THE DEVELOPMENT OF A MEASURE OF CUSTOMER-ORIENTED PRODUCT RETURNS SERVICE PERFORMANCE

BY

MRS. CHONLADA SAJJANIT

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
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FACULTY OF COMMERCE AND ACCOUNTANCY
THAMMASAT UNIVERSITY
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ENTITLED

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was approved as partial fulfillment of the requirements for
the degree of Doctor of Philosophy (Business Administration)

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ABSTRACT

Product returns or reverse logistics management has emerged as a strategic issue within the field of supply chain management over the last few decades. Effective product returns management can increase firm's profitability, enhance customer satisfaction and lead to long term customer relationships. Although the core processes of reverse flow of products start from unhappy customers, existing literatures in product returns management have been mainly focused on the firm process and economic operations, instead of the customer-based and relational approach. To manage product returns successfully, the study proposed that the marketing and reverse logistics interface must be taken into account. Drawing upon extant literature in the field of marketing, the study applies the initiatives of service-dominant logic, customer value cocreation, customer orientation, customer expectations, service recovery and service quality to product returns management.

Employing qualitative consumer interviews and a quantitative survey, the study conceptualized the construct of customer - oriented product returns service (COPRS) performance and operationalized as well as validated its measure. Samples were mobile telephone customers, a rapidly growing industry in Thailand. Findings, based on qualitative content analysis and Confirmatory Factor Analysis (CFA), reported twelve components with 46 measurable items of the COPRS performance measure including tangibles, responsiveness, explanation, empathy, employee empowerment, reliability, timeliness, information availability, assurance,

compensation, feedback, and convenience. Additionally, hypotheses results from Structural Equation Modeling (SEM) confirmed the role of COPRS performance in enhancing long-term customer relationships when considered two key elements of customer satisfaction and trust. The study claims that it is one of the first academic works to substantiate the notion of marketing and reverse logistics interface, the underrepresented body of knowledge in the related disciplines. Put differently, the incorporation of marketing concepts into product returns management enhances holistic and cross-disciplinary in services marketing and reverse logistics disciplines. The developed measure in customer service area could facilitate future empirical studies in product returns and reverse logistics area. It enables practitioners to pay more attention to functional integration in designing returns service strategies meeting long-term customer satisfaction. Managers could evaluate their existing returns service performance in key different aspects based on the COPRS performance metrics and then improve their returns offering accordingly.

Keywords: Customer orientation, Functional integration, Performance measurement, Product returns, Reverse logistics, Service-dominant logic, Value co-creation

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Mrs. Chonlada Sajjanit

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Symbols/Abbreviations	Terms
AS	Assurance
COPRS	Customer-Oriented Product Returns Service
COPRS Performance	Customer-Oriented Product Returns Service Performance
CP	Convenient Process
CS	Compensation
CT	Customer Trust
EN	Explanation
EP	Empowerment
ET	Empathy
CT	Customer Trust
FB	Feedback
IA	Information Availability
RL	Reliability
RP	Responsiveness
RS	Returns Satisfaction
TB	Tangibles
TL	Timeliness

CHAPTER 1
INTRODUCTION

1.1 Background of the Study

Product returns present one of the strategic challenges in logistics and supply chain management over the last few decades. According to Rogers & Tibben-Lembke (1998), product returns involve the reverse flow of material or the movement of goods from the point of consumption toward the point of origin. When academics need to study the issue of product returns, reverse logistics has basically been specified (Quinn, 2002; Stock, Speh, & Shear, 2002; Stock & Mulki, 2009). Although the scope of two terms might be different, both terms of product returns and reverse logistics have similarly been defined from the same sources i.e. Rogers, & Tibben-Lembke (1998, 1999, 2001) as the process of managing backward flow of material or goods and related information from the customer to the firm. Hence, both terms are often interchangeably used. In this study, the term of "product returns" would be referred to focus on service operations of returns. Specifically, consumer returns or product returns in the context of end consumers, the largest category of product returns (Rogers, Lambert, Croxton, & Garcia-Dastugue, 2002) are the focus of the current study.

It is widely accepted that one key objective of both marketing (Kohli & Jaworski, 1990; Narver & Slater, 1990) and logistics management (Banomyong, Veerakachen, & Supatn, 2008) is to meet customer requirements. However, most returns processes are not well managed to handle the return of products (Autry, Daugherty & Richey 2001; Huscroft, Hazen, Hall, Skipper, & Hanna, 2013b; Stock & Lambert, 2001). The product return rates account for 15-20% on average of product sold across all industries (Genchev, 2007). Returns problems do not only affect firms' cost and time (French & Discenza, 2006), but also cause customer dissatisfaction (Potdar, 2009; Petersen & Kumar, 2010). Notably, the key reasons underlying consumer returns involve defects and quality issues (Daugherty, Autry, & Ellinger, 2001; French & Discenza, 2006), thus the core processes of reverse flow of products

start from unhappy customers (Potdar, 2009). Managing returns service effectively may alleviate such problems, then customer dissatisfaction could be turned into customer satisfaction. Previous study suggests that effective product returns management can reduce costs, increase revenues, improve profitability and enhance customer service level (Stock, Speh, & Shear, 2006) and finally lead to long-term customer-purchase behavior (Petersen & Kumar, 2010).

While the returns processes are considered as post-purchase customer support (The Supply Chain Council, 2001), prior theoretical researches in product returns and reverse logistics management generally focus on firm foundations, instead of customer perspectives. It is important to note that returns requests are initiated by end consumers and customer return is legitimate (Anderson, Hansen, & Simester, 2009). All customers have reasons for returning a product and firms must provide satisfactory return service experience for long-term customer-company relationships. In brief, while the key issue of product returns management is the customer, extant researches in returns process and management have been firm-oriented. Designing product return policy (Wang, Wang, & Kobaccy, 2007; Yalabik, 2005), forecasting product returns (Agrawal, Singh, & Murtaza, 2014; Potdar, 2009) and reducing product returns (Hess, Chu, & Gerstner, 1996; Scariotta, 2003) are examples of issues emphasized in product returns area of study. In other words, improving the quality of product returns systems has been focused on the firms' point of view (e.g. Bernon, Upperton, Bastl, & Cullen, 2013; Guide & Wassenhove, 2001; Huscroft, 2010; Khan, 2010; Wang et al., 2007). Specifically, most studies in returns management were mostly economic operational-based approach focusing on material transactions rather than customer-based and relational approach. It should be recognized that product returns do not only involve the physical materials that flow in the reverse process but also intangible aspects i.e. customer knowledge and experiences before, during and after the product usage as well as relational exchanges with firms.

According to Huscroft et al. (2013b), the existing researches in reverse logistics area had not provided a good understanding of the key factors regarding customer needs in a reverse logistics process and rare research was found regarding measures of reverse logistics specifically in the customer satisfaction area. It is probable that the past researches of product returns have not incorporated marketing

concept or customer orientation while prior researches (Ruiz-Beitez, 2007; Bernon et al., 2013; Ferguson, Guide, & Souza, 2006) emphasize the coordination between marketing and logistics efforts in improving product returns systems. Functional integration across marketing, logistics and operations disciplines has increasingly been received interests to build firm's competitive advantage (Verma, Thompson, Moore, & Louviere, 2001). Firm benefits are also identified when operations and marketing functions are integrated (O' Leary-Kelly & Flores, 2002).

The current study addresses this issue and proposes that product returns management should integrate marketing concept with reverse logistics process. Although prior studies revealed the positive link between functional integration and firm performance (Lee, Rhee, & Oh, 2014; Turkulainen & Ketokivi, 2012), rare research in product returns and reverse logistics literature emphasized functional integration, specifically in marketing and reverse logistics interface. Broadening this view, the current study highlights the notion of interdisciplinary approach in consumer returns management by integrating marketing initiatives with reverse logistics process. Accordingly, this study suggested that to manage product returns successfully, it is imperative to take service perspective and customer orientation in managing consumer returns to enhance customer satisfaction.

To incorporate marketing theories and concepts into product returns management, one of the seminal works receiving progressively more attention in marketing discipline has been service-dominant (S-D) logic advanced by Vargo & Lusch (2004). Based on the S-D logic of marketing, service is regarded as the core reason for an exchange between firm and customer. The concentration for all businesses has shifted from the firm to the consumer. Consequently, the focal point in product returns management should be extended from goods perspective to service perspective. They posit that service is defined based on customer-determined benefits and cocreated by customers. In this regard, end consumers could actively provide ideas for improving service, which has traditionally been viewed as firm activities (Karpen, Bove, Lukas, & Zyphur, 2015). Lusch, Vargo, and O'Brien, (2007) also proposed that competing through services based on a service-dominant logic needs engaging customers in cocreating service offerings. They put strong emphasis on understanding customer as an integrator of resource in the creation of value

proposition through service experiences. Customers know what they want from services as they are experts on their own consumption of service.

Likewise, Brown & Britner (2006) suggested a strategic guidance to firms to involve customers in co-producing services. Therefore, returns processes should be taken into consideration as service offerings cocreated by customers. Customer then becomes an input and cocreator of service regarded as temporary members of the firms (McColl-Kennedy, Vargo, Dagger, Sweeney, & van Kasteren, 2012). Put differently, the notions of service perspective and customer orientation which are central to S-D logic (Meunier-FitzHugh, Baumann, Palmer, & Wilson, 2011) were utilized in the current study.

According to Hogan, Lemon, and Rust (2002), one key source of competitive advantage of customer-oriented firms is the capability to manage customer information to initiate and maintain relationships with customers. Customer orientation involves a firm's willingness to put its customers first to create customer value (Jack, Powers, & Skinner, 2009; Slater, 1995). Customer-centric product and service development is based on customer-focused information (Brady & Cronin, 2001). Similarly, with regard to the best practice of becoming customer orientation, Brown & Britner (2006) suggest that firms have to understand service from the customer's point of view by listening to them and taking action based on their information.

In addition, managing returns service should be treated as managing service recovery in the reverse flow of the returned products. Service recovery is defined as "the action of a service provider in response to service failure" (Gronroos, 1988). The top five reasons or approximately 84% of most common reasons of product returns i.e. customer dissatisfaction, defective merchandise, incorrect item received, repairs needed and damaged (Daugherty et.al, 2001) are due to the failure of firm's offerings. Accordingly, from customer's assessment, service failure implicitly happens. The customer's recovery needs or the needs of product returns are the outcomes of the company failure in providing offerings to customers. Hence, treating managing the return of products as managing service recovery are the actions taken by firms to respond to service failure.

Considering product returns as service offerings in reverse channels, the quality of service delivery should also be examined. According to the American perspective, service quality is a comparison between customer expectations for what a firm should offer and firm's actual service performance (Parasuraman, Zeuthaml, & Berry, 1985, 1988). Customer expectations play an important role as reference points for consumers to assess the performance of a service provider (Oliver, 1980; Robledo, 2001). It is necessary for firms to take customers' anticipation into account in providing product returns service to meet or exceed customer expectations.

All things considered, the current study suggests that marketing initiatives i.e. service-dominant logic, customer orientation, customer value cocreation, customer expectations, service quality improvement and service recovery management are necessary to be incorporated into product returns management. Past research indicated that the adoption of service – dominant (S-D) orientation could positively impact market and financial performance (Karpen et al., 2015). Consequently, the construct of customer-oriented product returns service (COPRS) was proposed by integrating marketing and logistics discipline.

In this regard, the performance of customer-oriented product returns service (COPRS performance) was needed to be operationalized to assess returns service. It is important to note that traditional financial (economic) performance measures encourage managers to adopt a short-term perspective (Hayes & Abernathy, 1980) whereas customer satisfaction measure results in the long-term benefits to the company (Petersen & Kumar, 2010). According to Huscroft et al. (2013b), metrics of reverse logistics focusing on customer satisfaction or effectiveness of returns process have been largely ignored. Empirical studies in Czech (Skapa & Klapalova, 2012) and the US (Hall, Huscroft, Hazen, & Hanna, 2013) firms also found that measures designed to achieve customer service goal were rarely applied. These scholars suggested that future research should focus more on understanding customer expectations for reverse logistics and devise proper reverse logistics measures.

Additionally, existing measures or some well known service performance measurement frameworks in marketing literature such as SERVQUAL (Parasuraman et al., 1988) and SERVPERF (Cronin & Taylor, 1992) cannot be generalized to measure reverse logistics processes or product returns service due to its unique

characteristics requiring marketing and logistics integration. Unlike other services in traditional forward logistics, returns service starts from the point of destination (customers) to the point of origin (firms). The process starts from unhappy customers (Potdar, 2009) since the customer returns the product for some reasons. Therefore, the specific performance measure of product returns service should be developed from customer expectations to enhance their satisfaction.

Put emphasis on the expectation-disconfirmation paradigm (Oliver, 1980), consumers compare between firm's actual performance and their expectations. Understanding customer expectations is then one key consideration in providing superior services. However, direct performance metrics of product returns service derived from actual customer expectations have not been initiated, the current study extends this paradigm by proposing that the scale measurement of returns service performance should be generated from customer requirement to enhance customer satisfaction.

Furthermore, according to the concept of customer value cocreation, customers provide their returns service experience as a source of developing the new measure. More specifically, the customers supplied information about the specifications of the returns service they expect to receive based on their past experiences. Traditionally viewed, the firm acts an expert in offering its service. In this study, the notion of customer active paradigm is highlighted as customers are viewed as experts on their own consumption of service. Customers then become the cocreators of returns service. In sum, the performance measure of returns service developed from customer perspective has never been proposed. The current study provides such measurement instrument.

Accordingly, to examine the predictive validity of a developed measure of COPRS performance, research hypotheses testing were employed. Given that offering products and services to customers require the formation of relationships (Alsajjan, 2014; Morgan & Hunt, 1994) and the cost of acquiring a new customer is substantially greater than that of retaining an existing one (Ok, 2004; Spreng, Harrell, & Mackoy, 1995), it is crucial for any business to build long-term relationships with customers. Therefore, strengthening customer relationships is the goal of product returns management in the current study. According to Blackston (2000), trust and

satisfaction are two major components of a successful relationship between organizations and customers. Product returns and reverse logistics literatures also emphasized that the effective product returns management could improve customer satisfaction (Autry et al., 2001; Mollenkopf, Rabinovich, Laseter, & Boyer, 2007; Stock et al., 2006).

In addition, the long lasting relationships between customer and company require trust (Berry & Parasuraman, 1991). Customer trust, as a fundamental element of relationship marketing (Morgan & Hunt, 1994), is typically established through the consistent of perceived service quality, the fulfillment of customer requirement, honesty, fair treatment, and the confidence that the firm intends to serve the customers at their best interest (Choi & La, 2013). Consequently, the relationship with customer satisfaction and consumer trust were examined to validate the new construct and understand the role of customer-oriented returns service offerings in building long-term customer relationships.

1.2 Research Objectives and Questions

The objectives of this study were to conceptualize the customer-oriented product returns service (COPRS) performance, develop and validate its measure. It also studied the relationship among the developed construct, customer satisfaction and trust in maintaining successful relational exchanges with customers. Thus, the following research questions (RQs) were addressed.

RQ1 How can the construct of the customer-oriented product returns service performance be developed, measured, and validated?

RQ2 How does the performance of customer-oriented product returns services impact returns satisfaction and customer trust in the company?

1.3 Scope of the study and research plan

Product returns are grouped into five categories including consumer returns, marketing returns, asset returns, product recalls, and environmental returns (Rogers et al., 2002). The current research focuses on consumer returns, the largest

category of returns (Rogers et al., 2002). Unlike other categories, this type of returns is originated from end consumers. It is a return that has the direct effect on the consumers and needs the best management practice since it could influence customer long-term relationships (Rogers et al., 2002). Therefore, consumer returns or product returns in the context of end consumers would be referred throughout the current study. Additionally, return transactions in this study involved the needs of customer to return product for any reasons, to accommodate damaged or defective goods, and to execute the repairs and maintenance (Autry et al., 2001). In this regard, the notion of recycling and product recall which were included in Autry et al.'s definition of returns activities were excluded in this research since they were initiated by firms and might need a specific study.

To conceptualize the new construct and operationalize its performance measurement, the study followed the procedure for developing the measure by Ambulkar, Blackhurst, and Grawe (2015), Churchill (1979), Karpen et al. (2015), Mentzer, Flint, & Kent (1999), Parasuraman et al. (1988) and Parasuraman, Zeithaml, and Maholtra (2005). The meaning and domain of COPRS construct were developed based on a literature review in marketing, product returns and reverse logistics and validated by academic experts, practitioners, and customers using substantive validity test. Next, the individual in-depth interviews were used to generate measurement items and ascertain the resulting dimensions of the new measure derived from literature review. Then, the initial scale items developed based on literature review, depth interviews and expert validation were refined and validated by a pretest and a large survey with customers who had return experience of mobile service providers. Construct reliability and validity were also assessed via Confirmatory Factor Analysis (CFA) and independent samples t-test analysis. Lastly, the relationships among the developed construct, returns satisfaction and customer trust were investigated using Structural Equation Modeling (SEM) to test the research hypotheses and assess the predictive validity of the COPRS performance construct.

1.4 Contributions of the Study

Unlike other contributions in this research stream, the current study claims to be one of the first works in developing the performance measurement of product returns service from customer perspectives. Therefore, this research would contribute theoretically and practically in services marketing and reverse logistics area as follows.

1.4.1 Theoretical contributions

The study contributes to theoretical perspective in seven aspects. First, the expected results would fulfill the theoretical gap on product returns and reverse logistics management literature regarding the notion of functional integration across marketing and logistics disciplines. Specifically, the interface between marketing and reverse logistics puts emphasis on the incorporation of marketing concepts of a service-dominant logic of marketing (Vargo & Lusch, 2004) and the expectation-disconfirmation paradigm (Oliver, 1980) to product returns management, thus enhancing holistic and cross-disciplinary in logistics discipline. The study also urges marketing scholars to extend the body of knowledge of marketing across disciplines.

Second, product returns management has basically firm-oriented while the initial stage of reverse flow starts from customers. The practice of returns management in this study is customer-oriented and customer value cocreation. Therefore, the developed construct of customer-oriented product returns service and its framework could be an essential step for future explorations of product returns management based on customer expectations.

Third, the previous logistics literature provides the evidence that most studies in product returns management were economic operational-based approach focusing on material transactions. Conversely, the present study suggests that the focus of product returns management must be considered as relational exchange based on a service-centered view. It extends the concept of relationship marketing (Morgan & Hunt, 1994) in managing product returns and provides empirical evidence focusing on building long-term relationships with customers through the theoretical link among

the performance of product returns service, customer satisfaction and trust. In this way, the study could shed new light on this issue in taking a different perspective in managing product returns.

Fourth, the new measure also fulfills the gap of lacking the metrics of reverse logistics performance in customer service area. The study responds to the call for the performance measurement regarding the effectiveness of returns process involving customer satisfaction (Huscroft et al., 2013b). Therefore, the study draws the underrepresented performance measure for the improvement of returned product management which could be a lead to further empirical works.

Fifth, while existing measures cannot be directly applied due to unique features of returns service which requires the integration of marketing initiatives and reverse logistics processes, a new measure was intentionally developed to measure product returns performance, thus constituting essential groundwork for future empirical studies in product returns area.

Sixth, since extant measures of product returns and reverse logistics have not been developed from actual customer expectations, the construction of COPRS performance measurement metric was advanced based on actual customer expectations. Utilizing individual in-depth interviews, the customer would play an active role in the development of the new measure. It encourages researchers to develop the performance measure from customer's point of view.

Finally, the study responds to the need of service measurement embracing a cross-disciplinary research initiative and the call for enhancing the service experience through cocreation, two key research priorities for service science (Ostrom et al, 2010). Those research service priorities were indicated based on 18-month study by Arizona State University's Center for Services Leadership collaborating with academics in various disciplines and business executives around the world.

1.4.2 Managerial contributions

The managerial contribution of the current study has six aspects. First, the study alerts practitioners to pay more attention to marketing and reverse logistics interface in formulating their returns strategies meeting long-term customer satisfaction. The proposed relationship would support the evidence for firms to focus

on issues of customer orientation and involvement in offering product returns service which could enhance customer satisfaction and trust, two major factors in building long-term relationship with customers.

Second, the developed metrics of product returns service provide benefits for practitioners in measuring and evaluating their returns service offerings based on actual customer needs and expectations. Utilizing the results of customer service assessment, managers could analyze their existing returns service performance in key different aspects and then diagnose where improvements should be targeted.

Third, service managers could track the level of consumer returns service performance through annual examination of COPRS performance metrics. Such information could help practitioners to set priorities during the implementation of returns service strategies for the consecutive years. Allocating an appropriate amount of resource to the key COPRS dimensions can satisfy customers' expectations and achieve sustainable competitive advantage.

Fourth, COPRS performance scores could be used in market segmentation based on demographic and geographical profiles. Customer expectations of returns service might vary among different segments. Managers could then develop their returns strategies for each segment properly.

Fifth, the study encourages all service firms to involve the customers' active participation in the value creation process for their service offerings. Notably, the qualitative consumer interviews would be utilized in this study to make customers be the cocreators of returns service.

Finally, the key point of taking customer perspective in this study complies with government regulations such as consumer protection rules aiming to protect the rights of consumers. Adopting customer-driven approach for product returns management is likely to reduce the customer complaints regarding returns service.

1.5 The Structure of the study

The rest of the dissertation is organized as follows. Chapter two presents a literature review of product returns, reverse logistics, marketing and logistics

integration, service-dominant logic, customer value cocreation, customer orientation, customer expectations, service recovery, service quality, performance measurement and relationship marketing which becomes the development of the new construct and its measure. The theories and concepts on which this study was grounded were also reviewed. Chapter three provides the explanation of the new measure development, qualitative study and research hypotheses regarding customer satisfaction and trust. For qualitative approach, the design of individual depth interviews, procedure, data collection, data analysis and the findings were explained and discussed. Chapter four presents research methodology involving quantitative surveys. Accordingly, measurement of variables, research sample, data collection, research instruments, a pretest, and data screening were included. In Chapter five, data analysis techniques, descriptive statistics of the respondents, the measurement model results and validation as well as hypotheses testing and mediation analysis are presented. Finally, the discussion, conclusions implications, and limitations of the dissertation as well as recommendations for future researches are presented in Chapter six.

1.6 Summary

The background and rationale of the study are described in this chapter. The theoretical gap indicates that most reverse logistics and product returns researches have not incorporated marketing concept or customer orientation into their frameworks whereas the focal point of product return management is customer. Therefore, to manage product returns successfully, the current study proposes that consumer product returns should be viewed as service offerings, such returns service should be customer-oriented and managing product returns should be considered as managing service recovery in the reverse flow. In this regard, the construct of customer-oriented product returns service (COPRS) was developed by integrating marketing and logistics discipline. In addition, a few interests of academics and practitioners have focused on measures in customer service area or effectiveness of returns process and extant measures cannot be directly applied to returns service due to its distinctive feature of service offerings in the reverse flow. Therefore, providing the expectation-disconfirmation paradigm proposed by Oliver (1980) and the notion

of customer value cocreation, the performance metrics for the new construct would be developed based on actual customer expectations. Accordingly, research objectives and questions were indicated. Scope of the study and research plan were then presented. Finally, the expected theoretical and managerial contributions of the study were described.

CHAPTER 2
REVIEW OF LITERATURE

To develop the construct of customer-oriented product returns service performance, the following literatures were reviewed: 1) product returns and reverse logistics, 2) cross-functional integration, 3) marketing initiatives including service-dominant logic, customer orientation, customer value cocreation, customer expectations, service recovery, and service quality, 4) performance measurement and scale development of the related constructs, and 5) relationship marketing involving customer satisfaction and trust.

2.1 Product returns and reverse logistics

2.1.1 Definitions of product returns and reverse logistics

Several definitions for product returns are presented in the literature, but the most cited one (Bernon et al., 2013) is defined by Rogers and Tibben-Lembke (1998) as "the process of planning, implementing and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value or proper disposal". Originally, this definition was described for the term of reverse logistics. When scholars need to study product returns management, reverse logistics has commonly been referred (Quinn, 2002; Stock et al., 2002; Stock & Mulki, 2009). Therefore, both terms of product returns and reverse logistics have often been defined from the same sources i.e. Rogers, and Tibben-Lembke (1998, 1999, 2001).

However, the scope of two terms might be different. Rogers and Tibben-Lembke (2001) described reverse logistics activities to encompass product returns, marketing returns, secondary market, recycling, remanufacturing and reusable packaging activities. Likewise, Stock and Mulki (2009) asserted that product returns are only the part of reverse logistics which includes a combination of activities involving recycling, refurbishing, repair, waste disposal and other activities.

Focusing on managing product returns, Rogers et al. (2002) described these two terms as different activities in returns management. (Product) returns is one key activity that its definition involves "processes associated with returning or receiving returned products for any reason. These processes extend into post-delivery customer support" (The Supply Chain Council, 2001). In this regard, Rogers et al. (2002) emphasized that this definition focused on the physical movement of goods backwards in the supply chain but does not include gatekeeping (i.e. limiting the number of items allowed into the reverse flow) and avoidance (i.e. minimizing the number of return requests) activities. The term reverse logistics, however, was referred to the original definition proposed by Rogers and Tibben-Lembke (1998). Rogers et al. (2002) pointed out that "if no goods or material are being sent "backward," the activity is not a reverse logistics activity."

Recently, the Reverse Logistics Association (2015) defines reverse logistics as "all activity associated with a product/service after the point of sale, the ultimate goal to optimize or make more efficient aftermarket activity, thus saving money and environmental resources". This definition has been put more emphasis on environmental aspect, which is beyond the scope of the current study.

In sum, although they may be different in scope, both terms of product returns and reverse logistics are described as the backward flow of material or the movement of goods from the point of consumption toward the point of origin. In order to focus on service operations of returns, the term "product returns" will be used throughout this study. Nevertheless, review of literatures would also include reverse logistics literatures due to interchangeable terms used.

Product returns within the reverse flow in the current research specifically involve all returns initiated by end consumers. According to Rogers et al. (2002), product returns are grouped into five categories that are needed to manage within the returns process.

Consumer returns – returns involving customers' remorse or defects.

Marketing returns – returns driven by marketing issues such as slow sales, quality issues, or inventory repositioning.

Asset returns – desirable returns related to recapturing and repositioning of an asset such as reusable containers.

Product recalls – returns which are initiated due to product safety or quality concerns.

Environmental returns – returns related to environmental regulatory compliance e.g. the disposal of hazardous materials.

This study focuses on the largest category of returns (Rogers et al., 2002) – consumer returns. Unlike other categories, this type of returns is initiated by customers. According to Rogers et al. (2002), a return that has the direct effect on the consumers need the best procedure for handling product returns because it could affect long-term consumers' perception on the firm.

More specifically, product returns service in the current study involves the needs of customer to return product for any reason, to accommodate damaged of defective goods, and to execute the repairs and maintenance (Autry et al., 2001). However, recycling and product recall activities which are included in Autry et al.'s definition are excluded in this research since they are initiated by firms and might need a specific study.

2.1.2 The product returns processes

According to Stock et al. (2006), the product returns process consists of five stages: receive, sort and stage, process, analyze and support. Stock and Mulki (2009) describes four steps in product returns processing as receiving, processing, sortation and disposition. While Rogers et al. (2002) proposed both the strategic and operational returns management process. The operational returns management process comprises receive return request, determine routing, receive returns, select disposition, credit customer/supplier and analyze returns and measure performance. The product returns processes presented by these scholars are not much different.

Product returns can be source of information of buying expectations and customer behavior which influence the customers' purchase decisions (Stock et al., 2006). Therefore, an effective product returns process is considered as a competitive advantage (Stock et al., 2006 and Jack et. al., 2009). However, product

returns/reverse logistics processes adopted in most studies have been considered based upon firm perspectives. For example, Genchev (2007) developed a measurement tool in formalization of reverse logistics processes that were adapted from the operational returns management process presented by Rogers et al. (2002); however, both measures were proposed from the firms' point of view. Table 2.1 describes the product returns processes adapted from Rogers et al. (2002) and Genchev (2007).

[Table 2.1]

Although the returned product and information flows move backward from the point of consumption or consumers to the point of origin or firms as presented in Figure 2.1, managing product returns processes has still been focused on the firm's point of view. Therefore, the current study asserts that the starting point in improving product returns service within the returns process should be reconsidered.

2.1.3 Product returns management

To manage consumer returns, the underlying reasons why customers return the products are critical issues. Daugherty et al. (2001) indicated that the most common reasons of product returns are customer dissatisfaction, defective merchandise, incorrect item received, repairs needed and damaged respectively. French and Discenza (2006) presented internal and external sources of returns in process industry. For internal returns, returns are from plant source. Top five internal sources include out-of-specification, obsolete, rework, quality issues and out-of-shelf-life. For external returns, returns come from three sources: customers, distributors or retailers and shipping companies. Top five external sources that are major problems are quality issues, shipping damage, out-of-specification, customer returns due to ordered wrong or ordered too much and shipping errors. In conclusion, the main reasons underlying consumer returns involve defects and quality issues.

In addition, designing return policy is one of important issues regarding product returns management. A strict return policy is the return policy

offered by firms with restrictions such as strict time limits for returns, accepting returns that have not been used or with original packaging (Khan, 2010). A lenient return policy is the return policy that is hassle free or flexible. Previous study suggested that firms must offer a lenient return policy to lower the risk of a purchase and increase customer loyalty (Mollenkopf et al., 2007). Particularly in remote purchase environments, Wood (2001) found that a liberal return policy would enhance purchase rates and product return rates for customers. Prior study stated that flexible return policies cause an increase in product return rates, thus the trade-off between cost and customer satisfaction/loyalty should be considered (Khan, 2010). However, there has been supporting evidence that the implementation of liberal return policy increases product purchase more than returns rate (Janakiraman, Syrdal, & Freling, 2016; Wang, 2009) and gives an incremental gain in profit (Petersen and Kumar, 2010). The increases in return rates are offset by customer future purchases and a larger number of customer base.

With regard to product returns management literatures including reverse logistics literatures, the existing studies have focused on various aspects such as designing product return policy (Janakiraman et al., 2016; Wang, 2009; Wang et al., 2007; Yalabik, 2005), customer product return behavior (Foscht, Ernstreiter, Maloles III, Sinha, & Swoboda, 2013; Petersen, 2008; Petersen and Kumar, 2010), forecasting product returns (Agrawal et al., 2014; Potdar, 2009), reducing product returns (Hess et al., 1996; Scariotta, 2003), supply chain coordination (Bernon et al., 2013; Ferguson et al., 2006; Ruiz-Beitez, 2007), efficiency improvement (Banomyong, et al., 2008), optimizing returns of product (Anderson et al., 2009; Srivastava & Srivastava, 2006), performance measurement (Genchev, 2007; Richey, Genchev, & Daugherty, 2005a; Richey, Tokman, Wright, & Harvey, 2005b; Shaik & Abdul-Kader, 2012), environmental concern (Glen, Genchev, & Daugherty, 2005; Guide & Wassenhove., 2001; Vahabzadeh & Yusuff, 2012). However, most studies have focused on operational-based approach. In brief, managing the returns process has mainly been firm-oriented.

From previous literatures, reverse logistics and product returns management are generally based on firm's perspective or operational foundation or efficiency (Table 2.2). Although some studies (Foscht et al., 2013; Petersen, 2008;

Petersen and Kumar, 2010) have been customer-oriented, these works have focused on explaining why consumers return products or the role of customer return behavior, the other aspect of product returns management. While the current research suggests that to manage product returns successfully, firms have to understand customer expectations for returns service and develop proper metrics in measuring service quality performance.

[Table 2.2]

2.2 Cross-functional integration

2.2.1 Definitions of functional integration

Functional integration across marketing, logistics and operations disciplines has increasingly been received interests to build firm's competitive advantage (Verma et al., 2001). Following the conceptualization by Lawrence and Lorsch (1986, p.11), the current study refers integration as "the state of interdepartmental relations". It should be noted that this does not mean that organizational functions are formed into a single entity; rather, it is the firm's ability to pool and exploit information and knowledge across functions (Turkulainen & Ketokivi, 2012). The most common interface for operations/logistics function has been with marketing (Murphy & Poist, 1992) since it also needs customer's information and feedback as a source of performance improvement (Ellinger, 1993). Similarly, the value of logistics such as availability, timeliness, condition (Mentzer, et al. 1999), just-in-time, electronic data interchange (EDI), materials requirements planning and materials resources planning (Walters, 1999) is addressed in formulating marketing strategies and creating customer satisfaction. Accordingly, interdependence between marketing and logistics could enhance the provision of superior customer service (Ellinger, 1993; Mentzer, et al. 1999). Firm benefits such as increase in productivity, customer satisfaction, competitive capabilities, financial performance are also identified when operations and marketing functions are integrated (Ellinger, 1993; O' Leary-Kelly & Flores, 2002; Turkulainen & Ketokivi, 2012).

2.2.2 Cross-functional integration and product returns

Although prior studies revealed the positive link between functional integration and firm performance (Lee et al., 2014; Turkulainen & Ketokivi, 2012), rare research in product returns and reverse logistics literature emphasized functional integration, specifically in marketing and reverse logistics interface. Nevertheless, recent studies (Bernon et al., 2013; Mollenkopf et al., 2007; Yalabik, 2005) put more emphasis on the coordination between marketing and logistics efforts in improving product returns systems in different context. For instance, Bernon et al. (2013) employed a case study research to explore the benefit from internal (cross-functional) and external process integration in the retail industry. Mollenkopf et al. (2007) test a returns management model utilizing functional integration in the Internet retailing setting to improve firm's profitability. By the same token, the current study highlights the notion of interdisciplinary approach by integrating marketing initiatives with reverse logistics process.

2.3 Implications of marketing initiatives for product returns

Unlike most literatures in product returns and reverse logistics, the current study adopts the notion of marketing-logistics interface to better manage the processes and measure product returns performance. In this regard, marketing concepts and theories regarding service-dominant logic, customer value cocreation, customer orientation, customer expectations, service recovery, and service quality are reviewed.

2.3.1 Service-dominant logic of marketing

2.3.1.1 The concept of service-dominant logic of marketing

Since the emergence of services marketing paradigm in the 1980s, one of the seminal works receiving significant attention in marketing discipline has been service-dominant **(**S-D) logic advanced by Vargo and Lusch (2004). A new logic has been challenging traditional goods perspective. The frameworks have been advocated (e.g. Arnould, 2008; Day et al., 2004; Hunt & Madhavaram, 2006) as well as concerned or criticized (e.g. Gronroos, 2011; O'Shaughnessy & O'Shaughnessy, 2009, 2011; Sweeney, 2007) by various marketing scholars. S-D logic regards service

as the core reason for firm/customer exchange of specialized competences and operant resources (skills and knowledge) in creating and utilizing of wealth (Levy, 2006; Vargo & Lusch, 2004, 2008). Accordingly, the new logic is put more emphasis on operant resources than operand resources. While operand resources are tangible such as raw material or physical goods, operant resources, often invisible, are competencies, information, skills and knowledge which act on operand resources and other operant resources.

With S-D logic, consumers are viewed as a source of operant resources for business. Customers cocreate their own experiences in relational exchanges. The role of firm is to facilitate and enhance their experiences. In value cocreation process, both the provider and the beneficiary of service jointly create value-in-use, instead of an output unit. According to Vargo and Lusch, the firm can only offer value propositions and the customer determine value and participate in creating that value throughout interactions between the two parties. The new dominant logic proposes that goods are viewed as embodied knowledge (Normann & Ramirez, 1993) and not the common focus of exchange. This reorientation is proposed to apply to all market offerings.

In summary, the paradigm shifts from goods-centered view to service-centered view, where all goods are distribution mechanisms of services and consumers are cocreator of value (Vargo & Lusch, 2004, 2008). Therefore, the notions of service perspective and customer orientation are central to S-D logic (Meunier-FitzHugh et al., 2011). The present study focuses on such notions.

2.3.1.2 Implications of service-dominant logic for product returns

Based on S-D logic, all offerings including those that involve physical goods in the process of service provision are services. While a goods dominant (G-D) logic has focused on tangibles and discrete transactions, a service-centered view emphasizes intangibility, competences, exchange processes and relationships (Vargo & Lusch, 2004). In this regard, the study extends this service perspective to product returns process. Product returns do not only involve the physical goods that flow in the reverse process but also intangible aspects i.e. customer knowledge and experiences with the offerings before, during, and after usage as well as relational exchanges with firms. Such knowledge is the fundamental

foundation of competitive advantage (Vargo & Lusch, 2004, 2008). Firms need to use of information or knowledge strategically to make value offerings for returns processes to customers and gain competitive advantage.

In addition, the study of the member companies of the Center for Services Leadership (CSL) at Arizona State University by Brown and Bitner (2006) reveals that all types of businesses and industries now concentrate on competing through services leadership. Accordingly, the focus of product returns and reverse logistics management should be extended from a goods perspective to a service-provision perspective. To this end, the study proposes that to manage product returns successfully, product returns process should be considered as service offerings provided by firms.

2.3.1.3 Product returns as service offerings

Service is defined as "the application of specialized competences (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself" (Vargo & Lusch, 2004, p.4). Such definition encompasses two parts i.e. service consists of activities, processes and performances and these activities provide the benefits for the beneficiary. Based on this definition, S-D logic could be applicable to any business offerings including product returns activities. The service provision of product returns involve all activities, actions, processes and performances occurring in the reverse flow in which it could provide the benefits to consumers and organization itself.

According to Ladhari (2009), unique features of services include intangibility, heterogeneity, perishability and inseparability. Services are intangible because consumers can assess their performances only after a sale (Lovelock, 1981; Khan, 2003; Ladhari, 2009). Services are heterogeneous because they change from day to day, from place to place, from firm to firm and from customer to customer (Parasuraman et al., 1985). Services are perishable because they cannot be stocked and/or sold on another time and lastly services are inseparable because they are concurrently produced and consumed (Ladhari, 2009). In accordance with these four distinctive characteristics of services, product returns process can be considered as service offerings provided by firms no matter what kind of goods or services they basically sell. The quality returns service is dependent on firms,

consumers, time and place. The returns processes cannot be stored and then sold anytime. They are also inseparable between production and consumption during the entire process. Finally, firms have difficulty to assess how consumers perceive their offerings of returns processes due to the intangible feature.

2.3.1.4 Unique characteristics of product returns service

Product returns service is a specific kind of service requiring the integration of marketing and logistics discipline. It interfaces between marketing initiatives and reverse logistics process. The returns service is unlike other services offered in traditional forward logistics which starts from the point of origin (firms) to the point of destination (customers). It should be noted that a product is in the reverse flow because a customer returns it for some reasons. The process starts from unhappy customers (Potdar, 2009). Low quality of offered returns service will be considered as double fault. Customer satisfaction or dissatisfaction on the service quality of product returns processes provided by firms could impact customer repurchase behavior.

Therefore, the unique features of product returns service include 1) a service requiring marketing and logistics integration, 2) service offerings in the backward or reverse flow and, 3) the process mainly starting from customer dissatisfaction. Accordingly, the focal point in improving product returns service within the returns process is customer. According to Brown and Britner (2006), the best practice of becoming customer orientation, firms have to understand service from the customer's point of view by listening to them and taking action based on their information. In this regard, marketing initiatives such as customer orientation, value cocreation, customer expectations, service quality improvement and service recovery management are proposed to manage product returns.

2.3.2 Customer orientation

2.3.2.1 Definitions of customer orientation

Deshpande, Farley, and Webster (1993) define customer orientation as "the set of beliefs that puts the customer's interest first, while not excluding those of all other stakeholders such as owners, managers, and employees, in order to develop a long-term profitable enterprise". This definition is similar to those by Jack et al. (2009), Jeong and Hong (2007), and Slater (1995) who pointed out that

customer orientation involves a firm's willingness to put its customers first to create customer value. A customer-oriented firm understands and meets the real needs of its customers, therefore becoming more likely to have satisfied customers who come back and tell their friends (Brady & Cronin, 2001). Customer orientation including the product and service development is based on customer-focused information. The company is customer-focused and believes that the business exists to serve customers (Jack et al., 2009). Consistent with those mentioned definitions, the current study adopts the customer orientation concept as the first priority of customer interests in providing firm's offerings in order to satisfy customer expectations. According to Hogan et al. (2002), one key source of competitive advantage of customer-oriented firms is the capability to acquire and manage customer information to initiate and maintain profitable relationships with customers.

Considering product returns as service offerings, the study agrees with a service-centered view proposed by Vargo and Lusch (2004) that the focus has shifted from the company to the consumer and service perspectives emphasize customer oriented and relational. These are consistent with the concept of market orientation presented by Kohli and Jaworski (1990) and Narver and Slater (1990) indicating that all firm activities are incorporated in customer responsiveness and that firm profits are from customer satisfaction. However, the study focuses on the term "customer orientation" corresponding to the central concept of S-D logic, the main paradigm adopted in this research rather than "market orientation" which relates to organizationwide systems. Market orientation refers to the responsibilities of all departments in an organization participated in *generating*, *disseminating*, and *responding to market intelligence* i.e. target-consumers' needs including external factors and all stakeholders such as competitors, distributors, government which influence customers' needs [emphasis in original] (Kohli & Jaworski, 1990). It is a broader framework that is beyond the scope of the present study.

2.3.2.2 Implications of customer orientation for product returns

Since one key factor of product returns is customer dissatisfaction and the core processes of reverse logistics start from unhappy customers (Potdar, 2009), the current study proposes that product returns processes provided by firms are regarded as service offerings and must be customer-oriented.

One recent research (Petersen & Kumar, 2010) conducted a six-year study of purchases, product returns and marketing communications data of catalog retailers and found that satisfactory product returns experience can provide an increase in customers' repurchases and referrals as well as long term profitability for the company.

In addition, prior research in logistics area indicated that for third-party logistics providers, customer orientation (consisting of service variety, information availability, timeliness and continuous improvement) has a positive impact on customer firm logistics improvement (Tien, Ellinger, & Chen, 2009).

These empirical studies provided the supporting evidence that product returns service should be customer-oriented. Although some scholars might argue that there are the cases of opportunistic returns and customers' remorse in returning products, this study asserts that each customer return is legitimate (Anderson et al., 2009). In other words, all customers have reasons for returning a product and firms must provide satisfactory return service experience for long-term customer-company relationships.

2.3.3 The customer value cocreation of service

2.3.3.1 Definitions of customer value cocreation

Based on S-D logic, service is defined based on customer-determined benefits and cocreated by customers (Vargo & Lusch, 2004, 2008). This view pertains to the customer-centric concept. S-D logic makes the consumer mandatory to the value creation process. McColl-Kennedy et al. (2012, p. 370) defined customer value cocreation as "benefit realized from integration of resources through activities and interactions with collaborators in the customer's service network." In cocreation process, both the provider and the beneficiary of service jointly create value-in-use, instead of an output unit. Value in exchange or value in use refers to value emerged when service is consumed (Gummesson, 1998). Value does not exist if a good or service is unsold. Accordingly, value has to be developed by the user (Vargo & Lusch, 2008). Customer then becomes a resource and cocreator of service. According to Piercy and Lane (2005), superior firm's performance is relevant to its ability to deliver an integrated solution focusing on customers' needs. In a

similar vein, Brown and Bitner (2006) indicated the evidence that firm's performance is tied to involving customers in co-producing its services. They suggested a basic foundation for successful co-production, the similar construct of cocreation (Meunier-FitzHugh, 2011), is to have a thorough understanding of customers' needs, processes, procedures and the relevant factors.

Based on 18-month study by Arizona State University's Center for Services Leadership, ten research priorities for service science were addressed (Ostrom et al, 2010). Two of these service research priorities related to the current study included enhancing the service experience through cocreation and measuring and optimizing the value of service. One topic raised was the cocreation of service experience where customers are active in providing their experience in value cocreating process. Traditionally viewed, the firm acts an expert in offering its service. Conversely, according to customer active paradigm, customers know what they want from services and they are experts on their own consumption of service. The other interesting topic was the call for service value measurement embracing a cross-disciplinary research initiative. Creating tools for capturing value in use for services and enhancing service standards is in research infancy. Investing in measuring and optimizing the value of service research is essential to help firms improve the value of their services.

Value cocreation processes could not be isolated from the service system in which they are embedded (Vargo, Maglio, & Akaka, 2008). In other words, the service system is the foundation to understand value cocreation (Edvardsson, Ng, Min, Firth, & Yi, 2011). A service system is defined as "value co-production configuration of people, technology, other internal and external service systems, and shared information (Spohrer, Maglio, Bailey, & Gruhl, 2007, p. 72). Under S-D logic, a process and systems perspective was adopted rather than an output orientation. In the traditional system, firms decide what is of value to the customer in designing their service system (Prahalad & Ramaswamy, 2004). Customers are passive in this system. For service-centered view, service providers should advance their strategic approaches by developing service systems to support value cocreation. Accordingly, firms engage with the customer as a resource to design service systems based on customer experience (Prahalad & Ramaswamy, 2004). Managers would

move beyond tangible mindset to the experiences that customers will seek to cocreate. The empirical findings show that service-dominant design enabling value cocreation processes resulted in a better service system comparing to the goods-dominant design (Edvardsson et al., 2011).

2.3.3.2 Implications of customer value cocreation for product returns

Since product returns in the current study are considers as service offerings, it should be managed based on service experience contributed by end users. The customers know what they want from consuming returns services. In this regard, they could actively provide ideas for improving service, which has traditionally been viewed as firm activities (Karpen et al., 2015). Considering the adoption of cocreation frameworks, the study posits that firms have to leverage the information of the customer's experiences and expectations to better offer returns service and gain superior performance. Accordingly, the study could respond to the call for enhancing the service experience through cocreation and measuring and optimizing the value in use of service.

2.3.4 Customer expectations

2.3.4.1 Definitions of customer expectations

Customer expectations involve the customers' anticipation of the firm's performance in providing services (Chang, 2007). According to Miller (1977), there are four possible meanings of the term "expectations". Firstly, "ideal" expectations stand for the wished for level of performance. Secondly, "expected" expectations refer to predicted performance based on past averaged performance. Thirdly, "minimum tolerable" expectations are defined as the least acceptable level of performance. Lastly, "deserved" expectations mean performance evaluation based on customers' investment of time and money. Since product returns service is a kind of service involving a consumer's experience in returning products with firms, the "expected" expectations would be implicitly referred in this study. It is widely accepted that customer expectations play an important role as reference points for consumers to assess the performance of a service provider (Oliver, 1980; Robledo,

2001). To get a better understanding of customer expectations, the expectancy-disconfirmation model is basically referred.

2.3.4.2 The expectancy-disconfirmation paradigm

When customer expectations become more focused in customer satisfaction literature, the expectation-disconfirmation model has been the most prevalent paradigm (Myers, 1991). The disconfirmation approach describes that consumers compare between firm's actual performance and their expectations (Oliver, 1980). If the actual firm's performance is below customer expectations about the product or service, it is a negative disconfirmation and if the perceived performance is above expectations, it is a positive disconfirmation leading to customer satisfaction. Based on this model, to meet or exceed customer expectations, it is necessary for firms to take customers' anticipation into account in providing product returns service.

2.3.4.3 Implications of customer expectations for product returns

From a review of related literature in marketing and reverse logistics, rare research has been focused on customer expectations as the reference points to manage product returns and achieve customer satisfaction. Specifically, understanding what customers actually expect and need in using a returns service has not been found in the past theoretical and empirical researches. Therefore, the current study proposes that the starting point in managing product returns service within the returns process is customer. Consequently, to initially anticipate what customers expect from product returns service, the study integrates marketing initiatives i.e. customer orientation, service recovery, and service quality with product returns and reverse logistics concepts.

2.3.5 Service recovery

2.3.5.1 Definitions of service recovery

In general, researchers tried to understand service recovery which is defined as "the actions a service provider takes in response to a service failure" (Andreassen, 1999) as service failure generally costs much more to replace than keeping an existing customer (Reichheld & Sasser, 1990). Previous researches

also suggested that the greater severe service failure the greater the recovery performance needed to transform the customers' dissatisfaction into satisfaction (e.g. Magnini, Ford, Markowski, & Honerycutt, 2007; Weun, Beatty, & Jones, 2004). Recovering when service failures occur is one of the best practices of revolutionary marketers proposed by Brown and Bitner (2006). They assert that effective service-recovery strategies are essential in maintaining and increasing customer satisfaction and loyalty. Successful service recovery consists of apology, explanation, effort (Krishna, Dangayach, & Jain, 2011), assurance (Chang, 2008), reliability, employee's empowerment, customization, and responsiveness (Gilbert & Wong, 2003).

2.3.5.2 Justice (or Equity) theory

In evaluating of service recovery, justice or equity theory has normally been referred (Sabharwal, Soch, & Kaur, 2010; Tax, Brown, & Chandrashekaran, 1998). The notion of justice is crucial as customers anticipate that the firm treats them fairly and if the firm cannot fulfill their expectations, the customers will be distrustful (Seiders & Berry, 1998). Justice theory has three dimensional concepts: distributive justice, procedural justice, and interactional justice (Krishna et al., 2011, Sabharwal et al., 2010; Tax et al., 1998). Distributive justice involves the perceived fairness of the actual outcome of service recovery i. e. the fairness of compensation such as replacement, refunds, discounts (Ok, 2004; Tax et al., 1998). Procedural justice refers to the perceived fairness of a set of procedure to resolve problems or conflicts (Krishna et al., 2011; Ok, 2004; Tax et al., 1998). Its dimensions include speed, timeliness or time taken to solve problems, flexibility to deal with problems, convenience, accuracy, consistency, easy access to view the decision process (Seiders and Berry, 1998; Tax et al., 1998). Interactional justice is described as interpersonal treatment by employees of the firm (Ok, 2004; Krishna et al., 2011). The perceived fairness of this justice relates to apology, concern, courtesy, effort, empathy, explanation, honesty, and politeness (Goodwin & Ross, 1992; Tax et al., 1998). The interactional justice is the critical part of service recovery evaluation (Krishna et al., 2011) as treatment by the contact employees in the service encounter can result in customer satisfaction or dissatisfaction (Bitner, Booms, & Tetreault, 1990). Besides, the latest aspect added to justice concept is informational justice,

which means explaining and giving information to customers after service failure (Krishna et al., 2011).

2.3.5.3 Implications of service recovery for product returns

Based on product returns literature, the key reasons underlying consumer returns involve defects and quality issues (Daugherty et al., 2001; French & Discenza, 2006). These problems are due to 'the failure of firm's offerings'. The customer's recovery needs or the needs of product returns are the outcomes of the company failure in providing offerings to customers. In brief, from customer's point of view, service failure happens. Hence, this study stresses that the needs of product returns is considered as service failure and managing product returns within the reverse logistics process is treated as managing service recovery in order to recover customer satisfaction. Thus, the current study proposes that to manage product returns successfully, product returns service should be "customer oriented" and be considered as "managing service recovery within the reverse flows of the returned products".

2.3.6 Service quality

2.3.6.1 Definitions of service quality

The construct of service quality is more subtle than product quality due to its distinctive features of intangibility, heterogeneity, perishability and inseparability (Parasuramann et al., 1988; Ladhari, 2009). To understand the term of service quality, three perspectives are presented in Table 2.3.

[Table 2.3]

According to Brady and Cronin (2001), there have been two conceptualizations of service quality, namely the Nordic perspective and the American perspective. The Nordic perspective (Gronroos, 1984, 1988) suggests that quality of service involves two dimensions consisting of functional and technical quality. Functional quality refers to the manner how customers experience the service production process and their interactions with the service provider while technical

quality is the outcome that customers receive from consuming the service provided by the firm (Gronroos, 1988). The Nordic conceptualization also includes customer's perception regarding the service product (technical quality), the service delivery (functional quality) and the service environment (Rust & Oliver, 1994) referred as the three-component model (Brady & Cronin, 2001).

The American perspective (Parasuraman et al., 1985, 1988) defines service quality as a comparison between customer expectations for what a firm should offer and firm's actual service performance. However, the modified conceptualization (Cronin & Taylor, 1992) focuses on service quality based on actual performance only.

The other approach is the integration of both the Nordic and American perspectives (Brady and Cronin, 2001). They defined service quality as a hierarchical construct consisting of three primary dimensions and their sub-factors propose developed based on Gronroos (1984), Parasuraman et al., (1985, 1988) and Rust and Oliver (1994). Those dimensions comprise service outcome, service interaction and physical environmental quality.

The service quality delivery is considered as a fundamental success factor for all service businesses (Rahman, 2004). From a review of 20-year service quality researches, Ladhari (2009) stated that good service quality could reduce costs, enhance corporate image, lead to positive word-of mouth communications, keep existing customers and attract the new ones, thus increase profitability. Accordingly, functional quality and technical quality (Gronroos, 1988), SERVQUAL (Parasuraman et al., 1985, 1988) and SERVPERF (Cronin and Taylor, 1992) five dimensions, a three-component model (Rust & Oliver, 1994) as well as a hierarchical model of service quality (Brady & Cronin, 2001) are considered in developing a new construct and its measure.

2.3.6.2 Implications of service quality for product returns

Since product returns are proposed to be considered as service offerings, firms need to understand the consumer perceptions of service quality, thus formulating strategies to deliver such quality consistently (Sureshchandar, Chandrasekharan, & Anantharaman, 2002) and achieving sustainable competitive advantage (Rahman, 2004).

In product returns and reverse logistics context, fewer studies regarding service quality have been examined. Mollenkopf et al. (2007) examined the relationship between product returns systems in internet retailing and loyalty intentions. In this regard, they mainly employed electronic service quality measure or E-S-QUAL (Parasuraman et al., 2004) to assess the perceived value of return systems. Their measurement was not advanced based on actual customer data and was specific to electronic commerce.

2.4 Performance measurement of product returns service

2.4.1 Definitions of performance measurement

Neely, Gregory, and Platts, (1995) describes the performance measurement as "the process of quantifying the efficiency and effectiveness of action" and a performance measure as "a metric used to quantify the efficiency and/or effectiveness of an action." According to Skapa and Klapalova (2012), efficiency measures how economically a firm's resources are exploited to meet customer needs. Classic efficiency measures are costs, time and quality. Effectiveness measures whether the customer requirements are being met. A typical effectiveness measure is customer satisfaction. Hayes and Abernathy (1980) asserted that traditional financial (economic) performance measures encourage managers to adopt a short-term perspective. On the contrary, customer satisfaction measure results in the long-term benefits to the company (Petersen & Kumar, 2010).

Since direct performance metrics of product returns service based on customer perspective have not been initiated, performance measures of related constructs i.e. reverse logistics and product returns, customer orientation, service recovery and service quality are examined.

2.4.2 The measurement of product returns and reverse logistics

Skapa and Klapalova (2012) conducted an empirical study exploring performance measurement systems of reverse logistics of Czech companies and pointed out that most of them paid attention to measure the efficiency of reverse logistics process while the effectiveness was measured on a cost basis. In other words,

customer focus is neglected. They suggested that companies should focus more on the effectiveness in their performance measurement of reverse logistics process. Similarly, Hall et al. (2013) reported that although logistics practitioners in the US mentioned customer service as the key performance goal, metrics designed to achieve corresponding goal were rarely stated or applied.

The other approach in measuring reverse logistics performance involves two criteria i.e. economic performance and service quality performance (Genchev, 2007). Economic or financial performance includes cost containment, improved profitability, recovery of assets, and reduced inventory investment (Daugherty et al., 2001). Service quality performance refers to how easy it is for customers to return a product, how the company complies with its return policy and how such returns policy is adapted to customers' specific requirements (Genchev, 2007). Hence, service quality measures focus on meeting customer expectations or the effectiveness of returns process.

Table 2.4 shows that most studies in reverse logistics and product returns performance measurement have focused on economic performance or the efficiency of the process (e.g. Stock & Mulki, 2009; Daugherty et al., 2001; Yellepeddi, 2006). These scales have been basically developed based on firm perspective. Although some studies (Autry et al., 2001; Richey et al., 2005a; Huscroft, 2010) referred to the effectiveness of the process or customer service metrics, these measures are derived from literature and logistician perspective, not from customer requirements (See measure development sources in Table 2.4).

[Table 2.4]

Huscroft et al. (2013b) adopted a Delphi method to uncover the key issues viewed by logistics and supply chain professionals when managing reverse logistics processes. The result shown that the practitioners ranked customer support as the most important issue, following by top management support, communications, costs, formalization, timing of operations and environmental factors. Analyzing with the past 20 years of reverse logistics literatures, they proposed that setting service goals and developing appropriate metrics is essential. The authors emphasized that

issues of customer services cannot be understated, being able to efficiently and effectively satisfy customer expectations is important for any business including reverse logistics. Nevertheless, they found that past researches did not provide a good understanding of the key factors regarding customer needs in a reverse logistics process and rare research was found regarding metrics of reverse logistics particularly in the area of customer satisfaction. Accordingly, they suggested that future research should focus more on understanding customer expectations for reverse logistics and devise and utilize proper reverse logistics metrics.

Consequently, the focus of performance measurement of product return service in this research is service quality performance (i.e. effectiveness) based on customer perspective which has been largely ignored in the related literature. Increased service quality performance leads to future purchases and positive long term relationship with customers (Genchev, 2007; Petersen, 2008; Petersen & Kumar, 2010; Skapa & Klapalova, 2012).

2.4.3 The measurement of customer orientation

The measure of customer orientation developed by Deshpande et al. (1993) includes nine items. However, some statements cannot be specifically applicable to product returns service. The items that should be considered in product returns context involve the company is more customer-focused comparing to its competitors, the development of returns service is subject to appropriate use of customer information, the customer's interest always comes first and the firm exists basically to serve its customers.

Additionally, prior research specified the components of customer orientation in supply chains (Jeong & Hong, 2007). They include customer-closeness, customer-flexible and customer-accessible. Customer-closeness refers to the readiness of firms and individuals in the supply chain to keep in touch with their customers, understand their needs and communicate with them effectively (e.g. Bowen, Siehl, & Schneider, 1989, Jeong & Hong, 2007). Customer-flexible means a firm's willingness to respond to changing customer expectations (Kirwin, 2003; Jeong & Hong, 2007). Finally, customer-accessible involves information accessibility provided by firms according to customer needs (e.g. Cho & Park, 2003; Jeong & Hong, 2007).

2.4.4 The measurement of value cocreation

Based on the examination of measurement scale of value cocreation by Leclercq, Hammedi, and Poncin (2016), existing scales were utilized in the specific contexts. For example, Dahl and Moreau (2007) identified the dimensions of cocreation focusing on innovation. McColl-Kennedy (2012) proposed the dimensions based on qualitative analysis specific to health care services. Such value cocreation dimensions were not operationalized. As a result, the measure of value cocreation is in its infancy and a generic metric for all service settings including returns service has not been proposed.

2.4.5 The measurement of service recovery

Since the study views product return services as service recovery in reverse channels, four measures of service recovery (Table 2.5) are hereby discussed. RECOVSAT scale has been proposed to measure customer satisfaction with service recovery (Boshoff, 1997). Its dimensions include communication, empowerment, feedback, atonement, explanation and tangibles. E-Recs-Qual was developed by Parasuraman et al. (2005) in order to measure service recovery quality comprising recovery responsiveness, compensation and contact. Service recovery scale proposed by Sabharwal et al. (2010) was developed based on equity theory consisting of distributive justice, procedural justice and interactional justice. Mostafa, Lages, and Sääksjärvi (2014) developed the CURE scale to address an assessment of service recovery strategy. Using CURE index, the study concluded that problem-solving, speed of response, effort, facilitation and apology influence service recovery satisfaction.

[Table 2.5]

The scale development for service recovery such as RECOVSAT, E-Recs-Qual is useful as a foundation for generating the new scale. However, these measures for service recovery could not be totally used in the current work due to the distinctive features of product returns which involve the interfaces between marketing initiatives and reverse logistics processes. Since product returns service is service

offering in the backward flow, the dimensions involving reverse logistics should be simultaneously considered.

2.4.6 The measurement of service quality

Viewed as service offerings, its quality of product returns service should be assessed. In other words, service quality performance or the effectiveness of product returns process which has been largely ignored in previous literatures is needed to be developed.

According to Brown and Bitner (2006), measuring the service quality is a basis for excellent service-driven firms. Nevertheless, there have been no specific tools developed to measure product returns service especially from customer perspective. The existing service performance measures such as SERVQUAL or SERVPERF have never been applied in this context and either could inadequately measure product returns service due to its distinctive features of service offerings in the backward flow.

2.4.6.1 SERVQUAL measure

The best known and most commonly used measure of service quality has been the SERVQUAL scale which was originally developed by Parasuraman et al. (1985, 1988, 1991, 1993, 1994). It is determined by the difference between customer expectations and their perceptions of actual service or the gap scores. SERVQUAL dimensions are able to capture the construct of service quality (Raajpoot, 2004, Ruiqi & Adrian, 2009) and are reliable to measure. Such scale which consists of 22 items representing five dimensions i.e. tangibles, reliability, responsiveness, assurance and empathy have been applied to various service offerings such as finance and banking, e-commerce, hospitality industries (Table 2.6), but not to the product returns service. Although repair and maintenance services is included in the development of SERVQUAL scale by Parasuraman et al. (1988), product returns service in the current research encompass various activities in the reverse flow i.e. consumer returns, customer requests for accommodating defective goods, repairing and maintenance, and recycling (Autry et al., 2001). It is a specific kind of service that needs marketing and logistics integration. Therefore, scale development for such product returns service should be particularly considered.

[Table 2.6]

Table 2.6 shows that various studies have adopted SERVQUAL scale or adapted it to the specific service settings. The adaptations are in accordance with the arguments of Carman (1990), Babakus and Boller (1992), Brown and Koenig (1993) noting that SERVQUAL's dimensions are not universal. Ladhari (2008) suggests that adapting or even replacing SERVQUAL scale is required for industry-specific contexts. The outcome of SERVQUAL relied on type of services, situation, time, competitive environment and needs (Seth, Deshmukh, & Vrat, 2005). In addition, the measure was criticized for emphasis basically on service delivery process, its validity and reliability, and the applicability as a generic scale to measure service quality in all service contexts (Ladhari, 2009)

2.4.6.2 SERVPERF measure

The other major measure of service quality is SERVPERF scale. SERVPERF was developed by Cronin and Taylor (1992) in order to directly measure customers' performance perceptions based on five dimensions: tangibility, reliability, responsiveness, assurance and empathy. While SERVQUAL measures both expectations and service performance, SERVPERF measures only performance perceptions as it assumes that customers already compare expectations with performance during rating service performance. In this regard, Cronin and Taylor (1992) concluded from their study that the performance-based scale (SERVPERF) was superior to the gap scores (SERVQUAL). Table 2.7 describes the application of SERVPERF measure across service industries.

[Table 2.7]

Furthermore, some researchers (e.g. Gautam, 2011; Oh, 1997; Park & Ha, 2011; Ramez, 2011; Rodrigues, Barkur, Varambally, & Motlagh, 2011) simultaneously administered both SERVQUAL and SERVPERF scales in their studies. Accordingly, there have long been arguments among scholars which measures can better capture overall service quality. Some academic and empirical studies indicated that performance-based scale outperformed the gap model in terms

of predicting overall evaluation of service performance (Angur, Nataraajan, & Jahera, 1999; Cronin & Taylor, 1992; Huang, 2011; Ladhari, 2008, 2009; Lee, Lee, & Yoo, 2000; Maples, 1997; Ramez, 2011). While Carrillat, Jaramillo, and Mulki, (2007) found that the predictive validity of SERVQUAL is improved by context modification while that of SERVPERF is not. In other words, SERVQUAL users should modify the scale for specific context rather than SERVPERF users. This study agrees with scale adjustments as some items of these service quality measures might not be relevant for product returns.

In sum, although the existing measures investigated could not be generalized to measure product returns service, some measures such as SERVQUAL and SERVPERF in the service quality area, RECOVSAT and E-RecS-Qual in the service recovery setting and other instruments in customer orientation and reverse logistics context would be adapted to initiate scales of the developed construct in this study.

2.5 Scale development studies relevant to product returns

Most studies in reverse logistics and product returns performance measurement have focused on economic performance (e.g. Stock and Mulki, 2009; Daugherty et al., 2001; Yellepeddi, 2006). These scales have been basically developed based on firm perspective. Although some studies (Autry et al., 2001; Richey et al., 2005a; Huscroft, 2010) referred to the effectiveness of the process or customer service metrics, these measures are derived from literature and logistician perspective, not from customer requirements. While the research examining product returns systems in internet retailing context conducted by Mollenkopf et al. (2007) was focused on service operations, the metrics used were based on extant measures specific to online service. Remarkably, such measures were not developed based on actual customer data, particularly cocreation service experience proposed by the current study.

Further, some researches in forward logistics and supply chain management addressed the significance of customer service and developed service quality scale associated with logistics i.e. physical distribution service quality or

PDSQ (Bienstock, Mentzer, & Bird, 1997) and logistics service quality or LSQ scale (Mentzer et al., 1999). PDSQ aspects involve timeliness, availability and condition. Dimensions of LSQ consist of information quality, ordering procedures, ordering release quantities, timeliness, order accuracy, order quality, order condition, order discrepancy handling and personnel contact quality. However, most of these attributes in forward logistics context cannot be directly applied in the reverse channel as the needs, procedures and activities involved are diverse.

Importantly, according to Huscroft et al. (2013b), rare research was found regarding metrics of reverse logistics particularly in the area of customer satisfaction. Empirical studies in Czech (Skapa & Klapalova, 2012) and the US (Hall et al., 2013) firms also found that performance metrics designed to achieve customer service goal were rarely applied. These scholars suggested that future research should focus more on understanding customer expectations for reverse logistics and devise and utilize proper reverse logistics metrics.

2.6 Relationship marketing

Providing products and services to customers require the formation of relationships (Alsajjan, 2014; Morgan & Hunt, 1994). The cost of attracting a new customer is considerably more expensive than the cost of retaining an existing customer (Ok, 2004; Spreng et al., 1995). In this regard, to build long-term relationships with customers is essential for any business. Morgan and Hunt (1994, p. 22) define relationship marketing as "all marketing activities directed toward establishing, developing, and maintaining successful relational exchanges". Therefore, strengthening customer relationships is the goal of product returns management in the current study. According to Blackston (2000), satisfaction and trust are two major components of a successful relationship between organizations and customers. Consequently, customer satisfaction and consumer trust literatures would be examined.

2.6.1 Customer satisfaction

Customer satisfaction is defined in various ways such as a customer's fulfillment response (Oliver, 1977), favorability of the customer's subjective evaluation of the outcomes and experiences after consuming it (Westbrook, 1980), a customer's overall evaluation of a product or service provider to date (Johnson & Fornell, 1991), an indicator of met or exceeded expectations (Grisaffe, 2001). From these definitions, it can be concluded that satisfaction is a subjective or emotional evaluation of product or service (Oliver, 1980), resulting in a positive or negative feeling of fulfillment (Andreassen, 2000).

In the study of customer satisfaction, the expectancy-disconfirmation model by Oliver has commonly been referred. Customer satisfaction decisions are based on individual comparative judgments (Oliver, 1980). If the actual outcome is below customer expectation about the product or service, it is a negative disconfirmation, resulting in dissatisfaction.

Conversely, if the perceived performance is above customer expectation, it is a positive disconfirmation, bringing high satisfaction to the consumer. Likewise, if a customer's positive expectations are met or negative expectations are not met, either case results in the moderate level of customer satisfaction (Guo, 2001; Oliver, 1980). Therefore, to meet or exceed customer expectations, the study proposes that firms should take customers' anticipation into account in providing product returns service.

According to Stock et al. (2006) and Petersen & Kumar (2010), effective product returns management could improve customer satisfaction and then leading to positive long term relationship with customers. Since one of the unique features of product returns service includes the process mainly starting from customer dissatisfaction, the practice of returns management in the current study adopting the customer-oriented and relational based approach was proposed to restore and enhance customer satisfaction.

2.6.2 Trust

Moorman, Deshpande, and Zaltman, (1993) described trust as "a willingness to rely on an exchange partner in whom one has a confidence". Morgan

and Hunt (1994) defined as "one party has confidence in an exchange partner's reliability and integrity". Rousseau, Sitkin, Burt, and Camerer, (1998) suggested trust as "perceptions about others' attributes and a related willingness to become vulnerable to others". Extensive review of definition of trust can be viewed in Kantsperger and Kunz's work (2010). This study refers to the definition stated by Moorman et al. (1993).

As relationship marketing has become increasingly important during the past two decades (Kantsperger and Kunz, 2010), trust, as a fundamental element of relationship marketing (Morgan & Hunt, 1994) has gained increased attentions considerably (Sirdeshmukh, Singh, & Sabol, 2002). Various academic works emphasized that trust is an essential key for the development of strong and long-term relationships between organizations and consumers (Garbarino & Johnson, 1999; Morgan & Hunt, 1994; dos Santos & Fernandes, 2008; Tax et al., 1998). In other words, the long lasting relationships between customer and company require trust (Berry & Parasuraman, 1991). Thus, customer trust in the relationship marketing context can build sustainable market share (Urban, Sultan, & Qualls, 2000). According to Ambler (1997), trust is not only the most dominant measure in assessing relationship but also likely to be the leading indicator for brand equity. In this regard, recent study (Hu, Chang, Hsieh, & Chen, 2010) found the positive link between the level of trust in the company and brand equity. Brand equity, the aggregation of accumulated memories in the consumers' minds, can enhance profitability and long term cash flow (Ambler, 1997). Notably, customer trust cannot be copied by competitors (Bitner, 1992). In the product returns context, trust becomes crucial as it reduces the perceived risk toward the firm. If the customer returns a product satisfactorily, this level of uncertainty is probably removed by decreasing the perceived risk of future purchases.

In summary, to better manage product returns, the study proposes that product returns management should focus on relational exchange or a long-term customer relationship perspective. Consequently, to understand the role of customer-oriented returns service offerings in building long-term customer relationships, the links among the developed construct, customer satisfaction and trust would be further examined through research hypotheses in Chapter 3.

2.7 Theoretical gaps extracted from literature review

Based on a review of related literatures, the study indicates the following theoretical gaps that have to fulfill in order to manage product returns more efficiently.

Gap 1 The past researches of product returns have not incorporated marketing concepts whereas some scholars suggest the coordination between marketing and logistics efforts in improving product returns systems.

Gap 2 Product returns management is mainly firm-oriented while the initial stage of reverse flow starts from customers.

Gap 3 Product returns management focuses on material transactions based on operational-efficiency approach.

Gap 4 Measures in customer service area or effectiveness of returns process has been largely ignored.

Gap 5 Existing measures cannot be directly applied due to the unique features of returns service i.e. the service offerings in the reverse flow which require the integration of marketing initiatives and reverse logistics processes.

Gap 6 Existing measures of product returns and reverse logistics have not been developed from actual customer expectations or cocreated by customers.

Gap 7 Measuring and optimizing the value of service and enhancing the service experience through cocreation have not been advanced in service research.

The first three theoretical gaps involve product returns management. From an extensive review in product returns and reverse logistics literatures, the evidence revealed that returns processes and management basically relied on operational-based approach or firm orientation. Rare researches of product returns management focused on functional integration or incorporated marketing concepts. It is noteworthy that one key aspect of product returns is customer dissatisfaction. Specifically, the core processes of reverse flow of products start from unhappy customers (Potdar, 2009). Since all customers have reasons for returning a product or the customer return is legitimate (Anderson et al., 2009), firms must provide satisfactory returns service experience to restore customer satisfaction and enhance long-term customer-company relationships. This is consistent with the objectives of

reverse logistics management and services marketing in meeting customer requirements. Consequently, the concepts involving functional integration, customer orientation, service recovery, service-centered view and relational approach, were proposed to manage product returns.

The last four theoretical gaps involve the performance measurement of product returns and reverse logistics. From literature review, extant measures were generally efficiency measures focusing on economic performance and did not provide a good understanding regarding customer needs in the reverse flow of processes. A measure in customer service area or effectiveness of returns processes has not been developed, particularly through the customer cocreation of the service experience. Based on the marketing concepts of the expectancy-disconfirmation paradigm and customer value cocreation under service-dominant logic, the study proposes that a specific measure for product returns involving customer service should be developed based on actual customer expectations through the cocreation of service experience.

2.8 Summary

This chapter comprises six main parts. The first part involves a review of product returns/reverse logistics literature regarding their definitions, the processes and returns management. The distinctive characteristics of product returns service are also discussed in this part. The second part describes functional integration and the concept of marketing and reverse logistics interface. The third part provides the incorporations of marketing initiatives to product returns. Accordingly, the explanation and discussion of service-dominant logic of marketing, customer orientation, customer value cocreation, service recovery and service quality definitions and their relations with product returns issues. The fourth part discusses performance measurement of product returns service and a literature review of the measurement of the related constructs. The fifth part concludes scale development studies relevant to product returns. The sixth part involves relationship marketing including customer satisfaction and trust. Eventually, theoretical gaps in the existing literatures indicate that reverse logistics and product returns management need the functional integration between marketing and reverse logistics. Additionally, since

extant measures mostly involve economic performance or efficiency measures, the development of proper measurement scale in the area of customer service or effectiveness is required to enhance customer satisfaction and trust, two key majors of relationship marketing.

Table 2.1 The product returns processes

The product returns processes	Activities
1. Receiving customer return request	Handling the return requests received from customers. Identifying the items that should not be returned.
2. Determining Routing	Determining routing activity and managing inbound and outbound transportation of the reverse flow.
3. Receiving Returns	Receiving returns includes verifying, inspecting, processing and examining the returned product carefully. The reason codes for the returns are determined.
4. Selecting Disposition	Selecting the appropriate disposition option for the returned product. Disposition decisions might include recycle, refurbish, remanufacture, resell as is or resell through a secondary market or transfer the product to a landfill.
5. Crediting Customer/ Supplier	Determining the appropriate credit to customer, consumer or supplier. Negotiation is required within the firm and across the firms.
6. Analyzing Returns and Measuring Performance	Measuring return process performance and analyzing data on returns. The goal is to make improvements to the product and the operational returns processes.

Note. Adapted from Rogers et al. (2002) and Genchev (2007)

Table 2.2 Literature review of product returns and reverse logistics management

Authors	Aspects of study	Product returns literature	Reverse logistics literature	Firm orientation vs Customer orientation	Operational-based vs Customer-based approach
Agrawal et al., (2014); Potdar (2009)	Forecasting product returns	/		Firm orientation	Operational-based approach
Janakiraman et al., 2016; Wang et al. (2007); Yalabik (2005)	Designing product return policy	/		Firm orientation	Operational-based approach
Hess et al. (1996); Scariotta (2003)	Reducing product returns	/		Firm orientation	Operational-based approach
Foscht et al., (2013); Petersen (2008); Petersen and Kumar (2010)	Customer product return behavior	/		Customer orientation	Customer-based approach
Srivastava and Srivastava, (2006); Anderson et al. (2009)	Optimizing returns of product	/		Firm orientation	Operational-based approach
Bernon et al. (2013); Ferguson et al. (2006); Ruiz-Beitez, (2007)	Supply chain coordination		/	Firm orientation	Operational-based approach

Table 2.2 (continued)

Authors	Aspects of study	Product returns literature	Reverse logistics literature	Firm orientation vs Customer orientation	Operational-based vs Customer-based approach
Banomyong, et al. (2008)	Efficiency improvement		/	Firm orientation	Operational-based approach
Genchev, (2007), Richey et al. (2005a, 2005b), Shaik and Abdul-Kader (2012)	Performance measurement		/	Firm orientation	Operational-based approach

Table 2.3 Three perspectives of service quality conceptualization

The Nordic Perspective (Gronroos, 1984, 1988; Rust & Oliver, 1994)	**The American Perspective (Parasuraman et al., 1985, 1988)**	**Integration of Two Perspectives (Brady & Cronin, 2001)**
Functional quality or process-related dimension is the manner how customers experience the service production process and their interactions with the service provider.	Service quality is a comparison between customer expectations for what a firm should offer and firm's actual service performance.	Service quality is a hierarchical construct consisting of three primary dimensions and their sub-factors.
Technical quality or outcome dimension is the outcome that customers receive from consuming the service provided by the firm. Rust and Oliver (1994) add a service environment dimension.	The modified conceptualization (Cronin and Taylor, 1992) focuses on service quality based on actual performance only.	Service outcome, service interaction and physical environmental quality.

Table 2.4 Literature review of product returns and reverse logistics performance measurement and measure development

Authors	Literature	Measures/ scales	Economic performance (Efficiency)	Service quality performance (Effectiveness)	Measure development sources
Autry et al. (2001)	Reverse logistics	Environmental regulatory compliance, improved customer relations, recovery of assets, cost containment, improved profitability, reduced inventory investment and satisfaction measure	/	/	Literature review and interviews with logistics practitioners
Daugherty et al. (2001)	Reverse logistics	Financial-oriented items: cost containment, improved profitability, recovery of assets, and reduced inventory investments; service-oriented items: environmental regulatory compliance and improved customer relations	/	/	Literature review
Huscroft (2010)	Reverse logistics	Customer wait time, return rates, scrap rates, scrap value, return cycle time, returned product inventory value, customer satisfaction, account processing time, velocity, return rate by supplier, inventory levels, credit processing, cost of returned goods	/	/	Logistics Practitioners using grounded theory

Table 2.4 (continued)

Authors	Literature	Measures/ scales	Economic performance (Efficiency)	Service quality performance (Effectiveness)	Measure development sources
Huscroft, Hazen, Hall, and Hanna (2013a)	Reverse logistics	Reverse logistics cost effectiveness, and reverse logistics processing effectiveness	/		The existing measures (logistician perspective)
Mollenkopf et al. (2007)	Product returns	Previous service experience, recovery responsiveness, contact and compensation, site ease, customer effort		/	The existing measures of e-service
Richey et al. (2005a)	Reverse logistics	Strategic performance: recovery of assets, cost containment, profitability, labor productivity, reduced inventory; Operational responsiveness: ease of obtaining return authorization, length of time for credit processing, handling reconciliation for charge-backs; Operational service quality: quality and timeliness of re-work or repair	/	/	The existing measures (logistician perspective)

Table 2.4 (continued)

Authors	Literature	Measures/ scales	Economic performance (Efficiency)	Service quality performance (Effectiveness)	Measure development sources
Stock and Mulki (2009)	Product returns	Productivity, utilization and performance metrics	/		Literature review and practitioner survey
Yellepeddi (2006)	Reverse logistics	Value of returns entering RSC per unit time, gate-keeping effectiveness, warehousing effectiveness, environmental conformance effectiveness, carrying cost percentage of returns in a CRC per unit time,recovery efficiency, recovery rate, overall vehicle effectiveness, and return good total transit time	/		Literature review, specific industry practices and mathematics formulation

Table 2.5 Service recovery measures

Authors	Measures	Service Industries
Boshoff (1997, 2005)	RECOVSAT (Satisfaction with transaction-specific service recovery)	Banking industry
Parasuraman et al. (2005)	E-RecS-Qual (e-recovery service quality scale)	Online industry
Sabharwal et al. (2010)	Service recovery scale	Telecommunication industry
Mostafa et al. (2014)	CURE scale	Telecommunication industry

Table 2.6 Examples of the application of SERVQUAL measure across service industries

Authors	Service Industries
Abdullah, Suhaimi, Saban, and Hamali (2011), Avkiran, (1994), Nair, Ranjith, Bose, and Shri (2010)	Finance and Banking industry
Jun, Yang, and Kim (2004)	E-Commerce industry, Online industry
El-garaihy (2013), Ruiqi and Adrian (2009)	Hospitality industry
Lai, Hutchinson, Li, and Bai (2007)	Telecommunication industry
Rezazadeh, Yahhoubi and Nikoofar (2011)	Sport service industry
Fuentes (1999), Vandamme and Leunis (1992)	Health care and hospital industry
Dabholkar, Thorpe and Rentz (1996)	Retail industry
Ahmad, Awan, and Raouf (2009), Licata, Mowen, and Chakraborty(1995)	Pharmaceutical industry
Randheer, AL-Motawa, and Vijay (2011)	Public transportation industry
Brown and Koenig (1993)	Education industry

Table 2.7 Examples of the application of SERVPERF measure across service industries

Authors	Service Industries
Al-Mutawa and Ibrahim (2013), Angur et al. (1999), Arora and Vashishat (2011), Chang (2007), Cui et al. (2003), Culiberg and Rojsek (2010), Lee and Hwan (2005), Mehtap-Smadi (2010), Zhou (2004)	Finance and Banking industry
Al Khattab and Aldehayyat (2011), Hong (2003), Johns et al. (2004)	Hospitality industry
Peterson, Gregory, & Munch (2005)	B2B repair service industry
Urbaniak (2014)	Leisure service industry
Dracy (2000), Holdford (1995), Jenkins (1999), Qin, Prybutok, Peak, and Boakye (2014)	Health care and hospital industry
Kim (2005)	Sport service industry
Qin and Prybutok (2008, 2009)	Fast food industry
Ali, Ali, and Radam (2010)	Government agencies
Al-Rahimy (2013), Karami and Olfati (2012), Nejati and Nejati (2008), Randheer (2015)	Education industry
Wells and Stafford (1995)	Insurance industry
Quester and Romaniuk (1997)	Advertising industry
Al-Mutawa and Ibrahim (2013), Angur et al. (1999), Arora and Vashishat (2011), Chang (2007), Cui et al. (2003), Culiberg and Rojsek (2010), Lee and Hwan (2005), Mehtap-Smadi (2010)	Finance and Banking industry

CHAPTER 3
MEASURE DEVELOPMENT AND RESEARCH HYPOTHESES

In answering research questions, this chapter describes how can customer- oriented product returns service performance be developed? And how does the performance of customer-oriented product returns services impact returns satisfaction and customer trust in the company?

3.1 The construction of a new measure of product returns service performance

From literature review in product returns and reverse logistics area, managing product returns has basically relied on operational-based approach or firm perspective, instead of the customers' needs. Specifically, while the focal point of product returns management is the customer, the performance measurement has mainly focused on economic performance (i.e. efficiency), instead of service quality performance (i.e. effectiveness) of the process. As some key distinctive characteristics of product returns comprises the failure of firm's offerings and customer dissatisfaction at the initial stage of the backward flows of products, the present study emphasizes the integration between marketing initiatives and reverse logistics process. In particular, the marketing concept such as customer orientation, service quality improvement, service recovery should be incorporated into the returns process. In addition, since the objectives of logistics management and services marketing are to meet customer requirements, it is essential to take customers' needs into account in providing such returns service.

In other words, to improve returns service quality performance and manage product returns successfully, the study proposes that 1) consumer product returns should be considered as service offerings 2) such returns service should be customer-oriented and 3) managing product returns should be considered as managing service recovery within the reverse flows of the returned products. Consequently, the performance measurement of customer-oriented product returns service should be developed on the basis of customer perspective. Accordingly, to conceptualize and

operationalize the performance of customer- oriented product returns service, the study followed the procedure for developing a measure by Ambulkar et al. (2015); Churchill (1979); Karpen et al. (2015); Mentzer et al. (1999); Parasuraman et al. (1988, 2005) as described in Figure 3.1.

[Figure 3.1]

From Figure 3.1, the meaning and domain of customer-oriented product returns service (COPRS) performance construct were developed based on a review of related literature in marketing and reverse logistics and validated by academic experts, practitioners, and customers using substantive validity test (Step 1). Next, a qualitative approach (individual in-depth interviews) was used to generate measurement items and ascertain the resulting dimensions of the new measure derived from literature review (Step 2). Then, the initial scale items were developed based on literature review, in-depth interviews and expert validation (Step 3), followed by a pretest (Step 4) and a large survey with customers who had return experience of mobile companies to purify and validate the scale (Step 5). Construct reliability and validity were also assessed (Step 6). For the last step, the relationships among the developed construct, returns satisfaction and customer trust were examined to test the research hypotheses and assess the nomological validity of the new measure.

3.2 Specifying the meaning and domain of customer-oriented product returns service performance

Consistent with Churchill (1979)'s procedure in developing better marketing measures, the initial stage was conceptualizing the construct. Since the conceptualization of customer-oriented product returns service and its performance has never been proposed, the study followed the process for developing a construct definition based on the related literature introduced by Ambulkar et al. (2015) and Gilliam and Voss (2013). Those steps were described as follows:

Step 1 Develop the preliminary definitions based on prior literature.

Step 2 Use the preliminary definition and literature review to specify the domain of the new measure.

Step 3 Present the definitions and dimensions to five experts for a substantive validity test.

Step 4 Present the proposed dimensions to 100 customers who have returns experience for a substantive validity test.

Step 5 Refine the definitions and the construct's domain.

First, based on an extensive review of related literatures in marketing and reverse logistics, the study developed a preliminary definition of COPRS, COPRS performance and its dimensions. Next, to specify the domain of the new measure, the study borrowed product returns/reverse logistics, customer orientation, service recovery and service quality literature. Twelve dimensions include tangibles, responsiveness, explanation, empathy, empowerment, reliability, timeliness, information availability, assurance, compensation, feedback, and convenient process.

Subsequently, those dimensions along with the definitions were presented to five experts consisting of a marketing specialist, a logistics scholar and two practitioners as well as an English expert for face validity. They were asked to evaluate the proposed definitions and consider each dimension's relevance to the construct of COPRS performance. Substantive validity coefficient was then calculated. According to Anderson and Gerbing (1991), substantive validity means how well each measurement item theoretically is linked to the proposed construct. The formula of substantive validity coefficient is C_{sv}= (n_c-n_o)/N (Ambulkar et al., 2015; Anderson and Gerbing, 1991) where n_c is the number of experts rating a dimension as relevant to COPRS performance, n_o is the number of experts rating a dimension as irrelevant to COPRS performance, and N is the number of experts. Large positive values of C_{sv} demonstrate greater substantive validity while large negative values indicate lower substantive validity. The acceptable threshold is .50 (Anderson and Gerbing, 1991).

As a result, five experts agreed with the proposed definitions of COPRS, COPRS performance and its dimensions with minor adjustments (Appendix A). The values of C_{sv} for each dimension were 1.00, indicating high substantive validity (Appendix B). In addition, since the proposed construct emphasized customer

orientation, the convenience sample of 100 customers who have returns experience were asked to rate if each of twelve dimensions was either relevant or not relevant to COPRS performance. As a result, the C_{sv} values of all dimensions were greater than .50 (.58 – .92), supporting the evidence of substantive validity based on customer perspectives (Appendix C).

For the last step, based on the substantive validity results, the construct of customer-oriented product returns service (COPRS) was redefined as service offerings provided by firms to end consumers within the product returns process based on putting customers' needs first in order to enhance customer satisfaction. To measure such returns service, the construct of COPRS performance was developed and finally conceptualized as the firm performance in providing service within the product returns process to end consumers based on putting customers' needs first in order to enhance customer satisfaction. The final dimensions constituted the COPRS performance construct are presented in Table 3.1.

[Table 3.1]

From Table 3.1, customer orientation literature suggested five preliminary dimensions of returns service expectations consisting of responsiveness, empathy, timeliness, feedback, and information availability. Tangibles, assurance, responsiveness, empathy, timeliness, convenience, and reliability were the proposed service aspects that customers would expect based on service quality literature. Timeliness, convenience, and compensation were the dimensions proposed within the area of product returns and reverse logistics literature. It should be noted that service recovery literature suggested twelve components of returns service expectations as managing product returns could be viewed as managing service recovery due to the fact that the core processes of reverse flow of products start from unhappy customers (Potdar, 2009).

It should be noted that COPRS performance is a second-order factor containing two layers of latent constructs (Hair, Black, Babin, Anderson, & Tatham, 2006). That is, the measurement model introduces a second-order latent factor that causes multiple first-order constructs, which in turn, cause the observed variables.

According to Jarvis, Mackenzie, & Podsakoff, (2003), there are four types of second-order factor model specifications. The criteria are based on 1) a first-order construct contain either formative or reflective indicators 2) those first-order constructs are either formative or reflective indicators of the second-order construct. Four different combinations include reflective first-order, reflective second-order (Type I), reflective first-order, formative second-order (Type II), formative first-order, reflective second-order (Type III), and formative first-order, formative second-order (Type IV).

Therefore, the developed construct is a Type I second-order construct consisting of reflective second-order and reflective first-order indicators (Jarvis et al., 2003) representing a parsimonious model (Karpen et al., 2015). Specifically, the study suggested a total disaggregation second-order factor model (Bagozzi & Heatherton, 1994) representing a series of first-order latent dimensions with reflective indicators and these twelve first-order factors are themselves reflective indicators of the COPRS performance construct. In this regard, these components of the higher order COPRS performance sharing the common theme of customer focus should vary in the same directions. That is, the greater the level of each first-order dimension perceived by customers, the greater the level of customer-oriented returns service performance.

The dimensions of the second-order COPRS performance are described as follows.

3.2.1 Tangibles

Tangibles refer to the physical appearance of facilities, equipment and personnel (Boshoff, 2005; Parasuraman et al., 1985, 1988; Rust & Oliver, 1994). The contacting point at the service center where a customer returns a product or initiates request regarding product problems becomes a starting point of the returns process. This dimension is proposed to assess the return service employee and their working environment at the contacting point.

3.2.2 Responsiveness

Responsiveness is defined as employee's willingness and readiness to help customers and provide prompt service (Parasuraman et al., 1985; Ladhari, 2009) or prompt response (Boshoff, 1997). Immediate and effective handling of

return requests and problems is required for managing product returns service (Parasuraman et al., 2005) to recover customer satisfaction. In customer orientation literature, it indicates firm's readiness to understand customer needs and requests (Deshpande et al., 1993) and to communicate with them effectively as customer closeness (Jeong and Hong, 2007).

3.2.3 Explanation

Explanation is the degree to which the firm provides an explanation of the problems occurred and whether the customer is satisfied with that explanation (Boshoff, 2005). Explanation is one important factor in managing service recovery in terms of the perceived fairness of interactional justice (Tax et al., 1998; Krishna et al., 2011). This dimension is also required for the returns service as from customer's point of view, the firm's failure happens.

3.2.4 Empathy

Empathy involves the level of sympathy and personalized attention the firm provides to its customers (Parasuraman et al., 1985; Ladhari, 2009). In this regard, the firm has to understand customers' problem from their point of view (Krishna et al., 2011). It relates to interpersonal treatment by employees or interactional justice in the service recovery context (Tax et al., 1998). As the returns service is proposed to be customer-oriented, empathy is one factor to reveal the firm's willingness to put its customers first (Deshpande et al., 1993).

3.2.5 Empowerment

Empowerment means the extent that the firms empower their employees to use their common sense and to take care of their customers (Lashley, 1999; Krishna et al., 2011). Therefore, the first employee who first receives the return request is able to solve the problem and does not pass it to the others (Boshoff, 2005).

3.2.6 Reliability

Reliability involves the firm's ability to perform the service reliably and accurately (Parasuraman et al., 1985; Ladhari, 2009). Based on the technical

quality or outcome dimension concept by Gronroos (1988), the accurate returns function and dependability should be what the customers are left with when the returns process and interactions are over. Reliability is needed for product returns management to ensure its stable service performance.

3.2.7 Timeliness

Timeliness involves the firm's ability to keep promises regarding timeframes of returns delivery (Tien et al., 2009). Referring to justice theory (Tax et al., 1998), time taken to solve problems or complete a procedure should be evaluated. In other words, the firm has to respond to customer requests with speed (Mostafa et al., (2014). Since product returns within a reverse logistics process involve time-based activities (Day, 1998), the firm should be able to provide its customers with timely delivery of the returned products or compensation. Therefore, timeliness is a critical factor in assessing performance of both forward logistics (Bienstock et al., 1997; Mentzer et al., 1999) and reverse logistics.

3.2.8 Information availability

Information availability includes the degree to which the firm makes information related to service activities readily to share with and be available to customers (Tien et al., 2009). In accordance with customer orientation literature, this element allows the customer to access information according to customer needs (Cho & Park, 2003; Jeong & Hong, 2007). It is an essential factor in providing the return service because the entire process may not end within a minute or a day.

3.2.9 Assurance

Assurance means employees' knowledge and courtesy to perform the service and their ability to encourage trust and confidence (Parasuraman et al., 1985; Ladhari, 2009). In product returns context, service employees should be expected to have skill and knowledge to perform the returns service and solve the problems with courtesy so that customers can be confident and have respect for them. Another aspect of this factor is that the firm provides the assurance that the problem would not occur again (Barlow & Moller, 1996).

3.2.10 Compensation

Compensation refers to the extent that the firm provides compensation when returns occur (Parasuraman et al., 2005). In product returns context, the firm has to compensate its customers for problems and/or credit or charge back the customer's account (Rogers et al., 2002; Genchev, 2007). Autry et al. (2001) and Richey et al., (2005a) proposed to measure the firm's capability in handling reconciliation of charge backs for reverse logistics performance measurement. In service recovery context, compensation refers to distributive justice or the perceived fairness of the actual outcome of service recovery (Tax et al., 1998). From customer perspective, returns problems or service failure happen. The firm needs to recover by providing compensation in the form of both tangible and intangible outcomes.

3.2.11 Feedback

Feedback involves the degree to which the firm provides feedback about the progress made to solve the problems (Boshoff et al., 2005). It can be referred as customer-closeness along the supply chain or the total returns process in customer orientation literature (Jeong & Hong, 2007) i.e. the firm's commitment to keep in touch with customers.

3.2.12 Convenient process

Convenient process refers that the flexible returns process is easy to access in a convenient manner (Khan, 2010). In addition, the returns practice the firm adopts is hassle free or flexible (Khan, 2010). In other words, in providing product returns service, the firm chooses a lenient or liberal return policy rather than a strict one. Prior researches indicated that the implementation of liberal return policy gives an incremental gain in profit for firms (Petersen & Kumar, 2010) and enhances customer loyalty (Che 1996; Mollenkopf et al., 2007). Besides, based on the perceived fairness of a procedure or procedural justice (Tax et al., 1998), the returns process should be easy to access. Ease of processing the requests is important in consuming the returns service.

These resulting dimensions constituted COPRS performance would serve as a basis for discussion with the respondents using qualitative study.

3.3 Conducting qualitative study

To develop the customer-oriented product returns service (COPRS) performance measure based on actual customer expectations, the qualitative approach was employed. It is important to note that adopting qualitative interviews corresponds to the concept of customer value cocreation in that customers would provide their returns service experience as a source of developing a new measure. Specifically, the customers supplied information about the specifications of the returns service they expect to receive based on their past experiences. This step highlights the notion of customer involvement or customer active paradigm. They are viewed as experts on their own consumption of service. Customers then become the cocreators of returns service. Additionally, consumer interviews would be utilized to gain insights in expectations of returns service as customers use their expectations as reference points to evaluate firm's performance according to the expectation-disconfirmation paradigm (Oliver, 1980). In this regard, the scope of study centers on the mobile industry.

3.3.1 The mobile industry in Thailand

Mobile industry was chosen in this study because Thailand's mobile industry has been one of the growing fastest industries in the past twenty years. As of the end of 2014, there were 97.68 million mobile subscribers in Thailand (Office of the National Broadcasting and Telecommunications Commission of Thailand, 2015), accounting for 146% of total population. The subscriber penetration rate in Thailand exceeds that in Asia-Pacific region where it stands at 45% on average, and is forecast to tap 60% by 2020 (GSM Association, 2014). Despite slowing subscriber growth in recent years, the mobile industry remains robust due to continuing migration to mobile broadband, higher speed services and rising use of smartphones (GSM Association, 2014). In addition, mobile services account for approximately 60% of telecommunications revenue while the remainder comes from fixed services (Vodafone Annual Report, 2011). The mobile industry is one of the dominant industries that face product returns problems. Those mobile vendors adopt their own returns practices to accommodate these problems. Importantly, all functions in the mobile industry including reverse logistics or product returns service need to build

superior competitive advantage in the intensified domestic competition. More attention should be paid to improve service performance of product returns processes. The current study addresses this issue.

3.3.1.1 Product returns service in mobile industry

The scope of product returns service in this study includes services offered by the mobile company in receiving returns from the customers, exchanging for the whole product or some parts due to defects, requesting for repair and maintenance or any other customer requirements in the reverse channel (Autry et al., 2001). In this regard, these services are directly provided by the service centers or service stores of mobile service providers, not retailers. According to Potdar (2009), the store where a customer returns a product or initiates request regarding product problems can be classified into retail, direct and online store. The current study specifically examines returns process through the direct store which is completely controlled by the firm. This is crucial as performance measurement should be under control of the evaluated organization (Globerson, 1985; Neely, Gregory, & Platts, 2005) so that strategies can be adapted to improve service quality.

According to the interviews with customer service managers of the top two mobile companies in Thailand, selected from market share ranking in 2013 - 2014, the product returns service process practically consists of five steps: service a customer call and/or carry-in, receive request, process request, inspect and complete pick up process and measure performance (Table 3.2).

[Table 3.2]

Focusing on customer service expectations from the firms' view, they put emphasis on timeliness, empathy and cost to customers. Therefore, their service employees need both technical skill and interactional skill. They agree that customer satisfaction is a major objective in providing returns service. According to one vendor, in some particular cases of customer dissatisfaction, the compensation as part of service recovery such as gift vouchers, extending the warranty period has been delivered.

However, notably, the tools of performance measurement of their product returns services have been developed based on the firm perspectives, in consistent with the review of product returns and reverse logistics literatures. They set up some key indicators such as first-time completed, pending jobs, processing time to assess the performance of their authorized companies in servicing their customers. However, these key performance metrics have not been advanced from customer needs and expectations. According to those customer service managers, the findings of the current study could be of major contributions to their returns service management. To develop the performance measurement tool from customer perspective, the qualitative study was utilized as follows.

3.3.1 Individual in-depth interviews

The purpose of adopting qualitative interviews in this study is to ascertain the initial dimensions of COPRS derived from literature review in Table 3.1 and to extend the understanding regarding customer expectations of product returns. In-depth interviews are introduced to gain insights in customer expectations of returns service in each step of the returns process from customer perspectives. In this regard, the study relies on phenomenological interviewing, a type of in-depth interview that grounds in the understanding of lived experiences to develop a world view (Marshall & Rossman, 2006). Individual in-depth interviews are chosen because they allow the researcher to investigate much deeper into the interested issue and eliminate negative group influences (Churchill, 1995). The qualitative process is described as follows (Figure 3.2).

[Figure 3.2]

First, guided questions for semi-structured interviews (Appendix D and E) were developed to gain the understandings of customer expectations of returns service in mobile industry and to ensure that all issues identified in the literature review were covered. Although the topics were planned, a set of questions were not asked with specific words or in a particular order to gain a smooth and natural interviewing (Babbie, 2010). The questions involved customer actual experience of

returning or repairing mobiles/tablets or recycling or exchanging for the new ones in the past one year. Participants' returns service involvement in a year possibly covered cumulative experiences that can be fruitful to the current study. In this regard, the participants would specify the detail concerning the company and its service centers, products (mobiles or tablets), brand names, problems, service encounters, service outcomes and feeling for each incident during the year. To establish the product return processes from customer perspective, the interviewees had to describe the procedures of returning the products from their point of views.

Furthermore, to understand customer expectations of product returns service in mobile industry, their expectations in each step of product returns process were discussed by employing open-ended, non-directive questions. Customer expectations involve the customers' anticipation of the firm's performance in providing services (Chang, 2007). It is widely accepted that customer service expectations play a vital role as reference points for consumers to assess the performance of a service provider (Oliver, 1980; Robledo, 2001; Sachdev & Verma, 2002). According to Robledo (2001), sources of customer expectations include past experience of the customers, individual consumer needs, word-of-mouth communication, price to be paid, recommendations and formal communications provided by firms as well as corporate image. Therefore, issues to be discussed with interviewees involve five sources of expectations for a customer.

The dimensions derived from literature reviews were also discussed with the participants in order to generate the additional items or reword the statements in measuring each construct. In addition, to ensure the survey findings of the proposed research hypotheses, the interviewer asked the participants to assess their understandings of the relationships among perceived overall performance of returns service, customer satisfaction and customer trust in the company.

Those guided questions both in English and Thai were revised by three academics and experts in service marketing and reverse logistics area. Next, individual in-depth interviews with selected customers who had returns experience were conducted. The interviewees included twenty customers who had experience in returning or exchanging products or contacting the mobile firm's service centers regarding product problems in the past one year. According to Guest, Bunce, and

Johnson (2006), the smallest acceptable sample for all qualitative study is fifteen, thus twenty samples in this study was sufficient for developing the meaningful patterns and subsequent interpretations. In this regard, catalog and internet retailing experience which is beyond the scope of study was excluded.

With the consent of interviewees, the interviews are recorded and fully transcribed following the conversations for later analysis. Finally, the resulting dimensions of product returns service from the qualitative interviews using content analysis are linked with the initial scales from literature review (Table 3.1) to yield the final COPRS dimensions for validation tests. To achieve face or content validity, the resulting dimensions and items were discussed with marketing and logistics experts.

Data collection took place for four weeks. To gain a wide variety of answers, the sampling strategy involves diversity in consumer demographic profiles in terms of age, gender, education and occupation (Brunk, 2012). The characteristics of the participants are presented in Table 3.3.

[Table 3.3]

3.3.2 Qualitative data analysis

Responses collected from qualitative interviews were analyzed through the procedures recommended by Marshall and Rossman (2006). The analytic procedures consist of seven stages: 1) organizing the data, 2) immersion in the data, 3) generating categories and themes, 4) coding the data, 5) writing analytic memos, 6) searching for alternative interpretations, and 7) reporting.

First, after transcribing the data, it was organized according to names, dates and other demographic profiles using software. Reading through the data repeatedly was the next step to become familiar with those descriptive data. Subsequently, to generate themes and code the data, this study adopts content analysis, a method involving labeling recurring patterns in the text (Brady & Cronin, 2001).

Qualitative content analysis is referred as “a research method for the subjective interpretation of the content of text data through the systematic

classification process of coding and identifying themes or patterns" (Hsieh and Shannon, 2005, p.1278) which is widely used to analyze text data. It is used to provide knowledge and understanding of the phenomenon of interest (Downe-Wamboldt, 1992). Three approaches of content analysis involve conventional content analysis, directed content analysis and summative content analysis (Hsieh & Shannon, 2005). Conventional content analysis is used when extant theories on a phenomenon are limited, resulting in new categories flowing from the observations. Directed content analysis is applied to validate or extend a theory or research findings. Summative content analysis involves counting the frequency of words or text focusing on the appearance of a particular content or keyword. In this study, conventional content analysis was employed to derive the product returns processes established from customers. Directed content analysis was utilized to reassure the possible dimensions of return services generated from the related literature in marketing and logistics.

In this regard, three independent judges (marketing scholars) generated and coded the patterns of returns process and returns service expectations. Texts regarding customer expectations were categorized with the preliminary coding scheme in Table 3.1. If any passages could not be categorized, they would be named a new code.

According to Neuendorf (2002), inter-judge reliability is established when there are at least two judges. Inter-judge reliability was examined to determine whether different judges categorized the same patterns into the same categories (Latham and Saari, 1984). The reliability is calculated as (Voss, Tsikriktsis, & Frohlich, 2002):

$$\text{Reliability} = \frac{the\ number\ of\ agreements}{tho\ total\ number\ of\ agreements + the\ number\ of\ disagreement}$$

The inter-judge agreement value of 0.95 was satisfactory, exceeding the cut-off value of 0.8 (Latham and Saari, 1984). For step 5 and 6, a preliminary summary was presented and searched for alternative understandings. The panels then analyzed and matched the resulting dimensions with initial COPRS dimensions (Table 3.1). The results of individual in-depth interviews are presented below (Step 7).

3.3.4 Findings of individual in-depth interviews

According to the interviewees' experiences, product returns within the reverse flow involved customer request to accommodate improper functions or damaged devices, to return the products, to execute the repairs, and to exchange the products. The provided services were repairing, product compensation, exchanging for new/refurbished ones under warranty period, exchanging for new/refurbished ones with additional payment, and providing a new purchase. Their experiences included five different brands. In contacting the service providers, the participants described the processes as follows (Table 3.4).

[Table 3.4]

From Table 3.4, it should be noted that from customer perspectives, the returns service processes under warranty or out of warranty period were similar except for step 4. The customer had to pay service fee or related charges for the returns. In brief, the reverse flow of process starts from end consumers.

Based on Table 3.2 and Table 3.4, product returns service processes from firm and customer perspectives were compared (Table 3.5). Both processes were derived from in-depth interviews with the supply side and demand side of product returns processes in mobile industry.

Focusing on product returns service processes from customer points of view, interviewees described their requirements and expectations in each step. Interestingly, the following quotation from a participant illustrated some passages which did not exist in extant related literatures:

> As you know, we use our mobiles all and every day. When (it was) out of order and must be taken to the service center for checking, once it took almost two weeks. What should I do? I hope the firm provides a second mobile for me during that time, like car repair services.

Another participant noted:

> I would expect service employee to explain in a simple word what happened with my mobile. They should provide me with cost and time information of repairing or exchanging for a new one.

Their expectations of returns service in each step of the returns process are shown in Table 3.6. The results provided the better understandings of customer expectations of product returns service provided by firms, a key objective of introducing qualitative method in this study.

[Table 3.6]

In addition to measures derived from literature review, some of those key outcomes of the interviews would be used in developing measurement items for further questionnaire surveys. Regarding sources of customer expectations, key sources mainly included past experience of the customers, individual consumer needs, and corporate image respectively.

Based on three individual judges' analysis, the qualitative items were matched with initial COPRS dimensions and summarized in Table 3.7. It should be noted that there were no additional dimensions of returns service performance measurement.

[Table 3.7]

Table 3.7 confirms that the resulting dimensions from qualitative interviews were consistent with those derived from literature reviews (Table 3.1).

3.4 Generating a preliminary measure

The qualitative findings and the COPRS performance definition were discussed with three experts including academics and practitioners in service marketing and logistics field. Accordingly, the experts agreed that the developed definition could encompass the qualitative results. For Step 3, to generate a preliminary measure, items derived from literature review and consumer interviews were validated by the same panel of experts. It should be noted that based on expert validation, some items from those two sources were merged into one item due to similar content. For example, the item of "The firm's requirements on the condition of

product returned are appropriate." derived from literature review and the item of "Appropriate conditions for claim" based on interview results were finalized as "The firm's requirements on the condition of product returned are appropriate". In that way, a preliminary COPRS performance measure was generated (Table 3.8).

[Table 3.8]

3.5 Research Hypotheses

In order to answer research question of how customer-oriented product returns service performance enhance customer satisfaction and trust, two key elements of long-term relationship with customers, some research hypotheses are developed.

3.5.1 COPRS performance and returns satisfaction

Effective product returns management could increase customer service level, thus improving customer satisfaction (Stock et al., 2006) and then leading to positive long term relationship with customers (Petersen & Kumar, 2010). Measuring customer satisfaction with product returns service is essential as it has been proven that returns satisfaction has positive impact on profit (Petersen & Kumar 2010). The current study proposes that customer orientation, service quality improvement and service recovery management are necessary to be integrated into the product return process in order to restore and enhance customer satisfaction.

Two types of customer satisfaction are transaction-specific satisfaction and cumulative satisfaction (Andreassen, 2000; Yang, 2012). Transaction-based satisfaction is evaluated by the customer for a specific purchase occasion while cumulative customer satisfaction is an evaluative judgment based on the overall experiences with a product or service over a period of time (Anderson, Fornell, & Lehmann, 1994; Wang, Lo & Yang, 2004). Since cumulative satisfaction is more useful to analyze firm performance and predict subsequent consumer behaviors (Wang et al., 2004), this study concentrates on the latter i.e. customer satisfaction on product returns service or returns experiences over time.

Since COPRS dimensions are derived from customer orientation, service recovery, service quality, product returns and reverse logistics literature, past researches showing the positive relationship between the performance of these constructs and customer satisfaction will be discussed.

A customer orientation implies that an organization can develop a sustainable competitive advantage by understanding and meeting the needs of their customers (Deshpande et al., 1993). Kohli and Jaworski (1990) and Narver and Slater (1990) assert that all firm activities are incorporated in customer responsiveness and that firm profits are from customer satisfaction. Therefore, firms should offer satisfactory experience (Petersen & Kumar, 2010) with regard to return service offerings. Prior research also indicated the positive relationship between customer orientation and customer satisfaction (Guo, 2001). Hence, customer-oriented product returns service should enhance customer satisfaction.

Further, considering product returns service as service recovery, service providers should manage return service based on customer-focused information in order to satisfy their expectations. According to Choi and La (2013), recovery satisfaction refers to "the customer's evaluation of how well a service provider handled a service failure". It helps maintain customer relationships (Fornell & Wernerfelt, 1987). Additionally, the quality of service recovery (McCollogh, 2009; Swan & Bower, 1998), in this study treated as a key aspect of COPRS dimensions, plays a great role in satisfaction of the customer (Bitner & Hubber, 1994; Krishna et al., 2011; McCollogh, 2009).

It is widely accepted that service quality is a fundamental to customer satisfaction (Andreassen, 2000). In view of that, cognitive evaluation regarding the quality of the service precedes the formation of the emotional affect i.e. satisfaction (Dabholkar, 1995). Previous researches have shown the positive link between service quality (a determinant of COPRS) and customer satisfaction (e.g. Cronin & Taylor, 1992, Spreng & Mackoy, 1996). In particular, logistics studies (Daugherty, Stank, & Ellinger, 1998; Davis, 2006) found the positive influence of both operational (e.g. timeliness) and relational (e.g. empathy, responsiveness) logistics service performance on satisfaction. Product returns and reverse logistics literatures also emphasized that the effective product returns management could

improve customer satisfaction (Autry et al., 2000; Mollenkopf et al., 2007; Stock et al., 2006). From these supporting evidences, the current study proposes that the customer-oriented product returns service performance positively relates to returns satisfaction.

Hypothesis (H1): Customer-oriented product returns service (COPRS) performance positively relates to returns satisfaction.

3.5.2 Returns satisfaction and customer trust

A consumer can trust a brand, product, service or company (Alongso, 2000). Recently, trust in company has received increased attention in management and marketing literature (Kantsperger & Kunz, 2010). This study specifically concentrates on customer trust in an entire company i.e. the service provider who provides product returns service offerings to customers. In this regard, customer trust in a firm can be defined as "a customer's willingness to rely on a service provider in which a customer has confidence" (Moorman et al., 1993; Weun et al., 2004).

Trust is considered to be a key component of consumer perceptions about brands and firms (Aeker, 1997). It is reflected as a reduced customer's perception of risk toward the firm (Shpetim, 2012). In the product returns context, a customer's entire relationship with a company involves a certain level of uncertainty for all purchases which is not known until post-purchase activities (Petersen, 2008). Petersen explained that if the customer returns a product satisfactorily, this level of uncertainty is probably removed by decreasing the perceived risk of future purchases. Thus, the level of uncertainty will decline over time whether a customer returns a product or not. Consequently, the customer knows that all purchases that do not fit his needs can be returned and treated satisfactorily.

Accordingly, prior studies support the positive relationship between satisfaction and trust (Anderson & Weitz, 1989; Ganesan, 1994; Shpetim, 2012). Recognized as service recovery process, satisfaction with product returns service can create a higher level of customer trust (Choi & La, 2013). Customers evaluate the service provider's trustworthiness based on their satisfaction with service recovery efforts (Aeker, Fournier, & Brasel, 2004), then leading to customer trust (Mayer,

Davis, & Schoorman, 1995). Therefore, the current study extends these conclusions to the impact of returns satisfaction on customer trust in the company.

Hypothesis 2 (H2): Returns satisfaction positively relates to customer trust in the company.

3.5.3 COPRS performance and customer trust

From hypotheses 1 and 2, the study suggests that customer-oriented product returns service (COPRS) performance indirectly impact customer trust. Previous findings (Fullerton & Taylor, 2002; Kantsperger & Kunz, 2010; Shpetim, 2012) also support the mediating role of satisfaction in the service performance-trust relationship.

Alternatively, customer trust can arise through firm performance well above customer expectation's level (Alongso, 2000). Trust in the firm is established through the policies and practices governing the exchange (dos Santos and Fernandes, 2008). Customer trust is based on ending performance where positive result enhances trust and negative ending causes the trust to decline (Afzal, Khan, Rehman, Ali, & Wajahat, 2010). Agreeing to this view, customer judgments about trust in the company are based on the performance of product returns service as a whole.

Past researches also indicated that some key features of COPRS dimensions i.e. customer orientation, service quality and service recovery performance positively relate to customer trust (Alsajjan, 2014; Choi & La, 2013; dos Santos & Basso, 2012; Hazra & Srivastava, 2009). The nature regarding non-opportunistic and flexible of customer orientation supports the linkage between customer orientation and trust, thus making a competitive advantage (Farrelly & Quester, 2003; Saparito, Chen, & Sapienza, 2004; Luo, Hsu, & Liu, 2007). Other than accumulated satisfaction, customer trust is typically established through the consistent of perceived service quality, the fulfillment of customer requirement, honesty, fair treatment, and the confidence that the firm intends to serve the customers at their best interest (Choi & La, 2013). Those become the key characteristics of COPRS dimensions. As a result, this study also proposes that the performance of customer-oriented product returns service could directly influence customer trust.

Hypothesis 3 (H3): Customer-oriented product returns service (COPRS) performance positively relates to customer trust in the company.

3.6 Research framework

All research hypotheses and the proposed framework are represented in Figure 3.4.

[Figure 3.4]

In addition, it was found in the qualitative study that the research hypotheses proposed were confirmed in interviews with customers. Specifically, the positive relationship between returns service performance and satisfaction (H1) and between satisfaction and customer trust in company (H2) were totally confirmed. However, for hypothesis 3 or the direct effect of returns service performance on customer trust, the responses were diverse but consistent with the research framework. Some customers agreed that the performance of customer-oriented product returns service could directly affect customer trust in the company while the others suggested that cumulative satisfaction mediated the relationship between returns service performance and trust.

Therefore, based on literature review, the findings of qualitative study, and expert validation, the proposed COPRS performance indicators and research hypotheses were ready for further testing. Accordingly, step 4 to 7 employed in developing the new measure would be described in the next chapter.

3.7 Summary

This chapter explains the development of COPRS performance measure, qualitative study, research hypotheses and framework regarding customer satisfaction and trust. The summary of construct and sub-construct definitions and research hypotheses are concluded in Table 3.9, Table 3.10 and Table 3.11 respectively.

[Table 3.9]

[Table 3.10]

[Table 3.11]

Table 3.1 The dimensions of new product returns service performance scale

Proposed dimensions	Customer orientation literature	Service recovery literature	Service quality literature	Product returns and reverse logistics literature
Tangibles		Boshoff (2005)	Parasuraman et al. (1985, 1988)	
Responsiveness	Deshpande et al. (1993), Jeong and Hong (2007)	Boshoff (1997); Gilbert and Wang (2003), Krishna et al. (2011), Parasuraman et al. (2005);	Parasuraman et al. (1985, 1988)	
Explanation		Boshoff (1999,2005), Krishna et al. (2011), Tax et al. (1998)		
Empathy	Bowen et al., 1989, Deshpande et al. (1993), Jeong and Hong (2007), Jack et al. (2009),	Krishna et al. (2011), Tax et al. (1998)	Lai et al. (2007), Parasuraman et al. (1985, 1988)	
Empowerment		Boshoff (1997, 2005), Krishna et al. (2011)		
Reliability		Gilbert and Wang (2003)	Parasuraman et al. (1985, 1988)	
Timeliness	Tien et al. (2009)	Mostafa et al. (2014), Tax et al. (1998)	Bienstock et al. (19970, Davis (2006), Mentzer et al. (1999)	Autry et al. (2001), Day (1998), Richey et al. (2005a), Yellepeddi (2006)

Table 3.1 (continued)

Proposed dimensions	Customer orientation literature	Service recovery literature	Service quality literature	Product returns and reverse logistics literature
Information availability	Tien et al. (2009), Jeong and Hong (2007)	Krishna et al. (2011)		
Assurance		Barlow and Moller (1996), Chang (2008)	Parasuraman et al. (1985, 1988)	
Compensation		Ok (2004), Parasuraman et al. (2005), Tax et al. (1998)		Autry et al., (2001), Richey et al. (2005a)
Feedback (customer contact)	Jeong and Hong (2007)	Boshoff (2005)		
Convenient process		Tax et al. (1998)	Mentzer et al., (1999)	Autry et al., (2001), Mollenkopf et al. (2007), Petersen and Kumar (2010), Richey et al. (2005a)

Table 3.2 The product returns service process in mobile industry

The product returns service process	Activities
1. Servicing a customer call and/or carry-in	Providing information and receiving customer requests by telephone. Organizing queuing for the customers who bring in the products to the store for servicing.
2. Receiving customer request	Handling the return requests received from customers at the service counters. Verifying the items and isolating the problems in order to apply the appropriate solutions regarding receiving returns, repairing, exchanging with or without additional costs. Reviewing insurance. Providing alternatives for customer consideration.
3. Processing the request	Receiving returns only in case of "dead on arrival" (DOA) and a fault is detected within 7-day period starting from the purchase date and not the result of damage by the customers. Ordering the parts and executing the repairs in terms of repairing services. The processing time can vary from 1 hour to two weeks depending on the lead time of the parts ordered. Exchanging for the new devices is normally done in a short time. In case of returning or exchanging the devices, the firms' disposition choices include refurbish, resell or recycle.
4. Inspecting and completing the pick up process	Inspecting the delivered devices. Notifying the owners to pick up items by telephone in case of repairing. Reviewing work with users as a final inspection.

Source: Interviews with customer service managers who work in mobile firms

Table 3.2 (continued)

The product returns service process	Activities
5. Measuring Performance	Measuring returns services performance on a random basis via emails and/or phone calls to make improvements to the services provided.

Source: Interviews with customer service managers who work in mobile firms

Table 3.3 Interviewees' characteristics

Variables	Categories	Percentage of Participants
Gender	Male	50% (10)
	Female	50% (10)
Age	Below 25	30% (6)
	25-35	30% (6)
	36-45	15% (3)
	46-55	15% (3)
	Above 56	10% (2)
Education Level	Below undergraduate	35% (7)
	Undergraduate	25% (5)
	Graduate	40% (8)
Occupation	Students	20% (4)
	Employees	25% (5)
	Business owners	15% (3)
	Lecturers	20% (4)
	Government officials	10% (2)
	Others (retiree, interior designer)	10% (2)

Table 3.4 The product returns service processes from customer perspectives

The product returns service processes	Activities
1. Seeking for returns service information	Searching for locations and operating hours via phones and/or websites. Requesting for preliminary explanations of product problems.
2. Contacting the service centers	Bringing in the products to the store for servicing, queuing, complaining (if not customer's fault) and requesting for product's problem solving. Negotiating for claims, processing time and costs.
3. Looking forward to compensation/returns	Calling for status update of servicing. Notified for returns pick-up.
4. Inspecting and receiving compensation/returns	Testing functions of the returns/products. Paying service fee and related charges (if any).
5. Evaluating the whole returns process	Assessing performance of firm's returns service after completing the overall process. Contacting and complaining the service providers when the product does not perform well.

Table 3.5 The comparison of the product returns service processes from firm and customer perspectives

Product returns service processes (Firm perspectives)	Product returns service processes (Customer perspectives)
1. Servicing a customer call and/or carry-in	1. Seeking for returns service information
2. Receiving customer request	2. Contacting the service centers
3. Processing the request	3. Looking forward to compensation/returns
4. Inspecting and completing the pick up process	4. Inspecting and receiving compensation/returns
5. Measuring Performance	5. Evaluating the whole returns process

Table 3.6 Customer expectations of product returns service

Product returns processes	Customer expectations
1. Seeking for returns service information	Easy to access information Availability of service locations Availability and flexibility of operating hours Preliminary explanation of why problems had occurred Concern for customer' s problems
2. Contacting the service centers	Shorter length of time for queuing Facilities and activities provided during queuing Good explanation of why problems had occurred Taking care of problems promptly Knowledgeable employees/technicians Appropriate conditions for claim Prompt and reliable employees' decision for claim Friendly, polite and service-minded employees Adequate service employees Concern for customer' s problems Understandings of customer needs and requests Communicating effectively Ease and speed of processing the requests Information of cost and time provided Solution choices provided
3. Looking forward to compensation/returns	Easy to access information Shorter length of time for processing Periodic feedback from service employees Status information provided Good responsibility of service employees Rental mobile provided for free

Table 3.6 (continued)

Product returns processes	Customer expectations
4. Inspecting and receiving compensation/returns	Accurate returns' functions Delivery of returns at the time firm promises Shorter length of time for processing Guarantee for double fault Good explanation of what has done and suggestion of product usage
5. Evaluating the whole returns process	Accurate returns' functions Reliable and knowledgeable employees Ease and speed Convenient process of returns One-stop service One service employee for one customer No double fault Firm follow-up Compensating when customer dissatisfaction has occurred

Table 3.7 Customer expectations of returns service and COPRS performance dimensions

Product returns service processes (Customer perspectives)	Customer expectations (In-Depth Interviews)	COPRS performance dimensions
1. Seeking for returns service information	Easy to access information	Information availability
	Availability of service locations	Information availability
	Flexibility of service locations	Empathy
	Availability of operating hours	Information availability
	Flexibility of operating hours	Empathy
	Concern for customer' s problems	Empathy
	Preliminary explanation of why problems had occurred	Explanation
2. Contacting the service centers	Shorter length of time for queuing	Timeliness
	Adequate service employees	Tangibles
	Facilities and activities provided during queuing	Tangibles
	Good explanation of why problems had occurred	Explanation
	Communicating effectively	Responsiveness
	Taking care of problems promptly	Responsiveness
	Reliable employees' decision for claim	Reliability
	Concern for customer's problems	Empathy
	Friendly, polite and service-minded employees	Empathy
	Understandings of customer needs and requests	Empathy
	Knowledgeable employees/technicians	Assurance
	Information of cost and time provided	Information availability
	Solution choices provided	Information availability
	Ease of processing the requests	Convenient process
	Speed of processing the requests	Responsiveness
	Appropriate conditions for claim	Convenient process

Table 3.7 (continued)

Product returns service processes (Customer perspectives)	Customer expectations (In-Depth Interviews)	COPRS performance dimensions
3. Looking forward to compensation/returns	Easy to access information	Information availability
	Status information provided	Information availability
	Shorter length of time for processing	Timeliness
	Periodic feedback from service employees	Feedback
	Good responsibility of service employees	Reliability
	Understandings of customer needs	Empathy
	Rental mobile provided for free	Compensation
4. Inspecting and receiving compensation/returns	Status information provided	Information availability
	Shorter length of time for processing	Timeliness
	Periodic feedback from service employees	Feedback
	Good responsibility of service employees	Reliability
	Understandings of customer needs	Empathy
5. Evaluating the whole returns process	Rental mobile provided for free	Compensation
	Reliable employees	Reliability
	Knowledgeable employees	Assurance
	Ease and speed	Responsiveness
	Convenient process of returns	Convenient process
	One-stop service	Convenient process
	One service employee for one customer	Empowerment
	Overall returns process completed by one service employee	Empowerment
	No double fault	Reliability
	Firm follow-up	Assurance
	Compensating when customer dissatisfaction has occurred	Compensation

Table 3.8 A preliminary COPRS performance measure

Proposed dimensions	Literature review	Qualitative interviews	Expert validation (A preliminary measure)
Tangibles	"The firm has up-to-date equipment." (Parasuraman et al., 1988) "The firm's physical facilities are visually appealing." (Parasuraman et al., 1988) "The employees work in a tidy, professional environment." (Boshoff , 2005)	-Adequate service employees -Facilities and activities provided during queuing	-The service center has up-to-date equipment. -Physical facilities are visually appealing. -Employees work in a tidy, professional environment. -The number of employees is adequate. -Facilities and activities are provided during queuing.
Responsiveness	"Employees take care of problems promptly." (Parasuraman et al., 2005) "Employees can promptly response to customer's request even when they are busy." (Parasuraman et al.,1988)	-Taking care of problems promptly -Communicating effectively -Speed of processing the requests	-Employees take care of problems promptly. -Employees can promptly response to customer's request even when they are busy. -Employees communicate effectively. -Employees process your request rapidly.

Table 3.8 (continued)

Proposed dimensions	Literature review	Qualitative interviews	Expert validation (A preliminary measure)
Explanation	"The firm provided me with explanation of why the problem had occurred." "The employees I dealt with, provided a satisfactory explanation of why the problem had occurred." (Boshoff, 2005)	-Preliminary explanation of why problems had occurred -Good explanation of why problems had occurred -Good explanation what has done and suggestion of product usage	-Employees provide the customer with explanation of why problems had occurred. -Employees the customer deals with, provide a satisfactory explanation of why the problem had occurred. -Employees provide the customer with explanation of what has done with my product. -Employees provide the customer with suggestions of product usage when pick up.
Empathy	"Employees can be expected to give individual attention." (Lai et al.,2007; Parasuraman et al., 1988) "Employees know your needs." (Lai et al., 2007; Parasuraman et al., 1988)	-Concern for customer's problems -Understandings of customer needs and requests -Friendly, polite and service-minded employees -Flexibility of operating hours -Flexibility of service locations	-Employees can be expected to give individual attention. -Employees know the customer's specific needs in returning products. -Employees have the customer's best interests at heart. -Employees show sympathy for the customers when they have problems.

Table 3.8 (continued)

Proposed dimensions	Literature review	Qualitative interviews	Expert validation (A preliminary measure)
Empathy (continued)			-The operating hours are available to all customers. -The service locations are available to all customers.
Empowerment	"The employee I complained to first, was able to solve my returns problem." "The employee I complained to, had to find someone else to solve my problem." "My complaint was passed on from one employee to the next." (Boshoff, 2005)	-One service employee for one customer -Overall returns process completed by one service employee	-The employee the customer contacted to first, was able to solve the customer's returns problem. -The employee the customer contacted to, had to find someone else to solve his/her returns problem. -The customer's request was passed on from one employee to the next. -One employee could complete the overall process for the customer.
Reliability	"When promises to do something, it does so." (Parasuraman et al.,1988) "Employees are dependable." "The firm keeps statement accurately." (Lai et al.,2007)	-Reliable employees' decision for claim -Good responsibility of service employees -Accurate returns' functions -No double fault	-When promises to do something, it does so. -Employees are dependable. -The firm keeps statement accurately. -Employees' decisions are reliable.

Table 3.8 (continued)

Proposed dimensions	Literature review	Qualitative interviews	Expert validation (A preliminary measure)
Reliability (continued)			-The product's functions can perform well and accurately as usual. -Double fault of product problems is not found after completing the service.
Timeliness	"The firm's processing time is short." (Mentzer et al.,1999; Tien et al., 2009) "Delivery of returns arrives on the date the firm promised." (Mentzer et al.,1999; Tien et al., 2009) "The firm handles my returns quickly." (Tien et al., 2009)	-Shorter length of time for queuing -Shorter length of time for processing -Delivery of returns at the time firm promises	-The firm's processing time is short. -Delivery of returns arrives on the date the firm promised. -The firm handles the customer's returns quickly. -The time for queuing is short.
Information availability	"Related information is readily available or provided to customers." (Mentzer et al.,1999; Tien et al., 2009)	-Easy to access information -Information availability of service locations -Information availability of operating hours	-The firm provides information of operating hours and location of service centers. -The firm provides problem's solution choices information.

Table 3.8 (continued)

Proposed dimensions	Literature review	Qualitative interviews	Expert validation (A preliminary measure)
Information availability (continued)		-Information of cost and time provided -Solution choices provided -Status information provided	-The firm provides compensation/returns status information. -Employees provide information of processing time and tentative costs for me. -It is easy to access firm's service information.
Assurance	"Employees can be trusted." "You have confidence in product returns process of the firm." "Employees are polite." "Employees get adequate support from the firm to do their jobs well." (Parasuraman et al., 1988) "The firm provides a follow-up." (Barlow and Moller, 1996)	-Knowledgeable employees/technicians -Firm follow-up -Guarantee for double fault	-Employees can be trusted. -The customer has confidence in product returns process of the firm. -Employees are polite. -Employees get adequate support from the firm to do their jobs well. -The firm provides a follow-up after the compensation is provided. -Employees the customer deals with are knowledgeable. -The firm provides warranty for the returns.

Table 3.8 (continued)

Proposed dimensions	Literature review	Qualitative interviews	Expert validation (A preliminary measure)
Compensation	"The firm compensates me for problems it creates." (Mollenkopf et al, 2007; Parasuraman et al. ,2005) "The firm compensates me appropriately." (Genchev, 2007)	-Compensating when customer dissatisfaction has occurred -Rental mobile provided for free	-The firm compensates the customer for problems it creates. -The firm compensates the customer appropriately. -The firm compensates the customer when he/she is dissatisfied with the returns service. -Rental mobile is provided for free.
Feedback (customer contact)	"The firm informs me in writing about the progress made to solve my product problem." (Boshoff , 2005) "Employees keep in touch with me." (Jeong and Hong, 2007)	-Periodic feedback from service employees	-The firm informs the customer about the progress made to solve his/her product problem. -Employees keep in touch with the customer. -The firm provides periodic feedback during processing time.

Table 3.8 (continued)

Proposed dimensions	Literature review	Qualitative interviews	Expert validation (A preliminary measure)
Convenient process	"The firm provides me with convenient options for returning items." "The firm's requirements on the condition of product returned are appropriate." (Mollenkopf et al., 2007) "Requisitioning procedures of returning product are easy to use." (Mentzer et al., 1999)	-Ease of processing the requests -Appropriate conditions for claim -Convenient process of returns -One-stop service	-The firm provides the customer with convenient options for returning items. -The firm's requirements on the condition of product returned are appropriate. -Requisitioning procedures of returning product(s) are easy to use. -The firm provides one-stop service for requisitioning procedures.

Table 3.9 A summary of construct definitions

Constructs	Definitions	References
Customer-oriented product returns service (COPRS)	Service offerings provided by firms to end consumers within the product returns process based on putting customers' needs first in order to enhance customer satisfaction**.**	Literature review, qualitative study, expert validation
Customer-oriented product returns service performance (COPRS performance)	The firm performance in providing service within the product returns process to end consumers based on putting customers' needs first in order to enhance customer satisfaction.	Literature review, qualitative study, expert validation
Returns satisfaction	A subjective evaluation of the overall experience with the returns service provided by company over a period of time	Anderson et al. (1994), Andreassen (2000), Oliver (1980), Wang et al. (2004), expert validation
Customer trust in the company	A customer's willingness to rely on a company who provides returns service in which he/she has a confidence	Moorman et al. (1993), Weun et al. (2004), expert validation

Table 3.10 A summary of the definitions of COPRS performance dimensions

COPRS performance dimensions	Definitions	References
Tangibles	The physical appearance of facilities, equipment and personnel	Boshoff (2005), Parasuraman et al. (1985, 1988), expert validation
Responsiveness	Employee's willingness and readiness to help customers and provide prompt service	Boshoff (1997), Deshpande et al. (1993), Ladhari (2009), Parasuraman et al. (1985), expert validation
Explanation	An explanation of the problem that has occurred and what has been done to solve it	Boshoff (2005), qualitative study, expert validation
Empathy	The sympathy and personalized attention the service employees provided to their customers including understanding of customer problems from the customer point of view	Krishna et al. (2011), Ladhari (2009), Parasuraman et al. (1985), expert validation
Empowerment	The company gives the service employees the authority to use their common sense and to take care of their customers	Lashley (1999), Krishna et al. (2011), expert validation
Reliability	The company's ability to render the service reliably and accurately	Parasuraman et al. (1985), Ladhari (2009), expert validation
Timeliness	The time taken to perform the service and the company's ability to provide its customers with timely returns delivery	Day (1998), Mostafa et al. (2014), Tax et al. (1998), Tien et al. (2009), expert validation
Information availability	The company allows its customers to access information related to the returns process according to customer needs	Cho and Park (2003), Jeong and Hong (2007), Tien et al., (2009), expert validation

Table 3.10 (continued)

COPRS performance dimensions	Definitions	References
Assurance	Employees' knowledge and courtesy to perform the returns service and their ability to encourage trust and confidence	Barlow and Moller (1996), Parasuraman et al. (1985), Ladhari (2009), expert validation
Compensation	The compensation provided by company when returns or problems occur	Genchev (2007), Parasuraman et al. (2005), Rogers et al. (2002), expert validation
Feedback	Feedback provided by the company about the progress made to solve a problem	Boshoff et al. (2005), expert validation
Convenient process	The flexible returns process which should be easy to access in a convenient manner	Khan (2010), Tax et al. (1998), expert validation

Table 3.11 A summary of research hypotheses

Independent Variables	Dependent Variables	Hypotheses and Predictions
Customer-oriented product returns service (COPRS) performance	Returns satisfaction	H1 (positive)
Returns satisfaction	Customer trust in the company	H2 (positive)
Customer-oriented product returns service (COPRS) performance	Customer trust in the company	H3 (positive)

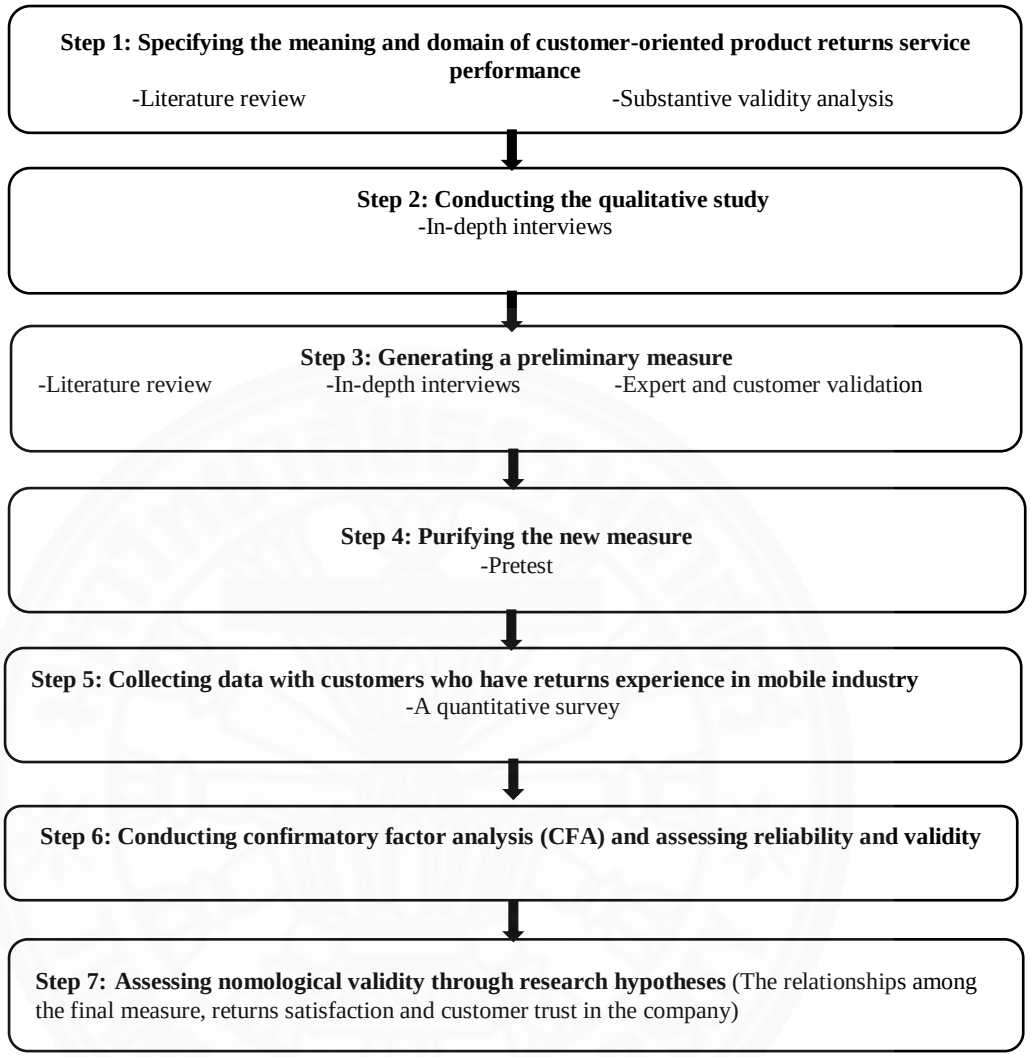


Figure 3.1 Steps employed in developing customer-oriented product returns service performance measure

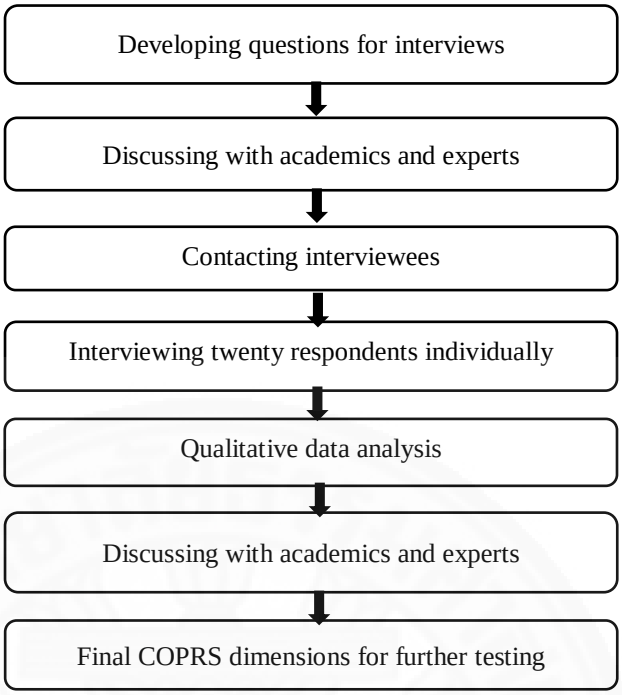


Figure 3.2 Steps for individual in-depth interviews

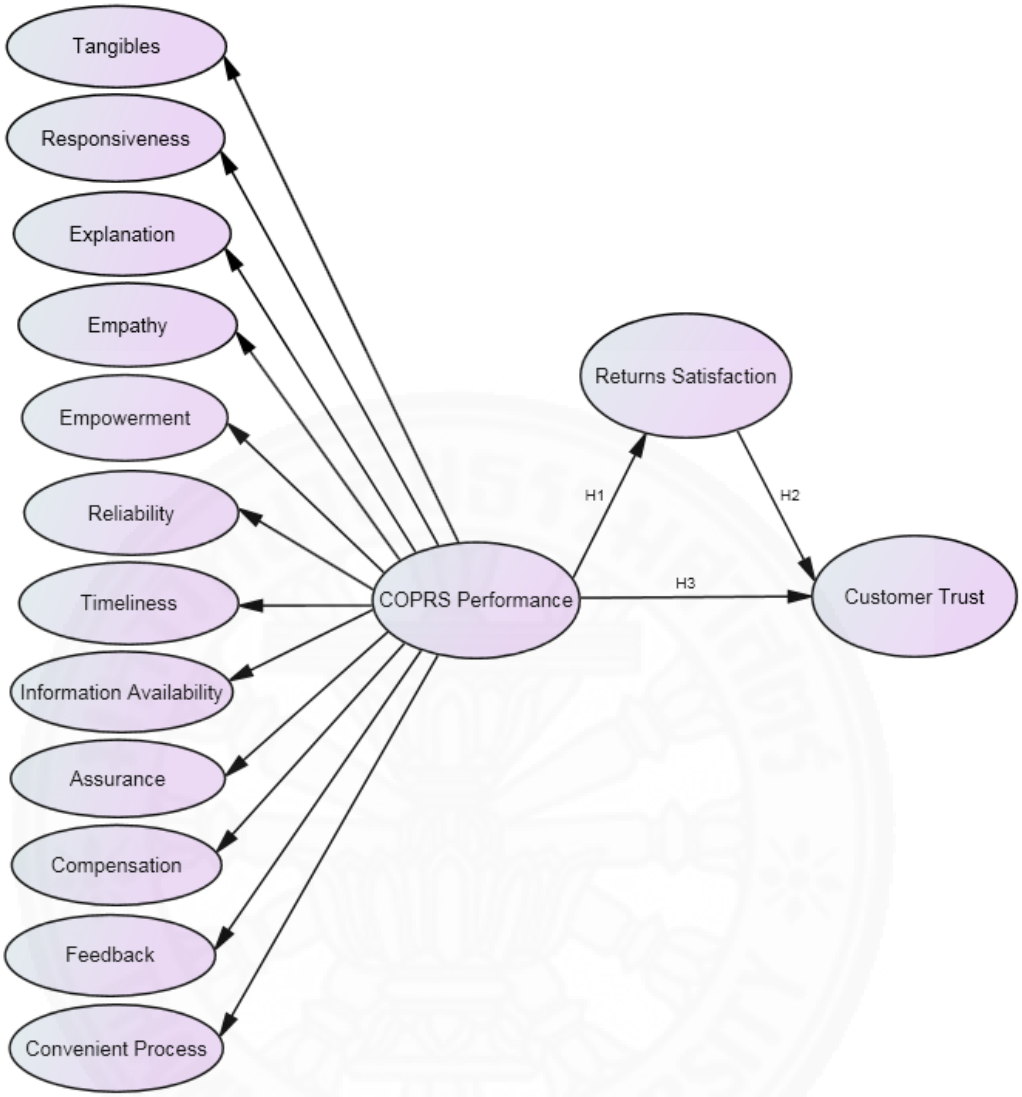


Figure 3.4 The Proposed Conceptual Framework

CHAPTER 4
RESEARCH METHODOLOGY

To operationalize the customer-oriented product returns service (COPRS) performance second-order construct and test research hypotheses, the quantitative methodology was employed as follows.

4.1 Research Design

Referring to steps employed to develop the new measure in Figure 3.1, the study has specified the meaning and domain of COPRS performance construct in the previous chapter (Step 1) followed by a qualitative study (Step 2). A preliminary new measure was subsequently developed based on literature review, depth interviews and expert validation (Step 3). Then, in this chapter, quantitative approach was utilized to operationalize, refine and validate the resulting COPRS performance measure (Step 4 and step 5). In sum, to develop the metrics of customer-oriented product returns service performance, the methodology of mixed method i.e. qualitative and quantitative approaches was employed.

4.2 Quantitative study

The current study adopted a quantitative cross-sectional design. A cross-sectional study had the advantage of collecting data from a large number of people at a single point in time (Zikmund et al., 2010) and examining the simultaneous occurrence of the variables of interest (Churchill, 1995). A pretest and a large survey were administered to purify and validate the COPRS performance measure. To conduct the surveys, the second-order construct of COPRS performance generated in Step 3 were operationalized as follows.

4.2.1 Measurement of variables

4.2.1.1 COPRS performance dimensions

(1) Tangibles

Based on SERVQUAL (Parasuramann et al., 1988), RECOVSAT (Boshoff, 2005) scales and qualitative results, tangibles were measured by five items. The last two items were derived from qualitative interviews.

TB1) The service center has up-to-date equipment.

TB2) Physical facilities are visually appealing.

TB3) Employees work in a tidy, professional environment.

TB4) The number of employees is adequate.

TB5) Facilities and activities are provided during queuing.

(2) Responsiveness

This dimension was operationalized based on SERVQUAL (Parasuramann et al.,1988) and E-RecS-Qual (Parasuraman et al., 2005). The last statement was operationalized based on qualitative interviews.

RP1) Employees take care of problems promptly.

RP2) Employees can promptly response to your request even when they are busy.

RP3) Employees communicate effectively.

RP4) Employees process your request rapidly.

(3) Explanation

The first two items were adapted from RECOVSAT scale (Boshoff, 2005). The last two items were developed based on qualitative results.

EN1) Employees provide me with explanation of why problems had occurred.

EN2) Employees I deal with, provide a satisfactory explanation of why the problem had occurred.

EN3) Employees provide me with explanation of what has done with my product.

EN4) Employees provide me with suggestions of product usage when pick up.

(4) Empathy

Referring to SERVQUAL instrument (Parasuramann et al.,1988), the original scale was measured by five items. In this study, three items

adapted by Lai et al. (2007) are used. Item four (ET4) is adapted from Ladhari (2009)'s definition of empathy. The last two items were derived from qualitative study.

ET1) Employees can be expected to give individual attention.

ET2) Employees know your specific needs in returning products.

ET3) Employees have your best interests at heart.

ET4) Employees show sympathy for you when you have problems.

ET5) The operating hours are available to all customers.

ET6) The service locations are available to all customers.

(5) Empowerment

Three items were adapted based on RECOVSAT by Boshoff (2005). The last statement was operationalized based on consumer interviews.

EP1) The employee I contacted to first, was able to solve my returns problem.

EP2) The employee I contacted to, had to find someone else to solve my returns problem.

EP3) My request was passed on from one employee to the next.

EP4) One employee could complete the overall process for me.

(6) Reliability

It was measured by three items adapted from SERVQUAL scale (Parasuramann et al.,1988; Lai et al., 2007) and three items resulting from depth interviews.

RL1) When promises to do something, it does so.

RL2) Employees are dependable.

RL3) The firm keeps statement accurately.

RL4) Employees' decisions are reliable.

RL5) The product's functions can perform well and accurately

as usual.

RL6) Double fault of product problems is not found after completing the service process.

(7) Timeliness

The scale items were adapted from Mentzer et al. (1999) and Tien et al. (2009) to customize with product returns service. The last item was derived from consumer interviews.

TL1) The firm's processing time is short.

TL2) Delivery of returns arrives on the date the firm promised.

TL3) The firm handles my returns quickly.

TL4) The time for queuing is short.

(8) Information availability

This construct was measured by five items (adapted from Mentzer et al., 1999; Tien et al., 2009 and qualitative results).

IA1) The firm provides information of operating hours and location of service centers.

IA2) The firm provides problem's solution choices information.

IA3) The firm provides compensation/returns status information.

IA4) Employees provide information of processing time and tentative costs for me.

IA5) It is easy to access firm's service information.

(9) Assurance

Other than the original four items of SERVQUAL scale (Parasuramann et al., 1988), the item of a follow-up by firm was added as this process could provide the assurance that the problem should not occur again (Barlow and Moller, 1996). Qualitative outcomes result in the last three items.

AS1) Employees can be trusted.

AS2) You have confidence in product returns process of the firm.

AS3) Employees are polite.

AS4) Employees get adequate support from the firm to do their jobs well.

AS5) The firm provides a follow-up after the compensation is provided.

AS6) Employees I deal with are knowledgeable.

AS7) The firm provides warranty for the returns/compensation.

(10) Compensation

It was measured by four items adapted from E-RecS-Qual (Parasuraman et al., 2005; Mollenkopf et al., 2007) and the reverse logistics process (Genchev, 2007). The last item was derived from qualitative study.

CS1) The firm compensates me for problems it creates.

CS2) The firm compensates me appropriately.

CS3) The firm compensates me when I am dissatisfied with the returns service.

CS4) Rental mobile is provided for free.

(11) Feedback

The first item was adopted from RECOVSAT by Boshoff (2005). The others were adapted from Jeong and Hong (2007) and qualitative results respectively.

FB1) The firm informs me about the progress made to solve my product problem.

FB2) Employees keep in touch with me.

FB3) The firm provides periodic feedback during processing time.

(12) Convenient process

The measurement items were adapted from Mollenkopf et al., 2007's work regarding the liberal return policy and Mentzer et al. (1999) for requisitioning procedures. The last item was derived based on consumer interviews.

CP1) The firm provides me with convenient options for returning items.

CP2) The firm's requirements on the condition of product returned are appropriate.

CP3) Requisitioning procedures of returning product(s) are easy to use.

CP4) The firm provides one-stop service for requisitioning procedures.

In conclusion, the final measurement of COPRS consists of 12 dimensions with 56 items. The measurement of items is by means of five-point Likert scale from 1 to 5 rating from strongly disagree (1) to strongly agree (5). The five-point Likert scale, a method of summated ratings is simple to administer and interpret the data, thus is typically used in business researches (Zikmund et al., 2010).

4.2.1.2 Returns satisfaction

Cumulative customer satisfaction on product returns service offered by the firm was measured by four items of five-point Likert scale ranging from strongly disagree to strongly agree. The items were adapted from the measurement of post-recovery satisfaction by McCollough (2009), returns satisfaction by Mollenkopf et al. (2007), and cumulative customer satisfaction by Boshoff (2005) and Wang et al. (2004). Consumer interviews resulted in the last item.

RS1) I am completely satisfied with the firm's entire process of making my return.

RS2) The firm's efforts to handle my request is satisfactory.

RS3) I am not satisfied with the experiences with the returns service delivered by the firm at all.

RS4) I am completely satisfied with the experiences with the returns service delivered by the firm.

RS5) The firm's returns service meet my expectations.

4.2.1.3 Customer trust in the company

The measurement of customer trust in the company was adapted from dos Santos and Basso (2012), Jasfar (2001), Kozikowski (2012), Morgan and Hunt (1994), Sirdeshmukh et al. (2002) and Weun et al. (2004). Accordingly, five items of five-point Likert scale ranging from strongly disagree to strongly agree were measured. The last item was derived based on qualitative study.

CT1) The firm's policies and practices are completely dependable.

CT2) I can count on the firm to respond to my requests.

CT3) I can count on the firm's promises.

CT4) I can trust this firm completely.

CT5) The firm sometimes cannot be trusted.

CT6) Overall, I can trust the firm's offerings.

Multi-item scales were chosen in the present study as previous researches show that multi-item scales have been significantly more reliable than the single-item scales (Cronin, Brady, & Hult, 2000; Dabholkar et al., 1996, 2000; Spreng & Mackoy, 1996). According to Davis (2006) and Hair et al. (2006), three to five items for a construct as shown in the current model were recommended. Further, some items were reversed to avoid response set bias (Boshoff, 2005; Churchill, 1979; Ruekert & Churchill, 1984) and a warning will be given to the respondents before completing the questionnaire survey (Babakus & Boller, 1992).

In summary, the final conceptual model is proposed in Figure 4.1

[Figure 4.1]

4.2.2 Population, research sample and unit of analysis

The population of this study is the number of consumers who have experience in returning or repairing or exchanging mobile products in Thailand. Since the statistics of the total number of population in this particular segment has never been presented, the study estimated the population size by multiplying the number of mobile subscribers in Thailand of 97.68 million in 2014 (Office of the National Broadcasting and Telecommunications Commission of Thailand, 2015) with average

returns rate of 15% (Genchev, 2007). The result yields the approximate population size as 14.65 million consumers.

Regarding the sample size, it was determined on the basis of the ratio of observations per variable. According to Hair et al. (2006), such ratio should be at least 5 to 1 while Bentler and Chou (1987) proposed that the ratio to number of observed variables of 10:1 is more appropriate to conduct SEM for arbitrary distributions. Based on the model complexity consisting of 67 observed variables, the present study was intended to be conducted with a sample of 1,200 consumers to accommodate refusals as some respondents might refuse to participate. According to Churchill (1995), the refusal rates or percentage of those contacted who had refused to participate in a survey was 15 - 38%. In addition, some returned questionnaires might be unusable. Therefore, to achieve a ratio of observations per observed variables of 10:1 (670 sample units), 1,200 customers would be contacted.

The sampling technique was quota sampling to ensure that each brand would be included proportionately in the sample. The advantages of this technique are that stratification of population is introduced and list of population is not required (Zikmund, Babin, Carr, & Griffin, 2010). To reduce the bias in classification of subjects, the study classified the population based on the firm's market share information of mobile companies (Office of the National Broadcasting and Telecommunications Commission of Thailand, 2015), then fixed the quota correspondingly.

The unit of analysis of this study was the individual level. Since the current study focuses on customer-orientation and value co-creation concepts in measuring returns service performance, customers are in a meaningful position to evaluate COPRS performance. Specifically, the research sample was consumers who have returns service experience in contacting the direct stores of mobile companies.

4.2.3 Research Instruments

Questionnaire was the instrument used in the quantitative survey. It was evaluated by customers who have experience in returning products of five particular mobile service providers representing four main brands in Thai markets. The questionnaire in this study consisted of five parts with Part I – describing

respondents' demographic profiles, Part II - dealing with respondents' experience in product returns, and Part III - asking for respondents' evaluation of their perception of the product returns service of that brand using COPRS measure. To test research hypotheses, Part IV and Part V were added, asking for respondents' evaluation of their returns satisfaction and customer trust in the corresponding company respectively. Regarding questionnaire development, the English version was translated into Thai version for data collection. To avoid translation error, an English language editor was requested to translate the Thai questionnaire into English. The resulting version was then compared to the original English version and revised until the statements reflect the novel. The content validity of the instrument was validated using Index of Item-Objective Congruence (IOC).

4.2.4 Index of Item-Objective Congruence (IOC)

According to Berk (1984), an assessment of the congruence between items and objectives is crucial for content validation of an instrument. An efficient measure that is used in test development for evaluating content validity is the index of item-objective congruence (Turner & Carlson, 2002). The measure was developed by Rovinelli and Hambleton (1977) to numerically assess content experts' evaluations of items in the item validation process. In this regard, ratings from content specialists are used to evaluate the match between items and specific objectives proposed by the researcher. Specifically, a content specialist gives an item a rating of +1 for the perfect item objective congruence or definitely measuring, -1 for the worst item objective congruence or definitely not a measure of objective , and 0 for the unclear content whether it measures the hypothesized objective (Rovinelli & Hambleton, 1977).

After the specialists completed an evaluation procedure, all ratings were calculated as indices of item-objective congruence. According to Brown (1996), the cut-off value should be .50. The value of indices less than .50 indicates that those items are not being valid measures of their hypothesized objectives.

Accordingly, the current study adopted the IOC measure to evaluate the validity of instruments for all 67 items of the proposed constructs. The content specialists in this study consisted of five marketing and logistics academics from four

universities and two managerial experts. The cover letters and the IOC results are shown in Appendix F and G respectively. The IOC findings indicated that an item of "AS3) Employees are polite." was deleted as its index value was only .29, below the acceptable threshold of .50. Additionally, some contents were adjusted according to experts' comments. Subsequently, the instruments were finally used for pretest.

4.2.5 Pretest

According to Hair et al. (2006), a pretest should be conducted to purify scale measures prior to a confirmatory test. The pretest in this study was performed with 100 respondents to assess the instrument's preliminary validity and to check clarity of statements and other technical issues such as completion time, ease of use. The sample units were the convenience sample of customers who had returns experience of mobile devices. Accordingly, reliability analysis was conducted. To evaluate internal consistency of a multiple-item measure, Cronbach (1951)'s coefficient alpha is recommended (Churchill, 1979). According to Peter (1979), the reliability estimates or coefficient alpha should be .7 or higher, to suggest the evidence of good reliability. The corrected item-to-total correlations (CITC) were examined to delete items. Any item with CITC less than 0.5 should be deleted (Hair et al., 2006). The preliminary validity was basically evaluated based on factor loadings and P-value using Confirmatory Factor Analysis (CFA). The acceptable, standardized loading estimates should be 0.5 or higher and be statistically significant (Hair et al., 2006). Table 4.1 and 4.2 describe the findings of the pretest.

[Table 4.1]

From Table 4.1, the CITC values indicated that two items of COPRS performance (EP2 and EP3) were the candidate for deletion. The item of EP2 was "The employee I contacted to, had to find someone else to solve my returns problem" and EP3 involved "My request was passed on from one employee to the next". A low alpha and CITC values suggested that those items did not share equally in the common core or correlate poorly with true scores. After the item deletion, the

coefficient alpha for empowerment factor was improved from .62 to .75. The correlations for the remaining two items were .60. It should be noted that the results suggested two-item factor of empowerment component. Although the minimum of three items per construct was suggested (Hair et al., 2006), it became apparent that this dimension was best tapped with only two measurable items. This was consistent with previous scale development studies (Boshoff, 2005; Mentzer et al., 1999; Ruekert & Churchill, 1984).

Table 4.2 demonstrated the pre-test results of returns satisfaction and customer trust. By the same token, the reverse items could not be statistically evaluated and utilized in this study. One measurable item of satisfaction (RS3) and an item of trust (CT5) were deleted.

[Table 4.2]

Based on the researchers' examination of preliminary validity and internal consistency, 53 measurable items for COPRS performance metric with twelve dimensions, 4 items for returns satisfaction, and 5 items for customer trust were retained. The comments from pretest respondents also helped identify the possible unclear questions. Finally, the revised measurement indicators (Appendix H and I) from the pretest were used in the main study.

4.2.6 Data collection procedure

The final questionnaires were intended to distribute to 1,200 customers. Seven service providers were contacted and a cover letter (Appendix J) was used to explain the purpose of the survey, address the importance of the survey to the firm and ask for cooperation from them. Further, a brief summary of research results would be offered to these companies after the study was completed. Two companies refused to participate in the survey. Therefore, five service providers involving four mobile brands were included. With the consent of the customer service managers of each firm, customers at the direct stores were randomly asked to evaluate the firm's performance in providing returns service, their satisfaction and trust in the company. To raise the response rate, some souvenirs such as key holders were

provided to the respondents. However, there were some firms addressing that they would collect customer data themselves and subsequently return the completed questionnaires to the researcher for further analysis. Within three months, 969 questionnaires were collected. There were 214 unusable questionnaires due to the lack of returns experience information, the product specified other than mobile devices, missing values and other technical issues. The missing data was concerned and remedies in the next section. Accordingly, the remaining usable questionnaires for further analysis were 755.

4.2.7 Data preparation and screening

Prior to conducting data analysis, data collected from the large scale survey has been screened for further examination. In this regard, the returned questionnaires were checked for the missing values, common-method bias and non-response bias. The remedies of such problems are also described as follows.

4.2.7.1 Missing data

In survey studies, missing data normally occur especially in the case of self-administered questionnaires since the respondents might accidentally skip or refuse to answer or do not know the answer to the questionnaire items (Cooper & Schindler, 2014). Missing data can affect the reduction of sample size, resulting in insufficiency for subsequent multivariate data analysis (Hair et al., 2006). To deal with this issue, the study adopts pairwise deletion technique (Cooper & Schindler, 2014) – the estimation of all cases that have data for each variable is replaced missing data. This imputation approach in SPSS software package was used to deal with these cases with the mean estimates for each variable. The advantages of using pairwise deletion procedure are fewer problems of convergence and factor loadings free of bias while one weakness of this technique is that χ^2 is biased upward if the number of missing data exceeds 10% (Hair et al., 2006). Therefore, questionnaires with more than 10% missing values were dropped from the study. As a result of missing data screening, 755 questionnaires were used for further analysis.

4.2.7.2 Common method bias

Since all item measures used the same type of rating scale (Likert rating scale), there could be a common method bias. One way to control such

bias was to obtain measures of the constructs from different sources (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The study followed this suggestion to reduce potential method variance (Table 4.3). To further test for the common method bias, the study adopts a widely used Harman's one factor test. An exploratory factor analysis (EFA) was conducted, it showed that the largest variance explained by the first factor was 46.8%. However, Podsakoff et al. (2003) noted that specific guidelines were not indicated to examine how much variance the first factor should extract and detect the bias. Additionally, according to Hair et al. (2006), if the second-order factor relate theoretically to the other constructs, the chance of common method bias is reduced. Hence, in this study, nomological validity of the higher order COPRS performance construct would be examined for the purpose of the assessment of common method bias as well.

4.2.7.3 Non-response bias

To screen for non-response bias, the statistical differences between early respondents and late respondents were tested (Armstrong & Overton, 1977). That is the first 25% and the last 25% (assumed to be similar to those of non-respondents) of the sample were examined. Independent t-test of mean differences of observable variables (Appendix K) reported that there were no significant differences between the first quartile and fourth quartile of respondents in this cross-sectional survey.

4.3 Summary

This chapter presents research design of quantitative approach. In this regard, operationalization of the second-order constructs and the related constructs, population and research sample, questionnaire development, data collection, and data screening were indicated. As a result, preliminary COPRS performance measure consists of 12 dimensions and 53 measurable items. The measurement items of the constructs and sub-constructs are presented in Table 4.3.

Table 4.1 The pretest findings of COPRS performance measurement model

Variables	Preliminary Validity	Internal Consistency	
	Factor loadings	**Cronbach's Alpha**	**Corrected Item-Total Correlation**
Tangibles		.86	
TB1	.77***		.58
TB2	.90***		.79
TB3	.86***		.77
TB4	.91***		.66
TB5	.70***		.63
Responsiveness		.84	
RP1	.71***		.68
RP2	.65***		.55
RP3	.84***		.65
RP4	.89***		.79
Explanation		.87	
EN1	.83***		.72
EN2	.86***		.78
EN3	.75***		.69
EN4	.78***		.72
Empathy		.86	
ET1	.67***		.61
ET2	.75***		.70
ET3	.78***		.75
ET4	.75***		.63
ET5	.65***		.64
ET6	.65***		.58
Empowerment		.62	
EP1	.82***		.61
EP2	.41***		.34
EP3	.24		.20
EP4	.71***		.52

Note. ***p< .001

Table 4.1 (continued)

Variables	Preliminary Validity	Internal Consistency	
	Factor loadings	**Cronbach's Alpha**	**Corrected Item-Total Correlation**
Reliability		.88	
RL1	.67***		.59
RL2	.87***		.79
RL3	.80***		.71
RL4	.73***		.67
RL5	.74***		.72
RL6	.64***		.65
Timeliness		.86	
TL1	.66***		.62
TL2	.88***		.72
TL3	.86***		.83
TL4	.71***		.66
Information Availability		.86	
IA1	.70***		.67
IA2	.83***		.76
IA3	.66***		.57
IA4	.72***		.65
IA5	.74***		.72
Assurance		.88	
AS1	.77***		.65
AS2	.77***		.71
AS3	.82***		.77
AS4	.62***		.61
AS5	.78***		.74
AS6	.70***		.72
Compensation		.83	
CS1	.92***		.67
CS2	.49***		.54
CS3	.86***		.66
CS4	.96***		.74

Note. ***p< .001

Table 4.1 (continued)

Variables	Preliminary Validity	Internal Consistency	
	Factor loadings	**Cronbach's Alpha**	**Corrected Item-Total Correlation**
Feedback		.89	
FB1	.77***		.74
FB2	.86***		.81
FB3	.90***		.79
Convenience		.90	
CP1	.84***		.76
CP2	.86***		.82
CP3	.87***		.81
CP4	.75***		.69

Note. ***p< .001

Table 4.2 The pretest findings of returns satisfaction and customer trust measurement models

Variables	Preliminary Validity	Internal Consistency	
	Factor loadings	**Cronbach's Alpha**	**Corrected Item-Total Correlation**
Returns satisfaction		.78	
RS1	.88***		.76
RS2	.90***		.77
RS3	-.09		-.06
RS4	.81***		.70
RS5	.70***		.61
Customer trust		.79	
CT1	.82***		.72
CT2	.82***		.71
CT3	.93***		.82
CT4	.79***		.76
CT5	-.17		-.14
CT6	.77***		.69

Note. ***p< .001

Table 4.3 A summary of measurement items

Constructs	Sub-constructs	Measurement items	References
Customer-oriented product returns service (COPRS) performance	Tangibles	TB1) The service center has up-to-date equipment. TB2) Physical facilities are visually appealing. TB3) Employees work in a tidy, professional environment.	Parasuramann et al. (1988), Boshoff (2005)
		TB4) The number of employees is adequate. TB5) Facilities and activities are provided during queuing.	Qualitative interviews, Expert validation
	Responsiveness	RP1) Employees take care of problems promptly. RP2) Employees can promptly response to your request even when they are busy. RP3) Employees communicate effectively.	Parasuramann et al. (1988), Parasuraman et al. (2005)
		RP4) Employees process your request rapidly.	Qualitative interviews, Expert validation
	Explanation	EN1) Employees provide me with explanation of why problems had occurred. EN2) Employees I deal with, provide a satisfactory explanation of why the problem had occurred.	Boshoff (2005)

Table 4.3 (continued)

Constructs	Sub-constructs	Measurement items	References
Customer-oriented product returns service (COPRS) performance	Explanation	EN3) Employees provide me with explanation of what has done with my product. EN4) Employees provide me with suggestions of product usage when pick up.	Qualitative interviews, Expert validation
	Empathy	ET1) Employees can be expected to give individual attention. ET2) Employees show sympathy and concern for you when you have problems. ET3) Employees know your specific needs in returning products. ET4) Employees have your best interests at heart.	Ladhari (2009), Lai et al. (2007), Parasuramann et al. (1988)
		ET5) The operating hours are available to you. ET6) The service locations are available to you.	Qualitative interviews, Expert validation
	Empowerment	EP1) The employee I contacted to first, was able to solve my returns problem.	Boshoff (2005)
		EP2) One employee could complete the overall process for me.	Qualitative interviews; Expert validation

Table 4.3 (continued)

Constructs	Sub-constructs	Measurement items	References
Customer-oriented product returns service (COPRS) performance	Reliability	RL1) When promises to do something, it does so. RL2) Employees are dependable. RL3) The firm keeps statement accurately.	Lai et al., (2007), Parasuramann et al. (1988)
		RL4) Employees' decisions are reliable. RL5) The product's functions can perform well and accurately as usual. RL6) Double fault of product problems is not found after completing the service process.	Qualitative interviews, Expert validation
	Timeliness	TL1) The firm's processing time is short. TL2) Delivery of returns arrives on the date the firm promised. TL3) The firm handles my returns quickly.	Mentzer et al. (1999), Tien et al. (2009)
		TL4) The time for queuing is short.	Qualitative interviews, Expert validation
	Information availability	IA1) The firm provides information of operating hours and location of service centers. IA2) The firm provides problem's solution choices information. IA3) The firm provides compensation/returns status information.	Mentzer et al. (1999), Tien et al. (2009), Qualitative interviews, Expert validation

Table 4.3 (continued)

Constructs	Sub-constructs	Measurement items	References
Customer-oriented product returns service (COPRS) performance	Information availability	IA4) Employees provide information of processing time and tentative costs for me. IA5) It is easy to access firm's service information.	Mentzer et al. (1999), Tien et al. (2009), Qualitative interviews, Expert validation
	Assurance	AS1) Employees can be trusted. AS2) You have confidence in product returns process of the firm. AS3) Employees get adequate support from the firm to do their jobs well. AS4) The firm provides a follow-up after the compensation is provided.	Barlow and Moller (1996), Parasuramann et al. (1988)
		AS5) Employees I deal with are knowledgeable. AS6) The firm provides warranty for the returns/compensation.	Qualitative interviews, Expert validation
	Compensation	CS1) The firm compensates me for problems it creates. CS2) The firm compensates me appropriately.	Genchev (2007), Mollenkopf et al. (2007), Parasuraman et al. (2005)

Table 4.3 (continued)

Constructs	Sub-constructs	Measurement items	References
Customer-oriented product returns service (COPRS) performance	Compensation	CS3) The firm compensates me when I am dissatisfied with the returns service. CS4) Rental mobile is provided for free.	Qualitative interviews, Expert validation
	Feedback	FB1) The firm informs me about the progress made to solve my product problem. FB2) Employees keep in touch with me.	Boshoff (2005), Jeong and Hong (2007)
		FB3) The firm provides periodic feedback during processing time.	Qualitative interviews, Expert validation
	Convenient process	CP1) The firm provides me with convenient options for returning items. CP2) The firm's requirements on the condition of product returned are appropriate. CP3) Requisitioning procedures of returning product(s) are easy to use.	Mentzer et al. (1999), Mollenkopf et al. (2007)
		CP4) The firm provides one-stop service for requisitioning procedures.	Qualitative interviews, Expert validation

Table 4.3 (continued)

Constructs	Sub-constructs	Measurement items	References
Returns satisfaction	-	RS1) I am completely satisfied with the firm's entire process of making my return. RS2) The firm's efforts to handle my request are satisfactory. RS3) I am completely satisfied with the experiences with the returns service delivered by the firm.	Boshoff (2005), McCollough, (2009), Mollenkopf et al. (2007), Wang et al. (2004)
		RS4) The firm's returns service meet my expectations.	Qualitative interviews, Expert validation
Customer trust in the company	-	CT1) The firm's policies and practices are completely dependable. CT2) I can count on the firm to respond to my requests. CT3) I can count on the firm's promises. CT4) I can trust this firm completely.	dos Santos and Basso, (2012), Kozikowski, (2012), Morgan and Hunt (1994)
		CT5) Overall, I can trust the firm's offerings.	Qualitative interviews, Expert validation

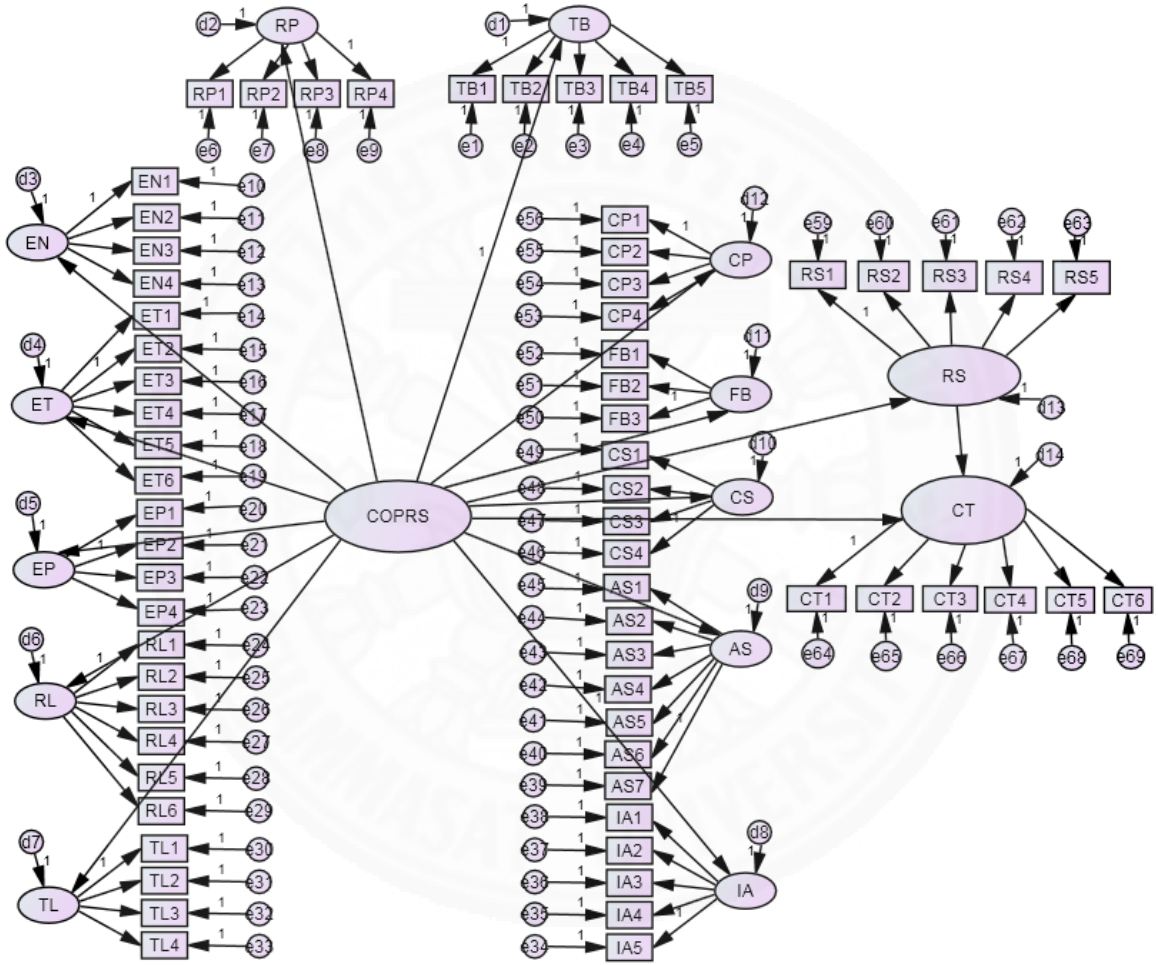


Figure 4.1 The final conceptual model

CHAPTER 5
DATA ANALYSIS, MEASUREMENT VALIDATION AND HYPOTHESES TESTING

This chapter encompasses the last two steps of measure development process (Figure 3.1): Step 6 - conducting confirmatory factor analysis (CFA) and assessing reliability and validity and Step 7 – assessing nomological validity through research hypotheses. Specifically, it explains data analysis techniques, descriptive statistics of the respondents, the measurement model results and validation as well as hypotheses testing and mediation analysis. Accordingly, the assessment of model fit, scale reliability and the new construct validity including content validity, convergent validity, discriminant validity, criterion validity, and nomological validity are described.

5.1 Data analysis techniques

5.1.1 Data analysis of the measurement model (a new measure)

Measurement model means "specification of the measurement theory that shows how constructs are operationalized by sets of measured variables" (Hair et al., 2006, p. 772). In the current study, the measurement model of the second-order latent construct - COPRS performance was assessed using Confirmatory Factor Analysis (CFA) via AMOS. CFA is a multivariate tool used to examine how well the measuring variables come together to represent a construct. CFA is appropriate when the number of factors and the items loading on each factor are theoretically specified (Hair et al., 2006). The analysis of the COPRS performance measure includes the overall model fit and construct validity.

5.1.1.1 Measurement model fit and unidimensionality

The study analyzes for unidimensional factor structure of the COPRS performance measure using CFA. It aims to assess model fit as an indicator of unidimensionality of COPRS performance construct. Unidimensional measures are described that "a set of measured variables (indicators) has only one underlying

construct" (Hair et al., 2006, p.781). It is important to assess unidimensionality when there are more than two constructs in an overall measurement model. That is, the measured variables should load on only a single construct. The results of model-data fit will indicate how well the theory fits the sample data. Specifically, the theoretical pattern represented by the proposed measurement model fits with the sample data represented by a covariance matrix of observable items.

(1) Assessing overall model fit

To examine the model fit, multiple fit indices including the absolute fit indices (the χ^2 statistic, Goodness-of-Fit Index or GFI and Root Mean Square Error of Approxiamation or RMSEA) and the incremental fit indices (Comparative Fit Index or CFI and Tucker Lewis Index or TLI) were examined. Absolute fit index is a direct measure how well the proposed specified model reproduces the observed data (Hair et al., 2006). The most fundamental absolute fit index is the chi-square statistic (Bagozzi & Yi, 2012), using to compare the observed and estimated covariance matrices. In this regard, low χ^2 values and insignificant p-values ($\geq .05$) are required to support no differences between matrices. Nevertheless, when number of observed variables is greater than 30 and number of observations is greater than 250, the χ^2 statistic can be expected to be larger with significant p-values (Hair et al., 2006). It is difficult to achieve good model fits when the sample size and number of observed variables increase. As the number of measured variables in the present study was 53 and the number of observations was 755, significant p-value would be predicted.

Since the χ^2 statistic has limitations regarding the bias against large samples and increased model complexity, it could not be used as the sole indicator. Other absolute fit indices are also evaluated. In the current study, chi-square per degree of freedom (χ^2/df), GFI and RMSEA are considered. The ratio of χ^2/df is more suitable when the χ^2 is biased to sample size and its value should be less than 3:1 (Chau, 1997; Chin & Todd, 1995; Shah & Goldstein, 2006). GFI is a fit statistic that is less sensitive to sample size (Hair et al., 2006). The good fit provides that GFI values are .90 or higher (Hair et al., 2006). RMSEA provides "the average amount of misfit for a model per degree of freedom" (Bagozzi and Yi, 2012, p. 28). It reflects how well a proposed model fits a population and is used to correct such bias caused by the χ^2

statistic (Hair et al., 2006). It could be termed as a badness-of-fit index (Hair et al., 2006). The lower values of RMSEA indicate better fit. The value of RMSEA below .05 indicates good fit (Joreskog & Sorbom, 1989). Considering the confidence interval of RMSEA, values between .03 and .08 with 95% confidence are considered good fit (Hair et al., 2006).

Incremental fit index is a measure comparing a specified model against some alternative base line model. The common base line model is a null model which is a model with no correlations among observed variables (Hair et al., 2006). It represents how much the fit improved by the specification of hypothesized model. Two incremental fit indices assessed in this study are CFI and TLI (or nonnormed fit index), the recommended practices in evaluating model fit (Bagozzi & Yi, 2012). According to Hair et al. (2006), CFI is one of the most widely used indices, being insensitive to model complexity. TLI compares the normed χ^2 values for the null and specified models. It is not normed so the value can be greater than 1 or less than 0. The cut-off value of CFI and TLI of .90 indicates a good model fit (Hair et al., 2006).

5.1.1.2 Construct validity analysis

The data analysis techniques used to assess the new measure validity and reliability are described as follows.

(1) Reliability analysis

Reliability refers to "the degree to which measures are free from error and therefore yield consistent results" (Peter, 1979, p. 6). To evaluate internal consistency of a multiple-item measure, coefficient alpha is absolutely recommended (Churchill, 1979). According to Nunnally (1967, p. 191), "the square root of coefficient alpha is the estimated correlation of the k-item test with errorless true scores". A high alpha indicates that the items perform well in capturing the construct. Conversely, a low alpha suggests that some items do not share equally in the common core or correlate poorly with true scores. Those items should be eliminated. Accordingly, the corrected item-to-total correlations (CITC) are examined to delete items. Any item with CITC less than .50 should be deleted (Hair et al., 2006). According to Peter (1979), the reliability estimates or coefficient alpha should

be .70 or higher, to suggest good reliability. The measures with coefficient alpha between .80 and .95 are considered to be very good reliability (Zikmund et al., 2010).

To assess each item reliability, squared multiple correlations provided in SEM program are evaluated. Squared multiple correlations are "values representing the extent to which a measured variable's variance is explained by a latent factor" (Hair et al., 2006, p. 772). The acceptable standard for squared multiple correlations for each indicator is .50 or greater (Bagozzi & Yi, 2012). In addition, to assess the reliability of all items of a factor, composite reliability (CR) measure is also considered. CR is a measure of reliability of the measured items representing a latent construct and should be established before assessing construct validity (Hair et al., 2006). According to Bagozzi and Yi (2012), a satisfactory composite reliability is .70 or higher.

(2) Validity assessment

Internal consistency is necessary but not sufficient condition for construct validity (Churchill, 1979; Peter, 1979). Validity refers to "the accuracy of a measure or the extent to which a score truthfully represents a concept" (Zikmund et al., 2010, p. 307). Validity reflects what the measurement is in fact measuring (Churchill, 1979). To establish the construct validity, the assessment of content validity, convergent validity, discriminant validity, criterion validity, and nomological or predictive validity is provided as follows.

a) Content validity or face validity: it is established based on the content of the scale items representing the construct's domain (Brunk, 2012; Hair et al., 2006). The COPRS performance definition and its components developed through an extensive review of related literature were assessed based on substantive validity test (Ambulkar et al., 2015). Items developed from qualitative depth interviews were assigned to each sub-construct by judges through qualitative data analysis (Hsieh & Shannon, 2005). In this regard, inter-judge reliability was examined. Additionally, the preliminary measurement items derived from related literatures and qualitative interviews were subjected to review by marketing and logistics academics and practitioners in mobile industry. The content validity of the instrument was assessed by content specialists using index of item-objective congruence technique (Rovinelli & Hambleton, 1977). The details of content validity assessment are

presented in Chapter 3 and 4 as the process of testing this property must be conducted before other validity testing (Hair et al., 2006).

b) Convergent validity: It is defined as "Extent to which indicators of a specific construct converge or share a high proportion of variance in common." (Hair et al., 2006, p.771). Basically, factor loadings and P-value are evaluated to assess convergent validity. According to Hair et al. (2006), standardized loading estimates should be 0.7 or higher and be statistically significant. Further, convergent validity can be assessed in multiple means such as the classical multitrait-multimethod approach (Campbell & Fiske, 1959), average variance extracted and composite reliability values (Fornell & Larcker, 1981), pairwise correlations analysis (Ruekert & Churchill, 1984). Since COPRS performance construct is considered as type I second order model consisting of the reflective second order constructs made up by reflective order constructs, the special considerations should be taken into account.

To test convergent and discriminant validity of a second-order model, Mentzer et al. (1999) recommended chi-square difference test among models relaxing restrictive assumptions. Specifically, the more rigorous analysis for convergent validity involves the comparison of model fit in terms of the χ^2 values and degrees of freedom between an independence model with no traits and 53 measurable items (Model 0) with a model comprising one trait (COPRS) and 53 items (Model 1). For Model 0, these measurable items would not be loaded together on any of COPRS dimensions (an independence model). Regarding Model 1, all 53 items would be loaded on a single latent construct – COPRS performance. According to Bienstock et al. (1997) and Widaman (1985), if the comparison of two models shows the significant difference in χ^2 values, it would be the evidence of convergent validity.

c) Discriminant validity: It refers to "Extent to which a construct is truly distinct from other constructs." (Hair et al., 2006, p.771). Discriminant validity provides evidence that a construct is unique and different from other constructs (Hair et al., 2006). The measure of interest and other measures that are not measuring the same construct should be discriminated (Churchill, 1979). Referring to Mentzer's recommendation for assessing discriminant validity of a second-order model, the comparison of Model 1 (one trait -COPRS performance and 53 items) with a proposed model with twelve traits and 53 items (Model 2) would be

conducted. In particular, Model 2 that resulted from the CFA analysis would be run by loading theoretically items on appropriate dimensions and those dimensions on one latent trait or COPRS performance. Discriminant validity establishes if the differences in χ^2 values are significant (Bienstock et al., 1997; Widaman, 1985).

Therefore, by adopting Mentzer's analytical technique, the current study puts emphasis on assessing both convergent and discriminant validity of a hierarchical order model at a holistic approach. Bagozzi (1994, p.338) suggested that "construct validity in terms of convergent and discriminant validity [is] not meaningful when indexes are formed as linear sums of measurement". Hence, other approaches using aggregated scales to assess convergent and/or discriminant validity would not be considered in this study.

d) Criterion validity: It means "Does the measure behave as expected?" (Churchill, 1979, p. 72). It examines that the measure correctly predicts some criterion measures in relation to other constructs. According to Ping (2004), the criterion-related validity is rarely evaluated in previous researches. Given COPRS performance measure is a new construct, whether the measure behaves as expected needs to be assessed. In this regard, the purified COPRS scale is validated across satisfied customers and dissatisfied customers on returns service using independent t-test analysis (Brunk, 2012). Therefore, the study classified the respondents into two groups using the returns satisfaction median as cut-off value: satisfaction scores $\geq$ median value for the satisfied group and satisfaction scores < median value for the dissatisfied group. It could be expected that the satisfied respondents would give a significantly higher COPRS performance ratings when compared to the dissatisfied ones. Accordingly, the COPRS performance measure will be supposed to discriminate between known groups supporting criterion validity.

e) Nomological validity: The predictive or nomological validity of a measure is evaluated by examining the relationships of the hypotesized construct with the other constructs in a nomological net based on theoretical model (Boshoff, 2005). If the measures of two constructs significantly relate as expected in theory, nomological validity is established (Ruekert & Churchill, 1984). According to Hair et al. (2006), nomological validity is a primary validation criterion for the higher-order factors as it could reduce the common method variance when all items

use the same type of rating scale. If the second-order factors relate to other theoretical constructs as expected, common method bias could be reduced. As such, a second-order model would show greater nomological validity than a first-order factor. According to Boshoff, structural equation modeling (SEM) is a favorable statistical technique to test the nomological net. The predictive or nomological validity of the new measure is evaluated by examining the relationships of COPRS performance construct with satisfaction and customer trust based on research hypotheses proposed in Chapter 3.

Table 5.1 concludes the criteria for assessment of the measurement model of COPRS performance measure.

[Table 5.1]

Additionally, the measurement models of two other constructs i.e. returns satisfaction and customer trust are also analyzed using CFA. Since the measures of these constructs were derived from previous literature, the certain data analysis would include measurement model fit, convergent validity, and discriminant validity. The model fit would be examined using the criteria presented in Table 5.1. At the basic level, item loadings within each construct should be significantly greater than .70 (Hair et al., 2006). As reflective first-order measurement models, convergent validity would also be evaluated through average variance extracted (AVE). AVE is "the average percentage of variation explained among items" (Hair et al., 2006, p.773). Since, reliability is an indicator in considering convergent validity (Hair et al., 2006), composite reliability (CR) would be also assessed. Convergent validity is established if AVE and CR estimates are greater than .5 and .7, respectively (Bagozzi & Yi, 2012; Hair et al., 2006; Ping, 2004).

Discriminant validity of returns satisfaction and customer trust would be assessed using chi-square difference test by comparing two measurement models using CFA, one in which two constructs (satisfaction and trust) are correlated and one in which they are not (Segars, 1997). This technique is appropriate when the measurement models are reflective and are analyzed in pairs of

two (Zait and Bertea, 2011). Discriminant validity establishes when the differences in χ^2 values are significant (Segars, 1997).

5.1.2 Data analysis of the structural models (hypotheses testing)

The hypotheses testing is utilized to answer research question of how the performance of COPRS impacts customers' returns satisfaction and customer trust in building long-term relationship. The overall fit of the conceptual structural model is examined using Structural Equation Modeling (SEM) via AMOS version 23. According to Bagozzi and Yi (2012), SEM provides a broad and integrative function encompassing many different statistical methods. It takes into account of measurement error and systematic error and helps researchers to be more precise in model specification. It could assess construct validity more broadly and extremely than traditional correlation analyses. SEM is also useful in different context including cross-sectional survey research under the philosophy of confirmation characterized in the current study. SEM consists of the measurement model and the structural model. The measurement model was tested using CFA as described in Section 5.1.1.

In this section, the structural model would be analyzed to test the proposed hypotheses and establish nomological validity of the new construct. Accordingly, model χ^2, absolute index, and incremental index (Hair et al., 2006) are assessed using the same criteria as those of the measurement model assessment. In addition, direct and indirect effects of COPRS performance on customer trust are explored using SEM to analyze which effects are more important and support the hypotheses. Furthermore, SEM is utilized to test the mediation effect of returns satisfaction on the link between COPRS performance and customer trust.

Mediation analysis is examined to study the importance of entities that intervene between input (independent variables) and output (dependent variables) (Baron & Kenny, 1986). Accordingly, four conditions should hold if mediation effects exist: 1) the independent variable impacts the mediating variable, 2) the mediating variable impacts the dependent variable, 3) the independent variable impacts the dependent variable, and 4) full mediation exists if the independent variable has insignificant effect on the dependent variable when the mediating variable is controlled.

The mediating role of returns satisfaction (the mediator) between the COPRS performance (the independent variable) and customer trust (the dependent variable) is analyzed by using SEM to examine three models in order to meet four conditions. Model 1 explores the first two conditions that COPRS performance should significantly impact returns satisfaction and returns satisfaction should significantly affect customer trust. Model 2 tests the third condition whether COPRS performance would significantly impact customer trust. Model 3 is conducted to test the fourth condition with COPRS performance and returns satisfaction as the independent variable and customer trust as the dependent variable whether the effect of COPRS performance on customer trust would be insignificant or less significant.

5.2 Descriptive statistics

Descriptive statistics refers to the characteristics of a sample and the measurement of each variable in a sample (Babbie, 2010). It summarizes data collected from a large-scale survey in a common way (Zikmund et al., 2010). In this study, descriptive statistics of 755 respondents includes mean, and standard deviations.

5.2.1 Descriptive statistics results

5.2.1.1 Respondent's profiles

The sample characteristics of 755 respondents based on gender, age, education, and occupation are described in Table 5.2.

[Table 5.2]

(1) Gender

According to Figure 5.1, 58.1 % of respondents are female and the rest is male.

[Figure 5.1]

(2) Age

From Figure 5.2, most respondents (43.8%) are between 25-35 years of age. 36.6%, 14.3%, 4.8%, and .5% are less than 25 years, between 36-45 years, between 46-55 years, and above 56 years respectively. The respondent age ranges from 15 years to 67 years. The average age is 28.79 years with a 8.66 standard deviation.

[Figure 5.2]

(3) Education

Based on Figure 5.3, most of respondents (52.3%) are at the undergraduate level. 39.6% are below undergraduate and 8.1% are at the graduate level.

[Figure 5.3]

(4) Occupation

According to Figure 5.4, most of respondents (45.7%) are company's employees. 26.4% are students, 13.2% are business owners, 7.8% are government officials, and 2.5% are professionals such as doctors, lecturers, lawyers. The rest (4.4%) includes security guards, workers, housewives, mechanics, retirees, merchants, and freelance workers.

[Figure 5.4]

5.2.1.2 Respondents' experience in product returns service

Respondents' experience in using returns service involving returning and/or repairing mobiles or tablets as well as exchanging for the new ones in the past one year are shown in Table 5.3. The categories of mobile devices and their associate brands are also indicated.

[Table 5.3]

(1) Devices

With reference to Figure 5.5, most devices that respondents experienced product returns (84.5%) are mobile phones. 9.9% are tablets. 2.1% are mobile accessories including chargers and batteries. Some respondents experienced more than one device (3.5%).

[Figure 5.5]

(2) Brands

Since the participating mobile firms in this study requested that their brand names should be disguised, brands reported in this section (Figure 5.6) involve brand A, B, C, and D accordingly. In this regard, brand A and B account for 44.5% and 41.6%, respectively. 7.8% are brand C and 2.5% are brand D. It should be noted that the sample data reflected the true values of market share ranking in the mobile market. Other brands that the respondents indicated in the questionnaires in spite of the fact that those companies did not officially involve in the current study are 3.6%, consisting of 14 brands.

[Figure 5.6]

(3) Returns experience in the past one year

According to Figure 5.7, 60.4%, 25.2%, and 4.9% are respondents who experienced product returns once, twice and three times in the past year, respectively. Nevertheless, there are some respondents who have returns experience more than three times (9.5%).

[Figure 5.7]

(4) The types of returns requests

Figure 5.8 shows that most returns requests are repairing (61.5%). 22.3% and 5.4% are returning with product compensation and exchanging for the new models, respectively. Some respondents experience more than one type of requests (8.4%). Other returns requests (2.4 %) include updating software, changing batteries, and changing SIM cards.

[Figure 5.8]

5.2.1.3 Mean and standard deviation of variables

Mean and standard deviation of observed measures of the first-order constructs of COPRS performance, returns satisfaction and customer trust are shown in Appendix L. Based on the findings, all items of COPRS performance before conducting CFA have mean greater than 3.36, representing high average score. Items of returns satisfaction and customer trust have mean ranging from 3.54 to 3.65 and 3.60 to 3.67, respectively, also exhibiting high average score.

5.3 Measurement model results

Based on the sample size of 755 in this study, the ratio to number of observed variables (62) is 12.2:1, which is appropriate to conduct SEM (Bentler & Chou, 1987). Maximum Likelihood Estimation (MLE) is an estimation technique used to identify parameter estimates in the current study. It is "a procedure that iterative improves parameter estimates to minimize a specified fit function" (Hair et al., 2006, p.708). It is widely used in SEM program as it is more efficient and produces more reliable results under many circumstances including violations of the normality assumptions comparing with other techniques.

To assess the measurement model of COPRS performance, returns satisfaction and customer trust, both the overall model fit and construct validity are presented.

5.3.1 COPRS performance measure

As a new construct, COPRS performance will be assessed based on all criteria presented in Table 5.1.

5.3.1.1 Assessing overall model fit

Using CFA with AMOS version 23, the study evaluated all 53 items with an iterative CFA item-deletion process (Steenkamp & van Trijp, 1991). That is, a measurable item was candidate to be deleted if it had a combination of an unsatisfactory standardized regression weight (< .70), a large error variance (> .50), a low square multiple correlation (< .50) and/or large modification indices (> 10) (Bagozzi & Yi, 2012; Karpen et al., 2015). Items were deleted selectively through nine CFA runs. Each round, the reduction in χ^2 is larger relative to the difference in df between the two consecutive models and the model difference was significant at p = .05. Thus, the model's fit was improved after refinement (Table 5.4).

[Table 5.4]

As a result, 46 items of 12 factors were retained. With an AMOS software package, the final measurement model of COPRS performance is presented in Figure 5.9. Further, Table 5.5 shows the final items and their factor loadings. Assurance factor consisted of 6 items. Reliability and information availability dimensions had 5 items per factor. For responsiveness, explanation, empathy, and timeliness, each component had 4 items. Three-item factor included tangible, compensation, feedback, and convenient process. Empowerment factor had two items.

[Figure 5.9]

[Table 5.5]

Considering the components of COPRS performance measure in Table 5.5, the study found that each of twelve dimensions was significant (P < .001). The top three factors exhibiting highest factor loadings were information

availability (0.96), empathy (0.93) and assurance (0.91), respectively. The dimension of tangibles had the lowest loading (0.73). Additionally, the item of "Company X compensates me appropriately." had the highest loading (0.89) while the items of "Employees provide information of processing time and tentative costs for me." and "The product's functions can perform well and accurately as usual." had the lowest loadings (0.72).

Regarding the overall model fit, the factor structure specified in Table 5.5 represents data well using the combination of various fit indices assessment. The overall model χ^2 was 1150.255 with 847 degrees of freedom. The p-value was significant (.000) using a Type I error of .05. Therefore, the χ^2 statistic indicated that the observed covariance matrix did not match the estimated covariance matrix within sampling variance. However, the χ^2 result behaved as predicted as the χ^2 statistic would normally be sensitive to large sample size (755) and model complexity (the second-order construct with 46 observed variables). This was consistent with the criteria in Table 3.1 that significant p-value is expected when sample size is greater than 250 and the observed variables are greater than 30 (Hair et al., 2006). Therefore, in addition to the χ^2 result, other fit statistics must be examined.

Other absolute fit indices to be assessed included χ^2 /df, GFI, and RMSEA. The ratio of χ^2 /df reported 1.36:1, less than the cut-off criterion of 3:1 (Chau, 1997; Chin & Todd; Shah & Goldstein, 2006). The GFI is 0.94 exceeded the guideline of 0.90 (Hair et al., 2006). The value of RMSEA was 0.02, below the cut-off value of 0.05 (Joreskog & Sorbom, 1989).

With regard to two incremental fit indices i.e. CFI and TLI, they were 0.99 and 0.99 respectively. Both exceeded the common cut-off threshold of 0.90 (Bagozzi & Yi, 2012; Hair et al., 2006). The results also supported the model. All in all, the CFA results suggested that the COPRS performance measurement model provided a reasonably good fit and satisfactory unidimensionality (Table 5.6).

[Table 5.6]

5.3.1.2 Assessing construct validity of COPRS performance measure

To examine if COPRS performance measure is reliable and valid, reliability and validity analysis were conducted as follows.

(1) Reliability analysis

The final COPRS performance measure was assessed using criteria presented in Table 5.1. According to Table 5.7, it was found that composite reliability values of the new construct and its components had satisfactory composite reliability (>.70). The coefficient alpha values of COPRS performance and its dimension were greater than a recommended level at .70, indicating internal consistency of the measures.

Focusing on the empowerment factor, Mentzer et al. (1999) suggested that Cronbach's alpha should not be considered for the two-item dimensions as its purpose is to compare each item to the remaining ones as a group and only simple correlations of this dimension should be reported. Alternatively, Ruekert and Churchill (1984) presented the alpha for the two-item factors even though they noted that one should not rely much on the alpha computed on two items of a dimension. In this regard, the current study would report both the coefficient alpha (.82) and simple correlations (.69) of the two-item empowerment dimension. The corrected item-total correlation scores in each dimension were above the acceptable value at .50. Regarding the reliability of each indicator, the values of squared multiple correlations of all items were greater than the cut-off value of .50 (Bagozzi & Yi, 2012).

[Table 5.7]

(2) Validity assessment

a) Content validity

The COPRS performance definition and its components were assessed based on the substantive validity analysis (Ambulkar et al., 2015; Anderson & Gerbing , 1991) by five academic and managerial experts. Additionally, 100 customers who have returns experience were asked to consider each dimension's

relevant to the concept of COPRS performance. The substantive validity coefficient (C_{sv}) values of both cases were greater than .50, indicating greater substantive validity (Chapter 3). Additionally, the inter-judge reliability on the items developed from in-depth interviews through qualitative content analysis (Hsieh & Shannon, 2005) was .95, greater than the cut-off value of .80 (Latham & Saari, 1984). The qualitative findings and the COPRS performance definition were also discussed with academics and practitioners in service marketing and logistics field. They agreed that the developed definition could encompass the qualitative results.

Further, the content validity of the questionnaire instrument was assessed by content specialists using index of item-objective congruence technique (Rovinelli & Hambleton, 1977). Based on the number of agreements among seven experts on each measurement item, one item was deleted as its index value was only .29, below the acceptable threshold of .50 (Brown, 1996). The values of the other items were .57 - 1.00. For final content validation, the final COPRS performance measure was presented to the same panel of experts in the first stage of the development process. Those five specialists agreed with the resulting purified measure. All in all, COPRS performance measure established content or face validity.

[Table 5.8]

b) Convergent validity and discriminant validity

Factor loadings and model fit comparisons are evaluated to ensure convergent validity of the COPRS performance measure construct. According to criteria shown in Table 5.1, standardized loading estimates should be 0.7 or higher and be statistically significant (Hair et al., 2006). From Table 5.5, all factor loadings were ranging from .72 to .89 and significant at $p < .001$ indicating high convergence.

Regarding model comparison results, Table 5.9 demonstrates that the difference in χ^2 statistic for Model 0 or Independence Model (no traits and retained 46 measurable items) and Model 1 (one trait (COPRS performance) and 46 items) was significant (P =.000), suggesting evidence of convergent validity of

COPRS performance measure (Bienstock et al.,1997; Mentzer et al., 1999; Widaman, 1985).

The difference in χ^2 statistic for Model 1 (one trait of COPRS performance and 46 items) and Model 2 or the proposed model (12 traits and 46 items) was also significant (P =.000), demonstrating the evidence of discriminant validity (Bienstock et al.,1997; Mentzer et al., 1999; Widaman, 1985). In addition, Model 2 provided the best overall model fit in terms of χ^2 statistic. As a result, the study concluded that convergent validity and discriminant validity were established for the COPRS performance measure construct. Figure 5.10 and 5.11 present Model 1 and Model 2 respectively.

[Table 5.9]

[Figure 5.10]

c) Criterion validity

COPRS performance measure was validated across satisfied customers and dissatisfied customers on returns service using independent t-test analysis. Therefore, the respondents are classified into two groups based on the median score of returns satisfaction information (3.5): satisfaction score of 3.5 or higher for the satisfied group and below 3.5 for the dissatisfied group. From Table 5.10, the results indicated that the mean COPRS score of 3.96 for 438 satisfied respondents was significantly higher than the mean score of 3.08 rated by 317 dissatisfied group (t = -22.63, p =.000). Consequently, the COPRS performance measure could discriminate between two groups supporting criterion validity.

[Table 5.10]

d) Nomological validity

To establish nomological or predictive validity, the relationships of COPRS performance construct with satisfaction and customer trust were examined based on the proposed research hypotheses. Thus, the result of

nomological validity would be presented in the assessment of the structural model (Section 5.6).

5.3.2 Returns satisfaction and customer trust measures

Using CFA with AMOS, the measurement model of returns satisfaction and customer trust were examined as follows.

5.3.2.1 Assessing model fit

Consistent with the previous model fit analysis, the study evaluated all items in each construct with an iterative CFA item-deletion process. The findings indicated that no item deletion was required. As a result, returns satisfaction consisted of four items and customer trust included five items which would be used for further analysis and hypotheses testing. Table 5.11 depicts the retained items of the two constructs.

[Table 5.11]

Regarding the overall model fit, the results specified in Table 5.12 indicated the good fit for both returns satisfaction and customer trust measurement models. For returns satisfaction, χ^2 was 2.547 and non significant. The ratio of χ^2 /df reported 2.55:1, less than the cut-off criterion of 3:1 (Chau, 1997; Chin & Todd, 1995; Shah & Goldstein, 2006). The GFI of 1.00 exceeded the guideline of .90 (Hair et al., 2006). The value of RMSEA was .045, below the cut-off value of .05 (Joreskog & Sorbom, 1989). Both CFI and TLI exceeded the common cut-off threshold of .90 (Bagozzi & Yi, 2012; Hair et al., 2006). Regarding customer trust, CFA results also showed a reasonable good fit (χ^2 = 3.789, p-value = .052, χ^2/df = 3.79, GFI = 1.00, RMSEA = .06, CFI = 1.00, TLI = .99). Consequently, both constructs could be used in further analysis.

[Table 5.12]

5.3.2.2 Assessing construct validity of returns satisfaction and customer trust

Since the measures of the two constructs were derived from previous literature, data analysis of construct validity would include reliability analysis, convergent validity and discriminant validity.

[Table 5.13]

From Table 5.13, the results suggested that reliability and internal consistency were supported for both constructs in examination all related criteria. For returns satisfaction, the values of CR, squared multiple correlations, coefficient alpha, and CITC were greater than the cut-off guidelines. Likewise, all values of customer trust support for reliability and internal consistency (CR = .93, range of squared multiple correlations = .56 - .77, coefficient alpha = .91, and range of CITC = .73 - .81).

Further, since the standardized values of factor loadings of each construct were significantly greater than .7 (Hair et al., 2006) the AVE values exceeded .5, the CR values were greater than .7 (Hair et al., 2006), the results supported convergent validity of returns satisfaction and customer trust (Table 5.14).

[Table 5.14]

Regarding discriminant validity analysis of returns satisfaction and customer trust in the company, the study used chi-square difference test by comparing two measurement models using CFA, one in which two constructs (satisfaction and trust) are correlated and one in which they are not (Segars, 1997). The study introduced the two models into AMOS as described in Figure 5.11.

[Figure 5.11]

The first model was set correlation to 0 (Model 1) while the second model was allowed free correlation (Model 2). In AMOS, correlations are

enabled by fixing the variance of latent variables to 1 instead of fixing one of the factor loadings. Table 5.15 depicts the χ^2 difference test for the two models. This technique for discriminant validity assessment is appropriate when the measurement models are reflective and are analyzed in pairs of two (Zait & Bertea, 2011). According to Segars (1997), discriminant validity establishes when the differences in χ^2 values are significant. From Table 5.15, the results showed that the difference in χ^2 statistic for Model 1 where the two constructs were not correlated and Model 2 where the correlation was allowed was significant (P =.000).

[Table 5.15]

5.4 Hypothesized structural model results

The full structural model (Figure 5.12) specified in AMOS was drawn from research framework in Chapter 3 to study the role of COPRS performance in building long-term relationships with customers. The model χ^2, absolute index, and incremental index (Hair et al., 2006) were assessed using the same criteria as those of the measurement model assessment. The hypotheses testing results of the proposed structural model were described in Table 5.16.

[Figure 5.12]

[Table 5.16]

From Table 5.16, the model fit measures were $\chi^2/df = 1.59$, GFI = .91, RMSEA = .03, CFI = .98, TLI = .97. The results met the criteria in Table 5.1, indicating that the structural model had a good fit of the proposed model to the data.

Two hypotheses (H1 and H2) were significantly supported. Their t-values (Critical Ratio) were greater than 1.96, suggesting that the relationships were significant at the .05 level. The third hypothesis (H3) was not statistically supported by the data. More specifically, each hypothesis testing was concluded and discussed as follows.

Hypothesis 1 (H1): Customer-oriented product returns service (COPRS) performance positively relates to returns satisfaction.

From Table 5.21, the structural equation model supported this hypothesis. The path coefficient between the customer-oriented product returns service (COPRS) performance and returns satisfaction was .84 (p = .000), indicating that COPRS performance positively relates to returns satisfaction. The result of this hypothesis testing was in line with previous product returns and reverse logistics literatures. The prior researches suggested that the effective product returns management could improve customer satisfaction (Autry et al., 2000; Mollenkopf et al., 2007; Stock et al., 2006). Product returns in the present study was proposed to be managed based on functional integrative approach between reverse logistics and marketing. Specifically, COPRS dimensions which were derived from customer orientation, service recovery, service quality, product returns and reverse logistics literature, reflecting an alternative approach of managing consumer returns positively affected customer satisfaction on product returns service.

The evidence was consistent with the past researches showing the positive relationship between those antecedents of COPRS performance and customer satisfaction (customer orientation: Goff et al., 1997; Guo, 2001; service recovery: Bitner & Hubber, 1994; Krishna et al., 2011; McCollogh, 2009; service quality: Cronin & Taylor, 1992, Spreng & Mackoy, 1996; logistics studies: Daugherty et al., 1998; Davis, 2006). Furthermore, the positive relationship between returns service performance and satisfaction supported the qualitative findings reported in Chapter 3.

Hypothesis 2 (H2): Returns satisfaction positively relates to customer trust in the company.

As expected, this hypothesis was statistically supported. The path coefficient between returns satisfaction and customer trust was .87 (p = .000), suggesting that COPRS performance positively relates to returns satisfaction. The positive relationship between satisfaction and customer trust in company was also totally confirmed in individual in-depth interviews. In the product returns context, the relationship between a customer and a firm involves a certain level of uncertainty for all purchases which is not known until post-purchase activities (Petersen, 2008). If the customer returns a product satisfactorily, this level of uncertainty is probably removed.

Hence, the customer knows that all purchases that do not fit his or her needs can be returned and treated satisfactorily. The result confirmed the similar findings of previous studies (Anderson & Weitz, 1989; Ganesan, 1994; Shpetim, 2012).

Hypothesis 3 (H3) Customer-oriented product returns service (COPRS) performance positively relates to customer trust in the company.

This hypothesis was shown to be non-significant. Based on the structural model, the result showed that COPRS performance did not positively affect to customer trust in the company. In other words, the new construct did not directly relate to customer trust. The result was partly consistent with the qualitative findings. It should be noted that based on qualitative interview results, the responses to H3 were diverse. Some participants agreed that the performance of customer-oriented product returns service could directly affect customer trust in the company while the others suggested that cumulative satisfaction mediated the relationship between returns service performance and trust. From the quantitative survey, it suggested that COPRS performance could not directly impact customer trust.

Additionally, from hypotheses 1 and 2, the findings statistically showed that COPRS performance possibly indirectly impacted customer trust. Therefore, the direct and indirect effects of COPRS performance and the mediation effect of returns satisfaction on the relationship between COPRS performance and customer trust should be further examined.

5.5 Direct and indirect effects of COPRS performance

Since the hypothesis 3 was not supported as the test showed that COPRS performance did not directly relate to customer trust, the direct and indirect effects of the new construct should be explored. Table 5.17 depicts the direct, indirect, and total effects of COPRS performance on both customer satisfaction and trust.

[Table 5.17]

From Table 5.17, COPRS performance had strong direct effects on returns satisfaction. On the other hand, it had a substantive larger indirect effect than the direct effect on customer trust. This is consistent with the result of hypothesis 3 testing. Regarding the indirect effect of COPRS performance on trust, a mediation analysis of returns satisfaction as a mediator between the link between COPRS performance and customer trust would be examined in the next section.

5.6 Mediation analysis

To test the mediating effect of returns satisfaction on the relationship between COPRS performance and customer trust, three separate models were run using SEM. Accordingly, four criteria should be met if mediation effect exists: 1) the independent variable impacts the mediating variable, 2) the mediating variable impacts the dependent variable, 3) the independent variable impacts the dependent variable, and 4) full mediation exists if the independent variable has insignificant effect on the dependent variable when the mediating variable is controlled (Baron and Kenny, 1986).

Model 1 (Figure 5.13) explores the first two conditions that COPRS performance would significantly impact returns satisfaction and returns satisfaction would significantly affect customer trust. The third condition is that independent variable affects the dependent variable. Model 2 (Figure 5.14) tests the third condition whether COPRS performance would significantly impact customer trust. Therefore, Model 2 did not include the mediator of returns satisfaction.

The last condition postulates that full mediation exists if the independent variable has insignificant effect on the dependent variable when the mediating variable is controlled. Model 3 (Figure 5.15) was specified to test the fourth condition with COPRS performance and returns satisfaction as the independent variable and customer trust as the dependent variable. It investigated whether the effect of COPRS performance on customer trust would be insignificant or less significant when the mediator of returns satisfaction was included.

[Figure 5.13]

[Figure 5.14]

[Figure 5.15]

The results of mediation analysis were shown in Table 5.18 and Table 5.19.

[Table 5.18]

According to Table 5.18, all three models had a good fit. Following the mediation analysis procedures by Choi and La (2013), the study conducted the chi square difference test for nested alternate model between Model 1 and Model 3. The result showed that the difference between two models was significant at p = .05.

[Table 5.19]

From Table 5.19, Model 1 fulfilled the first two conditions. COPRS performance significantly affected returns satisfaction (β = .85, p =.000) and returns satisfaction had a significant impact on customer trust (β = .90, p =.000). Results from Model 2 indicated that COPRS performance significantly impacted customer trust (β = .78, p =.000), thus meeting the third condition. The Model 3 results confirmed the full mediating effect of returns satisfaction that the impact of COPRS performance on customer trust was insignificant (β = .05, p =.432) after the inclusion of the mediator, returns satisfaction. Consequently, mediation analysis using SEM showed that returns satisfaction was the full mediator on the relationship between COPRS performance and customer trust. Previous findings (Fullerton & Taylor, 2002; Kantsperger & Kunz, 2010; Shpetim, 2012) also supported the mediating role of satisfaction in the service performance-trust relationship.

Regarding nomological validity assessment of COPRS performance, based on research hypotheses and mediation analysis results, COPRS performance measure was positively related theoretically to both returns satisfaction (Model 1) and customer trust (Model 2). The existence of nomological validity of the second-order

factor asserted that the common method bias did not pose the problem to the proposed model assessment (Hair et al., 2006).

5.7 Summary

Chapter 5 presents step 6 and step 7 of the new measure development process. It mainly describes data analysis techniques used to assess measurement model of COPRS performance and its structural model in enhancing customer relationships. With Confirmatory Factor Analysis (CFA), COPRS performance measurement model shows a reasonable good fit based on absolute fit indices and incremental fit indices. These indices include χ^2, χ^2/df, GFI, RMSEA, CFI and TLI. Considering all criteria to assess construct validity including reliability, convergent validity, discriminant validity, criterion validity, and nomological validity, COPRS performance measure meet the acceptable threshold, suggesting that the new measure is reliable and valid. Table 5.20 concludes the results of the COPRS performance measurement model. Table 5.21 presents 12 dimensions and the retained 46 items of COPRS performance instrument.

Regarding structural model representing the relationships among COPRS performance, returns satisfaction and customer trust, the model also shows a good fit based on SEM results. The findings supported two hypotheses. That is COPRS performance positively relates to returns satisfaction (H1) and returns satisfaction positively relates to customer trust in the company (H2). The third hypothesis is not supported. COPRS performance did not directly relate to customer trust. However, it has a larger indirect effect than the direct effect on customer trust. Based on mediation analysis, the results confirm the full mediating role of returns satisfaction on the link between COPRS performance and customer trust. Table 5.22 concludes the results of the hypothesized structural model and related analysis.

[Figure 5.20]

[Figure 5.21]

[Figure 5.22]

Table 5.1 Criteria for assessment of the measurement model

Measurement model analysis	Measures	Criteria	References
Model Fit Indices			
Absolute Fit Indices	Chi Square (χ^2) statistic	Significant p-value (sample size > 250, observed variables $\geq$ 30) is expected.	Bagozzi and Yi, (2012), Hair et al. (2006)
	Chi Square per degree of freedom (χ^2 /df)	Less than 3:1	Chau (1997), Chin and Todd (1995), Shah & Goldstein, (2006)
	Goodness of Fit Index (GFI)	Above .90	Hair et al. (2006)
	Root Mean Square Error of Approximation (RMSEA)	Less than .05	Joreskog and Sorbom (1989)
Incremental Fit Indices	Comparative Fit Index (CFI)	Above .90	Bagozzi and Yi, (2012), Hair et al. (2006)
	Tucker-Lewis Index (TLI)	Above .90	Bagozzi and Yi, (2012), Hair et al. (2006)
Construct validity			
Internal consistency	Cronbach's alpha	Above .70	Bagozzi and Yi, (2012), Peter (1979)
	Corrected item-to-total correlations	Above .50	Hair et al. (2006)
Reliability of indicators	Squared multiple correlations	Above .50	Bagozzi and Yi (2012)
Construct reliability	Composite reliability (CR)	Above .70	Bagozzi and Yi, (2012), Hair et al. (2006)

Table 5.1 (continued)

Measurement model analysis	Measures	Criteria	References
Construct validity			
Content validity	Substantive validity coefficients (C_{sv}) for the constructs' definitions and dimensions	Above .50	Ambulkar et al. (2015), Anderson and Gerbing (1991)
	Inter-judge reliability in qualitative data analysis	Above .80	Latham and Saari (1984)
	Agreement among judges in item-objective congruence (IOC) procedure	Above .50	Brown (1996)
Convergent validity	Standardized values of factor loadings	Significant p-value Above .70	Hair et al. (2006)
	χ^2 difference test between Model 0 and Model 1 (Model 0 = no traits and 53 items or Independence Model; Model 1 = 1 trait (COPRS) and 53 items)	Significance of the difference in χ^2 for Model 0 and Model 1	Bienstock et al. (1997), Mentzer et al. (1999), Widaman (1985)
Discriminant validity	χ^2 difference test between Model 1 and Model 2 (Model 1 = 1 trait (COPRS) and 53 items; Model 2 = 12 traits and 53 items)	Significance of the difference in $\chi^2$for Model 1 and Model 2	Bienstock et al. (1997), Mentzer et al. (1999), Widaman (1985)

Table 5.1 (continued)

Measurement model analysis	Measures	Criteria	References
Construct validity			
Criterion validity	Independent t-test analysis between known groups	Significant p-value Predict as expected	Brunk (2012)
Nomological validity	Standardized estimates	Significant p-values Behaved as theoretically expected	Diamantopoulos and Winklhofer (2001)

Table 5.2 Respondents' characteristics

Variables	Categories	Percentage of Respondents
Gender	Male	41.9%
	Female	58.1%
Age	Below 25	36.6%
	25-35	43.8%
	36-45	14.3%
	46-55	4.8%
	Above 56	.5%
Education Level	Below undergraduate	39.6%
	Undergraduate	52.3%
	Graduate	8.1%
Occupation	Employees	45.7%
	Students	26.4%
	Business owners	13.2%
	Government officials	7.8%
	Professionals	2.5%
	Others	4.4%

Table 5.3 Respondents' experience in returning products

Variables	Categories	Percentage of Respondents
Devices	Mobiles	84.5%
	Tablets	9.9%
	Others	2.1%
	More than one device	3.5%
Brands*	A	44.5%
	B	41.6%
	C	7.8%
	D	2.5%
	Others	3.6%
Returns experience in the past one year	One time	60.4%
	Two times	25.2%
	Three times	4.9%
	More than three times	9.5%
The types of returns requests	Returning with product compensation	22.3%
	Repairing	61.5%
	Exchanging for the new models	5.4%
	Other types of requests	2.4%
	More than one type of requests	8.4%

Note ***** Brand names were disguised according to the service providers' requests**.**

Table 5.4 Model refinement process for COPRS performance measure

Round	χ^2	df	χ^2/df	GFI	CFI	TLI	RMSEA	Deleted Items
1	2053.165	1204	1.705	.908	.971		.031	-
2	1951.660	1155	1.690	.910	.972	.968	.030	ET1
3	1867.730	1107	1.687	.912	.973	.969	.030	TB5
4	1767.114	1058	1.670	.916	.974	.970	.030	TB4
5	1671.376	1011	1.653	.919	.976	.972	.029	ET6
6	1559.810	967	1.613	.922	.978	.974	.029	CS1
7	1491.004	926	1.610	.923	.978	.975	.028	RL6
8	1319.818	869	1.519	.931	.982	.979	.026	CP4
9	1150.255	847	1.358	.939	.988	.985	.022	-

Table 5.5 Confirmatory Factor Analysis of COPRS performance measure

Dimensions	Items	Factor loadings
Tangibles (TB)		.73***
	TB1 The service center has up-to-date equipment.	.77***
	TB2 Physical facilities are visually appealing.	.80***
	TB3 Employees work in a tidy, professional environment.	.78***
Responsiveness (RP)		.88***
	RP1 Employees take care of problems promptly.	.73***
	RP2 Employees can promptly response to your request even when they are busy.	.76***
	RP3 Employees communicate effectively.	.83***
	RP4 Employees process your request rapidly.	.79***
Explanation (EN)		.84***
	EN1 Employees provide me with explanation of why problems had occurred.	.80***
	EN2 Employees I deal with, provide a satisfactory explanation of why the problem had occurred.	.82***
	EN3 Employees provide me with explanation of what has done with my product.	.83***
	EN4 Employees provide me with suggestions of product usage when pick up.	.79***
Empathy (ET)		.93***
	ET2 Employees know your specific needs in returning products.	.74***
	ET3 Employees have your best interests at heart.	.75***
	ET4 Employees show sympathy for you when you have problems.	.78***
	ET5 The operating hours are available to you.	.75***

Note. ***p <.001

Table 5.5 (continued)

Dimensions	Items	Factor loadings
Empowerment (EP)		.78***
	EP1 The employees I contacted to first, was able to solve my returns problem.	.84***
	EP2 One employee could complete the overall process for me.	.82***
Reliability (RL)		.90***
	RL1 When promises to do something, Company X does so.	.73***
	RL2 Employees are dependable.	.78***
	RL3 Company X keeps statement accurately.	.79***
	RL4 Employees' decisions are reliable.	.81***
	RL5 The product's functions can perform well and accurately as usual.	.72***
Timeliness (TL)		.86***
	TL1 Company X's processing time is short.	.74***
	TL2 Delivery of returns arrives on the date Company X promised.	.84***
	TL3 Company X handles my returns quickly.	.82***
	TL4 The time for queuing is short.	.76***
Information Availability (IA)		.96***
	IA1 Company X provides information of operating hours and location of service centers.	.75***
	IA2 Company X provides problem's solution choices information.	.75***
	IA3 Company X provides compensation/returns status information.	.78***
	IA4 Employees provide information of processing time and tentative costs for me.	.72***
	IA5 It is easy to access firm's service information.	.73***

Note. ***p <.001

Table 5.5 (continued)

Dimensions	Items	Factor loadings
Assurance (AS)		.91***
	AS1 Employees can be trusted.	.74***
	AS2 You have confidence in product returns process of company X.	.75***
	AS3 Employees get adequate support from the company to do their jobs well.	.79***
	AS4 Company X provides a follow-up after the compensation is provided.	.78***
	AS5 Employees I deal with are knowledgeable.	.80***
	AS6 Company X provides warranty for the returns/compensation.	.76***
Compensation (CS)		.75***
	CS2 Company X compensates me appropriately.	.89***
	CS3 Company X compensates me when I am dissatisfied with the returns service.	.86***
	CS4 Rental mobile is provided for free.	.73***
Feedback (FB)		.81***
	FB1 Company X informed me about the progress made to solve my product problem.	.84***
	FB2 Employees keep in touch with me.	.87***
	FB3 Company X provides periodic feedback during processing time.	.85***
Convenient process (CP)		.84***
	CP1 Company X provides me with convenient options for returning items	.83***
	CP2 Company X ’s requirements on the condition of product returned are appropriate.	.82***
	CP3 Requisitioning procedures of returning product(s) are easy to use.	.86***

Note. ***p <.001

Table 5.6 The fit results of COPRS performance measurement model

Measurement model analysis	**Measures**	**Criteria**	**Model fit results (AMOS-based)**
Absolute Fit Indices	Chi Square (χ^2) statistic	Significant p-value (sample size > 250, observed variables $\geq$ 30)	χ^2 = 1150.255 p-value =.000
	Chi Square per degree of freedom (χ^2 /df)	Less than 3:1	1.36:1
	Goodness of Fit Index (GFI)	Above .90	.94
	Root Mean Square Error of Approximation (RMSEA)	Less than .05	.02
Incremental Fit Indices	Comparative Fit Index (CFI)	Above .90	.99
	Tucker-Lewis Index (TLI)	Above .90	.99

Table 5.7 Reliability analysis of the COPRS performance measure

Variables	Construct Reliability	Reliability of indicators	Internal Consistency	
	Composite Reliability (CR) >.7	Squared Multiple Correlations >.5	Cronbach's Alpha >.7	Corrected Item-Total Correlation >.5
COPRS Performance	.98		.98	
Tangibles	.83		.85	
TB1		.59		.68
TB2		.64		.77
TB3		.60		.71
Responsiveness	.85		.87	
RP1		.54		.73
RP2		.58		.73
RP3		.70		.72
RP4		.62		.70
Explanation	.89		.88	
EN1		.64		.72
EN2		.66		.76
EN3		.69		.77
EN4		.62		.71
Empathy	.86		.86	
ET2		.55		.70
ET3		.57		.73
ET4		.60		.74
ET5		.57		.65
Empowerment	.79		.82	
EP1		.70		
EP2		.67		.69***
Reliability	.89		.87	
RL1		.54		.67
RL2		.60		.70
RL3		.62		.75
RL4		.65		.72
RL5		.52		.66

Note. *** p <.001(correlations)

Table 5.7 (continued)

Variables	Construct Reliability	Reliability of indicators	Internal Consistency	
	Composite Reliability (CR) >.7	Squared Multiple Correlations >.5	Cronbach's Alpha >.7	Corrected Item-Total Correlation >.5
Timeliness	.86		.85	
TL1		.54		.62
TL2		.71		.68
TL3		.68		.77
TL4		.58		.65
Information Availability	.88		.87	
IA1		.57		.71
IA2		.57		.72
IA3		.60		.72
IA4		.52		.66
IA5		.54		.69
Assurance	.90		.90	
AS1		.55		.69
AS2		.56		.69
AS3		.61		.73
AS4		.60		.72
AS5		.64		.77
AS6		.58		.72
Compensation	.86		.85	
CS2		.79		.73
CS3		.74		.79
CS4		.54		.63
Feedback	.88		.89	
FB1		.70		.76
FB2		.76		.80
FB3		.72		.79
Convenience	.89		.86	
CP1		.70		.71
CP2		.68		.78
CP3		.75		.71

Table 5.8 Content validity analysis of COPRS performance measure

Measurement model analysis	Measures	Criteria	Content validity results
Content validity	Substantive validity coefficients (C_{sv}) for the constructs' definitions and dimensions	Above .50	Expert validation 1.00 Customer validation .58 – .92
	Inter-judge reliability in qualitative data analysis	Above .80	.95
	Agreement among judges in item-objective congruence (IOC) procedure	Above .50	.57 – 1.00

Table 5.9 Convergent and discriminant validity analysis of COPRS performance measure (Chi-square difference test)

	Model 0 or Independence Model (no trait and 46 items)	Model 1 (1 trait and 46 items)	Model 2 (12 traits and 46 items)
χ^2	26387.408	1796.493	1150.255
df	1035	865	847
	Comparisons of χ^2 statistics		
χ^2 (diff)	26387.408 – 1796.493 = 24590.915**	1796.493 – 1150.255 = 646.238**	
df (diff)	1035 – 865= 170	865 – 847= 18	

Note. **p< .05

Table 5.10 Criterion validity analysis of COPRS performance measure

Discriminated groups	The mean score of COPRS performance
The satisfied respondents (Average returns satisfaction ≥ 3.5; n = 438)	3.96
The disssatisfied respondents (Average returns satisfaction < 3.5; n = 317)	3.08

Table 5.11 Confirmatory Factor Analysis of returns satisfaction and customer trust

Item	Measurable items	Factor loadings
Returns satisfaction		
RS1	I am completely satisfied with Company X's entire process of making my return.	.82***
RS2	Company X's efforts to handle my request are satisfactory.	.89***
RS3	Overall, I am completely satisfied with the experiences with the returns service delivered by Company X.	.75***
RS4	The firm's returns service meet my expectations.	.74***
Customer trust		
CT1	Company X's policies and practices are completely dependable.	.87***
CT2	I can count on Company X to respond to my requests.	.86***
CT3	I can count on Company X's promises.	.88***
CT4	I can trust Company X completely.	.76***
CT5	Overall, I can trust the firm's offerings.	.75***

Note. ***p < .001

Table 5.12 The results of returns satisfaction and customer trust measurement model fit

Measurement model analysis	Measures	Criteria	Model fit results (AMOS-based)	
			Returns satisfaction	**Customer trust**
Absolute Fit Indices	Chi Square (χ^2) statistic	Significant p-value (Sample size > 250, observed variables $\geq$ 30) was expected.	$\chi^2 = 2.547$ p-value =.000	$\chi^2 = 3.789$ p-value =.052
	Chi Square per degree of freedom (χ^2 /df)	Less than 3:1	2.55	3.79
	Goodness of Fit Index (GFI)	Above .90	1.00	1.00
	Root Mean Square Error of Approximation (RMSEA)	Less than .05	.05	.06
Incremental Fit Indices	Comparative Fit Index (CFI)	Above .90	1.00	1.00
	Tucker-Lewis Index (TLI)	Above .90	.99	.99

Table 5.13 Reliability analysis of returns satisfaction and customer trust

Variables	Construct Reliability	Reliability of indicators	Internal Consistency	
	Composite Reliability	Squared Multiple Correlations	Cronbach's Alpha	Corrected Item-Total Correlation
	>.7	>.5	>.7	>.5
Returns satisfaction	.89		.89	
RS1		.67		.73
RS2		.79		.78
RS3		.56		.75
RS4		.55		.75
Customer trust	.93		.91	
CT1		.56		.80
CT2		.76		.81
CT3		.75		.80
CT4		.77		.76
CT5		.57		.73

Table 5.14 Convergent validity assessment of returns satisfaction and customer trust

Constructs	Standardized Values of Factor Loadings	Average Variance Extracted	Composite Reliability (CR)
	>.7	**>.5**	**>.7**
Returns satisfaction		.68	.89
RS1	.82***		
RS2	.89***		
RS3	.75***		
RS4	.74***		
Customer trust		.72	.93
CT1	.87***		
CT2	.86***		
CT3	.88***		
CT4	.76***		
CT5	.75***		

Note. ***p < .001

Table 5.15 Discriminant validity assessment of returns satisfaction and customer trust

	Model 1 (No correlation)	**Model 2 (Free correlation)**
χ^2	825.6	37.6
df	25	19
Comparisons of χ^2 statistics		
χ^2 (diff)	825.6 – 37.6 = 788**	
df (diff)	25 – 19 = 6	

Note. **p < .05

Table 5.16 The hypothesized structural model results

Hypothesis	**Expected relationship**	**Path coefficient**	**t-value**	**p-value**	**Hypothesis result**
H1	COPRS -> RS (+)	.84	18.642	***	Supported
H2	RS -> CT (+)	.87	11.834	***	Supported
H3	COPRS -> CT (+)	.05	.786	.432	Not supported

Model fit results: χ^2 = 2079.203 , df = 1305, p = .000, χ^2/df = 1.59, GFI = .91 , RMSEA = .03, CFI = .98, TLI = .97

Note. *** p <.001; COPRS = COPRS Performance; RS = Returns satisfaction; CT = Customer trust

Table 5.17 Direct and indirect effects of COPRS performance on customer trust

Independent variable	Dependent variable	Standardized coefficient		
		Direct effects	Indirect effects	Total effects
COPRS performance	Returns satisfaction	.84	.00	.84
	Customer Trust	.05	.73	.78

Table 5.18 Model fit results for mediation effect of returns satisfaction on the relationship between COPRS performance and customer trust

Model specifications	χ^2	df	χ^2diff	GFI	CFI	TLI	RMSEA	Remarks
Model 1: COPRS -> RS; RS -> CT	2098.356	1307	Comparison base	.91	.98	.97	.03	1st and 2nd condition
Model 2: COPRS -> CT	1505.334	1069	-	.93	.99	.98	.02	3rd condition
Model 3: COPRS -> RS; RS -> CT; COPRS -> CT	2079.203	1305	19.153** df diff = 2	.91	.98	.97	.03	4th condition

Notes: **p< .05; COPRS = COPRS Performance; RS = Returns satisfaction; CT = Customer trust; Model 2 did not include the mediator of returns satisfaction; Model 3 included the mediator of returns satisfaction.

Table 5.19 SEM results for mediation effect of returns satisfaction on the relationship between COPRS performance and customer trust

	Model 1	Model 2	Model 3
COPRS -> RS	.85***		.84***
RS -> CT	.90***		.87***
COPRS -> CT		.78***	.05

Notes: ***p< .001; COPRS = COPRS Performance; RS = Returns satisfaction; CT = Customer trust; Model 2 did not include the mediator of returns satisfaction; Model 3 included the mediator of returns satisfaction.

Table 5.20 Summary of COPRS performance measurement model results

Measurement model analysis	Measures	Criteria	Results
Model Fit Indices			
Absolute Fit Indices	Chi Square (χ^2) statistic	Significant p-value (sample size > 250, observed variables $\geq$ 30) is expected.	χ^2 = 1150.255 p-value =.000
	Chi Square per degree of freedom (χ^2 /df)	Less than 3:1	1.36:1
	Goodness of Fit Index (GFI)	Above .90	.94
	Root Mean Square Error of Approximation (RMSEA)	Less than .05	.02
Incremental Fit Indices	Comparative Fit Index (CFI)	Above .90	.99
	Tucker-Lewis Index (TLI)	Above .90	.99

Table 5.20 (continued)

Measurement model analysis	Measures	Criteria	Results
Construct validity			
Internal consistency	Cronbach's alpha	Above .70	.82-.90
	Corrected item-to-total correlations	Above .50	.62-.80
Reliability of indicators	Squared multiple correlations	Above .50	.52-.79
Construct reliability	Composite reliability (CR)	Above .70	.79-.90
Content validity	Substantive validity coefficients (C_{sv}) for the constructs' definitions and dimensions	Above .50	Expert validation 1.00 Customer validation .58 – .92
	Inter-judge reliability in qualitative data analysis	Above .80	.95
	Agreement among judges in item-objective congruence (IOC) procedure	Above .50	.57 – 1.00
Convergent validity	Standardized values of factor loadings	Significant p-value Above .70	.73 -.89 (p-value =.000)
	χ^2 difference test between Model 0 and Model 1 (Model 0 = Independence Model; Model 1 = 1 trait (COPRS) and 46 items)	Significance of the difference in χ^2 for Model 0 and Model 1	24590.915***

Table 5.20 (continued)

Measurement model analysis	Measures	Criteria	Results
Construct validity			
Discriminant validity	χ^2 difference test between Model 1 and Model 2 (Model 1: 1 trait (COPRS) and 46 items Model 2: 12 traits and 46 items)	Significance of the difference in $\chi^2$for Model 1 and Model 2	646.238***
Criterion validity	Independent t-test analysis between known groups	Significant t-value Predict as expected	Mean of group1 (3.96) > Mean of group 2 (3.08) (t = -22.63, p =.000)
Nomological validity	Standardized estimates	Significant p-values: COPRS -> RS COPRS -> CT	.85*** .78***

Notes. *** p <.001

COPRS = COPRS Performance; RS = Returns satisfaction; CT = Customer trust

Table 5.21 Summary of the final COPRS performance measurement items

Dimensions	Items
Tangibles	1. The service center has up-to-date equipment.
	2. Physical facilities are visually appealing.
	3. Employees work in a tidy, professional environment.
Responsiveness	4. Employees take care of problems promptly.
	5. Employees can promptly response to your request even when they are busy.
	6. Employees communicate effectively.
	7. Employees process your request rapidly.
Explanation	8. Employees provide me with explanation of why problems had occurred.
	9. Employees I deal with, provide a satisfactory explanation of why the problem had occurred.
	10. Employees provide me with explanation of what has done with my product.
	11. Employees provide me with suggestions of product usage when pick up.
Empathy	12. Employees know your specific needs in returning products.
	13. Employees have your best interests at heart.
	14. Employees show sympathy for you when you have problems.
	15. The operating hours are available to you.
Empowerment	16. The employees I contacted to first, was able to solve my returns problem.
	17. One employee could complete the overall process for me.
Reliability	18. When promises to do something, Company X does so.
	19. Employees are dependable.
	20. Company X keeps statement accurately.
	21. Employees' decisions are reliable.
	22. The product's functions can perform well and accurately as usual.
Timeliness	23. Company X's processing time is short.
	24. Delivery of returns arrives on the date Company X promised.

Table 5.21 (continued)

Dimensions	Items
Timeliness	25. Company X handles my returns quickly.
	26. The time for queuing is short.
Information Availability	27. Company X provides information of operating hours and location of service centers.
	28 Company X provides problem's solution choices information.
	29. Company X provides compensation/returns status information.
	30. Employees provide information of processing time and tentative costs for me.
	31. It is easy to access firm's service information.
Assurance	32. Employees can be trusted.
	33. You have confidence in product returns process of company X.
	34. Employees get adequate support from the company to do their jobs well.
	35. Company X provides a follow-up after the compensation is provided.
	36. Employees I deal with are knowledgeable.
	37. Company X provides warranty for the returns/compensation.
Compensation	38. Company X compensates me appropriately.
	39. Company X compensates me when I am dissatisfied with the returns service.
	40. Rental mobile is provided for free.
Feedback	41. Company X informed me about the progress made to solve my product problem.
	42. Employees keep in touch with me.
	43. Company X provides periodic feedback during processing time.
Convenient process	44. Company X provides me with convenient options for returning items
	45. Company X 's requirements on the condition of product returned are appropriate.
	46. Requisitioning procedures of returning product(s) are easy to use.

Table 5.22 Summary of the hypothesized structural model results and related analysis

Analysis	Path coefficient	Results
Hypotheses testing		
H1 COPRS -> RS (+)	.84***	Supported
H2 RS -> CT (+)	.87***	Supported
H3 COPRS -> CT (+)	.05	Not supported
Model fit results: χ^2 = 2079.203 , df = 1305, p = .000, χ^2/df = 1.59, GFI = .91 , RMSEA = .03, CFI = .98, TLI = .97		
Effects of COPRS performance		
on RS	-	Direct effects (.84) > Indirect effects (.00)
on CT	-	Indirect effects (.73) > Direct effects (.05)
Mediation analysis		
Model 1: COPRS -> RS;	.85***	Meet the first condition
RS -> CT	.90***	
Model 2: COPRS -> CT	.78***	Meet the second condition
Model 3: COPRS -> RS	.84***	Meet the third condition (Full mediator of RS on COPRS and CT)
RS -> CT	.87***	
COPRS -> CT	.05	

Notes. *** p <.001

COPRS = COPRS Performance; RS = Returns satisfaction; CT = Customer trust

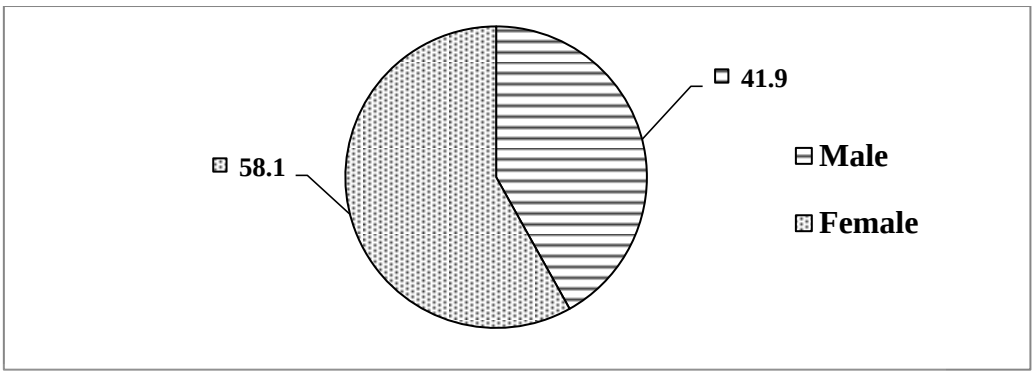


Figure 5.1 Gender

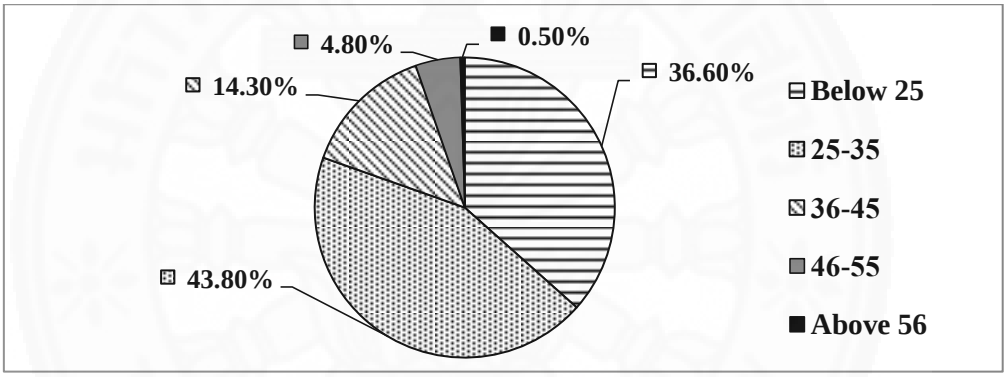


Figure 5.2 Age

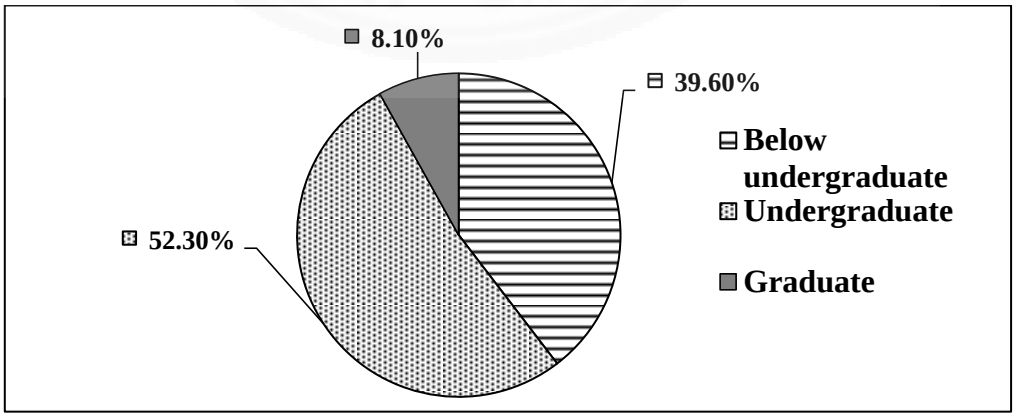


Figure 5.3 Education level

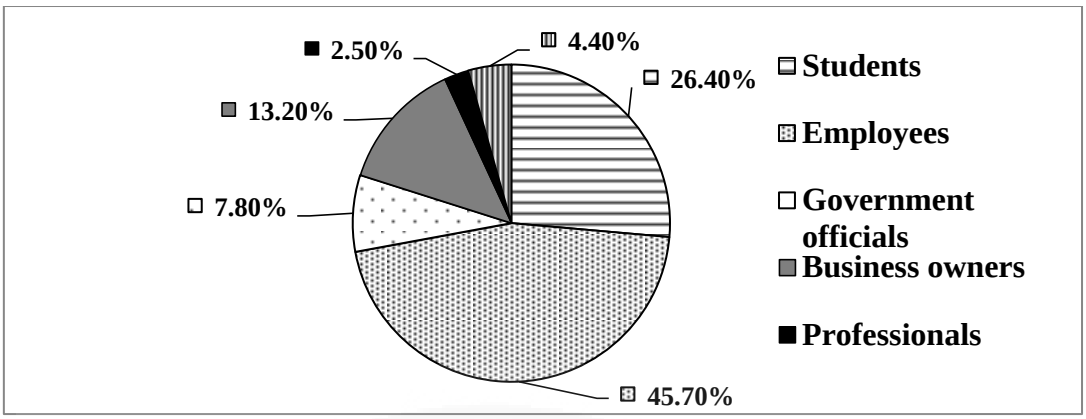


Figure 5.4 Occupation

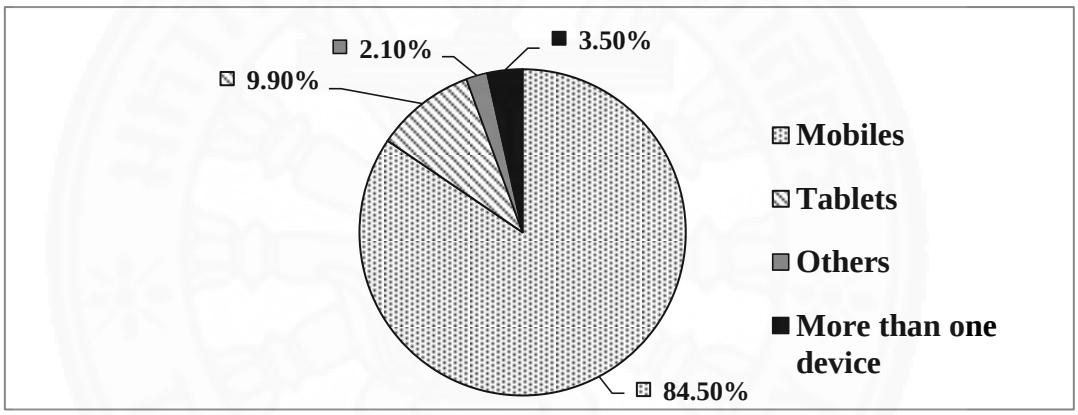


Figure 5.5 Devices

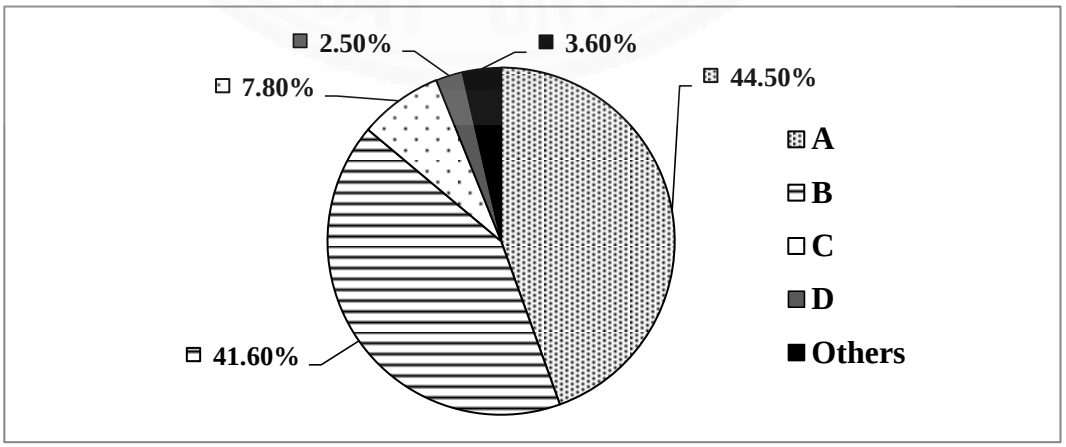


Figure 5.6 Brands

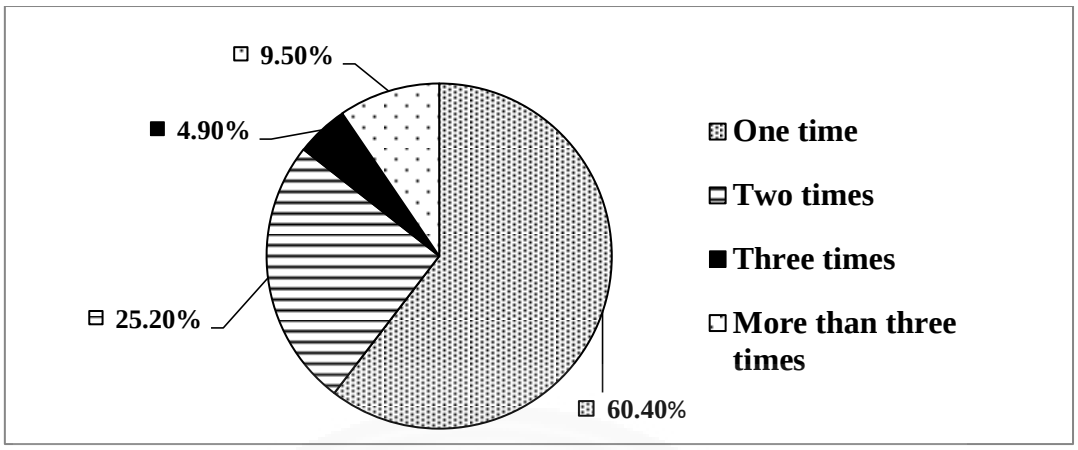


Figure 5.7 Returns experience in the past one year

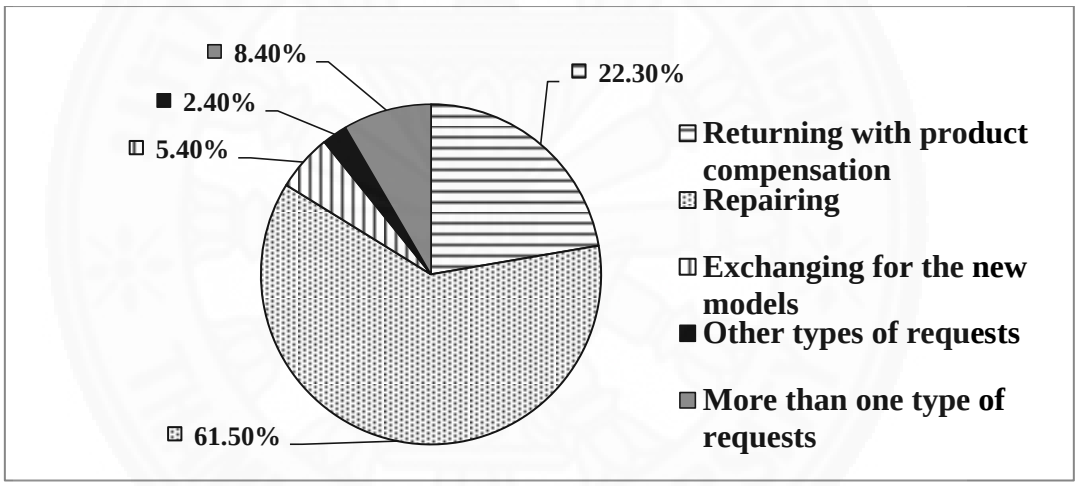


Figure 5.8 The types of returns requests

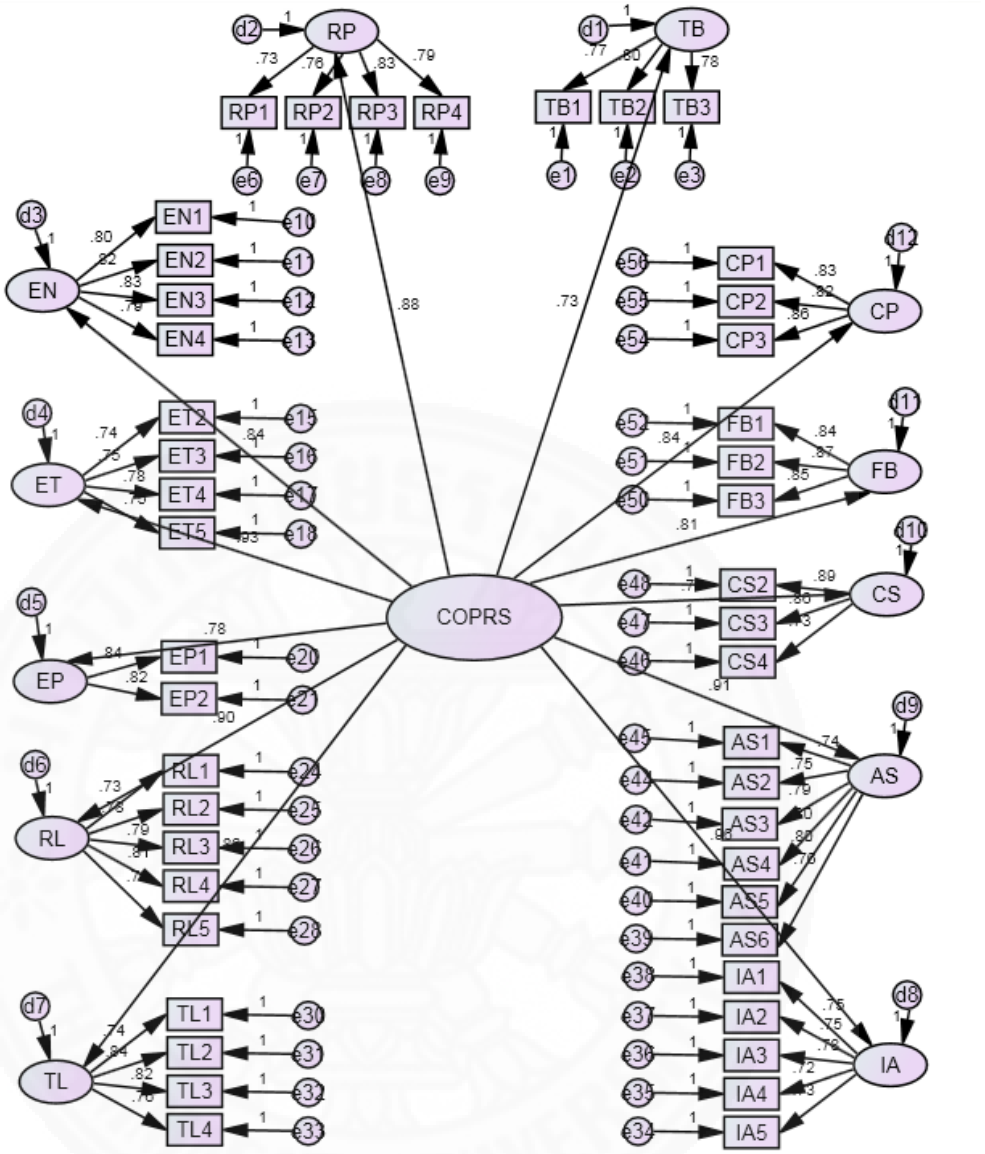
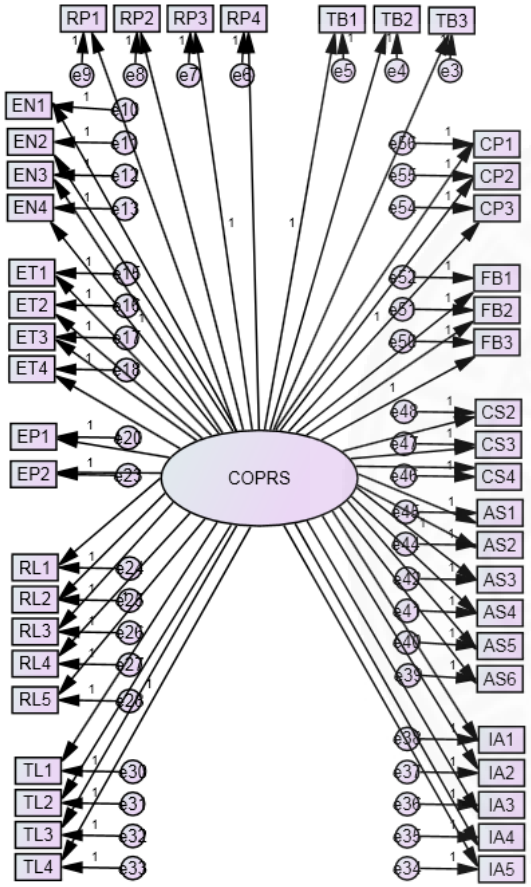


Figure 5.9 The measurement model of COPRS performance measure

Model 1 (1 trait and 46 items)



Model 2 (12 traits and 46 items)

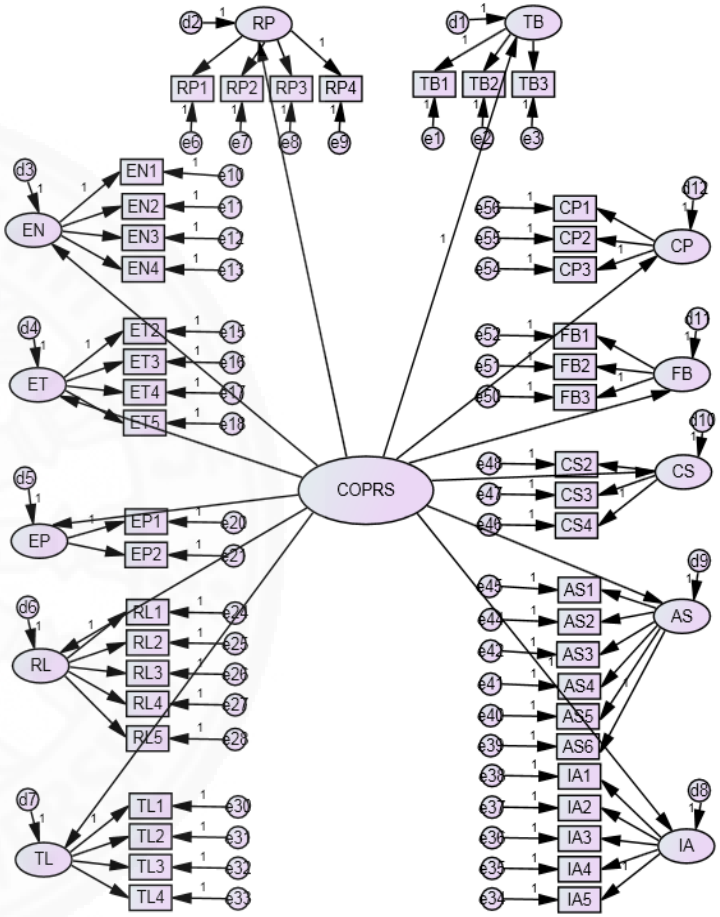
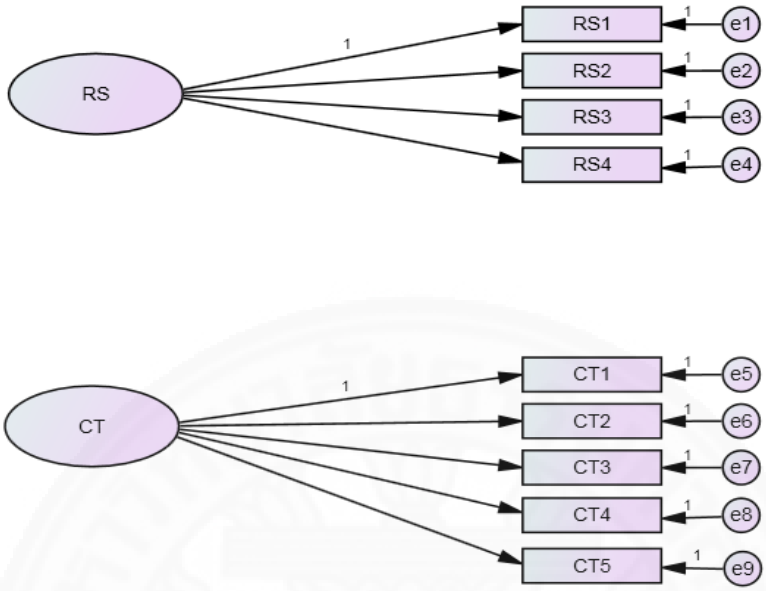


Figure 5.10 The model comparisons for convergent and discriminant validity analysis of COPRS performance measure

Model 1 (No correlation)



Model 2 (Free correlation)

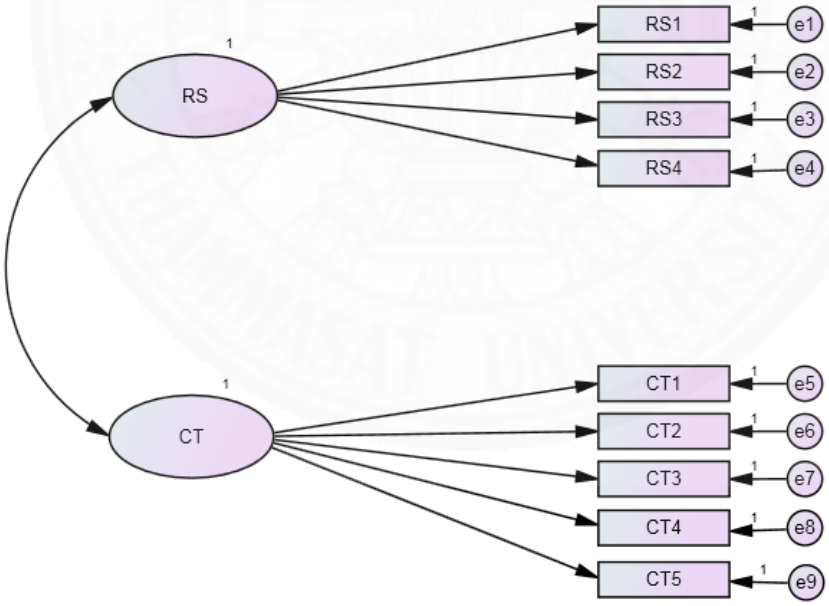


Figure 5.11 The model comparisons for discriminant validity analysis of returns satisfaction and trust measures

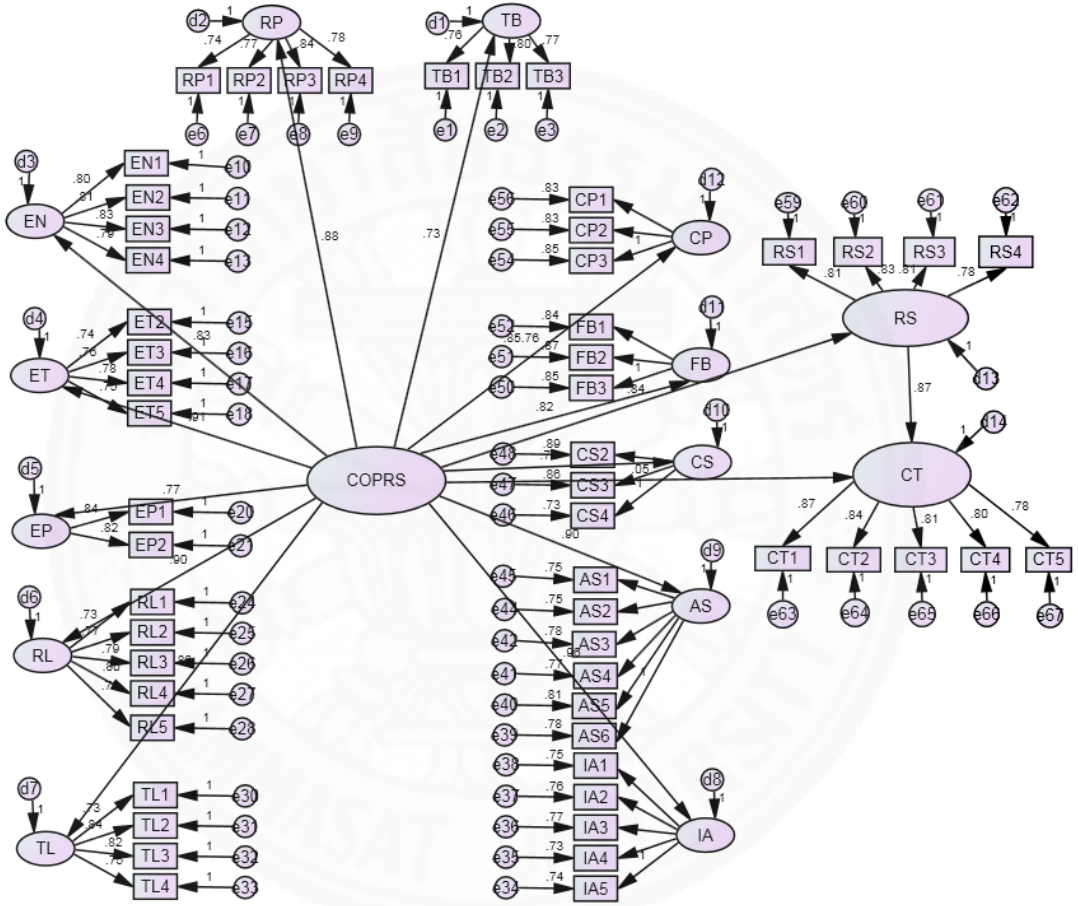


Figure 5.12 The hypothesized structural model

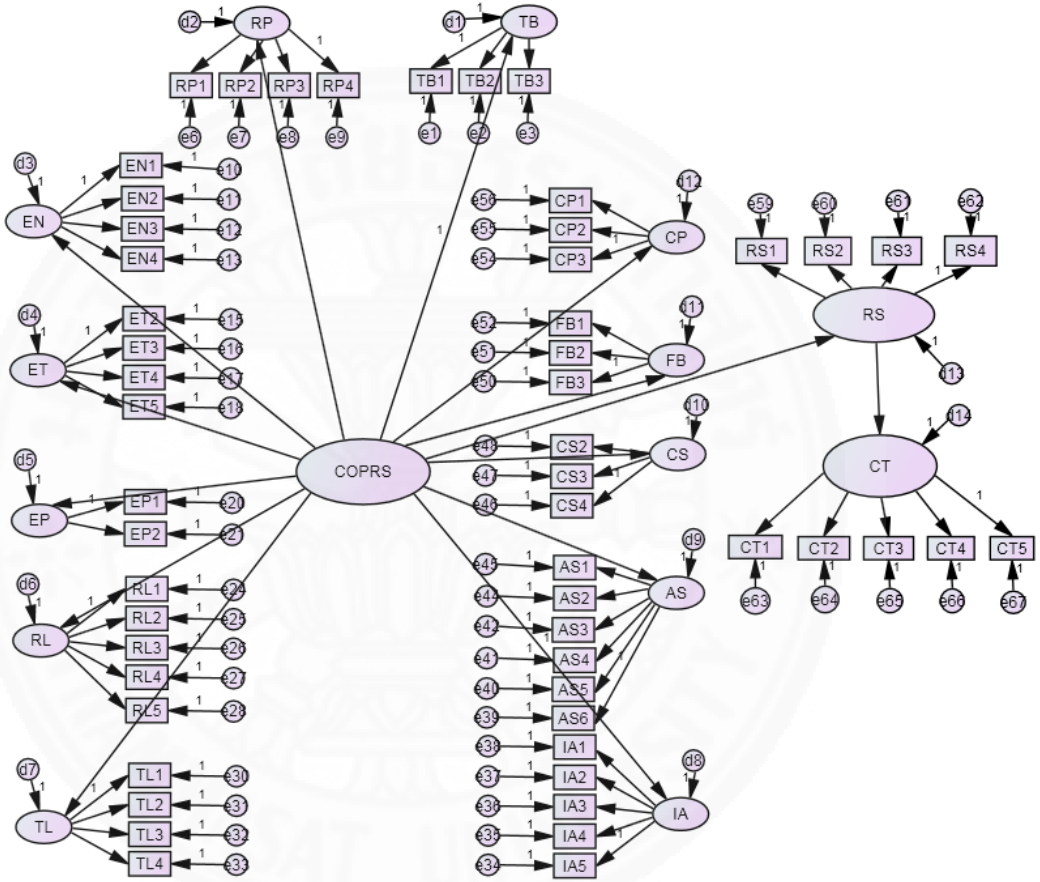


Figure 5.13 Model 1 for mediation analysis (COPRS -> RS; RS -> CT)

Note. COPRS = COPRS Performance; RS = Returns satisfaction; CT = Customer trust

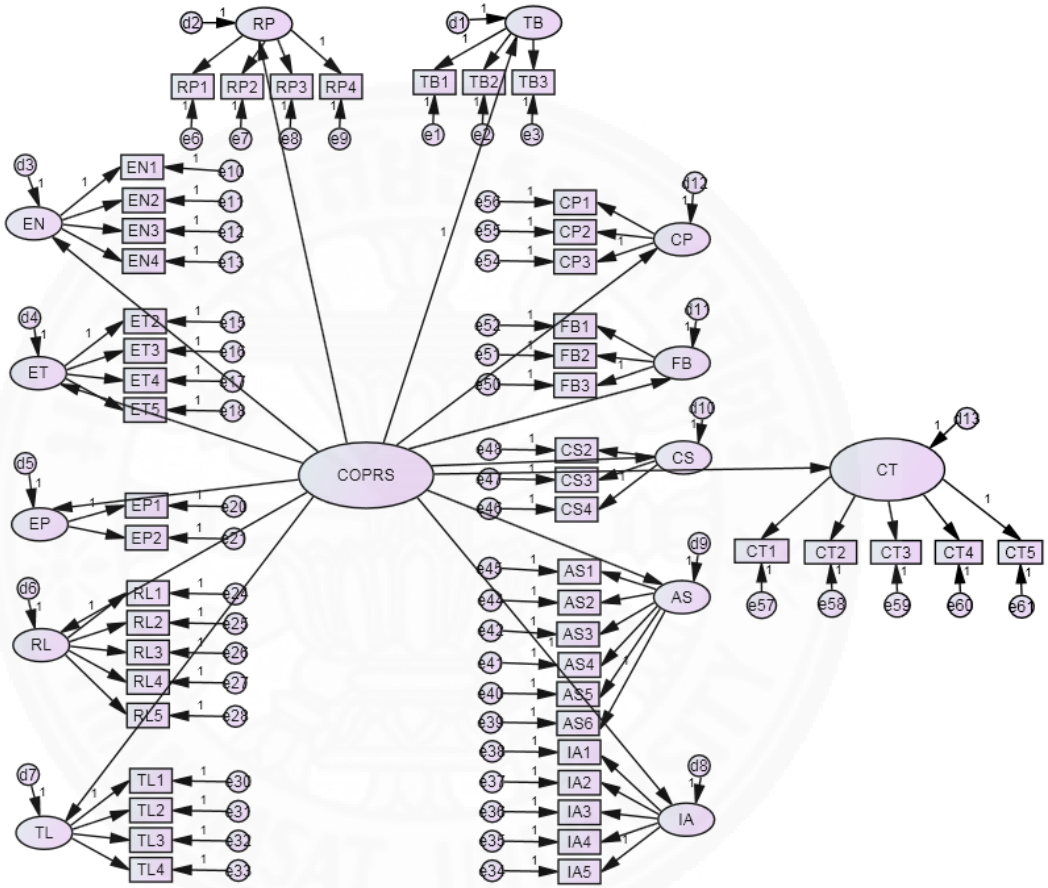


Figure 5.14 Model 2 for mediation analysis (COPRS --> CT)

Note. COPRS = COPRS Performance; CT = Customer trust

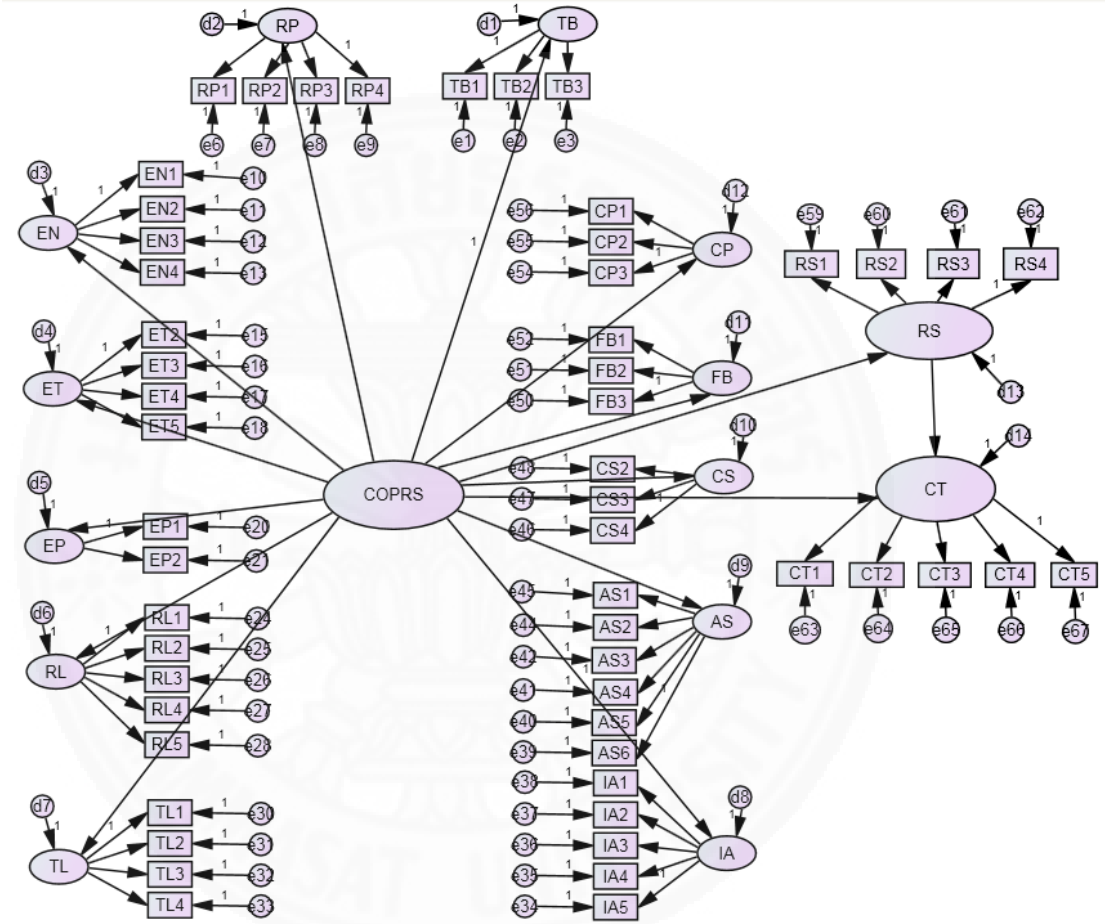


Figure 5.15 Model 3 for mediation analysis (COPRS --> RS; RS --> CT; COPRS --> CT)

Note. COPRS = COPRS Performance; RS = Returns satisfaction; CT = Customer trus

CHAPTER 6
DISCUSSION, CONCLUSIONS, IMPLICATIONS AND LIMITATIONS OF THE STUDY

6.1 Discussion and Conclusions of the Study

While previous researches in product returns and reverse logistics management have mainly focused on the firm process and operations, the current study proposed that the integration between marketing initiatives and returns process within reverse logistics must be taken into account. Marketing concepts including the notions of service perspective, value cocreation and customer orientation as well as the understanding of actual customer expectations must be incorporated into product returns process and management. Specifically, based on service dominant (S-D) logic of marketing, consumer product returns are proposed to be referred as service offerings. Such returns service delivery should be customer-oriented and cocreated by customers. Managing consumer returns are also considered as managing service recovery in the reverse flow. As a result, the new construct of customer-oriented product returns service (COPRS) was developed and conceptualized as "service offerings provided by firms to end consumers within the product returns process based on putting customers' needs first in order to enhance customer satisfaction". Satisfactory substantive validity coefficients indicated the face validity of the definition. Notably, the unique features of product returns service include 1) a service requiring marketing and logistics integration, 2) service offerings in the backward or reverse flow and, 3) the process mainly starting from customer dissatisfaction.

To measure COPRS performance, the study developed the measurement scale in the area of customer service or effectiveness which is largely ignored in product returns literature. In this regard, the study took seven steps in developing COPRS performance measure. It was operationalized and validated by mixed research methods. Based on the expectation-disconfirmation paradigm, consumers use their expectations as reference points to evaluate firm's performance (Oliver, 1980; Robledo, 2001), thus understanding customer expectations is one key consideration in

providing superior services, finally achieving customer satisfaction. In-depth interviews with customers were then employed to gain insights in expectations of returns service in each step of the returns process derived from customer perspectives. This step also highlighted the notion of customer involvement in value cocreating process (Vargo & Lusch 2004; 2008) to improve returns service. As such, the customer are viewed as an input into service provider's process and regarded as the temporary member of the organization (Gummesson, 1996) or the part-time employee of the firm (McColl-Kennedy et al., 2012).

Subsequently, a pretest and a large quantitative survey of 755 respondents was conducted to refine initial COPRS performance measure derived from literature review and qualitative study. With Confirmatory Factor Analysis (CFA) via AMOS, COPRS performance measurement type I model showed a reasonable good fit based on absolute fit indices ($\chi^2/df = 1.36$: 1, GFI = .94, RMSEA = .02) and incremental fit indices (CFI = .99 and TLI = .99). Regarding construct validity assessment including reliability, convergent validity, discriminant validity, criterion validity, and nomological validity, COPRS performance measure met the acceptable criteria, indicating that the developed measure was reliable and valid.

Accordingly, the proposed two-order measurement model identified twelve dimensions of COPRS performance with 46 measurable items. Findings revealed that customer-oriented returns service performance comprised twelve dimensions. The top five factors exhibiting highest factor loadings significantly were information availability (0.96), empathy (0.93), assurance (0.91), reliability (0.90), and responsiveness (0.88), respectively. The remaining dimensions were timeliness (0.86), explanation (0.84), convenient process (0.84), feedback (0.81), employee's empowerment (0.78), and compensation (0.75). The dimension of tangibles had the lowest loading (0.73).

Information availability is the most essential element in providing the return service in this study because the entire process may not end within a day. According to qualitative interviews, customers required information regarding service locations, operating hours, cost and time, solution choices and service status. Thus, the firm should allow its customers to access information related to activities of returns process according to customer needs (Jeong & Hong, 2007; Tien et al., 2009).

The accessibility of information provided by the service firm has significant implications for customer value creation (Mentzer et al., 2001). In accordance with customer orientation literature, this element allows the customer to access information according to customer needs (Cho & Park, 2003; Jeong & Hong, 2007).

Empathy relates to interpersonal treatment by employees in the service recovery context (Tax et al., 1998) and the firm's willingness to put its customers first in customer orientation literature (Deshpande et al., 1993). Thus, empathy or the understandings customers' problems from their point of views is an important factor in providing returns service. It plays an important role in customer service evaluation (Cui et al., 2003; El-garaihy, 2013, Lam, 2002; Tax et al.,1998; van der Wal, Pampallis, & Bond, 2002).

In accordance with service recovery (Barlow & Moller, 1996; Chang, 2008) and service quality (Parasuraman et al., 1985, 1988) literatures, customers expect the knowledgeable service employees and that the problems would not occur again. In some empirical studies, assurance measures were found to load on different factors based on the service settings (Brady & Cronin, 2001; Dabholkar et al., 2000). However, other studies supported the evidence that the stand-alone dimension of assurance influenced on consumer service evaluation (Lam, 2002; van der Wal et al., 2002). In particular, Parasuramann et al. (1988) and Lai et al. (2007) reported that assurance was one of the most critical dimensions in determining customer perceptions of service performance. In a similar vein, the stand-alone dimension of assurance was ranked the third in assessing consumer returns service in this study.

Reliability is needed for product returns management to ensure its stable service quality (Parasuraman et al., 1985; Ladhari, 2009). This dimension was generally recognized in assessing service quality and performance in previous empirical studies (Abdullah et al., 2011; Arasli, Mehtap-Smadi, & Katircioglu, 2005; Boshoff, 2005; Cook & Thompson (2000); Robledo, 2001; van der Wal et al., 2002). Based on the technical quality or outcome dimension concept by Gronroos (1988), the accurate returns function and dependability should be what the customers are left with when the returns process and interactions are over.

According to Parasuraman et al. (2005), immediate and effective handling of return requests and problems is required for managing product returns service;

therefore, responsiveness was an important dimension for customer evaluation of returns service performance. This is in line with the results of Abdullah et al. (2011), El-garaihy (2013), Lam (2002), Parasuramann et al. (2005), van der Wal et al. (2002) indicating the importance of responsiveness dimension in assessing service performance.

Timeliness is also a critical factor as the customers require that the firm should be able to keep promises concerning timeframes of returns delivery (Tien et al., 2009) and respond to customer requests with speed (Mostafa et al., 2014). Previous empirical studies also suggested the important role of timeliness in achieving competitive advantage (Hong, Chin, & Liu, 2004; Hult, Ketchen, & Nichols, 2002; Lambert & Burduroglu, 2000). Since product returns within a reverse logistics process involve time-based activities (Day, 1998), the firm should be able to provide its customers with timely delivery of the returned products. Therefore, timeliness is an important factor in assessing performance of both forward logistics (Bienstock et al., 1997; Mentzer et al., 1999) and reverse logistics.

Explanation is also required for the returns service as from customer's point of view, the firm's failure happens. Hence, this dimension corresponds to service recovery literature in terms of the perceived fairness of interactional justice (Boshoff, 2005; Krishna et al., 2011; Tax et al., 1998). From customer perspectives, the clear and specific explanation of why the product's problem had occurred and what has done after solving the problem should be provided. The results are consistent with the view that the explanation the firm provided to its customer directly contributes to customer evaluations (Baker & Meyer, 2014; Boshoff, 2005; Bradley & Sparks, 2012; Burke, 2009).

Customer expectations of returns service include convenient process. For instance, the participants required ease of process and overall returns process completed by one service employee. Put differently, the returns process should be easy to access in a convenient manner (Tax et al., 1998). Previous studies also postulated that the dimension of convenience was necessary for evaluating customer service performance (Lai et al., 2007; Lam, 2002; Mentzer et al., 1999).

In addition, the feedback about the progress provided by firm was also expected as it represents the firm's commitment to keep in touch with customers

(Jeong and Hong, 2007). Kansal's empirical research (2013) suggested that companies should focus on the customer feedback to improve the recovery systems and reduce customer dissatisfaction levels. It should be noted that the key reasons underlying consumer returns involve defects and quality issues (Daugherty et al., 2001; French & Discenza, 2006), managing consumer returns is therefore treated as managing service recovery. Specifically, the service provider should provide periodic feedback about the progress made to solve the product problem in order to recover customer satisfaction.

Employee empowerment refers to the power given to service employees by the firm to take care of their customers (Lashley, 1999; Krishna et al., 2011). In this regard, customers should expect that the first employee who first receives the return request is able to solve the problem and does not pass it to the others (Boshoff, 2005). Bowen and Lawler (1992) examined the benefits and costs of empowering service employees and indicated that the empowerment approach could fit certain situations. For instance, empowerment is the best approach when the service firms want to establish relationships with customers and that the organization operates in unpredictable environments such as hospitality and airlines services. In this regard, empowerment allows the employees to customize the service to respond the customer's needs and unpredictable events, thus helping establish the relationships.

Since the empowerment approach might not be right for all business characteristics, the contradiction of the empowerment effect exists in the literature. While some scholars indicated that empowerment might not yield positive benefits (Forrester, 2000; Randolph & Sashkin, 2002) or influence customer satisfaction (Naeem & Saif, 2010), the others empirically supported the positive relationship between empowerment and service consequences (Abbasi et al., 2011; Isimoya & Bakarey, 2013) and recommended the firms to empower front line service workers particularly in service recovery context (Babakus et al., 2003; Boshoff & Staude, 2003; Kansal, 2013). In the product returns setting, reasons of consumer returns vary among defective merchandise, customer dissatisfaction, incorrect item received, repairs needed and damaged (Daugherty et.al, 2001). Therefore, the customized approach in resolving customer problems is more appropriate to enhance long-term customer relationships. In that respect, empowerment was included in COPRS performance measure.

Based on qualitative interviews, some customers indicated that rental mobile should be provided for free as compensation during processing their requests or executing the repairs. Since in many cases, product problems were not initiated by users, recovering should be considered in providing returns service. Consequently, expectations of compensation correspond to service recovery concept (Parasuraman et al., 2005; Tax et al., 1998). It is noteworthy that compensation helps in creating a long-term customer relationship (Conlon & Murray, 1996; Wahab & Norizan, 2012; Wamuyu, Gichira, Wanjau, & Mung'atu, 2015).

Finally, tangibles include facilities, equipment and personnel. Since services are intangible, the physical environment could influence on customer's perception of the overall service (Bitner, 1992). The contacting point at the service center becomes a starting point of the returns process. Customers assess the return service employee and their working environment at the contacting point. This dimension corresponds to service recovery (Boshoff, 2005) and service quality (Parasuraman et al., 1985, 1988) literatures. However, the study findings complement prior work (Durvasula, Lysonski, Mehta, 1999; Lai et al., 2007) that tangible was the least important dimension in assessing service quality.

Overall, the results were in line with previous empirical researches indicating the importance of these dimensions in assessing service performance in various service settings. For instance, tangibles (El-garaihy, 2013; Robledo, 2001), responsiveness (El-garaihy, 2013), empathy (El-garaihy, 2013), empowerment (Bowen, 1997), and reliability (Robledo, 2001) were what customer expected in airline services and hospitality industry. The dimensions of tangibles (Arasli et al,, 2005; Boshoff, 2005; Cui et al., 2003; Lam, 2002), responsiveness (Abdullah et al., 2011; Arasli et al., 2005; Lam, 2002), explanation (Boshoff, 2005; Tax et al.,1998), empathy (Arasli et al., 2005; Cui et al., 2003; Lam, 2002; Tax et al.,1998), reliability (Arasli et al., 2005; Boshoff, 2005; Abdullah et al., 2011; Lam, 2002), timeliness (Tax et al.,1998), assurance (Lam, 2002), compensation (Tax et al.,1998), feedback (Boshoff, 2005), and convenient process (Lam, 2002) were indicated in banking industry. Three factors comprising timeliness (Mentzer et al., 1999; Tien et al., 2009), information availability (Tien et al., 2009), and convenient process (Mentzer et al., 1999) were addressed by customers in logistics service industry.

In view of the dimensionality among dimensions used to assessing returns service performance, while some studies indicated the overlap between responsiveness and assurance (Kim, 2000), responsiveness and empathy (Arasli et al., 2005), responsiveness, empathy, and assurance (Cook & Thompson, 2000; Nitecki, 1996), the research findings, conversely supported the distinctive factors among customer service dimensions.

Taken Miller (1997)'s typology of expectations into consideration, "expected" customer expectations based on past averaged performance derived from consumer interviews were evolved into "ideal" expectations or the wished for level of performance embedded in the COPRS performance measure.

With reference to service quality literature (Gronroos, 1988; Brady & Cronin, 2001**;** Parasuraman et al., 1988; Rust & Oliver, 1994), the service typology of service interaction, service delivery process, service outcome, and service environment will be discussed.

Service interaction or people dimension refers to the interactions between employees and customers during service encounter (Brady & Cronin, 2001). Therefore, the dimensions of responsiveness, explanation, empathy and assurance could be considered as interpersonal dimension of service. According to Justice Theory, interpersonal dimensions could be described as interactional justice. That is the employee treats the customer fairly. Service delivery process relates to how customers receive their service (Gronroos, 1988). In product returns context, it might involve convenience, timeliness, information availability, feedback, and employee's empowerment. Based on Justice Theory, service delivery would refer to procedural justice or the perceived fairness of a set of procedure to resolve problems. Service outcome means what customers receive from consuming the service provided by the firm (Gronroos, 1988). In this study, it would comprise reliability and compensation. Service outcome involves the perceived fairness of the actual outcome of service offerings or distributive justice based on Justice Theory. Service environment encompasses the physical environment or tangible aspects of the surroundings including facilities, equipment and personnel (Parasuraman et al., 1988; Rust & Oliver, 1994). Therefore, COPRS performance components could be categorized based on the existing service typology and subsequently used to improve returns

service. All in all, the measure development process and these findings could answer the first research question (RQ1) of how the performance measurement of product returns service could be developed based on customer perspectives.

To answer the second research question (RQ2) of how the performance of customer-oriented product returns services impacts returns satisfaction and customer trust in the company, hypotheses results will be discussed. It should be noted that three hypotheses were developed to study the role of COPRS performance in building long-term relationships with customers and assess nomological validity of the new construct. Based on Structural Equation Modeling (SEM) results, the structural model presented a good fit ($\chi^2/df = 1.59$, GFI = .91, RMSEA = .03, CFI = .98, TLI = .97) and statistically supported two hypotheses (H1 and H2).

Regarding H1, the findings indicated that COPRS performance positively related to returns satisfaction ($\beta = .84$, $p = .000$). This is consistent with prior product returns and reverse logistics literatures which concluded that the effective product returns management could improve customer satisfaction (Autry et al., 2000; Mollenkopf et al., 2007; Stock et al., 2006). Since COPRS construct was developed based on service-dominant logic, customer orientation, service recovery, service quality, product returns and reverse logistics literature, the hypothesis result was consistent with the past researches showing the positive relationship between these antecedents of COPRS performance and customer satisfaction (S-D logic: Karpen et al., 2015; customer orientation: Goff et al., 1997; Guo, 2001; service recovery: Bitner & Hubber, 1994; Krishna et al., 2011; McCollogh, 2009; service quality: Cronin & Taylor, 1992, Spreng & Mackoy, 1996; logistics studies: Daugherty et al., 1998; Davis, 2006). It is interesting to note that the positive relationship between returns service performance and satisfaction was in line with the qualitative findings conducted in Step 2. It is important to note that the COPRS performance construct was developed based on customer value cocreation through qualitative interviews. Specifically, the customers supplied information about the specifications of the returns service they expect to receive based on their past experiences. Hence, value-in-use or value emerged when service is consumed (Vargo & Lusch 2004; 2008) was created in the cocreation process. The results complement Vega-Vazquex, Revilla-Camacho, & Cossio-Silva's work (2013) that there is a positive link between value cocreation and

customer satisfaction with the service experience. Therefore, the customer's active involvement in creating value-in-use should be fostered to enhance market performance. The findings also supported the expectancy-disconfirmation paradigm indicating that when the perceived performance is above expectations, it is a positive disconfirmation leading to customer satisfaction.

According to H2 result, returns satisfaction positively related to customer trust in the company ($\beta = .87$, $p = .000$). The positive relationship between satisfaction and customer trust in company also supported the findings from qualitative in-depth interviews. In product returns context, the relationship between a customer and a firm involves some risks for purchases which are not known until post-purchase activities (Petersen, 2008). If the customer could return a product satisfactorily, this level of perceived risks is possibly removed. Therefore, the customers know that every purchase that does not fit their needs can be returned and treated reasonably. The positive effect of satisfaction on trust has been well established in previous studies (Anderson and Weitz, 1989; Shpetim, 2012).

The third hypothesis that COPRS performance directly relates to customer trust was not statistically supported. It should be noted that based on qualitative interview results, the responses to H3 were diverse. Some interviewees agreed that the performance of returns service could directly affect their trust in the firm while the others indicated that satisfaction mediated the relationship between returns service performance and trust. With reference to quantitative survey, it supported the latter. Total effects results and mediation analysis asserted that returns satisfaction was the full mediator of the relationship between COPRS performance and customer trust in the company. The findings were consistent with previous researches suggesting the mediating role of satisfaction in the service performance-trust relationship (Fullerton & Taylor, 2002; Kantsperger & Kunz, 2010; Shpetim, 2012).

It could be concluded that hypotheses results confirmed the role of COPRS performance in enhancing long-term customer relationships when considered two key elements of customer satisfaction and trust. Specifically, the greater the perceived returns service performance, the greater the customer satisfaction on such returns service. Further, COPRS performance could indirectly impact customer trust in the firm where customer satisfaction was the full mediator. Given that offering

products and services to customers require the formation of relationships (Alsajjan, 2014; Morgan & Hunt, 1994) and the cost of acquiring a new customer is much greater than that of retaining an existing one (Ok, 2004; Spreng et al., 1995), the adoption of COPRS concept in product returns management is crucial for the service provider.

In summary, instead of managing product returns from firm foundation as past researches, the current study was established to meet the objective of services marketing and reverse logistics management in satisfying customer expectations. To manage product returns successfully, the integration between marketing initiatives and returns process within reverse logistics was a central concept of the current study. Drawing upon existing literature in the marketing field, the study applies the initiatives of service-dominant logic and value cocreation, customer orientation, customer expectations, service recovery and service quality to product returns management. Accordingly, the new construct of customer-oriented product returns service (COPRS) and its performance measure were developed. The measure consisted of twelve dimensions with 46 observable items. Hypotheses results also supported the role of COPRS performance in enhancing customer-firm relationships. It directly affected returns satisfaction and indirectly impact customer trust in the firm where customer satisfaction was the full mediator.

6.2 Contributions of the Study

Unlike other contributions in this research stream, the current study claims to be one of the first works to integrate marketing concepts with reverse logistics, the underrepresented body of knowledge in the related disciplines. Put differently, the study attempts to shed new light on this issue in taking a different perspective in managing product returns. It advances both paradigm and practice in measuring performance of product returns service from customer perspectives. In particular, the current research could contribute both theoretically and practically to services marketing and reverse logistics area as follows.

6.2.1 Theoretical contributions

The study encourages logistics researchers to consider the paradigm through which they view the world and to examine the notion of marketing and reverse logistics (product returns) interface. By the same token, marketing scholars could attempt to shed new light in taking a different perspective on the implication of marketing concepts across disciplines. Theoretical contributions of this research provided below are presented based on theoretical gaps derived from a review of related literature.

Gap 1: The past researches of product returns and reverse logistics have not incorporated marketing concepts whereas some scholars suggest the coordination between marketing and logistics efforts in improving product returns systems.

The study highlighted the notion of functional integration across marketing and logistics disciplines. The incorporation of marketing concepts in product returns management enhances holistic and cross-disciplinary in logistics discipline. The results fulfilled the gap on reverse logistics literature regarding the importance of understanding and satisfying customer expectations by encompassing a service-dominant logic of marketing (Vargo & Lusch, 2004) and the expectation-disconfirmation paradigm (Oliver, 1980). On the other hand, it also extends the body of knowledge of service orientation, value co-creation, customer orientation, customer expectations, service recovery, and service quality in integrating returns management system. Therefore, the study urges researchers to move from atomistic considerations to holistic and interdisciplinary perspectives.

Gap 2: Product returns management is mainly firm-oriented while the initial stage of reverse flow starts from customers.

The starting point of product returns management in this study was reconsidered. The construct of customer-oriented product returns service and its framework was developed based on customer perspective. The practice of returns management in this study is customer-oriented. Customers provide ideas for improving returns service (customer value cocreation). In the current study, customers are active rather than passive recipient of service (McColl-Kennedy et al., 2012).

Therefore, the proposed model could be an essential step for future explorations of product returns management based on customer expectations.

Gap 3: Product returns management focuses on material transactions based on operational-efficiency approach.

Product returns management in this study focuses on relational exchange based on a service-centered view. Product returns do not only involve the physical goods that flow in the reverse process but also intangible aspects i.e. customer knowledge and experiences with the offerings before, during, and after usage as well as relational exchanges with firms. Interpersonal or people dimensions regarding responsiveness, empathy, explanation and assurance are included in COPRS construct. This study also provided empirical evidence of returns management focusing on building long-term relationships with customers through the theoretical link among the performance of product returns service, cumulative satisfaction and customer trust. Consequently, the present research moves beyond traditional considerations of efficiency and provides a new perspective of long-term relationships for product returns management.

Gap 4: Measures in customer service area or effectiveness of returns process has been largely ignored.

Past researches mainly focused on economic performance or the efficiency of the process and did not provide a good understanding regarding customer needs in a reverse logistics process. According to Huscroft et al. (2013b), rare research was found regarding metrics of reverse logistics particularly in the area of customer satisfaction. They suggested that future research should focus more on understanding customer expectations for reverse logistics and devise and utilize proper reverse logistics metrics. Responding to their calls, the study developed the underrepresented performance measure in customer service area or effectiveness of returns process i.e. COPRS performance measure. The scale measurement will facilitate further empirical studies in product returns and reverse logistics area. Future studies utilizing COPRS performance measure are suggested in section 6.3.

Gap 5: Existing measures cannot be directly applied due to the unique features of returns service.

Existing measures such as SERVQUAL, SERVPERF, logistics service quality (LSQ) cannot be directly applied due to unique features of returns service. Its unique features include 1) a service requiring marketing and logistics integration, 2) service offerings in the backward or reverse flow and, 3) the process mainly starting from customer dissatisfaction. Consequently, a specific measure i.e. COPRS performance measurement scale was developed to evaluate product returns performance. Based on research findings, the new measure possessed high construct validity, thus constituting essential groundwork for future empirical studies in product returns area. While SERVQUAL, a well-known instrument has been criticized for emphasis on service delivery process (Ladhari, 2009), a new measure could assess all aspects of returns service performance including service interaction, service delivery process, service environment and service outcome. Additionally, the customer-driven measure could be directly applied to returns service offerings in the context of business to end consumers including retail settings as such returns process also starts from end users.

Gap 6: Existing measures of product returns and reverse logistics have not been developed from actual customer expectations.

The measures used in product returns and reverse logistics context were basically based on literature review and logistics practitioners (e.g. Autry et al., 2001; Daugherty et al., 2001; Huscroft, 2010; Mollenkopf et al., 2007), and were not advanced based on actual customer data, particularly service experience cocreation. In this regard, COPRS performance measurement metrics were drawn on actual customer expectations through individual in-depth interviews with customers who have returns experience in the past one year. The study encourages researchers to develop the performance measure from customer's point of view.

Gap 7: Measuring and optimizing the value of service and enhancing the service experience through cocreation have not been advanced in service research.

Based on a 18-month study by Arizona State University's Center for Services Leadership, ten research priorities for service science were addressed (Ostrom et al, 2010). Two of these service research priorities included measuring and optimizing the value of service and enhancing the service experience through cocreation. The topic raised was the call for service value measurement and

optimization embracing an inter-disciplinary research initiative. Creating tools for capturing value in use for services is in its research infancy. Investing in measuring and optimizing the value of service research is essential to help firms improve the value of their services. The other interesting topic was the cocreation of service experience where customers are active in providing their experience in value cocreating process. Traditionally viewed, the firm acts an expert in offering its service. Conversely, according to customer active paradigm, customers know what they want from services and they are experts on their own consumption of service. Therefore, the present study responds to the need of service value measurement embracing a cross-disciplinary research initiative and the call for enhancing the service experience through cocreation, two key research priorities for the science of service.

Table 6.1 concludes theoretical gaps extracted from an extensive review of the related literature and how the current study fulfills those gaps.

[Table 6.1]

6.2.2 Managerial contributions

The managerial contribution of the current study has six aspects. First, the study alerts practitioners to pay more attention to marketing and reverse logistics interface in formulating their returns strategies meeting long-term customer satisfaction. The hypotheses results would be useful for firms to focus on issues of customer involvement in enhancing customer satisfaction and trust, two major factors in building long-term relationship with customers.

Second, the developed metrics of product returns service provide benefits for practitioners in measuring and evaluating their returns service offerings based on actual customers' needs and expectations. Utilizing the results of customer service assessment, managers could analyze their existing returns service performance in key different aspects and then diagnose where improvements should be targeted.

Third, service managers could track the level of consumer returns service performance through annual examination of COPRS performance metrics. Such information could help practitioners to set priorities during the implementation

of returns service strategies for the following years. Allocating an appropriate amount of resource to the key COPRS dimensions can not only satisfy customers' expectations but also increase competitiveness and gain strategic advance.

Fourth, COPRS performance scores can be used to segment customers in terms of demographic and geographical profiles. Customer expectations of returns service might vary among different segments. Practitioners could then develop the returns strategies for each segment appropriately.

Fifth, the study encourages all service firms to involve the customers' active participation in the value creation process as the empirical result indicated that there was the positive link between value cocreation and customer satisfaction. Notably, the qualitative consumer interviews were employed in this study to make customers be the cocreators of returns service.

Finally, the key point of taking customer perspective in this study complies with government regulations such as consumer protection rules aiming to protect the rights of consumers. For instance, based on Consumer Protection Act (B.E. 2522), consumers have the rights to receive a fair contract in obtaining services (Thailand Law Forum, 2009). According to Consumer Protection Board, when consumer rights are violated and the complaints are received, the agency would institute legal proceedings (Consumers International, 2016). Adopting the customer-driven approach for product returns management is likely to reduce the customer complaints regarding returns service. Consequently, the firms are encouraged to design their returns policy and process to respond to customer needs, thus conforming to government regulations.

To illustrate the practical implications of COPRS performance measure, the study would analyze the performance of returns service offered by each participating service provider and provide some suggestions to improve its returns service individually.

6.2.2.1 Service provider 1

With reference to mean values of COPRS measurement items in Appendix M, Service provider 1 had mean of each item ranging from 3.54 to 4.15. Item of "Employees get adequate support from the company to do their jobs well." had the highest average score while item of "Employees keep in touch with me." had the

lowest average score. Considering twelve dimensions of COPRS performance measure in Table 6.2, the study found that top three factors exhibiting higher average score were assurance (4.00), reliability (3.92) and explanation (3.90). The dimension of feedback had the lowest mean (3.62). The average score of COPRS performance of company 1 was 3.79, indicating high average score. In addition, customers of Company 1 were very satisfied with the returns service offered (3.82). The results also exhibit high trust score in the company (3.78). Table 6.2 describes mean and standard deviation for COPRS performance and its dimensions including returns satisfaction and customer trust.

[Table 6.2]

Recommendation for improving returns service: From Table 6.2, since the dimension of feedback had the lowest score, Service provider 1 might improve its returns service delivery by keeping more in touch with the customers, providing periodic feedback regarding the progress made to solve the problems. The personalized attention the service employees provided to their customers and the time taken to perform the service should be increasingly addressed. However, the highest level of the firm performance in performing service reliably and accurately could be used as the competitive advantage for promoting their services.

6.2.2.2 Service provider 2

From Appendix N, Service provider 2 had mean values of COPRS measurement items ranging from 3.49 to 4.09. The item of "When promises to do something, Company 2 does so" had the highest average scores. Further, "Company 2 handles customer's returns quickly" had the lowest average score. Regarding twelve dimensions of COPRS performance measure, the top three factors indicating higher average score were explanation (3.94), reliability (3.93) and assurance (3.89) while the dimension of timeliness had the lowest mean (3.59). The average score of COPRS performance of Company 2 was 3.80, exhibiting high average score. Company 2 also got high average scores for returns satisfaction (3.72) and customer trust (3.80).

[Table 6.3]

Recommendation for improving returns service: From Table 6.3, Service provider 2 could improve its returns service by focusing more on timeliness issue. The firm should investigate what cause the problem of its processing time and how to handle the returns more quickly. Additionally, clear explanation provided to the customers and reliability of the firm's return service performance could be communicated to the existing and potential customers to enhance the higher level in customer satisfaction and trust in the company.

6.2.2.3 Service provider 3

According to Appendix O, most measurement items were greater than 4.00, indicating very high average score. All items were ranging from 3.39 to 4.42. Item of "Company 3's processing time is short." had the highest average score. Item of "the service center has up-to-date equipment" had the lowest average score. Considering twelve dimensions of COPRS performance measure, the study found that top three factors exhibiting higher average score were explanation (4.20), feedback (4.15) and assurance (4.07). The dimension of tangibles had the lowest mean (3.81). The average score of COPRS performance of company 1 was 4.01, indicating very high average score. The results exhibit high score in returns satisfaction (4.17) and customer trust in the company (4.12). Table 6.4 presents mean and standard deviation for COPRS performance and its dimensions including returns satisfaction and customer trust of Company 3.

[Table 6.3]

Recommendation for improving returns service: In general, based on the research findings, Service provider 3 could achieve the highest score in COPRS performance, satisfaction and trust, relative to the other firms. The performance of service interaction, service delivery process and service outcome was satisfactory. Nevertheless, one weak point that should be addressed was the physical appearance of the firm's facilities. Service provider 3 might redesign its physical environment of the service center to be more visually appealing.

6.2.2.4 Service provider 4

From Appendix P, Service provider 4 had mean values of COPRS measurement items ranging from 3.10 to 3.76. The item that had the highest average scores was “employees are dependable” whereas “delivery of returns arrives on the date Company 4 promised.” had the lowest average score. Concerning twelve dimensions of COPRS performance measure (Table 6.5), the top three factors showing higher average score were convenient process (3.55), explanation (3.55) and reliability (3.54) while the dimension of timeliness had the lowest mean (3.28). The average score of COPRS performance of Service provider 4 was 3.43, exhibiting moderate average score. Company 4 had average scores of returns satisfaction of (3.24) and customer trust (3.42), indicating moderate average scores.

[Table 6.5]

Recommendation for improving returns service: According to Table 6.5, the first priority that Service provider 4 should emphasize in improving its returns service is timeliness. How to handle the returns more quickly is the critical issue for the firm. Based on the current study’s findings, the overall performance of Service provider 4 in offering returns service was moderate relative to its competitors, resulting in the lower levels of customer satisfaction and trust. Nevertheless, people dimensions such as responsiveness and explanation were perceived better comparing to other components. Overall, the firm should cultivate more on every single dimension to increase its customer service level.

6.2.2.5 Service provider 5

From Appendix Q, Service provider 5 had mean values of measurable items ranging from 2.89 to 4.26. Results showed that item of “employees get adequate support from the company to do their jobs well” had the highest average score. Item of “Company 5 provides periodic feedback during processing time.” had the lowest average score. Referring to twelve dimensions of COPRS performance measure (Table 6.6), the research found that top three factors exhibiting higher average score were explanation (3.97), tangibles (3.82) and reliability (3.80). The dimension of feedback had the lowest mean (2.95). The average score of COPRS performance of

company 5 was 3.82, indicating high average score. The mean values of returns satisfaction and customer trust in the company were 3.46 and 3.79, respectively.

[Table 6.6]

Recommendation for improving returns service: From Table 6.6, Service provider 5 might improve its returns service performance by targeting at the feedback dimension. The firm should keep more in touch with the customer by providing a periodic feedback during the processing time. In that respect, one employee could be assigned to take care of a customer for the entire process.

As a whole, Table 6.7 represents the firms' performance relative to their competitors on the total score of returns service performance and its dimensions. Among five service providers, based on COPRS performance scores, Service provider 3 performed returns service better while the performance of Service provider 4 was relatively inferior. Therefore, COPRS performance instrument could facilitate the practitioners to evaluate its product returns service performance and adapt their service design accordingly.

[Table 6.7]

6.3 Limitations and future research

This study has some limitations that give room for future research. First, the study focuses on managing returns service from business to end consumers (B2C), thus the development of the new construct and its metrics could not be used in product return management in business to business (B2B) context. Second, the COPRS scale is utilized for measuring returns services at direct store. Managing product returns concerning catalog retailers or e-retailers is excluded from the scope of this study. Third, a particular industry was examined. Application of COPRS measure beyond mobile industry is suggested for further research. Finally, the study does not involve returns across countries. Cross-cultural study is also the challenge issue in managing product returns based on customer perspective. Despite these limitations, the present

study provides a solid base for future research on product returns management. In particular, relying on the application of COPRS performance construct, the study suggests seven useful future avenues of research.

6.3.1 Alternative methodology utilizing COPRS construct

Alternative research methods applying COPRS dimensions may be conducted to study product returns management. To explore deeply firm performance in managing product returns, some qualitative techniques such as case research and action research could be utilized. Case research is primarily based on cases studies (Voss, Tsikriktisis, & Frohlich, 2002). It can be used to examine more intensively the phenomena in a natural setting. Accordingly, future studies might focus on a particular firm providing product returns service in a longitudinal context. Twelve components of COPRS performance could be used as a basis for case organization to build customer orientation in offering product returns service to customers. Alternatively, to tackle problems of returns offering in a specific organization, action research might be conducted based on the knowledge of what consumers need in consuming returns service i.e. COPRS dimensions. According to Naslund (2002), through active participation of researchers in the project, action research could help understand interdependency and change in the organization, contributing to solution of problems. For instance, interrelationships within organization might cause practical problems regarding reliability, timeliness and responsiveness in delivering returns service.

6.3.2 COPRS performance and other market performances

Other than customer relationships as a consequence of customer-oriented product returns service performance, future research might examine the link between COPRS performance and other market performance including customer loyalty and behavioral intention. Since customer satisfaction and trust are antecedents of customer loyalty and word of mouth communication or WOM (de Matos & Rossi, 2008; Lang & Hyde, 2013), future studies might include these constructs as some sources of repeat business from customers. Customer loyalty is defined in the service context as “the degree to which a customer exhibits repeat purchasing behavior from a service provider, possesses a positive attitudinal disposition toward the provider, and

considers using only this provider when a need for the service arises" (Gremler & Brown, 1996, p. 173). Additionally, such behavioral intention construct as WOM might be included in further models.

According to Lang and Hyde (2013, p. 1), WOM means "communication between a non-commercial communicator and receiver concerning a brand, a product, or a service". It is widely accepted that satisfied customers are more likely to engage in positive WOM and dissatisfied customers would establish negative WOM. Similarly, trust is also a strong predictor of WOM (de Matos and Rossi, 2008). In this regard, both oral WOM and electronic WOM or eWOM could be examined. Therefore, the study suggests that future studies could explore the role of COPRS performance in enhancing customer loyalty and WOM with the mediators of satisfaction and trust.

6.3.3 COPRS performance and financial performance

According to Deshpande et al. (1993), Kohli and Jaworski (1990) and Narver and Slater (1988), the consequences of adopting marketing concept on financial performance indicators such as return on investment (ROI), sales volume, profit have been satisfactory. Empirical study postulated the positive relationship between customer service performance and financial measures (Duncan, E. & Elliott, G., 2004). At the same time, there have been the evidences that such positive link frequently mediated by customer satisfaction, loyalty and referrals (Heskett, Jones, Loveman, Sasser, & Schlesinger, 1994; Rust, Zahorik, & Keiningham, 1995; Yoo & Park, 2007; Zahorik & Rust, 1992). In the product returns context, Petersen and Kumar (2010) indicated that flexible returns practice or the convenience of service delivery leads to greater profit and a larger customer base. According to Stock et al. (2006), effective product returns management can reduce costs, increase revenues and improve profitability. As a result, future study could examine whether the greater the perceived returns service performance, the higher firm's financial performance.

6.3.4 COPRS performance in cross-cultural context

Customer expectations regarding product returns service might vary among different regions. Future studies could take cross-cultural context into account in managing product returns on the basis of customer perspective. Accordingly, The Hofstede Centre (2016) cultural dimensions could be considered. For instance, masculine cultures may be more likely to demonstrate an active action in compensation requests while feminine cultures more likely to expect positive service interpersonal interaction such as empathy and explanation from front line employees. Risk avoidance cultures possibly pay more attention on liberal returns policy (convenient process factor). Long term oriented society might be more probably to take pragmatic way regarding assurance component comprising warranty for the returns and a follow-up after the compensation is provided.

6.3.5 COPRS performance in B2B context

As COPRS performance construct was developed based on the concepts of relational exchange, cocreation and a service-centered view, such notions could similarly be applied in managing product returns in the business to business (B2B) context. In B2B setting, it is more important to encourage and sustain long-term relationships with business customers (Gournaris, 2005). Business customers prefer long-term benefit between partners in dyadic relationships. Consistent with the current study, further researches could encourage business customers to cocreate value in designing product returns in the B2B context. Future models may include trust as outcome of product returns service performance as trust has been highlighted in customer-supplier relationships (Morgan & Hunt, 1994).

6.3.6 COPRS performance in other retailing context

The application of COPRS measure beyond direct stores might include retail stores, catalog retailing and internet retailing. In particular, the current model could be applied in various business to consumer (B2C) settings. According to the interviews with customer service managers of the top two mobile companies in Thailand, both sellers and retailers similarly adopt a 0-7 day return period and a one-year warranty for mobile devices. However, the retailers might offer special

packages and promotions of mobile services to attract customers for a new purchase. Notably, the reverse flow of process starts from end consumers, therefore the proposed framework could empirically be examined in all retail settings.

Further, the remote retailing has also faced some substantial problems of product returns. The notion of marketing and reverse logistics interface is inevitable for returns management in this retailing environment. Nevertheless, most studies in the related field did not put emphasis on this view. In addition, past researches examining product returns or reverse logistics in this context used the measures from extant measures (Mollenkopf et al, 2007) or logistics practitioners (Autry et al., 2001) and not advanced from customer data or managed based on customer perspectives. Consequently, twelve dimensions of COPRS performance developed from actual customer expectations could be utilized for future explorations in catalog retailing and internet retailing.

6.3.7 COPRS performance across industries

The further empirical researches might include other industries that usually face product returns problems for enhancing generalizability of the COPRS measure. The examples of business sectors that the developed scale could be transferable to measure consumer returns performance are computer, watch, camera, and home appliance sectors. The reverse logistics of these industries are required the integration with marketing concepts as the processes also start from ultimate consumers. Accordingly, such returns service requires customer input such as information, knowledge and experience that can help design or improve returns service. By the same token, the notion of service perspective and customer orientation should be applied to these business sectors. Hence, COPRS performance measure could serve as a basis of evaluating returns performance in these industry segments.

6.3.8 COPRS performance and strategic management

Based on the strategic management body of knowledge, the relationship between different strategies used by service providers and the level of customer-oriented returns service performance could be further examined both in the pubic and private sectors. Strategy involves “a broad, long-term orientation to how an

organization should conduct its operations" (Walker, Andrews, Boyne, Meier, & O'Toole, 2010). According to the classic typology of strategies by Miles and Snow's (1978), organizations could develop their strategies in three different approaches: prospecting, defending and reacting. A prospector is proactive and might innovate or seek out new opportunities in response to changes. A defender takes a conservative view in new product and service development. A reactor has no consistent strategy of its own or lacks strategy and is usually forced to adjust by external pressures. Researchers could explore how different approaches of strategies would impact returns service performance. Further, since traditional researches basically examined the link between strategy and performance of private firms (Boyne & Walker, 2010), the similar concept could be applicable in the public sector and non-profit organizations to improve their performance and provide better services.

6.4 Summary

To answer research questions specified in Chapter 1, this Chapter discusses the research findings regarding the development and validation of customer-oriented product returns service (COPRS) performance measure. Based on the assessment of reliability, content validity, convergent validity, discriminant validity, criterion validity, and nomological validity, it is noteworthy that the new measure is valid and reliable. The role of the new construct in building long-term relationships with customers is also highlighted. Accordingly, seven theoretical contributions in fulfilling previous research gaps are presented. Further, the section describes four managerial implications with illustrations. Finally, limitations of the study are reported with recommendations for future explorations.

Table 6.1 Theoretical gaps and the study's theoretical contributions

Theoretical gaps	The study' s theoretical contributions
The past researches of product returns and reverse logistics have not incorporated marketing concepts whereas some scholars suggest the coordination between marketing and logistics efforts in improving product returns systems.	-The study substantiates the notion of functional integration across marketing and logistics disciplines. -The incorporation of marketing concepts such as a service-dominant logic of marketing (Vargo and Lusch, 2004) and the expectation-disconfirmation paradigm (Oliver, 1980) into product returns management enhances holistic and cross-disciplinary in logistics discipline. -The study urges marketing scholars to extend the body of knowledge of marketing across disciplines.
Product returns management is mainly firm-oriented while the initial stage of reverse flow starts from customers.	-The construct of customer-oriented product returns service and its framework was developed based on customer perspective. -The practice of returns management in this study is customer-oriented (value cocreation). -The proposed model could be an essential step for future explorations of product returns management based on customer expectations.
Product returns management focuses on material transactions based on operational-efficiency approach.	-Product returns management focuses on relational exchange based on a service-centered view. -Interpersonal or people dimensions regarding responsiveness, empathy, explanation and assurance are included in the COPRS performance construct.

Table 6.1 (continued)

Theoretical gaps	The study' s theoretical contributions
Product returns management focuses on material transactions based on operational-efficiency approach. (continued)	-Empirical evidence of returns management focusing on building long-term relationships with customers was provided. -The research moves beyond traditional considerations of efficiency and provides a new perspective of long-term relationships for product returns management.
Measures in customer service area or effectiveness of returns process has been largely ignored.	-Measures in customer service area i.e. COPRS performance measure was developed, to respond to the call for the performance measurement regarding the effectiveness of returns process (Huscroft et al., 2013b). -The scale measurement will facilitate further empirical studies in product returns and reverse logistics area. -Future studies utilizing COPRS performance measure are suggested in section 6.3.
Existing measures cannot be directly applied due to unique features of returns service i.e. the service offerings in the reverse flow which require the integration of marketing initiatives and reverse logistics processes.	-A new measure possessing high construct validity was exclusively developed to measure product returns performance, thus constituting essential groundwork for future empirical studies in product returns area. -The customer-driven measure could assess all aspects of returns service performance including service interaction, service delivery process, service environment and service outcome. -A new measure could be directly applied to returns service offerings in the context of business to end consumers (B2C) including retail settings.

Table 6.1 (continued)

Theoretical gaps	The study' s theoretical contributions
Existing measures of product returns and reverse logistics have not been developed from actual customer expectations.	-The COPRS performance measurement scales were developed based on actual customer expectations through individual in-depth interviews with customers who have returns experience in the past one year. -The study encourages researchers to develop the performance measure from customer's point of view.
Measuring and optimizing the value of service and enhancing the service experience through cocreation have not been advanced in service research.	-The study responds to the need of service measurement embracing a cross-disciplinary research initiative and the call for enhancing the service experience through cocreation, two key research priorities for service science (Ostrom et al, 2010). -Service dominant logic and value cocreation concepts are being utilized in practice.

Table 6.2 Mean and standard deviation of COPRS performance, twelve dimensions, returns satisfaction and customer trust of Service provider 1

Variables	Mean	Standard Deviation
Assurance	4.00	1.02
Reliability	3.92	.74
Explanation	3.90	.79
Tangibles	3.89	.83
Empowerment	3.84	1.30
Convenient process	3.80	.91
Information availability	3.80	.80
Responsiveness	3.78	.98
Compensation	3.76	1.09
Empathy	3.72	.88
Timeliness	3.71	.96
Feedback	3.62	1.00
COPRS performance	**3.79**	**.71**
Returns satisfaction	**3.82**	**.91**
Customer trust	**3.78**	**.80**

Table 6.3 Mean and standard deviation of COPRS performance, twelve dimensions, returns satisfaction and customer trust of Service provider 2

Variables	Mean	Standard Deviation
Explanation	3.94	.87
Reliability	3.93	1.02
Assurance	3.89	.819
Feedback	3.83	1.08
Convenient process	3.83	.92
Responsiveness	3.82	.93
Empowerment	3.78	1.20
Information availability	3.75	.77
Compensation	3.72	1.01
Tangibles	3.70	.84
Empathy	3.69	.73
Timeliness	3.59	.69
COPRS performance	**3.80**	**.64**
Returns satisfaction	**3.72**	**.78**
Customer trust	**3.80**	**.68**

Table 6.4 Mean and standard deviation of COPRS performance, twelve dimensions, returns satisfaction and customer trust of Service provider 3

Variables	Mean	Standard Deviation
Explanation	4.20	.78
Feedback	4.15	.81
Assurance	4.07	.58
Responsiveness	4.05	.78
Timeliness	4.03	.69
Information availability	4.01	.66
Reliability	4.00	.69
Convenient process	3.97	.71
Empathy	3.92	.63
Empowerment	3.85	.852
Compensation	3.83	.81
Tangibles	3.82	.80
COPRS performance	**4.01**	**.55**
Returns satisfaction	**4.17**	**.66**
Customer trust	**4.12**	**.65**

Table 6.5 Mean and standard deviation of COPRS performance, twelve dimensions, returns satisfaction and customer trust of Service provider 4

Variables	Mean	Standard Deviation
Convenient process	3.55	1.36
Explanation	3.55	.89
Reliability	3.54	.94
Responsiveness	3.52	.78
Empowerment	3.46	.91
Tangibles	3.45	.92
Empathy	3.39	.89
Assurance	3.37	.76
Information availability	3.37	.89
Compensation	3.36	1.68
Feedback	3.32	1.43
Timeliness	3.28	.93
COPRS performance	**3.43**	**.78**
Returns satisfaction	**3.24**	**1.02**
Customer trust	**3.42**	**1.18**

Table 6.6 Mean and standard deviation of COPRS performance, twelve dimensions, returns satisfaction and customer trust of Service provider 5

Variables	Mean	Standard Deviation
Explanation	3.97	1.02
Tangibles	3.82	.79
Reliability	3.80	.69
Responsiveness	3.72	.72
Assurance	3.63	.80
Empathy	3.57	.55
Compensation	3.51	1.72
Information availability	3.47	.93
Convenient process	3.50	.81
Empowerment	3.32	1.27
Timeliness	3.32	1.03
Feedback	2.95	1.28
COPRS performance	**3.82**	**.79**
Returns satisfaction	**3.46**	**.84**
Customer trust	**3.79**	**.82**

Table 6.7 The comparisons of COPRS performance, COPRS dimensions, customer satisfaction and trust average scores among service providers

Variables	Service provider 1	Service provider 2	Service provider 3	Service provider 4	Service provider 5
Tangibles	3.89*	3.70	3.82	3.45**	3.82
Responsiveness	3.78	3.82	4.05*	3.52**	3.72
Explanation	3.90	3.94	4.20*	3.55**	3.97
Empathy	3.72	3.69	3.92*	3.39**	3.57
Empowerment	3.84	3.78	3.85*	3.46	3.32**
Reliability	3.92	3.93	4.00*	3.54**	3.80
Timeliness	3.71	3.59	4.03*	3.28**	3.32
Information availability	3.80	3.75	4.01*	3.37**	3.47
Assurance	4.00	3.89	4.07*	3.37**	3.63
Compensation	3.76	3.72	3.83*	3.36**	3.51
Feedback	3.62	3.83	4.15*	3.32**	2.95
Convenience	3.80	3.83	3.97*	3.55	3.50**
COPRS performance	3.79	3.80	4.01*	3.43**	3.82
Returns satisfaction	3.82	3.72	4.17*	3.24**	3.46
Customer trust	3.78	3.80	4.12*	3.42**	3.79

Notes: *The first rank, ** The fifth rank

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APPENDIX A

SUBSTANTIVE VALIDITY RESULTS OF CONSTRUCT DEFINITIONS: EXPERT VALIDATION

Constructs	Definitions	Revised definitions	Substantive validity coefficients C_{sv}= (n_c-n_o)/N
Customer-oriented product returns service (COPRS)	Service offerings provided by firms to end consumers within the product returns process on a basis of putting customers' needs first in order to enhance customer satisfaction	Service offerings provided by firms to end consumers within the product returns process based on putting customers' needs first in order to enhance customer satisfaction**.**	1.00
Customer-oriented product returns service performance (COPRS performance)	The firm performance in providing service within the product returns process to end consumers on a basis of putting customers' needs first in order to enhance customer satisfaction	The firm performance in providing service within the product returns process to end consumers based on putting customers' needs first in order to enhance customer satisfaction.	1.00
Tangibles	The physical appearance of facilities, equipment and personnel	The physical appearance of facilities, equipment and personnel	1.00
Responsiveness	Employee's willingness and readiness to help customers and provide prompt service	Employee's willingness and readiness to help customers and provide prompt service	1.00
Explanation	An explanation of the problems occurred and what has done to solve customers' problems	An explanation of the problem that has occurred and what has been done to solve it	1.00

APPENDIX A (continued)

Constructs	Definitions	Revised definitions	Substantive validity coefficients C_{sv}= (n_c-n_o)/N
Empathy	The sympathy and personalized attention the service employees provide to their customers and the understandings customers' problems from their point of views	The sympathy and personalized attention the service employees provided to their customers including understanding of customer problems from the customer point of view	1.00
Empowerment	The company gives the service employees the authority to use their common sense and to take care of their customers	The company gives the service employees the authority to use their common sense and to take care of their customers	1.00
Reliability	The company's ability to render the service reliably and accurately	The company's ability to render the service reliably and accurately	1.00
Timeliness	The time taken to perform the service and the company's ability to provide its customers with timely returns delivery	The time taken to perform the service and the company's ability to provide its customers with timely returns delivery	1.00
Information availability	The company allows its customers to access information related to activities of returns process according to customer needs	The company allows its customers to access information related to the returns process according to customer needs	1.00

APPENDIX A (continued)

Constructs	Definitions	Revised definitions	Substantive validity coefficients C_{sv}= (n_c-n_o)/N
Assurance	The knowledgeable and respectful service employees and the customer's confidence that the problems would not happen again	Employees' knowledge and courtesy to perform the returns service and their ability to encourage trust and confidence	1.00
Compensation	The compensation provided by company when returns or problems occur	The compensation provided by company when returns or problems occur	1.00
Feedback	The feedback provided by company about the progress made to solve the problems	Feedback provided by the company about the progress made to solve a problem	1.00
Convenient process	The flexible returns process which should be easy to access in a convenient manner	The flexible returns process which should be easy to access in a convenient manner	1.00
Returns satisfaction	A subjective evaluation of the overall experience with the returns service provided by company over a period of time	A subjective evaluation of the overall experience with the returns service provided by company over a period of time	1.00
Customer trust in the company	A customer's willingness to rely on a company who provides returns service in which he/she has a confidence	A customer's willingness to rely on a company who provides returns service in which he/she has a confidence	1.00

Notes. n_c = the number of experts rating a definition as relevant to the construct, n_o = the number of experts rating a definition as relevant to the construct, N = the number of experts

APPENDIX B

SUBSTANTIVE VALIDITY RESULTS OF COPRS PERFORMANCE DIMENSIONS: EXPERT VALIDATION

COPRS performance dimensions	Substantive validity coefficients C_{sv}= (n_c-n_o)/N
Tangibles (สิ่งแวดล้อมกายภาพ) The physical appearance of facilities, equipment and personnel (สิ่งแวดล้อมทางกายภาพด้านสิ่งอำนวยความสะดวก เครื่องมืออุปกรณ์และพนักงานบริการ)	1.00
Responsiveness (การตอบสนองในการให้บริการ) Employee's willingness and readiness to help customers and provide prompt service (ความเต็มใจและความพร้อมของพนักงานในการให้บริการตอบสนองแก่ลูกค้าได้ทันที)	1.00
Explanation (คำชี้แจง) An explanation of the problem that has occurred and what has been done to solve it (คำชี้แจงให้แก่ลูกค้าเกี่ยวกับปัญหาที่เกิดขึ้นแก่ผลิตภัณฑ์และสิ่งที่ได้ดำเนินการไปในการแก้ปัญหาให้แก่ลูกค้า)	1.00
Empathy (ความเข้าใจในความรู้สึกลูกค้า) The sympathy and personalized attention the service employees provided to their customers including understanding of customer problems from the customer point of view (ความเห็นอกเห็นใจที่พนักงานมีให้แก่ลูกค้าและความเข้าใจในปัญหาของลูกค้าจากมุมมองของลูกค้า)	1.00
Empowerment (การให้อำนาจในการตัดสินใจแก่พนักงาน) The company gives the service employees the authority to use their common sense and to take care of their customers (บริษัทให้อำนาจแก่พนักงานในการใช้วิจารณญาณของตนเองในการดูแลช่วยเหลือแก้ไขปัญหาให้แก่ลูกค้า)	1.00
Reliability (ความเที่ยงตรงน่าเชื่อถือในการให้บริการ) The company's ability to render the service reliably and accurately (บริษัทสามารถให้บริการแก่ลูกค้าได้อย่างเที่ยงตรงและถูกต้อง)	1.00
Timeliness (เวลาในการให้บริการ) The time taken to perform the service and the company's ability to provide its customers with timely returns delivery (ระยะเวลาที่ใช้ในการให้บริการและความสามารถของบริษัทที่จะส่งมอบสินค้าคืนแก่ลูกค้าได้ทันเวลา)	1.00
Information availability (การให้ลูกค้าเข้าถึงข้อมูล) The company allows its customers to access information related to the returns process according to customer needs. (บริษัทได้ให้ลูกค้าเข้าถึงข้อมูลที่เกี่ยวข้องกับการให้บริการรับคืนตามที่ลูกค้าต้องการ)	1.00

APPENDIX B (continued)

COPRS performance dimensions	Substantive validity coefficients C_{sv}= (n_c-n_o)/N
Assurance (การทำให้เชื่อมั่น) Employees' knowledge and courtesy to perform the returns service and their ability to encourage trust and confidence (การสร้างความเชื่อมั่นและความมั่นใจด้านพนักงานที่มีความรู้ความสามารถเป็นที่น่าเชื่อถือในการให้บริการรับคืนสินค้า)	1.00
Compensation (การชดเชยกับปัญหาที่เกิดขึ้น) The compensation provided by company when returns or problems occur (บริษัทจัดหาสิ่งชดเชยให้แก่ลูกค้าเมื่อมีปัญหาเกี่ยวกับสินค้าหรือต้องส่งคืนสินค้า)	1.00
Feedback (การให้ข้อมูลย้อนกลับของบริษัท) Feedback provided by the company about the progress made to solve a problem (บริษัทแจ้งผลเกี่ยวกับความคืบหน้าในการแก้ปัญหาให้แก่ลูกค้า)	1.00
Convenient process (ขั้นตอนที่สะดวก) The flexible returns process which should be easy to access in a convenient manner (กระบวนการรับคืนสินค้าที่มีความยืดหยุ่น ง่ายและสะดวก)	1.00

Notes. n_c = the number of experts rating a definition as relevant to the construct, n_o = the number of experts rating a definition as relevant to the construct, N = the number of experts

APPENDIX C

SUBSTANTIVE VALIDITY RESULTS OF COPRS PERFORMANCE DIMENSIONS: CUSTOMER VALIDATION

COPRS performance dimensions	Substantive validity coefficients C_{sv}= (n_c-n_o)/N
Tangibles (สิ่งแวดล้อมกายภาพ) The physical appearance of facilities, equipment and personnel (สิ่งแวดล้อมทางกายภาพด้านสิ่งอำนวยความสะดวก เครื่องมืออุปกรณ์และพนักงานบริการ)	0.80
Responsiveness (การตอบสนองในการให้บริการ) Employee's willingness and readiness to help customers and provide prompt service (ความเต็มใจและความพร้อมของพนักงานในการให้บริการตอบสนองแก่ลูกค้าได้ทันที)	0.84
Explanation (คำชี้แจง) An explanation of the problem that has occurred and what has been done to solve it (คำชี้แจงให้แก่ลูกค้าเกี่ยวกับปัญหาที่เกิดขึ้นแก่ผลิตภัณฑ์และสิ่งที่ได้ดำเนินการไปในการแก้ปัญหาให้แก่ลูกค้า)	0.92
Empathy (ความเข้าใจในความรู้สึกลูกค้า) The sympathy and personalized attention the service employees provided to their customers including understanding of customer problems from the customer point of view (ความเห็นอกเห็นใจที่พนักงานมีให้แก่ลูกค้าและความเข้าใจในปัญหาของลูกค้าจากมุมมองของลูกค้า)	0.58
Empowerment (การให้อำนาจในการตัดสินใจแก่พนักงาน) The company gives the service employees the authority to use their common sense and to take care of their customers (บริษัทให้อำนาจแก่พนักงานในการใช้วิจารณญาณของตนเองในการดูแลช่วยเหลือแก้ไขปัญหาให้แก่ลูกค้า)	0.58
Reliability (ความเที่ยงตรงน่าเชื่อถือในการให้บริการ) The company's ability to render the service reliably and accurately (บริษัทสามารถให้บริการแก่ลูกค้าได้อย่างเที่ยงตรงและถูกต้อง)	0.80
Timeliness (เวลาในการให้บริการ) The time taken to perform the service and the company's ability to provide its customers with timely returns delivery (ระยะเวลาที่ใช้ในการให้บริการและความสามารถของบริษัทที่จะส่งมอบสินค้าคืนแก่ลูกค้าได้ทันเวลา)	0.70
Information availability (การให้ลูกค้าเข้าถึงข้อมูล) The company allows its customers to access information related to the returns process according to customer needs. (บริษัทได้ให้ลูกค้าเข้าถึงข้อมูลที่เกี่ยวข้องกับการให้บริการรับคืนตามที่ลูกค้าต้องการ)	0.86

APPENDIX C (continued)

COPRS performance dimensions	Substantive validity coefficients C_{sv}= (n_c-n_o)/N
Assurance (การทำให้เชื่อมั่น) Employees' knowledge and courtesy to perform the returns service and their ability to encourage trust and confidence (การสร้างความเชื่อมั่นและความมั่นใจด้านพนักงานที่มีความรู้ความสามารถเป็นที่น่าเชื่อถือในการให้บริการรับคืนสินค้า)	0.82
Compensation (การชดเชยกับปัญหาที่เกิดขึ้น) The compensation provided by company when returns or problems occur (บริษัทจัดหาสิ่งชดเชยให้แก่ลูกค้าเมื่อมีปัญหาเกี่ยวกับสินค้าหรือต้องส่งคืนสินค้า)	0.72
Feedback (การให้ข้อมูลย้อนกลับของบริษัท) Feedback provided by the company about the progress made to solve a problem (บริษัทแจ้งผลเกี่ยวกับความคืบหน้าในการแก้ปัญหาให้แก่ลูกค้า)	0.72
Convenient process (ขั้นตอนที่สะดวก) The flexible returns process which should be easy to access in a convenient manner (กระบวนการรับคืนสินค้าที่มีความยืดหยุ่น ง่ายและสะดวก)	0.82

Notes. n_c = the number of experts rating a definition as relevant to the construct, n_o = the number of experts rating a definition as relevant to the construct, N = the number of experts

APPENDIX D

GUIDED QUESTIONS FOR INDIVIDUAL IN-DEPTH INTERVIEWS

Part I. Respondent's profiles

1. Respondent's name
2. Age
3. Gender
4. Education
5. Occupation

Part II. Questions for interviews

1. Please explain your experience of returning /repairing mobiles or tablets/ recycling or exchanging for the new ones in the past one year.
   (The interviewees specify the company and its service centers / products / brands / timing/problems/ service encounters/service outcomes/feeling for each incident).
2. Please describe the procedures of returning your products from your point of view.
3. What are your expectations for the returns service offered by the mobile companies in each step?
4. What are the sources of your above expectations?

   -past experience
   -individual needs
   -word-of-mouth communication
   -recommendations from other firms/institutions
   -formal communications provided by firms
   -corporate image
   -price to be paid (if any)
5. Please describe the following terms relating product returns service from your point of view: tangibles, responsiveness, explanation, empathy, empowerment, reliability, timeliness, information availability, assurance, compensation, feedback, and convenient process. Do these aspects reflect "customer-oriented" product returns service?
6. From your perspective, what does "customer satisfaction on product returns service" mean?
7. From your perspective, what is "customer trust in the company"?

APPENDIX D (continued)

8. Do you agree that the performance of customer-oriented product returns service positively relates to returns satisfaction (H1)?
9. Do you agree that returns satisfaction positively relates to customer trust in the company (H2)?
10. Do you agree that the performance of customer-oriented product returns service positively relates to customer trust in the company (H3)?
11. Other comments relating to customer-oriented product returns service.

APPENDIX E

THAI VERSION OF GUIDED QUESTIONS FOR INDIVIDUAL IN-DEPTH INTERVIEWS

แบบสัมภาษณ์

การพัฒนาตัวชี้วัดในการประเมินผลการให้บริการรับคืน/แลกเปลี่ยน/ซ่อมแซมสินค้า

ตอนที่ 1 ข้อมูลลักษณะประชากรผู้ให้สัมภาษณ์

1. ชื่อ-สกุล.....
2. อายุ ..... ปี
3. เพศ.....
4. ระดับการศึกษา.....
5. อาชีพ.....

ตอนที่ 2 คำถามสัมภาษณ์

1. อธิบายประสบการณ์ในการรับบริการรับคืนสินค้า/ซ่อมแซม/เปลี่ยนผลิตภัณฑ์ด้านการสื่อสาร (Returns experience)

1.1 ท่านเคยใช้บริการรับคืน/ซ่อมแซม/เปลี่ยนสินค้ารวมทั้งสิ้นกี่ครั้ง ในระยะเวลา 1 ปีที่ผ่านมา และใช้บริการในช่วงเวลาใด

1.2 โปรดระบุชื่อตราสินค้า/ผลิตภัณฑ์ (โทรศัพท์มือถือและอุปกรณ์, เครื่องแท็บเล็ตและอุปกรณ์)/ ชื่อบริษัทและศูนย์บริการที่ท่านเคยใช้บริการรับคืน/ซ่อมแซม/เปลี่ยน/ชดเชยสินค้าในแต่ละครั้ง

1.3 โปรดระบุปัญหาของผลิตภัณฑ์

1.4 โปรดระบุลักษณะการใช้บริการ

-ส่งคืนสินค้าที่มีปัญหาและได้รับชดเชยเป็นสินค้า

-บริการซ่อมแซม/บำรุงรักษา

-บริการเปลี่ยนสินค้าเก่า

-อื่นๆ

1.5 ท่านมีความพึงพอใจจากการใช้บริการหรือไม่ อย่างไร

2. อธิบายขั้นตอนในการส่งคืนสินค้า/เปลี่ยน/ชดเชยผลิตภัณฑ์ด้านการสื่อสารกับบริษัท (Product returns process from customer perspective)

3.ความคาดหวังของท่านในการใช้บริการส่งคืนสินค้า/เปลี่ยน/ชดเชยผลิตภัณฑ์ด้านการสื่อสารแต่ละขั้นตอน (Customer expectations)

4. ความคาดหวังต่อการใช้บริการส่งคืน/เปลี่ยน/ชดเชยสินค้าของท่านมาจากแหล่งใด (Sources of customer expectations)

-ประสบการณ์การใช้บริการที่ผ่านมา

-ความต้องการของท่านเอง

-คำบอกเล่าจากครอบครัว เพื่อน ญาติ คนรู้จัก

APPENDIX E (continued)

-คำแนะนำจากสถาบัน/หน่วยงาน/สื่อ/บริษัทอื่นๆ

-การสื่อสารโดยตรงจากบริษัทเอง

-ภาพลักษณ์ของบริษัท

-ค่าบริการที่ต้องชำระ (ถ้ามี)

5. อธิบายความเข้าใจของท่านต่อคุณสมบัติหรือลักษณะต่อไปนี้เมื่อกล่าวถึงการใช้บริการส่งคืนสินค้า/เปลี่ยน/ชดเชยผลิตภัณฑ์ด้านการสื่อสาร

-สิ่งแวดล้อมทางกายภาพในการเข้ารับบริการจากบริษัท (Tangibles)

-การตอบสนองในการให้บริการของบริษัท (Responsiveness)

-คำชี้แจงต่อปัญหาที่เกิดขึ้น (Explanation)

-ความเข้าใจและความเอาใจใส่ในความต้องการของท่าน (Empathy)

-พนักงานสามารถให้ความช่วยเหลือและแก้ไขปัญหาให้ท่านได้โดยตรง (Empowerment)

-ความเที่ยงตรงน่าเชื่อถือในการให้บริการ (Reliability)

-การตรงต่อเวลาและการใช้เวลาในการให้บริการ (Timeliness)

-การเข้าถึงข้อมูลได้ง่าย (Information Availability)

-การสร้างความมั่นใจในคุณภาพการให้บริการ (Assurance)

-การชดเชยกับปัญหาที่เกิดขึ้น (Compensation)

-การแจ้งผล/การติดตามผลของบริษัท (Feedback)

-ขั้นตอนการให้บริการส่งคืนสินค้า/เปลี่ยน/ชดเชยที่สะดวก (Convenient Process)

ท่านคิดว่าคุณสมบัติข้างต้นดังกล่าวสะท้อนถึงการให้บริการที่มุ่งเน้นลูกค้า (Customer-oriented service) หรือไม่ อย่างไร

6. จากความเข้าใจของท่าน ความพึงพอใจต่อการใช้บริการส่งคืนสินค้า/เปลี่ยน/ชดเชยผลิตภัณฑ์ด้านการสื่อสาร (Returns satisfaction) หมายความว่าอย่างไร

7. จากความเข้าใจของท่าน ความไว้วางใจต่อบริษัท (Customer trust) หมายความว่าอย่างไร

8. ท่านเห็นด้วยหรือไม่ว่าการให้บริการส่งคืนสินค้า/เปลี่ยน/ชดเชยที่มุ่งเน้นลูกค้ายิ่งมีคุณภาพดีจะสร้างความพึงพอใจให้แก่ผู้รับบริการมากขึ้นด้วย (H1)

9. ท่านเห็นด้วยหรือไม่ว่าความพึงพอใจที่ได้รับจากการใช้บริการส่งคืนสินค้า/เปลี่ยน/ชดเชยยิ่งมากจะทำให้ผู้รับบริการมีความไว้วางใจในบริษัทดังกล่าวมากขึ้น (H2)

10. ท่านเห็นด้วยหรือไม่ว่าการให้บริการส่งคืนสินค้า/เปลี่ยน/ชดเชยที่มุ่งเน้นลูกค้ายิ่งมีคุณภาพดีจะทำให้ผู้รับบริการมีความไว้วางใจในบริษัทดังกล่าวมากขึ้น (H3)

11. ท่านมีข้อคิดเห็นอื่นๆ เพิ่มเติมเกี่ยวกับการให้บริการส่งคืนสินค้า/เปลี่ยน/ชดเชยที่มุ่งเน้นลูกค้าหรือไม่อย่างไร

APPENDIX F
COVER LETTER TO EXPERTS FOR IOC EXAMINATION

ที่.....

มกราคม 2559

เรื่อง ขอความอนุเคราะห์ตรวจสอบความเที่ยงตรงเชิงเนื้อหาของเครื่องมือวิจัย

เรียน

สิ่งที่แนบมาด้วย แบบสอบถามเรื่อง “The development of a measure of customer-oriented product returns service performance”

ด้วยนางชลลดา สัจจานิตย์ นักศึกษาปริญญาเอก หลักสูตร โครงการปรัชญาดุษฎีบัณฑิตสาขาวิชาบริหารธุรกิจมหาวิทยาลัยธรรมศาสตร์ รหัส 5502310096 ได้รับอนุมัติให้ทำดุษฎีนิพนธ์ เรื่อง “The development of a measure of customer-oriented product returns service performance” ชื่อภาษาไทย ‘‘การพัฒนาเครื่องมือชี้วัดในการประเมินผลการให้บริการรับคืนสินค้า’’ และได้พัฒนาเครื่องมือวิจัยซึ่งได้ผ่านการตรวจสอบจากอาจารย์ที่ปรึกษา รศ.ดร.นภดล ร่มโพธิ์ เป็นที่เรียบร้อยแล้ว เพื่อความสมบูรณ์ถูกต้องในด้านความเที่ยงตรงเชิงเนื้อหาของเครื่องมือวิจัยดังกล่าว จึงใคร่ขอความอนุเคราะห์ท่านตรวจสอบความสอดคล้องของข้อคำถามกับนิยามแต่ละตัวแปร ตลอดจนความเข้าใจชัดเจนของภาษาให้เป็นไปตามเกณฑ์ในการสร้างเครื่องมือวิจัย ทั้งนี้เพื่อจะได้นำไปใช้ในการดำเนินการตามขั้นตอนต่อไป

จึงเรียนมาเพื่อโปรดพิจารณาให้ความอนุเคราะห์ และขอขอบพระคุณเป็นอย่างสูงมา ณ โอกาสนี้

ขอแสดงความนับถือ

(ผศ.ดร.สุลักษมณ์ ภัทรธรรมมาศ)

ผู้อำนวยการหลักสูตรโครงการปรัชญาดุษฎีบัณฑิตสาขาวิชาบริหารธุรกิจ

APPENDIX G

INDEX OF ITEM-OBJECTIVE CONGRUENCE (IOC) RESULTS

COPRS dimensions	Measurement items	IOC results
Tangibles	TB1) The service center has up-to-date equipment.	.57
	TB2) Physical facilities are visually appealing.	.71
	TB3) Employees work in a tidy, professional environment.	1.00
	TB4) The number of employees is adequate.	
	TB5) Facilities and activities are provided during queuing.	1.00
		.57
Responsiveness	RP1) Employees take care of problems promptly.	1.00
	RP2) Employees can promptly response to your request even when they are busy.	1.00
	RP3) Employees communicate effectively.	1.00
	RP4) Employees process your request rapidly.	1.00
Explanation	EN1) Employees provide me with explanation of why problems had occurred.	1.00
	EN2) Employees I deal with, provide a satisfactory explanation of why the problem had occurred.	.71
	EN3) Employees provide me with explanation of what has done with my product.	1.00
	EN4) Employees provide me with suggestions of product usage when pick up.	1.00
Empathy	ET1) Employees can be expected to give individual attention.	.57
	ET2) Employees show sympathy and concern for you when you have problems.	.71
	ET3) Employees know your specific needs in returning products.	1.00
	ET4) Employees have your best interests at heart.	1.00
	ET5) The operating hours are available to all customers.	.57
	ET6) The service locations are available to all customers.	.57

APPENDIX G (continued)

COPRS dimensions	Measurement items	IOC results
Empowerment	EP1) The employee I contacted to first, was able to solve my returns problem.	1.00
	EP2) The employee I contacted to, had to find someone else to solve my returns problem.	1.00
	EP3) My request was passed on from one employee to the next.	1.00
	EP4) One employee could complete the overall process for me.	1.00
Reliability	RL1) When promises to do something, it does so.	1.00
	RL2) Employees are dependable.	.71
	RL3) The firm keeps statement accurately.	.71
	RL4) Employees' decisions are reliable.	.71
	RL5) The product's functions can perform well and accurately as usual.	1.00
	RL6) Double fault of product problems is not found after completing the service process.	1.00
Timeliness	TL1) The firm's processing time is short.	.86
	TL2) Delivery of returns arrives on the date the firm promised.	1.00
	TL3) The firm handles my returns quickly.	1.00
	TL4) The time for queuing is short.	1.00
Information availability	IA1) The firm provides information of operating hours and location of service centers.	1.00
	IA2) The firm provides problem's solution choices information.	1.00
	IA3) The firm provides compensation/returns status information.	1.00
	IA4) Employees provide information of processing time and tentative costs for me.	.86
	IA5) It is easy to access firm's service information.	1.00

APPENDIX G (continued)

COPRS dimensions	Measurement items	IOC results
Assurance	AS1) Employees can be trusted.	.86
	AS2) You have confidence in product returns process of the firm.	1.00
	AS3) Employees are polite.	.29
	AS4) Employees get adequate support from the firm to do their jobs well.	1.00
	AS5) The firm provides a follow-up after the compensation is provided.	.71
	AS6) Employees I deal with are knowledgeable.	.86
	AS7) The firm provides warranty for the returns/compensation.	1.00
Compensation	CS1) The firm compensates me for problems it creates.	1.00
	CS2) The firm compensates me appropriately.	1.00
	CS3) The firm compensates me when I am dissatisfied with the returns service.	1.00
	CS4) Rental mobile is provided for free.	.86
Feedback	FB1) The firm informs me about the progress made to solve my product problem.	.86
	FB2) Employees keep in touch with me.	.86
	FB3) The firm provides periodic feedback during processing time.	.86
Convenient process	CP1) The firm provides me with convenient options for returning items.	1.0
	CP2) The firm's requirements on the condition of product returned are appropriate.	.86
	CP3) Requisitioning procedures of returning product(s) are easy to use.	.86

APPENDIX G (continued)

COPRS dimensions	Measurement items	IOC results
Convenient process	CP4) The firm provides one-stop service for requisitioning procedures.	1.00
Returns satisfaction	RS1) I am completely satisfied with the firm's entire process of making my return.	1.00
	RS2) The firm's efforts to handle my request are satisfactory.	.86
	RS3) Overall, I am not satisfied with the experiences with the returns service delivered by Company X at all.	1.00
	RS4) I am completely satisfied with the experiences with the returns service delivered by the firm.	.86
	RS5) The firm's returns service meet my expectations.	.86
Customer trust	CT1) The firm's policies and practices are completely dependable.	.57
	CT2) I can count on the firm to respond to my requests.	.86
	CT3) I can count on the firm's promises.	.86
	CT4) I can trust this firm completely.	1.00
	CT5) Company X sometimes cannot be trusted.	1.00
	CT6) Overall, I can trust the firm's offerings.	1.00

APPENDIX H

SURVEY QUESTIONNAIRE

Part I. Respondent's profiles

1. Gender ( ) Male ( ) Female

2. Age …… years

3. Occupation

( ) Students ( ) Employees

( ) Government officers ( ) Business owners

( ) Professionals ( ) Others, please specify……

Part II. Respondent's experience in product returns

1. Please specify the name of devices and brands.

( ) Mobiles, please specify the brand…….

( ) Tablets, please specify the brand……..

( ) Others, please specify……

2. The number of times you have experience with the product returns service of mobile companies for the past one year.

( ) One time ( ) Two times

( ) Three times ( ) More than three times

3. Please specify the name of service center you have contacted for product returns service.

……

4. Please specify the type of your requests (you can answer more than one choice)

( ) Returning with product compensation

( ) Repairing service

( ) Exchanging for the new ones

( ) Others, please specify……

APPENDIX H (continued)

Part III. Customer-oriented product returns service

1 = strongly disagree 5 = strongly agree

Dimensions	Items	1 Strongly disagree	2	3	4	5 Strongly agree	Cannot be evaluated
Tangibles	1. The service center has up-to-date equipment.						
	2. Physical facilities are visually appealing.						
	3. Employees work in a tidy, professional environment.						
	4. The number of employees is adequate.						
	5. Facilities and activities are provided during queuing.						
Responsiveness	6. Employees take care of problems promptly.						
	7. Employees can promptly response to your request even when they are busy.						
	8. Employees communicate effectively.						
	9. Employees process your request rapidly.						
Explanation	10. Employees provide me with explanation of why problems had occurred.						
	11. Employees I deal with, provide a satisfactory explanation of why the problem had occurred.						
	12. Employees provide me with explanation of what has done with my product.						
	13. Employees provide me with suggestions of product usage when pick up.						
Empathy	14. Employees can be expected to give individual attention.						
	15. Employees know your specific needs in returning products.						
	16. Employees have your best interests at heart.						
	17. Employees show sympathy for you when you have problems.						
	18. The operating hours are available to you.						
	19. The service locations are available to you.						

APPENDIX H (continued)

Dimensions	Items	1 Strongly disagree	2	3	4	5 Strongly agree	Cannot be evaluated
Empowerment	20. The employees I contacted to first, was able to solve my returns problem.						
	21. One employee could complete the overall process for me.						
Reliability	22. When promises to do something, Company X does so.						
	23. Employees are dependable.						
	24. Company X keeps statement accurately.						
	25. Employees' decisions are reliable.						
	26. The product's functions can perform well and accurately as usual.						
	27. Double fault of product problems is not found after completing the service process.						
Timeliness	28. Company X's processing time is short.						
	29. Delivery of returns arrives on the date Company X promised.						
	30. Company X handles my returns quickly.						
	31. The time for queuing is short.						
Information Availability	32. Company X provides information of operating hours and location of service centers.						
	33 Company X provides problem's solution choices information.						
	34. Company X provides compensation/returns status information.						
	35. Employees provide information of processing time and tentative costs for me.						
	36. It is easy to access firm's service information.						
Assurance	37. Employees can be trusted.						
	38. You have confidence in product returns process of company X.						

APPENDIX H (continued)

Dimensions	Items	1 Strongly disagree	2	3	4	5 Strongly agree	Cannot be evaluated
Assurance	39. Employees get adequate support from the company to do their jobs well.						
	40. Company X provides a follow-up after the compensation is provided.						
	41. Employees I deal with are knowledgeable.						
	42. Company X provides warranty for the returns/compensation.						
Compensation	43. Company X compensates me for problems it creates.						
	44. Company X compensates me appropriately.						
	45. Company X compensates me when I am dissatisfied with the returns service.						
	46. Rental mobile is provided for free.						
Feedback	47. Company X informed me about the progress made to solve my product problem.						
	48. Employees keep in touch with me.						
	49. Company X provides periodic feedback during processing time.						
Convenient process	50. Company X provides me with convenient options for returning items						
	51. Company X 's requirements on the condition of product returned are appropriate.						
	52. Requisitioning procedures of returning product(s) are easy to use.						
	53. Company X provides one-stop service for requisitioning procedures.						

APPENDIX H (continued)

Part IV. Customer satisfaction on product returns service

1 = strongly disagree 5 = strongly agree

Items	1 Strongly disagree	2	3	4	5 Strongly agree	Cannot be evaluated
1. I am completely satisfied with Company X's entire process of making my return.						
2. Company X's efforts to handle my request are satisfactory.						
3. Overall, I am completely satisfied with the experiences with the returns service delivered by Company X.						
4. The firm's returns service meet my expectations.						

Part V. Customer trust in the company

1 = strongly disagree 5 = strongly agree

Items	1 Strongly disagree	2	3	4	5 Strongly agree	Cannot be evaluated
1. Company X's policies and practices are completely dependable.						
2. I can count on Company X to respond to my requests.						
3. I can count on Company X's promises.						
4. I can trust Company X completely.						
5. Overall, I can trust the firm's offerings.						

Other comments (if any)

……

……

APPENDIX I

THAI VERSION OF SURVEY QUESTIONNAIRE

<u>ตอนที่ 1</u> ข้อมูลลักษณะประชากร

คำชี้แจง โปรดเขียนเครื่องหมาย ⁄ ลงในช่อง ( ) หรือเขียนข้อความที่ตรงกับข้อมูลของท่าน

1. เพศ ( ) ชาย ( ) หญิง
2. อายุ ..... ปี
3. การศึกษา ( ) ต่ำกว่าปริญญาตรี ( ) ปริญญาตรี ( ) สูงกว่าปริญญาตรี
4. อาชีพ ( ) นักเรียน/นักศึกษา ( ) พนักงานบริษัท
   ( ) ข้าราชการ/พนักงานรัฐวิสาหกิจ ( ) เจ้าของกิจการ
   ( ) อาชีพเฉพาะทาง อาทิ แพทย์ ทนายความ อาจารย์ ( ) อื่นๆ โปรดระบุ .....

<u>ตอนที่ 2</u> ประสบการณ์ในการใช้บริการรับคืน/แลกเปลี่ยน/ซ่อมแซมสินค้า

1. โปรดระบุชื่อตราสินค้า/ผลิตภัณฑ์

( )โทรศัพท์มือถือ ตราสินค้า/ยี่ห้อ.....

( ) เครื่องแท็บเล็ต ตราสินค้า/ยี่ห้อ.....

( ) อุปกรณ์ที่เกี่ยวข้อง ระบุ.....ตราสินค้า/ยี่ห้อ.....

2. ท่านเคยใช้บริการรับคืน/ซ่อมแซม/เปลี่ยนสินค้า รวมทั้งสิ้นกี่ครั้ง ในระยะเวลา 1 ปีที่ผ่านมา

   ( ) 1 ครั้ง ( ) 2 ครั้ง

   ( ) 3 ครั้ง ( ) มากกว่า 3 ครั้ง

3. โปรดระบุชื่อ ศูนย์บริการ/สาขาของบริษัทที่ท่านเคยใช้บริการรับคืน/ซ่อมแซม/เปลี่ยน/ชดเชยสินค้า

.....

4. โปรดระบุลักษณะการใช้บริการ (ตอบได้มากกว่า 1 ข้อ)

   ( ) ส่งคืนสินค้าที่มีปัญหาและได้รับชดเชยเป็นสินค้า

   ( ) บริการซ่อมแซม

   ( ) บริการเปลี่ยนสินค้าเก่าเป็นสินค้ารุ่นใหม่

   ( ) บริการอื่นๆ ระบุ.....

APPENDIX I (continued)

<u>ตอนที่ 3</u> การประเมินคุณภาพการให้บริการรับคืน/แลกเปลี่ยน/ซ่อมแซมสินค้าของบริษัทเจ้าของผลิตภัณฑ์

ตัวชี้วัดการให้บริการรับคืน/แลกเปลี่ยน/ซ่อมแซมสินค้าของบริษัท	ความคิดเห็น					
	1 เห็นด้วยน้อยที่สุด	2 เห็นด้วยน้อย	3 เห็นด้วยปานกลาง	4 เห็นด้วยมาก	5 เห็นด้วยมากที่สุด	ไม่สามารถประเมินได้
1. ศูนย์บริการของบริษัท มีเครื่องมืออุปกรณ์ที่ทันสมัย						
2. สภาพแวดล้อมและสิ่งอำนวยความสะดวกของศูนย์บริการโดดเด่นดึงดูดสายตา						
3. สภาพแวดล้อมของศูนย์บริการเหมาะสมกับการให้บริการ						
4. จำนวนพนักงานในศูนย์บริการมีเพียงพอ						
5. ศูนย์บริการมีสิ่งอำนวยความสะดวกหรือกิจกรรมให้ทำระหว่างรอคิว						
6. พนักงานสามารถให้บริการท่านได้ทันที						
7. พนักงานสามารถให้บริการท่านได้ทันทีแม้ว่าจะติดภารกิจอื่น						
8. พนักงานติดต่อสื่อสารกับท่านได้อย่างมีประสิทธิภาพ						
9. พนักงานสามารถดำเนินการตามคำขอของท่านได้อย่างรวดเร็ว						
10. พนักงานได้ให้คำอธิบายถึงสาเหตุที่ทำให้เกิดปัญหาเกี่ยวกับตัวผลิตภัณฑ์						
11. พนักงานที่ท่านติดต่อได้ให้คำอธิบายถึงสาเหตุของปัญหาที่เกิดขึ้นได้เป็นที่น่าพอใจ						
12. พนักงานได้ให้คำอธิบายถึงสิ่งที่ได้ทำไปแล้วในการแก้ปัญหาให้กับผลิตภัณฑ์ของท่าน						
13. พนักงานแนะนำการใช้ผลิตภัณฑ์เมื่อท่านรับผลิตภัณฑ์ที่ได้รับการแก้ไขปัญหาแล้ว						
14. ท่านคาดหวังได้ว่าพนักงานให้ความสนใจปัญหาของท่านเป็นการเฉพาะบุคคล						

APPENDIX I (continued)

ตัวชี้วัดการให้บริการรับคืน/แลกเปลี่ยน/ซ่อมแซมสินค้าของบริษัท	ความคิดเห็น					
	1 เห็นด้วยน้อยที่สุด	2 เห็นด้วยน้อย	3 เห็นด้วยปานกลาง	4 เห็นด้วยมาก	5 เห็นด้วยมากที่สุด	ไม่สามารถประเมินได้
15. พนักงานรู้ถึงความต้องการเฉพาะของท่านในการแก้ไขปัญหาเกี่ยวกับสินค้า						
16. พนักงานให้ความสนใจสูงสุดในการบริการแก่ท่าน						
17. พนักงานแสดงความเห็นอกเห็นใจในปัญหาที่เกิดขึ้นกับท่าน						
18. เวลาในการให้บริการสะดวกแก่ท่าน						
19. ที่ตั้งศูนย์บริการสะดวกแก่ท่าน						
20. พนักงานที่ท่านติดต่อด้วยเป็นคนแรกสามารถแก้ไขปัญหาให้ท่านได้เลย						
21. พนักงาน 1 คนสามารถให้บริการท่านตั้งแต่ต้นจนจบกระบวนการ						
22. บริษัท สามารถปฏิบัติตามสัญญาที่ได้แจ้งลูกค้า						
23. พนักงาน สามารถพึ่งพาได้						
24. บริษัท รักษาคำพูดที่ได้แจ้งแก่ท่าน						
25. การตัดสินใจของพนักงานสามารถเชื่อถือได้						
26 ผลิตภัณฑ์ของท่านกลับมาใช้งานได้เป็นปกติหลังจากเข้ารับบริการ						
27. ท่านไม่พบปัญหาเกี่ยวกับผลิตภัณฑ์เป็นครั้งที่สองหลังจากเข้ารับบริการแล้ว						
28. การดำเนินการของบริษัท ใช้ระยะเวลาอันสั้น						

APPENDIX I (continued)

ตัวชี้วัดการให้บริการรับคืน/แลกเปลี่ยน/ซ่อมแซมสินค้าของบริษัท	ความคิดเห็น					
	1 เห็นด้วยน้อยที่สุด	2 เห็นด้วยน้อย	3 เห็นด้วยปานกลาง	4 เห็นด้วยมาก	5 เห็นด้วยมากที่สุด	ไม่สามารถประเมินได้
29. การส่งมอบสินค้า/การชดเชย/แก้ไข/ซ่อมแซม/เปลี่ยนสินค้าตรงเวลาตามที่แจ้งไว้						
30. ศูนย์บริการของบริษัท ดำเนินการรับคืนสินค้า/แลกเปลี่ยน/ซ่อมแซมได้อย่างรวดเร็ว						
31. ระยะเวลาในการรอคิวเพื่อเข้ารับบริการไม่นาน						
32. ศูนย์บริการของบริษัท มีการให้ข้อมูลด้านเวลาและสถานที่ในการเข้ารับบริการ						
33. ศูนย์บริการของบริษัท มีการให้ข้อมูลเกี่ยวกับทางเลือกในการแก้ไขปัญหาสินค้าของท่าน						
34. ศูนย์บริการของบริษัท มีการให้ข้อมูลเกี่ยวกับสถานะความคืบหน้าในการดำเนินการเกี่ยวกับตัวสินค้า						
35. พนักงานให้ข้อมูลเกี่ยวกับเวลาที่จะใช้ดำเนินการและค่าใช้จ่ายที่จะเกิดขึ้นแก่ท่าน						
36. ท่านสามารถเข้าถึงข้อมูลการให้บริการของบริษัทได้อย่างง่ายดาย						
37. พนักงานสามารถเชื่อใจได้						
38. ท่านมีความเชื่อมั่นในระบบการรับคืน/แลกเปลี่ยน/ซ่อมแซมสินค้าของบริษัท						
39. พนักงานได้รับการสนับสนุนจากบริษัทเป็นอย่างดีเมื่อแก้ปัญหาให้ท่าน						
40. บริษัท มีการติดตามหรือสอบถามความพึงพอใจหลังจากที่ได้ส่งมอบ/แก้ไขสินค้าให้แก่ท่าน						
41. พนักงานที่ท่านติดต่อด้วยมีความรู้เป็นอย่างดี						

APPENDIX I (continued)

ตัวชี้วัดการให้บริการรับคืน/แลกเปลี่ยน/ซ่อมแซมสินค้าของบริษัท	ความคิดเห็น					
	1 เห็นด้วยน้อยที่สุด	2 เห็นด้วยน้อย	3 เห็นด้วยปานกลาง	4 เห็นด้วยมาก	5 เห็นด้วยมากที่สุด	ไม่สามารถประเมินได้
42. บริษัท ให้การรับประกันสินค้าที่ได้รับการแก้ไขปัญหา						
43. บริษัท มีสิ่งชดเชยให้กับปัญหาที่ท่านได้รับ						
44. บริษัท มีสิ่งชดเชยให้กับท่านได้อย่างเหมาะสม						
45. บริษัท มีสิ่งชดเชยให้แก่ท่านเมื่อท่านไม่พึงพอใจกับบริการที่ได้รับจากศูนย์บริการ						
46. บริษัท มีเครื่องสำรองให้ท่านใช้เมื่อต้องใช้บริการซ่อมแซมหรือแก้ไขปัญหาผลิตภัณฑ์						
47.บริษัท ได้แจ้งความคืบหน้าในการแก้ไขปัญหาผลิตภัณฑ์ให้กับท่าน						
48. พนักงานติดต่อกับท่านสม่ำเสมอตลอดการใช้บริการ						
49. บริษัท ได้แจ้งความคืบหน้าเป็นระยะระหว่างการดำเนินการเกี่ยวกับผลิตภัณฑ์ให้กับท่าน						
50. บริษัท กำหนดวิธีการในการใช้บริการส่งคืน/แก้ไข/ชดเชย/เปลี่ยนสินค้าที่สะดวกแก่ท่าน						
51. เงื่อนไขที่บริษัท กำหนดเพื่อรับคืน/แก้ไข/ชดเชย/เปลี่ยนสินค้ามีความเหมาะสม						
52. ขั้นตอนทั้งหมดในการที่ท่านจะร้องขอให้บริษัท ดำเนินการเกี่ยวกับผลิตภัณฑ์ทำได้ง่าย						
53. การดำเนินการของบริษัท ในการให้บริการแก่ท่านเป็นลักษณะรวมทุกขั้นตอนไว้ที่แห่งเดียว (one-stop service)						

APPENDIX I (continued)

<u>ตอนที่ 4</u> ความพึงพอใจโดยรวมต่อการให้บริการรับคืนสินค้าของบริษัท

คำชี้แจง โปรดเขียนเครื่องหมาย ⁄ ที่ตรงกับความคิดเห็นของท่าน

ความพึงพอใจต่อการให้บริการของบริษัท	ความคิดเห็น					
	1 เห็นด้วยน้อยที่สุด	2 เห็นด้วยน้อย	3 เห็นด้วยปานกลาง	4 เห็นด้วยมาก	5 เห็นด้วยมากที่สุด	ไม่สามารถประเมินได้
1. ท่านมีความพึงพอใจอย่างที่สุดในกระบวนการให้บริการรับคืนสินค้าของบริษัท						
2. ความพยายามของบริษัท ในการรับผิดชอบที่จะแก้ปัญหาเกี่ยวกับผลิตภัณฑ์ให้ท่านเป็นที่น่าพอใจ						
3. จากประสบการณ์ของท่าน ท่านพึงพอใจอย่างที่สุดในการให้บริการรับคืน/แก้ไข/ซ่อมแซม/เปลี่ยนสินค้าของบริษัท						
4. การให้บริการรับคืน/แก้ไข/ซ่อมแซม/เปลี่ยนสินค้าของบริษัท ตรงกับความคาดหวังของท่าน						

<u>ตอนที่ 5</u> ความไว้วางใจต่อบริษัทที่ท่านใช้บริการ

ความไว้วางใจต่อบริษัท	ความคิดเห็น					
	1 เห็นด้วยน้อยที่สุด	2 เห็นด้วยน้อย	3 เห็นด้วยปานกลาง	4 เห็นด้วยมาก	5 เห็นด้วยมากที่สุด	ไม่สามารถประเมินได้
1. นโยบายและวิธีปฏิบัติของบริษัท เป็นที่เชื่อถือได้อย่างที่สุด						
2. ท่านสามารถเชื่อมั่นต่อบริษัท ในการตอบสนองต่อความต้องการของท่าน						
3. ท่านสามารถเชื่อมั่นต่อคำมั่นสัญญาที่ให้ไว้ของบริษัท						
4. ท่านไว้วางใจต่อบริษัท อย่างที่สุด						
5. ในภาพรวม ท่านไว้วางใจต่อสิ่งที่บริษัทนำเสนออย่างที่สุด						

ความคิดเห็นอื่นๆ (ถ้ามี) ……

……...

APPENDIX J
COVER LETTER FOR DATA COLLECTION

BIOGRAPHY

มกราคม 2559

เรียน ผู้จัดการฝ่ายบริการลูกค้า
เรื่อง ขอความอนุเคราะห์ในการเก็บข้อมูลผู้ใช้บริการ

ด้วยปัจจุบันดิฉันกำลังศึกษาปริญญาเอกด้านการตลาด คณะพาณิชยศาสตร์และการบัญชี มหาวิทยาลัย ธรรมศาสตร์ และอยู่ระหว่างจัดทำวิทยานิพนธ์ในหัวข้อ การพัฒนาเครื่องมือชี้วัดในการประเมินผลการให้บริการรับคืนสินค้า (The development of a measure of customer-oriented product returns service performance) โดยเลือกศึกษาเฉพาะอุตสาหกรรมอิเล็กทรอนิกส์ด้านการสื่อสารโมบายล์ จึงใคร่ขอความอนุเคราะห์ในการเก็บข้อมูลผู้ใช้บริการเพื่อประกอบการจัดทำวิทยานิพนธ์ในการให้บริการรับคืนสินค้า/เปลี่ยน/ชดเชยผลิตภัณฑ์ด้านการสื่อสารของบริษัท ทั้งนี้ผลการวิจัยจะนำไปใช้ประโยชน์เพื่อการศึกษาต่อไป

ดิฉันหวังเป็นอย่างยิ่งว่าจะได้รับความอนุเคราะห์จากท่านและขอขอบพระคุณเป็นอย่างสูงมา ณ โอกาสนี้

ขอแสดงความนับถือ

นางชลลดา สัจจานิตย์
นักศึกษาปริญญาเอก
มหาวิทยาลัยธรรมศาสตร์

APPENDIX K

T-TEST FOR NON-RESPONSE BIAS

(MEAN DIFFERENCES OF OBSERVED VARIABLES)

Items	Mean difference	t-value	Sig. (2-tailed)
TB1 The service center has up-to-date equipment.	0.89	8.95	1.61
TB2 Physical facilities are visually appealing.	0.93	9.86	1.56
TB3 Employees work in a tidy, professional environment.	0.95	9.87	1.42
TB4 The number of employees is adequate.	1.10	10.80	7.02
TB5 Facilities and activities are provided during queuing.	1.16	11.46	2.74
RP1 Employees take care of problems promptly.	1.56	16.01	2.28
RP2 Employees can promptly response to your request even when they are busy.	1.54	15.38	9.21
RP3 Employees communicate effectively.	1.30	14.60	1.47
RP4 Employees process your request rapidly.	1.47	15.52	2.51
EN1 Employees provide me with explanation of why problems had occurred.	1.04	11.33	8.29
EN2 Employees I deal with, provide a satisfactory explanation of why the problem had occurred.	1.143	12.72	4.66
EN3 Employees provide me with explanation of what has done with my product.	1.143	12.30	1.93
EN4 Employees provide me with suggestions of product usage when pick up.	1.14	12.42	6.31
ET1 Employees can be expected to give individual attention.	1.11	11.33	8.27
ET2 Employees know your specific needs in returning products.	1.21	14.63	1.15
ET3 Employees have your best interests at heart.	1.26	14.98	4.14
ET4 Employees show sympathy for you when you have problems.	1.40	14.83	1.64
ET5 The operating hours are available to you.	1.35	15.27	2.70
ET6 The service locations are available to you.	1.16	11.76	2.10

APPENDIX K (continued)

Items	Mean difference	t-value	Sig. (2-tailed)
EP1 The employees I contacted to first, was able to solve my returns problem.	2.56	43.64	2.90
EP2 One employee could complete the overall process for me.	2.29	28.15	1.32
RL1 When promises to do something, Company X does so.	1.27	14.10	1.58
RL2 Employees are dependable.	1.23	13.32	2.01
RL3 Company X keeps statement accurately.	1.23	12.92	7.78
RL4 Employees' decisions are reliable.	1.28	14.13	1.14
RL5 The product's functions can perform well and accurately as usual.	1.20	13.68	7.30
RL6 Double fault of product problems is not found after completing the service process.	1.19	12.41	7.17
TL1 Company X's processing time is short.	1.31	12.68	6.18
TL2 Delivery of returns arrives on the date Company X promised.	1.20	12.16	6.18
TL3 Company X handles my returns quickly.	1.13	11.48	2.37
TL4 The time for queuing is short.	1.38	13.88	1.19
IA1 Company X provides information of operating hours and location of service centers.	1.19	13.12	1.20
IA2 Company X provides problem's solution choices information.	1.14	12.87	1.14
IA3 Company X provides compensation/returns status information.	1.18	12.75	3.37
IA4 Employees provide information of processing time and tentative costs for me.	0.99	10.70	1.71
IA5 It is easy to access firm's service information.	1.18	13.20	5.72
AS1 Employees can be trusted.	1.13	12.70	5.16
AS2 You have confidence in product returns process of company X.	1.23	14.24	4.36
AS3 Employees get adequate support from the company to do their jobs well.	1.19	14.16	8.73

APPENDIX K (continued)

Items	Mean difference	t-value	Sig. (2-tailed)
AS4 Company X provides a follow-up after the compensation is provided.	1.22	12.04	1.89
AS5 Employees I deal with are knowledgeable.	1.24	14.49	4.22
AS6 Company X provides warranty for the returns/compensation.	1.09	11.79	1.61
CS1 The firm compensates me for problems it creates.	1.31	12.14	7.47
CS2 Company X compensates me appropriately.	1.19	12.02	2.12
CS3 Company X compensates me when I am dissatisfied with the returns service.	1.19	12.19	5.07
CS4 Rental mobile is provided for free.	1.27	11.76	2.05
FB1 Company X informed me about the progress made to solve my product problem.	1.28	12.82	1.85
FB2 Employees keep in touch with me.	1.39	13.73	4.49
FB3 Company X provides periodic feedback during processing time.	1.30	13.30	2.34
CP1 Company X provides me with convenient options for returning items	1.25	12.92	7.50
CP2 Company X 's requirements on the condition of product returned are appropriate.	1.18	13.16	8.87
CP3 Requisitioning procedures of returning product(s) are easy to use.	1.26	14.35	1.51
CP4 The firm provides one-stop service for requisitioning procedures.	1.14	12.06	1.49
RS1 I am completely satisfied with Company X's entire process of making my return.	0.98	10.71	1.49
RS2 Company X's efforts to handle my request are satisfactory.	0.96	10.59	4.29
RS3 Overall, I am completely satisfied with the experiences with the returns service delivered by Company X.	1.11	12.06	1.57
RS4 The firm's returns service meet my expectations.	0.99	11.52	1.63

APPENDIX K (continued)

Items	Mean difference	t-value	Sig. (2-tailed)
CT1 Company X's policies and practices are completely dependable.	0.98	11.64	6.03
CT2 I can count on Company X to respond to my requests.	1.021	11.40	4.49
CT3 I can count on Company X's promises.	0.98	10.84	5.30
CT4 I can trust Company X completely.	0.93	10.13	1.78
CT5 Overall, I can trust the firm's offerings.	1.01	12.14	7.68

APPENDIX L

MEAN AND STANDARD DEVIATION OF OBSERVED VARIABLES

Dimensions	Items	Mean	Standard deviation
Tangibles (TB)	TB1 The service center has up-to-date equipment.	3.67	.97
	TB2 Physical facilities are visually appealing.	3.68	.96
	TB3 Employees work in a tidy, professional environment.	3.73	.97
	TB4 The number of employees is adequate.	3.50	1.05
	TB5 Facilities and activities are provided during queuing.	3.36	1.09
Responsiveness (RP)	RP1 Employees take care of problems promptly.	3.54	1.09
	RP2 Employees can promptly response to your request even when they are busy.	3.42	1.09
	RP3 Employees communicate effectively.	3.72	.97
	RP4 Employees process your request rapidly.	3.66	1.04
Explanation (EN)	EN1 Employees provide me with explanation of why problems had occurred.	3.73	.94
	EN2 Employees I deal with, provide a satisfactory explanation of why the problem had occurred.	3.74	.97
	EN3 Employees provide me with explanation of what has done with my product.	3.73	.95
	EN4 Employees provide me with suggestions of product usage when pick up.	3.72	.94
Empathy (ET)	ET1 Employees can be expected to give individual attention.	3.69	.99
	ET2 Employees know your specific needs in returning products.	3.56	.90
	ET3 Employees have your best interests at heart.	3.57	.91
	ET4 Employees show sympathy for you when you have problems.	3.48	1.00
	ET5 The operating hours are available to you	3.53	.95
	ET6 The service locations are available to all customers.	3.66	.97

APPENDIX L (continued)

Dimensions	Items	Mean	Standard deviation
Empowerment (EP)	EP1 The employees I contacted to first, was able to solve my returns problem.	3.51	1.05
	EP2 One employee could complete the overall process for me.	3.50	1.08
Reliability (RL)	RL1 When promises to do something, Company X does so.	3.64	.93
	RL2 Employees are dependable.	3.73	.92
	RL3 Company X keeps statement accurately.	3.65	.97
	RL4 Employees' decisions are reliable.	3.67	.94
	RL5 The product's functions can perform well and accurately as usual.	3.73	.94
	RL6 Double fault of product problems is not found after completing the service process.	3.63	1.01
Timeliness (TL)	TL1 Company X's processing time is short.	3.51	1.08
	TL2 Delivery of returns arrives on the date Company X promised.	3.53	1.01
	TL3 Company X handles my returns quickly.	3.43	.99
	TL4 The time for queuing is short.	3.45	1.03
Information Availability (IA)	IA1 Company X provides information of operating hours and location of service centers.	3.57	.94
	IA2 Company X provides problem's solution choices information.	3.60	.93
	IA3 Company X provides compensation/returns status information.	3.58	.97
	IA4 Employees provide information of processing time and tentative costs for me.	3.65	.92
	IA5 It is easy to access firm's service information.	3.60	.95
Assurance (AS)	AS1 Employees can be trusted.	3.71	.935
	AS2 You have confidence in product returns process of company X.	3.71	.94
	AS3 Employees get adequate support from the company to do their jobs well.	3.73	.92
	AS4 Company X provides a follow-up after the compensation is provided.	3.55	1.05
	AS5 Employees I deal with are knowledgeable.	3.71	.96

APPENDIX L (continued)

Dimensions	Items	Mean	Standard deviation
Assurance (AS)	AS6 Company X provides warranty for the returns/compensation.	3.66	.95
Compensation (CS)	CS1 The firm compensates me for problems it creates.	3.50	1.12
	CS2 Company X compensates me appropriately.	3.37	1.03
	CS3 Company X compensates me when I am dissatisfied with the returns service.	3.35	1.00
	CS4 Rental mobile is provided for free.	3.63	1.09
Feedback (FB)	FB1 Company X informed me about the progress made to solve my product problem.	3.44	1.04
	FB2 Employees keep in touch with me.	3.38	1.08
	FB3 Company X provides periodic feedback during processing time.	3.43	1.06
Convenient process (CP)	CP1 Company X provides me with convenient options for returning items	3.59	.99
	CP2 Company X 's requirements on the condition of product returned are appropriate.	3.61	.94
	CP3 Requisitioning procedures of returning product(s) are easy to use.	3.52	.95
	CP4 The firm provides one-stop service for requisitioning procedures.	3.59	.98
Returns satisfaction (RS)	RS1 I am completely satisfied with Company X's entire process of making my return.	3.65	.93
	RS2 Company X's efforts to handle my request are satisfactory.	3.57	.92
	RS3 Overall, I am completely satisfied with the experiences with the returns service delivered by Company X.	3.54	.95
	RS4 The firm's returns service meet my expectations.	3.57	.90
Customer trust (CT)	CT1 Company X's policies and practices are completely dependable.	3.63	.87
	CT2 I can count on Company X to respond to my requests.	3.66	.90
	CT3 I can count on Company X's promises.	3.60	.92
	CT4 I can trust Company X completely.	3.62	.95
	CT5 Overall, I can trust the firm's offerings.	3.67	.88

APPENDIX M

MEAN AND STANDARD DEVIATION OF OBSERVED VARIABLES FOR SERVICE PROVIDER 1

Dimensions	Items	Mean	Standard deviation
Tangibles (TB)	TB1 The service center has up-to-date equipment.	3.94	1.04
	TB2 Physical facilities are visually appealing.	3.81	.93
	TB3 Employees work in a tidy, professional environment.	3.91	.93
Responsiveness (RP)	RP1 Employees take care of problems promptly.	3.76	1.19
	RP2 Employees can promptly response to your request even when they are busy.	3.65	1.18
	RP3 Employees communicate effectively.	3.89	1.14
	RP4 Employees process your request rapidly.	3.81	1.12
Explanation (EN)	EN1 Employees provide me with explanation of why problems had occurred.	3.84	.95
	EN2 Employees I deal with, provide a satisfactory explanation of why the problem had occurred.	3.89	.95
	EN3 Employees provide me with explanation of what has done with my product.	3.94	1.00
	EN4 Employees provide me with suggestions of product usage when pick up.	3.91	.92
Empathy (ET)	ET2 Employees know your specific needs in returning products.	3.77	.94
	ET3 Employees have your best interests at heart.	3.76	1.03
	ET4 Employees show sympathy for you when you have problems.	3.66	1.16
	ET5 The operating hours are available to you	3.70	1.08

APPENDIX M (continued)

Dimensions	Items	Mean	Standard deviation
Empowerment (EP)	EP1 The employees I contacted to first, was able to solve my returns problem.	3.77	1.17
	EP2 One employee could complete the overall process for me.	3.91	2.08
Reliability (RL)	RL1 When promises to do something, Company X does so.	3.85	1.03
	RL2 Employees are dependable.	4.07	1.07
	RL3 Company X keeps statement accurately.	3.93	1.00
	RL4 Employees' decisions are reliable.	3.89	.99
	RL5 The product's functions can perform well and accurately as usual.	3.89	1.01
Timeliness (TL)	TL1 Company X's processing time is short.	3.78	1.17
	TL2 Delivery of returns arrives on the date Company X promised.	3.79	1.16
	TL3 Company X handles my returns quickly.	3.62	1.12
	TL4 The time for queuing is short.	3.63	1.18
Information Availability (IA)	IA1 Company X provides information of operating hours and location of service centers.	3.75	1.09
	IA2 Company X provides problem's solution choices information.	3.80	.91
	IA3 Company X provides compensation/returns status information.	3.73	.98
	IA4 Employees provide information of processing time and tentative costs for me.	3.88	.97
	IA5 It is easy to access firm's service information.	3.84	1.08
Assurance (AS)	AS1 Employees can be trusted.	4.08	2.02
	AS2 You have confidence in product returns process of company X.	4.04	2.03
	AS3 Employees get adequate support from the company to do their jobs well.	4.15	3.19
	AS4 Company X provides a follow-up after the compensation is provided.	3.83	1.13
	AS5 Employees I deal with are knowledgeable.	4.02	1.13
	AS6 Company X provides warranty for the returns/compensation.	3.92	1.09

APPENDIX M (continued)

Dimensions	Items	Mean	Standard deviation
Compensation (CS)	CS2 Company X compensates me appropriately.	3.73	1.33
	CS3 Company X compensates me when I am dissatisfied with the returns service.	3.64	1.26
	CS4 Rental mobile is provided for free.	3.57	1.47
Feedback (FB)	FB1 Company X informed me about the progress made to solve my product problem.	3.65	1.11
	FB2 Employees keep in touch with me.	3.54	1.17
	FB3 Company X provides periodic feedback during processing time.	3.67	1.14
Convenient process (CP)	CP1 Company X provides me with convenient options for returning items	3.80	1.14
	CP2 Company X 's requirements on the condition of product returned are appropriate.	3.84	1.05
	CP3 Requisitioning procedures of returning product(s) are easy to use.	3.76	1.08
	CP4 The firm provides one-stop service for requisitioning procedures.	3.73	1.33
Returns satisfaction (RS)	RS1 I am completely satisfied with Company X's entire process of making my return.	3.89	1.04
	RS2 Company X's efforts to handle my request are satisfactory.	3.93	1.08
	RS3 Overall, I am completely satisfied with the experiences with the returns service delivered by Company X.	3.84	1.23
	RS4 The firm's returns service meet my expectations.	3.25	1.80
Customer trust (CT)	CT1 Company X's policies and practices are completely dependable.	3.75	1.11
	CT2 I can count on Company X to respond to my requests.	3.78	1.09
	CT3 I can count on Company X's promises.	3.78	.89
	CT4 I can trust Company X completely.	3.75	.87
	CT5 Overall, I can trust the firm's offerings.	3.78	.99

APPENDIX N

MEAN AND STANDARD DEVIATION OF OBSERVED VARIABLES FOR SERVICE PROVIDER 2

Dimensions	Items	Mean	Standard deviation
Tangibles (TB)	TB1 The service center has up-to-date equipment.	3.71	.91
	TB2 Physical facilities are visually appealing.	3.66	.96
	TB3 Employees work in a tidy, professional environment.	3.75	1.05
Responsiveness (RP)	RP1 Employees take care of problems promptly.	3.62	1.17
	RP2 Employees can promptly response to your request even when they are busy.	3.78	1.39
	RP3 Employees communicate effectively.	4.01	1.07
	RP4 Employees process your request rapidly.	3.89	.96
Explanation (EN)	EN1 Employees provide me with explanation of why problems had occurred.	3.99	1.12
	EN2 Employees I deal with, provide a satisfactory explanation of why the problem had occurred.	3.93	1.05
	EN3 Employees provide me with explanation of what has done with my product.	3.92	1.06
	EN4 Employees provide me with suggestions of product usage when pick up.	3.93	1.18
Empathy (ET)	ET2 Employees know your specific needs in returning products.	3.63	.77
	ET3 Employees have your best interests at heart.	3.69	.89
	ET4 Employees show sympathy for you when you have problems.	3.72	1.04
	ET5 The operating hours are available to you	3.72	1.02

APPENDIX N (continued)

Dimensions	Items	Mean	Standard deviation
Empowerment (EP)	EP1 The employees I contacted to first, was able to solve my returns problem.	3.77	1.27
	EP2 One employee could complete the overall process for me.	3.80	1.52
Reliability (RL)	RL1 When promises to do something, Company X does so.	4.09	3.15
	RL2 Employees are dependable.	3.84	1.05
	RL3 Company X keeps statement accurately.	3.82	.96
	RL4 Employees' decisions are reliable.	3.89	1.04
	RL5 The product's functions can perform well and accurately as usual.	4.02	1.34
Timeliness (TL)	TL1 Company X's processing time is short.	3.76	1.18
	TL2 Delivery of returns arrives on the date Company X promised.	3.54	.79
	TL3 Company X handles my returns quickly.	3.49	.78
	TL4 The time for queuing is short.	3.56	.92
Information Availability (IA)	IA1 Company X provides information of operating hours and location of service centers.	3.72	.97
	IA2 Company X provides problem's solution choices information.	3.85	1.02
	IA3 Company X provides compensation/returns status information.	3.74	1.12
	IA4 Employees provide information of processing time and tentative costs for me.	3.84	1.05
	IA5 It is easy to access firm's service information.	3.61	.97
Assurance (AS)	AS1 Employees can be trusted.	3.86	1.05
	AS2 You have confidence in product returns process of company X.	3.95	1.06
	AS3 Employees get adequate support from the company to do their jobs well.	3.94	1.21
	AS4 Company X provides a follow-up after the compensation is provided.	3.73	1.29
	AS5 Employees I deal with are knowledgeable.	3.91	1.17
	AS6 Company X provides warranty for the returns/compensation.	3.97	1.33

APPENDIX N (continued)

Dimensions	Items	Mean	Standard deviation
Compensation (CS)	CS2 Company X compensates me appropriately.	3.57	1.06
	CS3 Company X compensates me when I am dissatisfied with the returns service.	3.79	1.28
	CS4 Rental mobile is provided for free.	3.77	1.06
Feedback (FB)	FB1 Company X informed me about the progress made to solve my product problem.	3.82	1.21
	FB2 Employees keep in touch with me.	3.91	1.31
	FB3 Company X provides periodic feedback during processing time.	3.83	1.17
Convenient process (CP)	CP1 Company X provides me with convenient options for returning items	3.82	.97
	CP2 Company X 's requirements on the condition of product returned are appropriate.	3.85	1.24
	CP3 Requisitioning procedures of returning product(s) are easy to use.	3.74	.94
Returns satisfaction (RS)	RS1 I am completely satisfied with Company X's entire process of making my return.	3.74	.81
	RS2 Company X's efforts to handle my request are satisfactory.	3.72	1.01
	RS3 Overall, I am completely satisfied with the experiences with the returns service delivered by Company X.	3.70	.97
	RS4 The firm's returns service meet my expectations.	3.76	.83
Customer trust (CT)	CT1 Company X's policies and practices are completely dependable.	3.77	.79
	CT2 I can count on Company X to respond to my requests.	3.79	.92
	CT3 I can count on Company X's promises.	3.79	.98
	CT4 I can trust Company X completely.	3.89	1.00
	CT5 Overall, I can trust the firm's offerings.	3.71	.91

APPENDIX O

MEAN AND STANDARD DEVIATION OF OBSERVED VARIABLES FOR SERVICE PROVIDER 3

Dimensions	Items	Mean	Standard deviation
Tangibles (TB)	TB1 The service center has up-to-date equipment.	3.39	1.12
	TB2 Physical facilities are visually appealing.	4.06	.83
	TB3 Employees work in a tidy, professional environment.	4.00	1.03
Responsiveness (RP)	RP1 Employees take care of problems promptly.	3.97	1.05
	RP2 Employees can promptly response to your request even when they are busy.	4.03	.95
	RP3 Employees communicate effectively.	4.06	.90
	RP4 Employees process your request rapidly.	4.15	.71
Explanation (EN)	EN1 Employees provide me with explanation of why problems had occurred.	4.09	.80
	EN2 Employees I deal with, provide a satisfactory explanation of why the problem had occurred.	4.24	.79
	EN3 Employees provide me with explanation of what has done with my product.	4.24	1.25
	EN4 Employees provide me with suggestions of product usage when pick up.	4.24	.79
Empathy (ET)	ET2 Employees know your specific needs in returning products.	3.94	.86
	ET3 Employees have your best interests at heart.	4.06	.79
	ET4 Employees show sympathy for you when you have problems.	3.82	.68
	ET5 The operating hours are available to you	3.88	.82

APPENDIX O (continued)

Dimensions	Items	Mean	Standard deviation
Empowerment (EP)	EP1 The employees I contacted to first, was able to solve my returns problem.	3.97	.98
	EP2 One employee could complete the overall process for me.	3.73	1.15
Reliability (RL)	RL1 When promises to do something, Company X does so.	3.82	.88
	RL2 Employees are dependable.	4.03	.73
	RL3 Company X keeps statement accurately.	4.00	.87
	RL4 Employees' decisions are reliable.	4.03	.73
	RL5 The product's functions can perform well and accurately as usual.	4.12	.86
Timeliness (TL)	TL1 Company X's processing time is short.	4.42	1.37
	TL2 Delivery of returns arrives on the date Company X promised.	3.94	1.00
	TL3 Company X handles my returns quickly.	4.06	.90
	TL4 The time for queuing is short.	3.70	1.10
Information Availability (IA)	IA1 Company X provides information of operating hours and location of service centers.	4.09	1.10
	IA2 Company X provides problem's solution choices information.	3.94	.90
	IA3 Company X provides compensation/returns status information.	4.06	.86
	IA4 Employees provide information of processing time and tentative costs for me.	4.03	.85
	IA5 It is easy to access firm's service information.	3.94	.97
Assurance (AS)	AS1 Employees can be trusted.	4.24	.66
	AS2 You have confidence in product returns process of company X.	4.06	.70
	AS3 Employees get adequate support from the company to do their jobs well.	3.85	.76
	AS4 Company X provides a follow-up after the compensation is provided.	3.97	.85
	AS5 Employees I deal with are knowledgeable.	4.06	.70
	AS6 Company X provides warranty for the returns/compensation.	4.24	1.12

APPENDIX O (continued)

Dimensions	Items	Mean	Standard deviation
Compensation (CS)	CS2 Company X compensates me appropriately.	3.70	.88
	CS3 Company X compensates me when I am dissatisfied with the returns service.	3.79	.89
	CS4 Rental mobile is provided for free.	4.00	1.00
Feedback (FB)	FB1 Company X informed me about the progress made to solve my product problem.	4.09	.84
	FB2 Employees keep in touch with me.	4.27	1.20
	FB3 Company X provides periodic feedback during processing time.	4.09	.88
Convenient process (CP)	CP1 Company X provides me with convenient options for returning items	4.03	.81
	CP2 Company X 's requirements on the condition of product returned are appropriate.	3.94	.79
	CP3 Requisitioning procedures of returning product(s) are easy to use.	3.94	.83
Returns satisfaction (RS)	RS1 I am completely satisfied with Company X's entire process of making my return.	4.09	.84
	RS2 Company X's efforts to handle my request are satisfactory.	4.12	.82
	RS3 Overall, I am completely satisfied with the experiences with the returns service delivered by Company X.	4.30	.88
	RS4 The firm's returns service meet my expectations.	4.18	.68
Customer trust (CT)	CT1 Company X's policies and practices are completely dependable.	4.09	.77
	CT2 I can count on Company X to respond to my requests.	4.27	.67
	CT3 I can count on Company X's promises.	4.06	.70
	CT4 I can trust Company X completely.	4.03	.77
	CT5 Overall, I can trust the firm's offerings.	4.15	.80

APPENDIX P

MEAN AND STANDARD DEVIATION OF OBSERVED VARIABLES FOR SERVICE PROVIDER 4

Dimensions	Items	Mean	Standard deviation
Tangibles (TB)	TB1 The service center has up-to-date equipment.	3.53	1.42
	TB2 Physical facilities are visually appealing.	3.42	1.02
	TB3 Employees work in a tidy, professional environment.	3.41	1.05
Responsiveness (RP)	RP1 Employees take care of problems promptly.	3.49	.99
	RP2 Employees can promptly response to your request even when they are busy.	3.46	1.12
	RP3 Employees communicate effectively.	3.53	1.13
	RP4 Employees process your request rapidly.	3.59	.97
Explanation (EN)	EN1 Employees provide me with explanation of why problems had occurred.	3.63	1.13
	EN2 Employees I deal with, provide a satisfactory explanation of why the problem had occurred.	3.46	1.04
	EN3 Employees provide me with explanation of what has done with my product.	3.61	1.40
	EN4 Employees provide me with suggestions of product usage when pick up.	3.49	1.15
Empathy (ET)	ET2 Employees know your specific needs in returning products.	3.17	.87
	ET3 Employees have your best interests at heart.	3.51	1.24
	ET4 Employees show sympathy for you when you have problems.	3.47	1.21
	ET5 The operating hours are available to you	3.39	.93

APPENDIX P (continued)

Dimensions	Items	Mean	Standard deviation
Empowerment (EP)	EP1 The employees I contacted to first, was able to solve my returns problem.	3.32	1.01
	EP2 One employee could complete the overall process for me.	3.59	1.31
Reliability (RL)	RL1 When promises to do something, Company X does so.	3.41	1.23
	RL2 Employees are dependable.	3.76	1.30
	RL3 Company X keeps statement accurately.	3.39	1.31
	RL4 Employees' decisions are reliable.	3.68	1.11
	RL5 The product's functions can perform well and accurately as usual.	3.46	.97
Timeliness (TL)	TL1 Company X's processing time is short.	3.34	.94
	TL2 Delivery of returns arrives on the date Company X promised.	3.10	1.26
	TL3 Company X handles my returns quickly.	3.31	1.21
	TL4 The time for queuing is short.	3.37	.89
Information Availability (IA)	IA1 Company X provides information of operating hours and location of service centers.	3.41	1.10
	IA2 Company X provides problem's solution choices information.	3.46	1.30
	IA3 Company X provides compensation/returns status information.	3.56	1.32
	IA4 Employees provide information of processing time and tentative costs for me.	3.17	.97
	IA5 It is easy to access firm's service information.	3.27	.89
Assurance (AS)	AS1 Employees can be trusted.	3.20	.89
	AS2 You have confidence in product returns process of company X.	3.42	1.10
	AS3 Employees get adequate support from the company to do their jobs well.	3.42	1.16
	AS4 Company X provides a follow-up after the compensation is provided.	3.25	1.03
	AS5 Employees I deal with are knowledgeable.	3.47	1.09
	AS6 Company X provides warranty for the returns/compensation.	3.42	1.18

APPENDIX P (continued)

Dimensions	Items	Mean	Standard deviation
Compensation (CS)	CS2 Company X compensates me appropriately.	3.22	1.88
	CS3 Company X compensates me when I am dissatisfied with the returns service.	3.39	1.79
	CS4 Rental mobile is provided for free.	3.47	1.84
Feedback (FB)	FB1 Company X informed me about the progress made to solve my product problem.	3.37	1.48
	FB2 Employees keep in touch with me.	3.29	1.44
	FB3 Company X provides periodic feedback during processing time.	3.31	1.53
Convenient process (CP)	CP1 Company X provides me with convenient options for returning items	3.59	1.50
	CP2 Company X 's requirements on the condition of product returned are appropriate.	3.66	1.48
	CP3 Requisitioning procedures of returning product(s) are easy to use.	3.39	1.39
Returns satisfaction (RS)	RS1 I am completely satisfied with Company X's entire process of making my return.	3.25	1.04
	RS2 Company X's efforts to handle my request are satisfactory.	3.25	1.36
	RS3 Overall, I am completely satisfied with the experiences with the returns service delivered by Company X.	3.19	1.32
	RS4 The firm's returns service meet my expectations.	3.25	.98
Customer trust (CT)	CT1 Company X's policies and practices are completely dependable.	3.22	1.19
	CT2 I can count on Company X to respond to my requests.	3.39	1.44
	CT3 I can count on Company X's promises.	3.29	1.23
	CT4 I can trust Company X completely.	3.54	1.50
	CT5 Overall, I can trust the firm's offerings.	3.68	1.60

APPENDIX Q

MEAN AND STANDARD DEVIATION OF OBSERVED VARIABLES FOR SERVICE PROVIDER 5

Dimensions	Items	Mean	Standard deviation
Tangibles (TB)	TB1 The service center has up-to-date equipment.	3.74	.81
	TB2 Physical facilities are visually appealing.	3.84	.90
	TB3 Employees work in a tidy, professional environment.	3.89	.88
Responsiveness (RP)	RP1 Employees take care of problems promptly.	3.84	.83
	RP2 Employees can promptly response to your request even when they are busy.	3.58	.84
	RP3 Employees communicate effectively.	3.89	.81
	RP4 Employees process your request rapidly.	3.58	.90
Explanation (EN)	EN1 Employees provide me with explanation of why problems had occurred.	3.89	.81
	EN2 Employees I deal with, provide a satisfactory explanation of why the problem had occurred.	3.74	1.10
	EN3 Employees provide me with explanation of what has done with my product.	4.05	1.58
	EN4 Employees provide me with suggestions of product usage when pick up.	4.21	1.47
Empathy (ET)	ET2 Employees know your specific needs in returning products.	3.42	.77
	ET3 Employees have your best interests at heart.	3.63	.68
	ET4 Employees show sympathy for you when you have problems.	3.63	.68
	ET5 The operating hours are available to you	3.58	.90

APPENDIX Q (continued)

Dimensions	Items	Mean	Standard deviation
Empowerment (EP)	EP1 The employees I contacted to first, was able to solve my returns problem.	3.16	1.21
	EP2 One employee could complete the overall process for me.	3.47	1.71
Reliability (RL)	RL1 When promises to do something, Company X does so.	3.68	1.00
	RL2 Employees are dependable.	3.68	.89
	RL3 Company X keeps statement accurately.	3.84	.83
	RL4 Employees' decisions are reliable.	3.84	.76
	RL5 The product's functions can perform well and accurately as usual.	3.95	.85
Timeliness (TL)	TL1 Company X's processing time is short.	3.21	1.36
	TL2 Delivery of returns arrives on the date Company X promised.	3.53	1.17
	TL3 Company X handles my returns quickly.	3.26	1.19
	TL4 The time for queuing is short.	3.26	1.05
Information Availability (IA)	IA1 Company X provides information of operating hours and location of service centers.	3.26	1.15
	IA2 Company X provides problem's solution choices information.	3.37	1.21
	IA3 Company X provides compensation/returns status information.	3.37	1.30
	IA4 Employees provide information of processing time and tentative costs for me.	3.63	1.01
	IA5 It is easy to access firm's service information.	3.74	.73
Assurance (AS)	AS1 Employees can be trusted.	3.42	1.07
	AS2 You have confidence in product returns process of company X.	3.63	1.07
	AS3 Employees get adequate support from the company to do their jobs well.	4.26	1.82
	AS4 Company X provides a follow-up after the compensation is provided.	3.16	1.01
	AS5 Employees I deal with are knowledgeable.	3.74	.87
	AS6 Company X provides warranty for the returns/compensation.	3.58	.77

APPENDIX Q (continued)

Dimensions	Items	Mean	Standard deviation
Compensation (CS)	CS2 Company X compensates me appropriately.	3.37	1.74
	CS3 Company X compensates me when I am dissatisfied with the returns service.	3.47	1.71
	CS4 Rental mobile is provided for free.	3.68	1.77
Feedback (FB)	FB1 Company X informed me about the progress made to solve my product problem.	3.00	1.33
	FB2 Employees keep in touch with me.	2.95	1.39
	FB3 Company X provides periodic feedback during processing time.	2.89	1.29
Convenient process (CP)	CP1 Company X provides me with convenient options for returning items	3.58	.77
	CP2 Company X 's requirements on the condition of product returned are appropriate.	3.42	1.02
	CP3 Requisitioning procedures of returning product(s) are easy to use.	3.53	.84
Returns satisfaction (RS)	RS1 I am completely satisfied with Company X's entire process of making my return.	3.47	.84
	RS2 Company X's efforts to handle my request are satisfactory.	3.32	1.06
	RS3 Overall, I am completely satisfied with the experiences with the returns service delivered by Company X.	3.47	.84
	RS4 The firm's returns service meet my expectations.	3.58	.84
Customer trust (CT)	CT1 Company X's policies and practices are completely dependable.	3.84	.96
	CT2 I can count on Company X to respond to my requests.	3.68	1.00
	CT3 I can count on Company X's promises.	3.74	.87
	CT4 I can trust Company X completely.	3.68	1.00
	CT5 Overall, I can trust the firm's offerings.	4.00	.67

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Sajjanit, C. and Rompho, N. (2015). *Assessing performance of customer-oriented product returns service.* The Proceedings of 2015 International Conference of Business and Social Sciences. Higher Education Forum. Osaka, Japan. 22- 24 March, 2015, 506 - 521.

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