	16.8889	28.959	.889	.809	.907

2.4 Brand Loyalty

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.882	.883	7

Inter-Item Correlation Matrix

	ABL1	ABL2	ABL3	BBL1	BBL2	BBL3	BBL4
ABL1	1.000	.684	.410	.404	.254	.367	.449
ABL2	.684	1.000	.576	.456	.288	.330	.418
ABL3	.410	.576	1.000	.588	.412	.403	.365
BBL1	.404	.456	.588	1.000	.719	.716	.639
BBL2	.254	.288	.412	.719	1.000	.817	.797
BBL3	.367	.330	.403	.716	.817	1.000	.797
BBL4	.449	.418	.365	.639	.797	.797	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ABL1	30.5556	28.025	.528	.528	.885
ABL2	30.2778	29.635	.584	.585	.875

ABL3	30.2500	29.679	.576	.478	.876
BBL1	30.8333	26.657	.771	.662	.852
BBL2	30.4444	27.283	.722	.775	.858
BBL3	30.7778	25.892	.756	.752	.853
BBL4	30.5278	26.199	.768	.745	.851

2.5 Perceived Ease of Use

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.882	.881	5

Inter-Item Correlation Matrix

	PEOU1	PEOU2	PEOU3	PEOU4	PEOU5
PEOU1	1.000	.606	.612	.492	.486
PEOU2	.606	1.000	.616	.360	.470
PEOU3	.612	.616	1.000	.720	.773
PEOU4	.492	.360	.720	1.000	.830
PEOU5	.486	.470	.773	.830	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PEOU1	22.2778	12.321	.638	.477	.875
PEOU2	22.3889	12.187	.584	.494	.885
PEOU3	22.4167	9.679	.844	.718	.824
PEOU4	22.3889	10.244	.739	.724	.852
PEOU5	22.1944	10.047	.800	.758	.836

2.6 Perceived Usefulness

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.922	.922	6

Inter-Item Correlation Matrix

	PU1	PU2	PU3	PU4	PU5	PU6
PU1	1.000	.686	.566	.570	.648	.588
PU2	.686	1.000	.702	.700	.518	.466
PU3	.566	.702	1.000	.848	.719	.698
PU4	.570	.700	.848	1.000	.818	.682
PU5	.648	.518	.719	.818	1.000	.756
PU6	.588	.466	.698	.682	.756	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PU1	27.6667	17.314	.705	.641	.917
PU2	27.5000	16.943	.712	.702	.917
PU3	27.5833	16.136	.836	.772	.899
PU4	27.3611	16.180	.862	.841	.896
PU5	27.4167	16.479	.811	.791	.903
PU6	27.3333	17.657	.740	.640	.913

2.7 Behavioural Intention to Use

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.781	.783	3

Inter-Item Correlation Matrix

	BIU1	BIU2	BIU3
BIU1	1.000	.511	.620
BIU2	.511	1.000	.508
BIU3	.620	.508	1.000

Item-Total Statistics

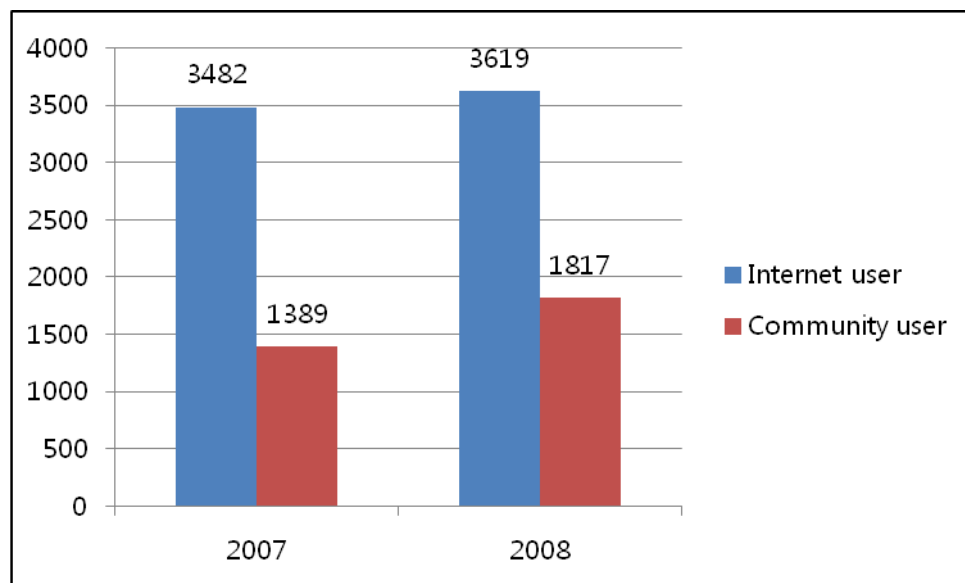
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BIU1	11.0278	3.399	.654	.436	.672
BIU2	10.6389	4.580	.566	.320	.761
BIU3	11.1667	3.971	.655	.434	.665

Appendix C

The reason of why this study choose the South Korea

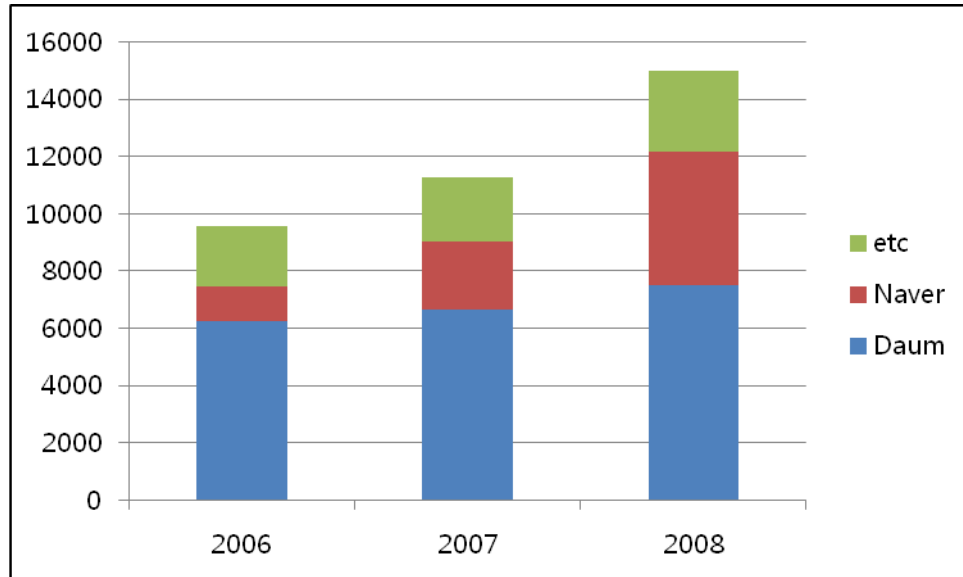
Online communities are emerging as a life space and OBCs are gradually growing in South Korea which is one of the developed countries for IT and IS use. Hence, numerous consumers have been using and doing activities in OBC. The population of South Korea is 48,754,657 in July of 2011(CIA, 2012). According to a research from Samsung Economic Research Institute (SERI), official statistics in 2008 show that 18,170,000 people among 36,190,000 people who are internet users were using online communities in South Korea [Figure 1.1].

Figure 1.1 The number of internet user and community user



Since 2006, approximately 2,700,000 online communities are increased every year and in 2008, the number of online communities has reached around 15,000,000 and most of them were established in portal sites such as Daum and Naver [Figure 1.2].

Figure 1.2 The number of online communities



Furthermore, South Korea is one of the developed countries for IT products and services. Therefore, many companies such as Samsung, LG, and Sony have interested in OBCs and focus on the way to collaborate with OBCs for improving their performance. The research proposed by SERI also reported that 128 companies in South Korea are successfully operating their own OBCs in the company's website and the numerous of OBCs established and succeed by consumers on the web (Lee *et al.*, 2009). The importance of OBCs has been insisted by marketers but, it has been also strongly recognized by engineers and designers today. The companies realize that the OBC members are one of the significant resources to improve their brand products and services and their demands are as indicators to develop new products that consumers needs and wants. Lee *et al.* (2009) who are the researchers in SERI argued that OBC will be more significant and beneficial for companies in terms of marketing, new product development, knowledge sharing and building relationship with consumers. They also insisted that consumers tend to avoid activities in firm initiated OBC rather than consumer initiated OBC because they do not want to be exploited for profit of companies. Hence, they recommend that the collaboration with consumer initiated OBC

is a good strategy for companies to build relationship with consumers and their brand loyalty. Hence, today, some of companies are trying to collaborate with OBCs and its members. These phenomenon indicate consumers' participation of OBC activities becomes more significant for success of OBC as well as business. However, many researchers argued that the members who contribute OBC and engaged in collaboration with firms are very few in OBCs. Furthermore, despite many scholars have been studied on OC, it is lack of understanding OBC members' behaviours to increase consumers' participation.

Within these issues the researcher perceived an exciting research opportunity promising important contributions to both academia and practice. The opportunity takes the form of an examination of members' behavioural modelling applications for generalisation to OBCs related IT products industries. Therefore, this study was conducted in South Korea with seventeen OBCs that are related IT products such as smart phones and Digital single-lens reflex (DSLR) camera. The investigating OBC members' behaviour of South Korea would be able to result in interesting insights. In addition, the investigation would help to improve the general understanding of OBC user behaviour and demonstrate the OBC transition process model with robustness.

Appendix D

1. Kurtosis and Skewness test (Each Items)

Descriptive Statistics (Items)									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PIQ1	518	1.00	7.00	5.5792	.98955	-.630	.107	.474	.214
PIQ2	518	2.00	7.00	5.2529	1.16349	-.659	.107	.219	.214
PIQ3	518	1.00	7.00	5.6004	1.14033	-.940	.107	.919	.214
PIQ4	518	1.00	7.00	5.1293	1.29896	-.603	.107	-.119	.214
PSOB1	518	1.00	7.00	4.2046	1.70238	-.150	.107	-.842	.214
PSOB2	518	1.00	7.00	4.6892	1.33322	-.376	.107	-.004	.214
PSOB3	518	1.00	7.00	4.6641	1.48203	-.412	.107	-.274	.214
PSOB4	518	1.00	7.00	3.7703	1.74687	.152	.107	-.831	.214
PSOB5	518	1.00	7.00	4.0077	1.68849	-.085	.107	-.916	.214
ABL1	518	1.00	7.00	5.2568	1.32295	-.732	.107	.148	.214
ABL2	518	1.00	7.00	5.2992	1.27057	-.735	.107	.272	.214
ABL3	518	1.00	7.00	5.2799	1.35299	-.791	.107	.466	.214
BBL1	518	1.00	7.00	4.4595	1.59220	-.380	.107	-.580	.214
BBL2	518	1.00	7.00	5.1236	1.36981	-.677	.107	.284	.214
BBL3	518	1.00	7.00	4.6467	1.62687	-.411	.107	-.554	.214
BBL4	518	1.00	7.00	5.0232	1.40579	-.528	.107	-.055	.214
PU1	518	1.00	7.00	5.4208	1.10935	-.717	.107	.574	.214
PU2	518	2.00	7.00	5.4382	1.01585	-.570	.107	.288	.214
PU3	518	1.00	7.00	5.4575	1.04868	-.534	.107	.154	.214

PU4	518	1.00	7.00	5.5193	1.01183	-.660	.107	.437	.214
PU5	518	2.00	7.00	5.4035	1.07249	-.669	.107	.109	.214
PU6	518	2.00	7.00	5.5425	1.00921	-.564	.107	-.044	.214
BIU1	518	1.00	7.00	5.5058	1.30871	-.860	.107	.361	.214
BIU2	518	1.00	7.00	5.7838	1.04612	-1.075	.107	1.554	.214
BIU3	518	1.00	7.00	5.5907	1.13434	-.777	.107	.445	.214
PEOU1	518	1.00	7.00	5.5849	1.15338	-1.123	.107	1.553	.214
PEOU2	518	1.00	7.00	5.3996	1.17376	-.788	.107	.442	.214
PEOU3	518	1.00	7.00	5.5483	1.09358	-.680	.107	.158	.214
PEOU4	518	1.00	7.00	5.6255	1.09451	-.807	.107	.784	.214
PEOU5	518	1.00	7.00	5.6100	1.09970	-.882	.107	.734	.214
TR1	518	2.00	7.00	5.0347	1.17137	-.234	.107	-.473	.214
TR2	518	2.00	7.00	5.3069	1.04465	-.394	.107	-.261	.214
TR3	518	1.00	7.00	5.1313	1.23542	-.542	.107	.084	.214
TR4	518	1.00	7.00	4.8958	1.31379	-.547	.107	-.087	.214
TR5	518	1.00	7.00	5.1255	1.13230	-.393	.107	.025	.214
Valid N (listwise)	518								

2. Kolmogorov-Smirnov and Shapiro-Wilk test (Each Items)

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PIQ1	.263	518	.000	.879	518	.000
PIQ2	.205	518	.000	.902	518	.000
PIQ3	.261	518	.000	.870	518	.000
PIQ4	.200	518	.000	.914	518	.000
PSOB1	.155	518	.000	.937	518	.000
PSOB2	.156	518	.000	.933	518	.000
PSOB3	.155	518	.000	.931	518	.000
PSOB4	.133	518	.000	.940	518	.000
PSOB5	.135	518	.000	.942	518	.000
ABL1	.221	518	.000	.901	518	.000
ABL2	.233	518	.000	.897	518	.000
ABL3	.203	518	.000	.898	518	.000
BBL1	.151	518	.000	.934	518	.000
BBL2	.185	518	.000	.908	518	.000
BBL3	.141	518	.000	.932	518	.000
BBL4	.179	518	.000	.918	518	.000
PU1	.234	518	.000	.893	518	.000
PU2	.241	518	.000	.891	518	.000
PU3	.240	518	.000	.895	518	.000
PU4	.264	518	.000	.882	518	.000
PU5	.263	518	.000	.884	518	.000
PU6	.264	518	.000	.884	518	.000
BIU1	.248	518	.000	.875	518	.000
BIU2	.283	518	.000	.846	518	.000
BIU3	.251	518	.000	.881	518	.000
PEOU1	.299	518	.000	.844	518	.000
PEOU2	.261	518	.000	.884	518	.000
PEOU3	.272	518	.000	.876	518	.000
PEOU4	.254	518	.000	.876	518	.000
PEOU5	.283	518	.000	.863	518	.000
TR1	.191	518	.000	.917	518	.000
TR2	.233	518	.000	.899	518	.000
TR3	.213	518	.000	.909	518	.000
TR4	.186	518	.000	.916	518	.000
TR5	.193	518	.000	.915	518	.000

a. Lilliefors Significance Correction

Appendix E

1. Communalities (The second test)

Communalities					
	Initial	Extraction		Initial	Extraction
PIQ2	1.000	.796	BIU1	1.000	.786
PIQ3	1.000	.695	BIU2	1.000	.844
PIQ4	1.000	.804	BIU3	1.000	.859
PSOB1	1.000	.836	PEOU1	1.000	.703
PSOB2	1.000	.644	PEOU2	1.000	.769
PSOB3	1.000	.790	PEOU3	1.000	.759
PSOB4	1.000	.829	PEOU4	1.000	.688
PSOB5	1.000	.771	PEOU5	1.000	.759
ABL2	1.000	.639	TR1	1.000	.728
ABL3	1.000	.650	TR2	1.000	.669
BBL1	1.000	.691	TR3	1.000	.700
BBL2	1.000	.768	TR4	1.000	.728
BBL3	1.000	.793	TR5	1.000	.692
BBL4	1.000	.815			
PU1	1.000	.650			
PU2	1.000	.722			
PU3	1.000	.755			
PU4	1.000	.764			
PU5	1.000	.774			
PU6	1.000	.757			

Extraction Method: Principal Component Analysis.

Appendix G

1. Item-to-total correlation

[Factor 1] Perceived Usefulness

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PU1	27.3610	20.316	.715	.558	.922
PU2	27.3436	20.454	.785	.646	.912
PU3	27.3243	20.061	.803	.658	.910
PU4	27.2625	20.333	.805	.675	.910
PU5	27.3784	19.810	.811	.717	.909
PU6	27.2394	20.384	.801	.681	.910

[Factor 2] Brand Loyalty

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ABL2	24.5328	40.137	.687	.584	.912
ABL3	24.5521	39.126	.700	.597	.910
BBL1	25.3726	36.165	.737	.584	.906
BBL2	24.7085	37.383	.809	.708	.895
BBL3	25.1853	34.515	.819	.730	.894
BBL4	24.8089	36.406	.851	.779	.889

[Factor 3] Perceived Sense of belonging

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PSOB1	17.1313	29.488	.856	.736	.887
PSOB2	16.6467	35.482	.689	.497	.920
PSOB3	16.6718	32.263	.817	.680	.896

PSOB4	17.5656	29.647	.815	.689	.896
PSOB5	17.3282	30.519	.795	.649	.900

[Factor 4] Perceived Ease of Use

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PEOU1	22.1834	14.947	.728	.613	.889
PEOU2	22.3687	14.562	.762	.647	.882
PEOU3	22.2201	14.942	.784	.645	.877
PEOU4	22.1429	15.314	.730	.587	.888
PEOU5	22.1583	14.845	.792	.658	.875

[Factor 5] Trust

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
TR1	20.4595	15.483	.746	.582	.849
TR2	20.1873	16.733	.691	.515	.863
TR3	20.3629	15.199	.727	.541	.853
TR4	20.5985	14.813	.711	.551	.859
TR5	20.3687	15.966	.717	.544	.856

[Factor 6] Perceived Information Quality

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
--	-------------------------------	-----------------------------------	--------------------------------------	---------------------------------	--

PIQ2	10.7297	4.782	.751	.572	.750
PIQ3	10.3822	5.219	.659	.436	.835
PIQ4	10.8533	4.296	.738	.561	.764

[Factor 7] Behavioural Intention to Use

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BIU1	11.3745	4.208	.736	.547	.868
BIU2	11.0965	5.132	.770	.618	.831
BIU3	11.2896	4.628	.811	.669	.787

2. Inter-Item correlation

[Factor 1] Perceived Usefulness

Inter-Item Correlation Matrix

	PU1	PU2	PU3	PU4	PU5	PU6
PU1	1.000	.715	.617	.606	.587	.603
PU2	.715	1.000	.705	.653	.645	.660
PU3	.617	.705	1.000	.736	.702	.690
PU4	.606	.653	.736	1.000	.760	.699
PU5	.587	.645	.702	.760	1.000	.789
PU6	.603	.660	.690	.699	.789	1.000

[Factor 2] Brand Loyalty

Inter-Item Correlation Matrix

	ABL2	ABL3	BBL1	BBL2	BBL3	BBL4
ABL2	1.000	.732	.520	.577	.546	.609
ABL3	.732	1.000	.520	.569	.594	.624

BBL1	.520	.520	1.000	.690	.724	.672
BBL2	.577	.569	.690	1.000	.738	.815
BBL3	.546	.594	.724	.738	1.000	.816
BBL4	.609	.624	.672	.815	.816	1.000

[Factor 3] Perceived Sense of belonging

Inter-Item Correlation Matrix

	PSOB1	PSOB2	PSOB3	PSOB4	PSOB5
PSOB1	1.000	.666	.782	.768	.745
PSOB2	.666	1.000	.652	.575	.593
PSOB3	.782	.652	1.000	.734	.684
PSOB4	.768	.575	.734	1.000	.757
PSOB5	.745	.593	.684	.757	1.000

[Factor 4] Perceived Ease of Use

Inter-Item Correlation Matrix

	PEOU1	PEOU2	PEOU3	PEOU4	PEOU5
PEOU1	1.000	.761	.592	.542	.618
PEOU2	.761	1.000	.649	.573	.630
PEOU3	.592	.649	1.000	.704	.743
PEOU4	.542	.573	.704	1.000	.719
PEOU5	.618	.630	.743	.719	1.000

[Factor 5] Trust

Inter-Item Correlation Matrix

	TR1	TR2	TR3	TR4	TR5
TR1	1.000	.669	.658	.578	.586
TR2	.669	1.000	.600	.511	.558
TR3	.658	.600	1.000	.609	.563
TR4	.578	.511	.609	1.000	.684
TR5	.586	.558	.563	.684	1.000

[Factor 6] Perceived Information Quality

Inter-Item Correlation Matrix

	PIQ2	PIQ3	PIQ4
PIQ2	1.000	.619	.721
PIQ3	.619	1.000	.606
PIQ4	.721	.606	1.000

[Factor 7] Behavioural Intention to Use

Inter-Item Correlation Matrix

	BIU1	BIU2	BIU3
BIU1	1.000	.665	.718
BIU2	.665	1.000	.770
BIU3	.718	.770	1.000

Appendix H

1. Unidimensionality for Perceived Information Quality

Residual Covariances (Group number 1 - Default model)

	PIQ2	PIQ3	PIQ4
PIQ2	.000		
PIQ3	.000	.000	
PIQ4	.000	.000	.000

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
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Variances: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

2. Unidimensionality for Trust

CFA indexes for Trust (the 1st test)

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	13.662	.948	.884	.949	.953	.905	.156

Estimated values for Trust (The 1st test)

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
TR4 <- TR	1000			.761	.579
TR3 <- TR	.974	.055	17.676	.788	.621
TR1 <- TR	.953	.054	17.704	.813	.661
TR2 <- TR	.788	.048	16.383	.754	.569
TR5 <- TR	.863	.049	17.750	.762	.580

Standardized Residual Covariances (Group number 1 - Default model) (The 1st test)

	TR5	TR2	TR1	TR4	TR3
TR5	.000				
TR2	-.336	.000			
TR1	-.649	1.086	.000		
TR4	2.044	-1.243	-.787	.000	
TR3	-.724	.098	.335	.180	.000

Modification Indices (Group number 1 - Default model) (The 1st test)

Covariances: (Group number 1 - Default model) (The 1st test)

	M.I.	Par Change
e31 <--> e35	5.970	-.065
e31 <--> e32	16.071	.099
e34 <--> e35	43.149	.211
e34 <--> e32	15.349	-.117
e34 <--> e31	8.719	-.091
e33 <--> e35	6.319	-.073

Standardized Residual Covariances (Group number 1 - Default model) (The 2nd Test)

	TR5	TR2	TR1	TR3
TR5	.000			
TR2	.055	.000		
TR1	-.214	.118	.000	
TR3	.269	-.219	.026	.000

Modification Indices (Group number 1 - Default model) (The 2nd Test)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change

3. Unidimensionality for Perceived Sense of Belonging

CFA indexes for Perceived Sense of Belonging (The 1st test)

Model	CMIN/D F	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	6.511	.975	.925	.983	.985	.971	.103

Estimated values for Perceived Sense of belonging (The 1st test)

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
PSOB 5<- PSOB	1.000			.832	.692
PSOB 4<- PSOB	1.068	.044	24.279	.859	.737
PSOB 3<- PSOB	.905	.038	23.655	.858	.735
PSOB 2<- PSOB	.686	.037	18.515	.723	.522
PSOB 1<- PSOB	1.096	.043	25.777	.904	.817

Standardized Residual Covariances (Group number 1 - Default model) (The 1st test)

	PSOB1	PSOB5	PSOB2	PSOB3	PSOB4
PSOB1	.000				
PSOB5	-.118	.000			
PSOB2	.254	-.152	.000		
PSOB3	.134	-.547	.623	.000	
PSOB4	-.147	.791	-.882	-.033	.000

Modification Indices (Group number 1 - Default model) (The 1st test)

Covariances: (Group number 1 - Default model) (The 1st test)

	M.I.	Par Change
e13 <--> e15	7.772	-.104
e13 <--> e12	5.587	.084
e14 <--> e15	16.420	.177
e14 <--> e12	11.312	-.140

Standardized Residual Covariances (Group number 1 - Default model) (The 2nd Test)

	PSOB1	PSOB5	PSOB2	PSOB3
PSOB1	.000			
PSOB5	.133	.000		
PSOB2	-.160	-.086	.000	

	PSOB1	PSOB5	PSOB2	PSOB3
PSOB3	-.017	-.187	.335	.000

Modification Indices (Group number 1 - Default model) (The 2nd Test)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

Variances: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
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4. Unidimensionality for Brand Loyalty

CFA indexes for Brand Loyalty (The 1st test)

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	< .80
Default model	22.595	.894	.754	.913	.916	.861	.204

Estimated values for Brand Loyalty (The 1st test)

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
BBL 4 <- BL	1.000			.918	.842
BBL 3 <- BL	1.105	.036	30.409	.876	.767
BBL 2 <- BL	.921	.031	29.882	.867	.752
BBL 1 <- BL	.953	.042	22.860	.772	.597
ABL 3 <- BL	.732	.038	19.371	.698	.487
ABL 2 <- BL	.671	.036	18.644	.681	.464

Standardized Residual Covariances (Group number 1 - Default model) (The 1st test)

	BBL4	BBL3	BBL2	BBL1	ABL2	ABL3
BBL4	.000					
BBL3	.220	.000				
BBL2	.342	-.390	.000			
BBL1	-.685	.899	.372	.000		
ABL2	-.315	-.991	-.283	-.130	.000	
ABL3	-.317	-.336	-.712	-.380	5.263	.000

Modification Indices (Group number 1 - Default model) (The 2nd Test)

Covariances: (Group number 1 - Default model) (The 1st test)

	M.I.	Par Change
e25 <--> e27	8.091	.061
e25 <--> e26	6.105	-.070
e24 <--> e27	17.428	-.130
e24 <--> e26	16.985	.167
e22 <--> e26	14.044	-.138
e23 <--> e25	7.054	-.088
e23 <--> e22	138.578	.493

CFA indexes for Brand Loyalty (The 2nd test)

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	8.340	.972	.915	.978	.980	.961	.119

Estimated values for Brand Loyalty (The 2nd test)

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
BBL 4 <- BL	1.000			.921	.848
BBL 3 <- BL	1.110	.036	30.704	.883	.780
BBL 2 <- BL	.919	.031	29.953	.868	.754
BBL 1 <- BL	.950	.042	22.730	.772	.597
ABL 3 <- BL	.701	.038	18.365	.671	.450

Standardized Residual Covariances (Group number 1 - Default model) (The 2nd test)

	BBL4	BBL3	BBL2	BBL1	ABL3
BBL4	.000				
BBL3	.054	.000			
BBL2	.280	-.516	.000		
BBL1	-.730	.790	.358	.000	
ABL3	.122	.031	-.268	.039	.000

Modification Indices (Group number 1 - Default model) (The 2nd Test)

Covariances: (Group number 1 - Default model) (The 2nd test)

	M.I.	Par Change
e25 <--> e27	5.853	.052
e25 <--> e26	11.776	-.096
e24 <--> e27	21.286	-.143
e24 <--> e26	14.341	.151

Standardized Residual Covariances (Group number 1 - Default model)
(The 3rd Test Result)

	BBL4	BBL3	BBL2	ABL3
BBL4	.000			
BBL3	-.009	.000		
BBL2	.045	-.094	.000	
ABL3	-.106	.359	-.081	.000

Modification Indices (Group number 1 - Default model) (The 3rd Test Result)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
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Variances: (Group number 1 - Default model)

	M.I.	Par Change
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Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
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5. Unidimensionality for Perceived Ease of Use

CFA indexes for Perceived Ease of Use (The 1st test)

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	28.337	.898	.694	.916	.919	.837	.230

Estimated values for Perceived Ease of Use (The 1st test)

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression	Squared multiple
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				weight	correlation
Significant value			Above 1.96	Above .5	
PEOU5 <- PEOU	1000			.856	.733
PEOU4<- PEOU	.925	0.42	21.928	.796	.634
PEOU3 <- PEOU	.985	0.41	24.017	.848	.719
PEOU2<- PEOU	.978	0.48	20.295	.785	.616
PEOU1<- PEOU	.922	0.48	19.172	.752	.566

Standardized Residual Covariances (Group number 1 - Default model) (The 1st test)

	PEOU2	PEOU1	PEOU5	PEOU4	PEOU3
PEOU2	.000				
PEOU1	3.348	.000			
PEOU5	-.783	-.505	.000		
PEOU4	-.999	-1.119	.699	.000	
PEOU3	-.318	-.888	.303	.535	.000

Modification Indices (Group number 1 - Default model) (The 1st test)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e41 <--> e42	117.869	.300
e45 <--> e42	12.857	-.079
e45 <--> e41	4.513	-.048
e44 <--> e42	13.283	-.090
e44 <--> e41	14.066	-.095
e44 <--> e45	10.923	.067
e43 <--> e41	12.954	-.083
e43 <--> e44	5.947	.050

Standardized Residual Covariances (Group number 1 - Default model) (The 2nd Result)

	PEOU2	PEOU5	PEOU4	PEOU3
PEOU2	.000			
PEOU5	-.044	.000		
PEOU4	-.433	.211	.000	
PEOU3	.350	-.128	-.028	.000

Modification Indices (Group number 1 - Default model) (The 2nd Result)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
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6. Unidimensionality for Perceived Usefulness

CFA indexes for Perceived Usefulness (The 1st Test)

Model	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	13.597	.924	.823	.947	.951	.918	.156

Estimated values for Perceived Usefulness (The 1st Test)

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
PU 5 <- PU	1000			.865	.747
PU6 <- PU	.922	.036	25.495	.847	.717
PU4 <- PU	.927	.037	25.332	.850	.722
PU3 <- PU	.949	.039	24.296	.839	.705
PU2 <- PU	.877	.039	22.220	.800	.641
PU1 <- PU	.879	.045	19.504	.735	.540

Standardized Residual Covariances (Group number 1 - Default model) (The 1st Test)

	PU6	PU2	PU1	PU5	PU4	PU3
PU6	.000					
PU2	-.334	.000				
PU1	-.386	2.480	.000			
PU5	1.045	-.874	-.931	.000		
PU4	-.382	-.508	-.356	.464	.000	
PU3	-.392	.621	.005	-.431	.423	.000

Modification Indices (Group number 1 - Default model) (The 1st Test)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e51 <--> e52	61.457	.175
e55 <--> e56	33.996	.089
e55 <--> e52	17.231	-.070
e55 <--> e51	14.023	-.077
e54 <--> e52	5.094	-.037
e54 <--> e55	6.875	.040

	M.I.	Par Change
e53 <--> e52	7.008	.047
e53 <--> e55	5.461	-.038
e53 <--> e54	4.611	.034

CFA indexes for Perceived Usefulness (The 2nd Test)

Model fit index	CMIN/DF	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	Above .90	Above .80	Above .90	Above .95	Above .90	<.80
Default model	7.821	.970	.910	.978	.981	.962	.115

Estimated values for Perceived Usefulness (The 2nd Test)

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation
Significant value			Above 1.96	Above .5	
PU5 <- PU	1.000			.885	.783
PU6 <- PU	.909	.034	26.624	.855	.730
PU4 <- PU	.912	.035	26.036	.856	.732
PU3 <- PU	.911	.038	23.978	.824	.679
PU1 <- PU	.819	.044	18.541	.701	.491

Standardized Residual Covariances (Group number 1 - Default model) (The 2nd Test)

	PU6	PU1	PU5	PU4	PU3
PU6	.000				
PU1	.071	.000			
PU5	.598	-.640	.000		
PU4	-.590	.129	.055	.000	
PU3	-.267	.785	-.492	.581	.000

Modification Indices (Group number 1 - Default model) (The 2nd Test)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e55 <--> e56	15.215	.056
e55 <--> e51	7.410	-.057
e54 <--> e56	11.004	-.049
e53 <--> e51	6.369	.059
e53 <--> e55	8.155	-.046
e53 <--> e54	8.431	.047

Variances: (Group number 1 - Default model)

	M.I.	Par Change
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Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
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Standardized Residual Covariances (Group number 1 - Default model)
(The 3rd Test Result)

	PU6	PU1	PU4	PU3
PU6	.000			
PU1	.271	.000		
PU4	.011	-.222	.000	
PU3	-.134	.018	.092	.000

Modification Indices (Group number 1 - Default model) (The 3rd Test Result)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
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Variances: (Group number 1 - Default model)

	M.I.	Par Change
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Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
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7. Unidimensionality for Behavioural Intention to Use

Standardized Residual Covariances (Group number 1 - Default model)

	BIU2	BIU1	BIU3
BIU2	.000		
BIU1	.000	.000	
BIU3	.000	.000	.000

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

Variances: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
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Appendix I

1. Confirmation measurement model with all construct (The first test).

Fit indexes for measurement model with all constructs

Chi-square (χ^2) = 600.350, Degree of freedom (df) = 278, $p = .000$								
Model fit index	CMIN/DF	RMR	GFI	AGFI	NFI	CFI	TLI	RMSEA
Significant level	< 2.83	<.1	Above .90	Above .80	Above .90	Above .90	Above .90	<.80
Default model	2.160	.070	.917	.895	.938	.965	.959	.047

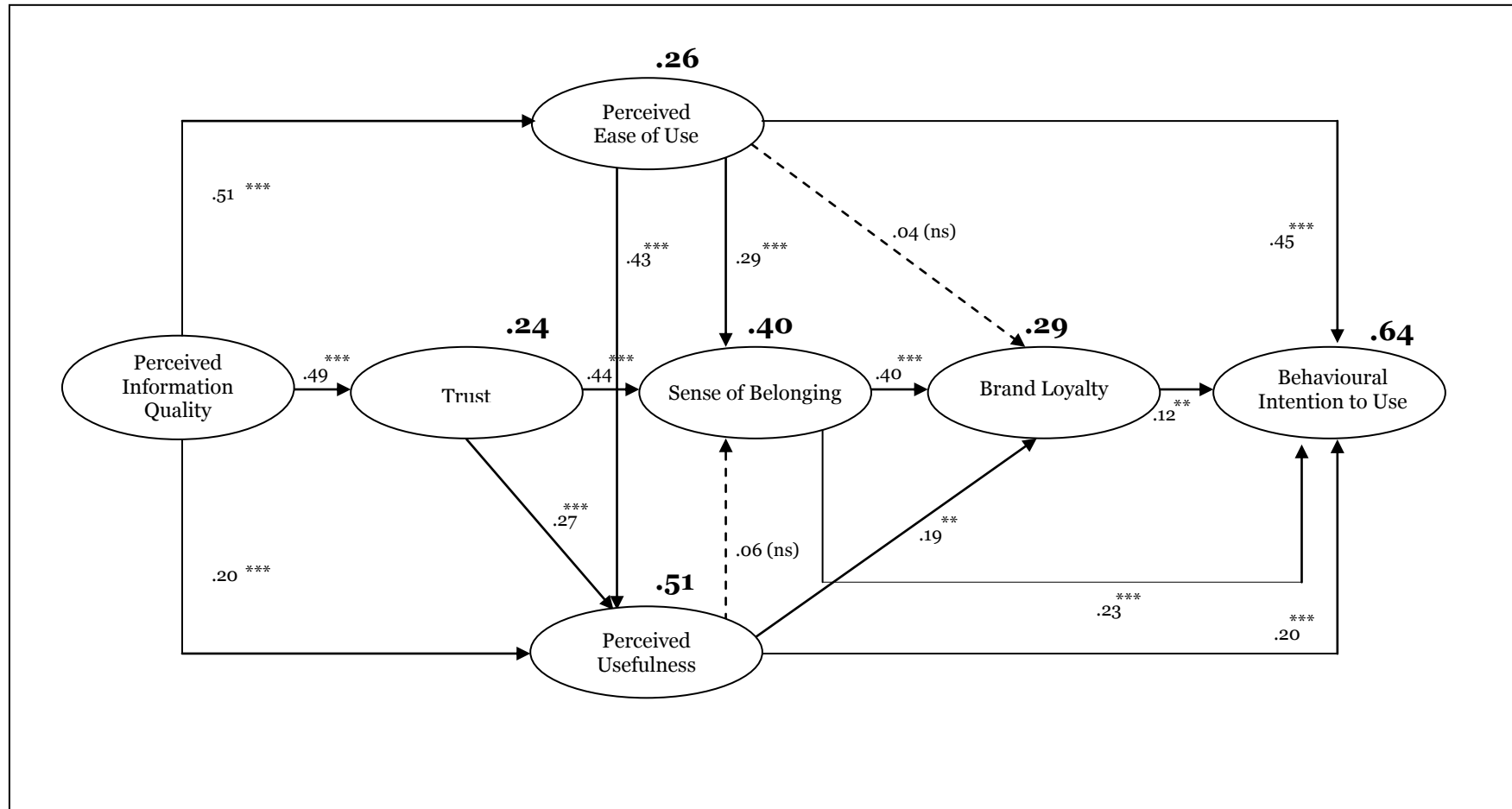
Path loadings, critical ratios and R square values in the measurement model

Structural relation	Regression weight	Standard error	Critical ratio (t-value)	Standardized regression weight	Squared multiple correlation (R^2)
Significant value	-	-	Above 1.96	Above .5	-
PIQ4 < PIQ	1.000			.836	.698
PIQ3 < PIQ	.773	.044	17.467	.736	.542
PIQ2 < PIQ	.912	.044	20.604	.851	.724
TR3 < TR	1.000			.776	.601
TR5 < TR	.860	.052	16.575	.727	.529
TR2 < TR	.871	.048	18.210	.799	.638
TR1 < TR	1.000	.052	19.130	.818	.670
PSOB5 < PSOB	1.000			.806	.649
PSOB3 < PSOB	.938	.042	22.405	.861	.742
PSOB2 < PSOB	.745	.039	18.901	.760	.577
PSOB1 < PSOB	1.126	.047	24.094	.900	.810
BBL3 < BL	1.000			.864	.747
BBL4 < BL	.940	.031	30.240	.940	.884
BBL2 < BL	.843	.032	26.132	.865	.748
ABL3 < BL	.646	.037	17.528	.671	.451
PEOU5 < PEOU	1.000			.870	.756
PEOU4 < PEOU	.936	.040	23.219	.818	.669
PEOU3 < PEOU	.977	.039	24.809	.854	.730
PEOU2 < PEOU	.906	.046	19.580	.738	.545
PU4 < PU	1.000			.846	.716
PU6 < PU	.965	.044	22.136	.819	.671
PU3 < PU	1.050	.044	23.720	.857	.735
PU1 < PU	.943	.051	18.556	.728	.530

BIU3 < BIU	1.000			.895	.801
BIU2 < BIU	.865	.034	25.165	.839	.704
BIU 1 < BIU	1.050	.046	23.019	.814	.663

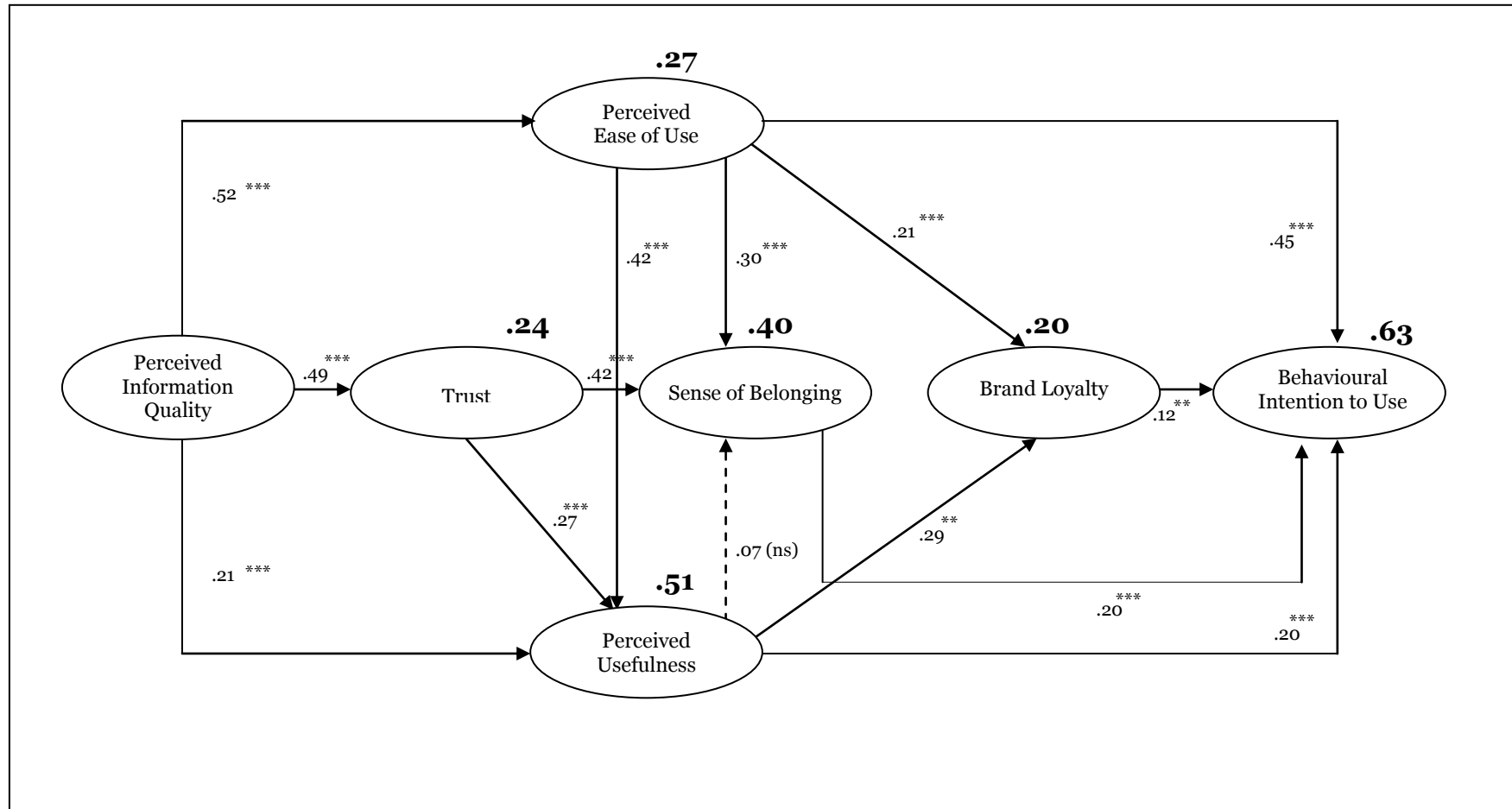
Appendix J

The Main Result of SEM (n = 518)



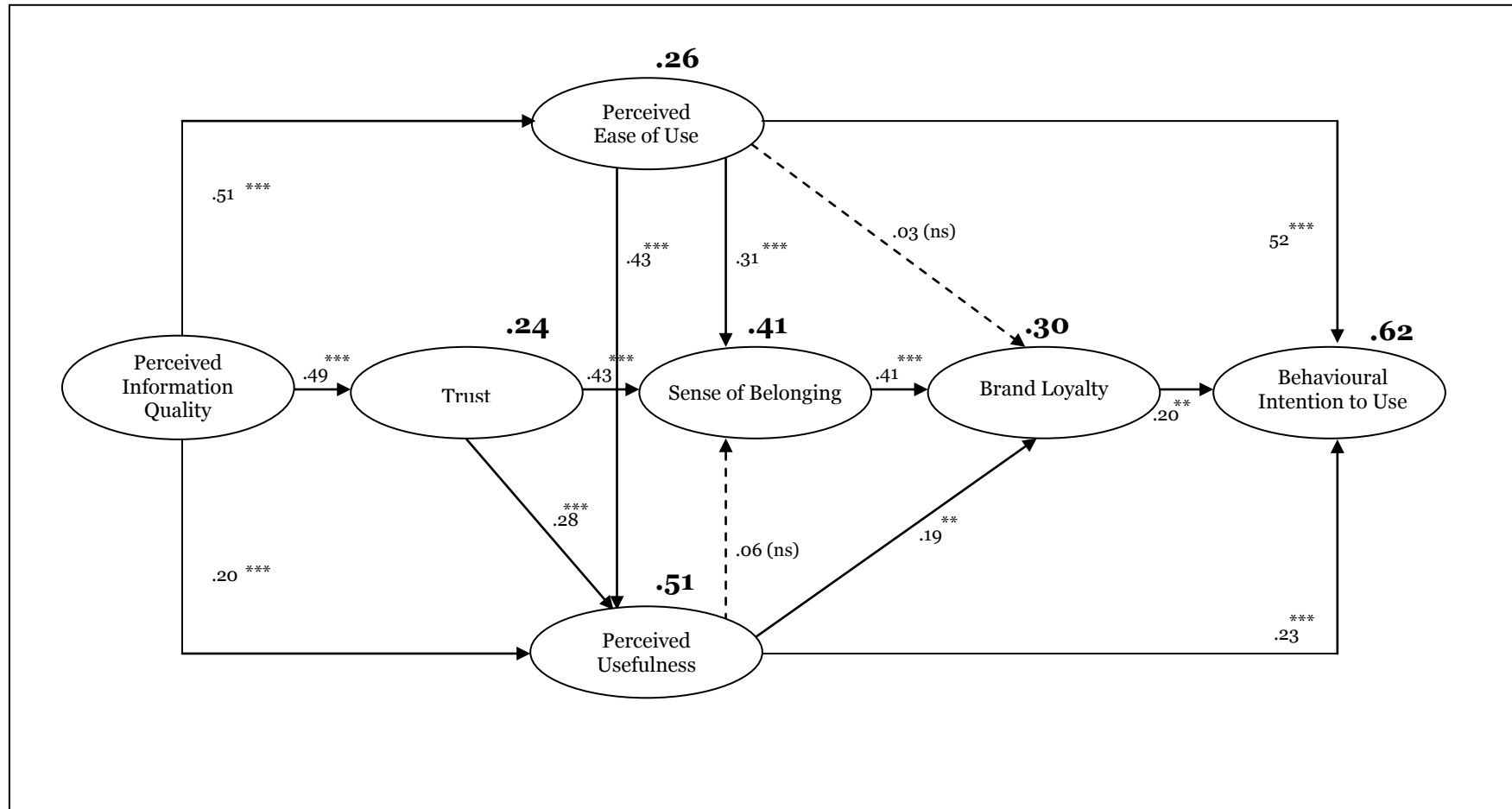
Testing results, normed $\chi^2 = 2.579$, RMSEA = 0.055, GFI = 0.905, AGFI = 0.881, CFI = 0.954, NFI = 0.928, TLI = .947 (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, ns: non-significance level).

The mediation role of Brand loyalty (n = 518)



Testing results, normed $\chi^2 = 2.798$, RMSEA = 0.059, GFI = 0.895, AGFI = 0.870, CFI = 0.948, NFI = 0.922, TLI = .940 (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, ns: non-significance level).

The mediation role of Brand loyalty (n = 518)



Testing results, normed $\chi^2 = 2.670$, RMSEA = 0.057, GFI = 0.903, AGFI = 0.879, CFI = 0.952, NFI = 0.925, TLI = .944 (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, ns: non-significance level).