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Master's thesis

Online Service Failure and Recovery in Chinese Online Setting.

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Summary

Delivering high quality service is essential for encouraging repeat purchases and building customer loyalty. When service failure occurs, developing an effective recovery program is highly important also within an online environment. Furthermore, effectiveness of complaint management is of strategic importance for e-business due to the limitations of the online shopping environment. Based on the traditional service failure and recovery literature, several studies have employed justice theory to explain online complaint handling (Lin, Wang and Chang 2011; Santos and Fernandes 2011; Fan, Wu and Wu 2010). This master thesis extends previous work by incorporating informational justice into the conceptual framework and investigating how consumers assess fairness in the online environment. The purpose of this study is to provide an understanding of consumers' evaluation of online complaint handling programs, its impact on post-recovery behaviors and implications for customer relationship management.

This master thesis follows a four-justice-dimension framework (distributive, procedural, interactional and informational justice) to test the effects of justice perception on post-recover satisfaction and overall firm satisfaction. The four justice dimensions are measured respectively by compensation, response speed, respect and explanation. To test the hypotheses, a mixed-design experiment was employed in which there were 24 scenarios manipulated at different justice levels. A survey was used to collect the data.

The results reveal that three justice dimensions (distributive, procedural and interactional justice) are strongly related to satisfaction with recovery while only two justice dimensions (distributive and interactional justice) have great influences on overall firm satisfaction. Informational justice has no significant influence on either of them. The interaction between distributive and interactional justice is a strong

predictor of satisfaction with recovery, whereas, the interaction between distributive and informational justice is significant for both satisfaction with recovery and overall firm satisfaction. Satisfaction with recovery has a positive impact on repurchase intent and a negative effect on negative word-of-mouth intent. However, overall firm satisfaction has a stronger influence on repurchase intent and negative word-of-mouth intent than satisfaction with recovery.

There are a number of implications for management. First, offering a compensation to customer after service failure is very important. Second, offering a compensation cannot solve the problem if the organization performs badly on all the other justice dimensions. Third, if the compensation is given in a respectful manner or when it is combined with a sound explanation, consumers' satisfaction is higher than other recovery programs. The lowest level of compensation (15% discount) conducted in a rude and impatient manner can ruin the recovery effort, producing the worst effect on satisfaction with recovery. Furthermore, the lowest level of compensation combined with an explanation has the worst impact on overall firm satisfaction. Hence, online retailers should try to avoid these two recovery efforts. Finally, giving the importance of overall firm satisfaction for retaining the customer, online retail managers should pay sufficient attention to increase it.

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List of Abbreviations

DJ	Distributive Justice
PJ	Procedural Justice
INTJ	Interactional Justice
INFJ	Informational Justice
SWR	Satisfaction with Recovery
OFS	Overall Firm Satisfaction
RPI	Repurchase Intent
NWOM	Negative Word of Mouth

1. INTRODUCTION

1.1 Background

The rapid growth of e-business in the past decades has presented huge commercial opportunities for online retailers. More and more people like shopping online for convenience. Because of the inherent nature of online business (e.g., lack of physical presence of products and absence of face-to-face communication), service problems are relatively widespread in the e-commerce sector (Forbes, Kelley and Hoffman 2005). Many online shoppers have unpleasant online purchase experiences. Customer dissatisfaction may result from incidents like product defects, poor guarantee policy, inadequate information, slow response, delivery failure and website failure. How to effectively cope with customer complaints is critical for retaining customers and financial performances. Well-enacted service recovery program can alleviate customers' frustration and anger, and even salvage a relationship (Tax and Brown 2000). An effective service recovery strategy even has the potential to prevent the defection of customers (Lewis and Spyrakopoulos 2001), to restore customer satisfaction and to reinforce loyalty (Smith, Bloton and Wagner 1999).

Previous research indicates that service failure has negative effects on loyalty behaviors, repurchase intention, word-of-mouth and it is one of the driving factors that cause customers' switching behaviors (Zeithaml, Berry and Parasuraman 1996). Hence, complaint handling strategies are important particularly in managing customer relationships in service businesses (Tax, Brown and Chandrashekaran 1998). However, additional research is needed to gain a full understanding of how customers evaluate service recovery and what drives customer loyalty in an online business environment where consumers can easily switch to a competitor (Holloway and

Beatty 2003). Although the impact of consumers' evaluation of service recovery on customer satisfaction, loyalty and commitment has been tested in traditional services, there are relatively limited studies conducted in an online complaint handling context since e-commerce began to be widespread only at the end of last century. What has been investigated so far is mainly based on the extant traditional service theories. Justice theory is one of those that provide a theoretical framework to explore customer satisfaction with service recovery and its impacts on post-complaint behaviors (Tax, Brown and Chandrashekaran 1998; Blodgett, Hill and Tax 1997). This master thesis incorporates four justice dimensions (distributive, procedural, interactional and informational justice) into the framework to test whether there are differences between traditional and online service recovery evaluations, what they are and how they affect customer relationships.

The structure of this master thesis is as follows. First, in the rest of this chapter, I present the research purpose and research questions. In Chapter 2, an overview of the existing literature is presented concerning both traditional and online service failure and recovery, justice theory, satisfaction constructs, repurchase intent and negative word-of-mouth. Chapter 3 describes methodology, research design, data collection and measurement of variables. Results from the scenario-based experiment are given in Chapter 4. The discussion of the findings and the managerial implications are described in Chapter 5 and Chapter 6. The mater thesis concludes with the limitations of this study as well as some further research suggestions.

1.2 Research Purpose and Research Questions

The purpose of this master thesis is to investigate how the four justice dimensions (distributive, procedural, interactional and informational) affect customer satisfaction with recovery and overall firm satisfaction and consequently how online consumers'

repurchase intent and negative word-of-mouth intent are influenced by these satisfactions.

Research Questions:

- How does customer's perceived justice influence satisfaction with recovery and overall firm satisfaction in an online setting?
- What is the implication of perceived justice for online-business complaint management?
- How does satisfaction with recovery and overall firm satisfaction affect the customer relationship?

2. LITERATURE REVIEW AND HYPOTHESES

2.1 Service Failure and Service Recovery

Service failure has been investigated by a considerable number of service management and marketing researchers. It is defined as activities that occur as a result of customer perceptions of initial service delivery behaviors falling below the customer's expectations or "zone of tolerance" (Zeithaml, Parasuraman and Berry 1993; Holloway and Beatty 2003, p. 93). In the event of service failure, customers generally expect service providers to implement recoveries (Bitner, Booms and Tetreault 1990) because consumers think that what they received is unfair and the organization should compensate for the losses. This can be explained as psychological, emotional and economic equity (Tax, Brown and Chandrashekaran 1998). Service recovery refers to the actions or activities a service provider takes to amend and restore the losses experienced by customers after service failure (Gronroos 1988).

2.1.1 Traditional Service Failure and Service Recovery

Traditional service failure and recovery strategies have received a lot of attention in service marketing literature. The major topics in this field include: 1) the classification of service failure types; 2) identifying effective service recovery strategies; 3) measuring customer satisfaction with each recovery strategy; 4) assessing post-recovery attitudes and behaviors and 5) moderating factors of customer responses to service failure and recovery efforts (Kelly, Hoffman and Davis 1993). Restaurants, hotels, banking and airlines are the most popular service sectors that are studied.

Bitner, Booms and Tetreault (1990) used critical incident techniques to collect 700 incidents from customers of hotels, airlines and restaurants and classified three major groups of unfavorable and favorable service encounters that underlie satisfaction or dissatisfaction for customers: 1) employee response to service delivery system failures; 2) employee response to customer needs and requests; and 3) unprompted and unsolicited employee actions. There are twelve subgroups identified within these three major groups, such as responses to unavailable service, responses to unreasonably slow service, responses to "special needs" of the customer, etc. Gremler and Bitner (1992) had similar findings. Kelly, Hoffman and Davis (1993) not only extended Bitner, Booms and Tetreault (1990), but also identified seven recovery strategies (discount, correction, manager/employee intervention, correct plus, replacement, apology and refund) and five unacceptable recovery strategies (customer initiated correction, store credit, unsatisfactory correction, failure escalation and doing nothing).

There are also studies conducted in specific industries (Hoffman, Kelly and Rotalsky 1995; Hoffman and Kelley 1996; Johnston and Hewa 1997). Kelly, Hoffman and Rotalsky (1995) used critical incident method, collecting 373 incidents from restaurants, and classified seven service recovery strategies (free food, discount, coupon, managerial intervention, replacement, correction and apology).

A considerable amount of research suggests that effective service recovery can improve customer satisfaction with recovery and overall organization satisfaction and can even increase repurchase intent (Chebat and Slusarczyk 2005; McColl-Kennedy and Sparks 2003; Mattila and Enz 2002; Smith and Bolton 2002 & 1998). However, there is a risk if organizations regard service failures as opportunities to delight customers. This is what Smith and Bolton (1998) defined as the recovery paradox. Consumers' reaction to service recovery is not that straightforward. Service failure type, magnitude of failure and prior experience with the organization moderate the

relationship between service recovery evaluation and post-recovery customer relationship (Mattila 2001; Spreng, Harrell, and Mackoy 1995; Berry and Parasuraman 1991).

How consumers evaluate complaint handling is one of the major concerns for service researchers. There are several theories explaining the assessment process, such as Hirschman's theory of exit, voice and loyalty, attribution theory and equity theory (perceived justice) (Blodgett, Hill and Tax 1997). Substantial research has been conducted using justice theory (Wirtz and Mattila 2004; Maxham and Netemeyer 2002; Hoffman and Kelley 2000; Smith, Bolton and Wagner 1999; Tax, Brown and Chandrashekaran 1998; Blodgett, Hill and Tax 1997; Sundaram et al., 1997; Blodgett, Granbois and Walters 1993; Goodwin and Ross 1992). Blodgett, Hill and Tax (1997) using a quasi-experimental approach, found that distributive and interactional justice had great effects on negative word of mouth and repurchase intent.

Of particular relevance for the research described in this master thesis are consumers' perceptions of justice in evaluating service recovery. The main arguments of justice theory will be presented in Paragraph 2.2.

2.1.2 E-Service Failure and Service Recovery

Compared to traditional service failure and recovery, e-service failure and recovery has not yet received much attention because e-commerce started to flourish only at the end of the 20th century. As a result, researchers are just beginning to tackle the range of issues unique to the online service experience (Holloway and Beatty 2003). Internet is getting an increasingly import role in service delivery and it will receive more attention from researchers in the future.

One of the notable topics in this field is conceptualizing and measuring electronic service quality. One of those findings is the e-SERVQUAL scale proposed by

Zeithaml, Parasuraman, and Malhotra (2002; 2005) for measuring e-service quality. This scale contains seven dimensions of a core service scale (efficiency, reliability, fulfillment, privacy, responsiveness, compensation, and contact) and four dimensions of a recovery service scale (efficiency, reliability, fulfillment, and privacy). Another measurement scale of e-service quality is WEBQUAL with 12 dimensions proposed by Loiacono, Watson and Goodhue (2000), which includes informational fit-to-task, tailored information, trust, response time, ease of understanding, intuitive operations, visual appeal, innovativeness, emotional appeal, consistent image, online completeness and relative advantage. Because e-business is fundamentally based on technology, some research stresses that online firms need to pay particular attention to the role of technology in facilitating provision of online service and improving customer satisfaction. For example, Bitner, Brown and Meuter (2000) discussed the role of technology in implementing effective service recoveries and encouraging customer complaining (see also Brown 1997; Hsieh and Lin 2009).

Similarly, typologies of e-service failure and recovery have been studied as well. Holloway and Beatty (2003) classified seven groups of online service failure (delivery problem, website design problem, customer service problem, payment problem, security problem and miscellaneous and others). Subsequent research has examined the moderating factors which affect the relationship between service failure and recovery evaluation. Holloway, Wang and Parish (2005) found that cumulative online purchase experience has moderating influences on the relationship between post-recovery satisfaction and negative word-of-mouth and the relationship between post-recovery satisfaction and repurchase intent. Furthermore, there are studies investigating the antecedents and consequences of satisfaction with online recovery. Similar to the findings in traditional service failure and recovery literature, Fan, Wu and Wu (2010) found that in an online environment perceived justice affects recovery satisfaction, positive word-of-mouth and repurchase intent and compared to the results from an offline environment, they demonstrated that online consumers more

easily switch to other service providers and spread negative word-of-mouth if they are unsatisfied. Santos and Fernandes (2011) reported that justice improves the evaluation of the online recovery process. More specifically, they explored consumer trust in online shopping and found that consumer trust is influenced by satisfaction with complaint handling, familiarity and the quality of prior experience with online shopping (Santos and Fernandes 2011). Lin, Wand and Chang (2011) examined consumer assessments of online recovery efforts and found that distributive, procedural and interactional justices have a significant positive impact on consumer satisfaction.

This master thesis is based on previous research on justice theory and extends the justice framework with a fourth dimension, being informational justice, to examine not only consumer satisfaction with the service recovery, but also overall satisfaction with the organization. Because of the importance of justice theory for this thesis, justice theory will now be explained into more detail.

2.2 Justice Theory

Justice theory has been a popular topic of social psychology and organizational behavior in the past three decades (Mattila and Cranage 2005). Research undertaken in organizational behavior study is mainly based on equity theory (Adams 1965; Deutsch 1975; Leventhal 1976). Previous studies on justice theory revealed that an outcome will be evaluated in terms of its perceived equity (Colquitt 2001). Adams (1965) proposed that a person evaluates the outcome based upon inputs and outputs. Many justice studies have measured satisfaction with the outcomes of a decision-making process, such as pay, promotions, and performances evaluation (Colquitt et. al., 2001).

Justice theory has been applied to service marketing and is one of the main theories in explaining consumer complaining behavior. Fairness is considered as an important factor in the formation of customer's evaluative judgment of organizational responses to a service failure (Schoefer and Ennew 2005; Tax, Brown and Chandrashekaran 1998).

When a customer is unsatisfied with the service received, there are a number of actions he or she may take, which include complaining to the service provider, or to a third party, switching to another service provider, or taking legal action to redress (Tax, Brown and Chandrashekaran 1998; Lovelock and Wirtz 2010). A complaint arises when the customer perceives unfairness in the service provider-customer relationship (Chebat and Slusarczyk, 2005). Consequently service providers are expected to do something in the form of service recovery and consumers make a judgment whether the service recovery is fair.

Service recovery evaluations involve perceptions of justice at different levels (Maxham and Netemeyer 2002). In most of the extant literature perceived justice has been conceptualized by three dimensions which are procedural, distributional and interactional justice (Blodgett et al., 1997; Tax et al., 1998; Smith et al., 1999; Wirtz et al., 2004). It is the combination of distributive, procedural and interactional justice dimensions that determines consumers' overall perception of justice and their subsequent behaviors (Blodgett, Hill and Tax 1997). The influences of perceived justice on customer satisfaction and post-recovery attitude and behaviors have been supported by many studies. For example, Smith, Bolton and Wagner (1999) found that positive perceptions of distributive, procedural, and interactional justice significantly enhance customer satisfaction in restaurants and hotels sectors. Blodgett, Granbois and Walter (1994) reported that overall perceived justice is the main determinant of both negative word- of-mouth and repatronage intentions. However, Colquitt (2001) reported that a four-dimensional model fits better than a

two-dimensional or three-dimensional one. Hence, he added informational justice into the justice measure model which is commonly conceptualized as three dimensions: distributive justice, procedural justice and interactional justice. Therefore, this master thesis follows a four-dimensional justice model as Colquitt (2001) proposed to investigate online consumers' service recovery evaluation. Each justice dimension will be explained respectively in the following paragraphs.

2.2.1 Distributive Justice

Distributive justice refers to the perceived fairness of tangible outcomes of a dispute, negotiation or decision involving two or more parties (Blodgett, Hill and Tax 1997 p.188). In a service context, it can be defined as the extent to which customers feel they have been treated fairly in terms of the final recovery outcome (Maxham and Netemeyer 2002). Tax, Brown and Chandrashekaran (1998) have identified two dimensions of distributive fairness, compensation (in forms of reimbursement/refund, replacement, repair, credit and correction plus) and apology. Evaluation of the compensation provided by the service provider is the most prevalent in the service recovery literature. As it was suggested that compensation is a strategy for restoring equity to an exchange relationship when one party has been harmed by the other (Berscheid, and Walster 1973; Smith, Bolton and Wagner 1999), studies on distributive justice are primarily based on the equity principle (Sparks and McColl-Kennedy 2001) derived from Adam (1965) who used social exchange theory to evaluate fairness. Adam (1965) suggested that one way to determine fairness was to calculate the input-outcome ratio. There are two other rules that have been used to determine distributive fairness, equality and need (Colquitt et al., 2001). Equality means that all parties achieve an equal share of rewards or same outcomes regardless of their inputs for the exchange and the rule of "need" means outcome is based on

requirement of members in resource allocation regardless of their contributions (Deutsch 1975; Leventhal 1976).

Previous research has provided empirical evidence that perceived fairness of tangible outcomes has a positive effect on recovery evaluation (Goodwin & Ross, 1992; Boshoff, 1997; Smith, Bolton and Wagner 1999). There is much evidence supporting that equity evaluation influences customer satisfaction (Mowen and Grove, 1983; Oliver and DeSarbo 1988; Oliver and Swan 1989; Goodwin and Ross 1992). Maxham and Netemeyer (2002) reported that distributive justice affects two levels of satisfaction, satisfaction with recovery and overall firm satisfaction. Fan, Wu and Wu (2010) have found that distributive justice has a positive effect on recovery satisfaction in an online environment. These findings lead to the following two hypotheses:

H1: Distributive justice has a positive impact on satisfaction with recovery.

H2: Distributive justice has a positive impact on overall firm satisfaction.

2.2.2 Procedural Justice

The concept of procedural justice was introduced into justice literature by Thibaut and Walker (1975) which found its application in legal disputes. Leventhal extended this concept into non-legal contexts such as organizational settings (Leventhal 1980). Procedural justice refers to the perceived fairness of the policies, procedures, and criteria used by decision makers in arriving at the outcome of a dispute or negotiation (Blodgett, Hill and Tax 1997, p. 189). Procedural justice involves different dimensions according to a number of studies. As is summarized in Tax, Brown, and Chandrashekaran (1998), procedural justice dimensions that have been identified include process control (Lind and Tyler 1988; Goodwin and Ross 1992), decision control (Brett 1986; Heide and John 1992), accessibility (Bitner, Booms and Tetreault,

1990; Bowen and Lawler 1995), timing/speed (Fisk and Coney 1982; Maister 1985) and flexibility (Bitner, Booms and Tetreault 1990). A considerable amount of studies have found that response speed (timing) which implies the speed with which the organization handles service problems and complaints, is an important dimension of procedural justice (Blodgett, Hill, and Tax 1997; Clemmer and Schneider 1996; Tax, Brown, and Chandrashekaran 1998; Smith and Bolton 2002; Wirtz and Mattila 2004).

Procedural justice aims to resolve conflicts in a way that encourages the continuation of a productive relationship between the disputants, even when outcomes are unsatisfactory to one or both parties (Folger 1987; Greenberg 1990; Tax, Brown and Chandrashekaran 1998). In service marketing, many studies have demonstrated that procedural justice influences consumers' satisfaction with recovery (Goodwin and Ross 1992; Blodgett, Hill and Tax 1997; Smith, Bolton and Wagner 1999; Sparks and McColl-Kennedy 2001; Wirtz and Mattila 2004). Some research has demonstrated that procedural justice exerts influence on overall firm satisfaction (Maxham and Netemeyer 2002). Fan, Wu and Wu (2010) found that procedural justice has a positive effect on recovery satisfaction in online service recovery as well. It is therefore hypothesized that

H3: Procedural justice has a positive impact on satisfaction with recovery.

H4: Procedural justice has a positive impact on overall firm satisfaction.

2.2.3 Interactional Justice

Interactional justice concerns fairness of how individuals treat one another not only when resources are distributed but in everyday interactions as well (Bies and Moage 1986, p.44). Bies and Moage (1986) identified four criteria for interactional justice: justification (explaining the basis for decisions), truthfulness (authority figure being candid and not engaging in deception), respect (being polite) and propriety

(restraining from improper remarks or prejudicial statements). Later Greenberg (1990) suggested that interactional justice could be separated into two specific types, interpersonal justice which reflects the degree to which people are treated with politeness, dignity and respect by authority or third parties, and informational justice which emphasizes providing information to people to explain why procedures are handled or why outcomes are arrived at in a certain way (Colquitt et al., 2001). Other elements associated with consumers' perception of interactional justice involve apology (Goodwin and Ross 1989 & 1992; Blodgett, Hill and Tax 1997), empathy, effort, honesty and attitude (Tax, Brown and Chandrashekaran 1998).

The concept of interactional justice helps explain why sometimes consumers perceive an overall lack of justice even when they receive a fair outcome (Bies and Shapiro 1987). One reason is that it is related to the personal treatment received from the employees of the service provider in terms of respect, courtesy, honesty and dignity during the service recovery process (Bies and Shapiro, 1987; Blodgett, Hill and Tax 1997; Varela-Neira, Va´zquez-Casielles and Iglesias 2009). Perceived interactional justice raises the customer's evaluation of service quality (Parasuraman, Zeithalm and Berry 1985) and contributes to satisfaction with service encounter (Bitner, Booms and Tetreault 1990).

It has been demonstrated that interactional justice has an impact on complaint handling satisfaction (Goodwin and Ross 1992; Blodgett, Hill and Tax 1997; Smith, Bolton and Wagner 1999; Sparks and McColl-Kennedy 2001; Wirtz and Mattila 2004; Mattila and Cranage 2005). Some studies demonstrate that interactional justice has a strong effect on overall firm satisfaction (Maxham and Netemeyer 2002). However, it has been seldom tested in the online service environment. It seems that there is little interaction between service provider and customer in online environment because there is no physical interaction, but all means of communication - either through email or telephone - are of relevance for interactional justice (Santos and Fernandes 2011).

According to Lin, Wang and Chang (2011), interactional justice has a significant positive influence on customer satisfaction within the online retail setting. Therefore, the following two hypotheses are derived:

H5: Interactional justice has a positive impact on satisfaction with recovery.

H6: Interactional justice has a positive impact on overall firm satisfaction.

2.2.4 Informational Justice

Informational justice includes justification (e.g., explaining the basis for decisions), truthfulness (e.g., an authority figure being candid and not engaging in deception), respect (e.g., being polite rather than rude), and propriety (e.g., refraining from improper remarks or prejudicial statements) (Colquitt 2001, p. 390). It focuses on the equity of the explanations and justifications offered about decisions, about the reason behind things (Ambrose, Hess and Ganesan 2007). Colquitt (2001) has suggested that a four-dimensional justice model (distributive, procedural, interactional and informational justice) with informational justice added as a distinct dimension provides a better fit in than a three-dimensional one (distributive, procedural and interactional justice). A customer's perception of information justice is threatened by the lack of explanations provided to people about why procedures were used in a certain way or why outcomes were distributed in a certain manner (Greenberg, 1993; Colquitt, 2001; Colquitt et al., 2001; Nikbin, Ismail and Marimuthu 2012). By reducing secrecy and dishonesty, informational justice demonstrates the trustworthiness towards an organization or people, which can increase collective esteem and status judgment (Colquitt 2001).

The distributive, procedural and interactional justice dimensions have been investigated considerably by service researchers, but informational justice has only received attention recently. There are only a few studies on complaint handling

informational justice. According to Mattila and Cranage's (2005) study conducted in a restaurant setting, offering service information relevant to a decision enhances consumers' perception of informational fairness regardless of the outcome of the service recovery process and it also increases customer's self-responsibility perceptions while simultaneously decreasing the possibility of blaming the service provider. Varela-Neira, Va´zquez-Casielles and Iglesias (2009) examined complaint handling in the financial sector and found that informational justice significantly influences consumer satisfaction. Though few studies have tested the effect of informational justice on overall firm satisfaction, especially in an e-company, it is reasonable to assume that informational justice affects overall firm satisfaction as well. Hence, the following two hypotheses are made:

H7: Informational justice has a positive impact on satisfaction with recovery.

H8: Informational justice has a positive impact on overall firm satisfaction.

2.2.5 Interaction among Justice Dimensions

When people evaluate the justice variables independently, there are interactions significantly affecting the relationship between the justice components and satisfaction variables (Tax, Brown and Chandrashekaran 1998, p.63). A considerable number of studies have provided theoretical and empirical supports for the interactions among justice dimensions (Blodgett, Hill and Tax 1997; Sparks and McColl-Kennedy 2001; Maxham and Netemeyer 2002; Wirtz and Mattila 2004; Mattila and Cranage 2005). Most extant literature has investigated the two-way and three-way interactions between distributive, procedural and interactional justice. There are different findings in terms of which combinations of justice dimensions produce significant interaction effects on consumer recovery evaluation.

Blodgett, Hill and Tax (1997) argued that interactional and distributive justice have an interaction effect on recovery evaluation, which means a higher level of interactional justice can compensate for a lower level of distributive justice, but all the other possible two-way and three-way interactions are not significant. However, there are some different findings in the work of Tax, Brown and Chandrashekaran (1998). They found that the two-way interaction between procedural-interactional justice and the interaction between procedural-distributive justice are important in recovery evaluation. Latest works incorporating informational justice in justice framework reports that of all the four justice dimensions, the procedural and informational justice combination has the greatest direct effect on customer satisfaction with complaint handling (Mattila and Cranage 2005).

Research conducted in online retailing has reported conflicting findings as well regarding the interactions among justice dimensions. Lin, Wang and Chang (2011) showed that both the interaction between distributive and procedural justice and the interaction between distributive and interactional justice have positive significant effects on complaint handling assessment. However, according to Fan, Wu and Wu (2010), the interaction between distributive and procedural justice is not significant. Therefore, it is difficult to predict which combinations of justice components produce interactions upon customer's satisfactions. However, the above arguments from other research lead to a prediction that there is a possible overall interaction among four justice factors on service recovery satisfaction and overall satisfaction with organization.

H9: There is an overall interaction effect among the four justice components affecting satisfaction with recovery.

H10: There is an overall interaction effect among the four justice components affecting overall firm satisfaction.

2.3 Satisfaction Constructs and Loyalty Behaviors

2.3.1 Satisfaction with Recovery and Overall Firm Satisfaction

Satisfaction with recovery refers to the degree to which a customer is satisfied with a service firm's transaction-specific service recovery effort following a service failure (Boshoff 1999). Satisfaction with complaint handling can be a mediator that links perceptions of the fairness dimensions to post-recovery attitudes and customer loyalty behaviors (Spreng 1995; Zeithaml, Berry and Parasuraman 1996; Tax, Brown and Chandrashekaran 1998; Miller, Craighead and Karwan 2000; Wirtz and Mattila 2004). Maxham and Netemeyer (2002) report that satisfaction with recovery is a strong predictor of the likelihood of spreading word-of-mouth, which is consistent with the findings of other research (Spreng, Harrell and Mackoy 1995; Blodgett, Hill and Tax 1997). It is proven that satisfaction with recovery does not only improve the evaluation of a service experience (Bitner, Booms, and Tetreault 1990; Estelami 2000), but also enhances customer post-recovery commitment to a long-term relationship with the organization by increasing customer retention (Miller, Craighead and Karwan 2000).

Overall firm satisfaction refers to a customer's cumulative satisfaction with all prior exchanges as well as the satisfaction received from the most recent exchange (Maxham and Netemeyer 2002). Many service recovery studies focus on satisfaction with recovery, exploring its antecedents and impacts on post-recovery attitudes and behaviors. Overall firm satisfaction is included in the framework of this master thesis for several reasons. First, according to a number of studies, service recovery affects repatronage intention via cumulative satisfaction as well as transaction-specific satisfaction (Kelly and Davis 1994; Smith and Bolton 1998; 2002; Maxham 2001; Maxham and Netemeyer 2002). Second, it is found that satisfaction with recovery and overall firm satisfaction differently affect loyalty behaviors, negative word of mouth

and repurchase intents as Maxham and Netemeyer (2002) demonstrate that overall firm satisfaction has a stronger influence on purchase intent than satisfaction with recovery. How satisfaction constructs affect customer relationships in online business has not been examined thoroughly. It is worth to explore whether the relations existing in traditional services still hold in e-commerce.

2.3.2 Negative Word-of-Mouth and Repurchase Intents

Consumers who are dissatisfied with the retailer's response engage in twice as much word-of-mouth behavior than do consumers who are satisfied with the retailer's response (TARP 1981; Blodgett, Granbois and Walters 1993). A number of studies have shown that compared to positive word-of-mouth, negative word-of-mouth is more influential in determining the word-of-mouth receiver's attitudes and purchase intention (Herr, Kardes and Kim 1991; Holloway, Wang and Parish 2005). How to minimize negative word-of-mouth from customers is highly important for online business since information on internet is easily accessible to people around the world. In an online retailing context, word-of-mouth spreads much faster than in traditional retailing (Reichheld and Schefter 2000), for instance, via customer feedback systems and internet complaint forums. The damage of dissatisfaction and negative word-of-mouth is particularly evident for online business (Harrison-Walker 2001).

Previous research has established the role of complaint handling satisfaction as the antecedent of word-of-mouth and repurchase intents. Tax and Chandrashekaran (1992) suggest that consumers who believe that their complaints are handled poorly have higher negative word-of-mouth intention and lower repurchase intention. Goodwin and Ross (1990) reported that complaints who were satisfied with the complaint handling would be willing to repatronize the service provider. Maxham and

Netemeyer (2002) indicate that overall firm satisfaction has a strong influence on purchase intent in banking, home construction and sales service.

Similarly, negative word-of-mouth and repurchase intents of online purchasers are found to be determined by post-recovery satisfaction. Ineffective recovery efforts lead to lower repatronage intention and more negative word-of-mouth (Holloway and Beatty 2003). Holloway, Wang and Parish (2005) support this argument and go further verifying that the relationship between post-recovery satisfaction and loyalty attitude and behaviors is moderated by cumulative online purchase experience. Thus, extending the above argument to the framework of this paper, the following four hypotheses are proposed:

H11: Satisfaction with recovery has a negative effect on negative word-of-mouth intent.

H12: Satisfaction with recovery has a positive effect on repurchase intent.

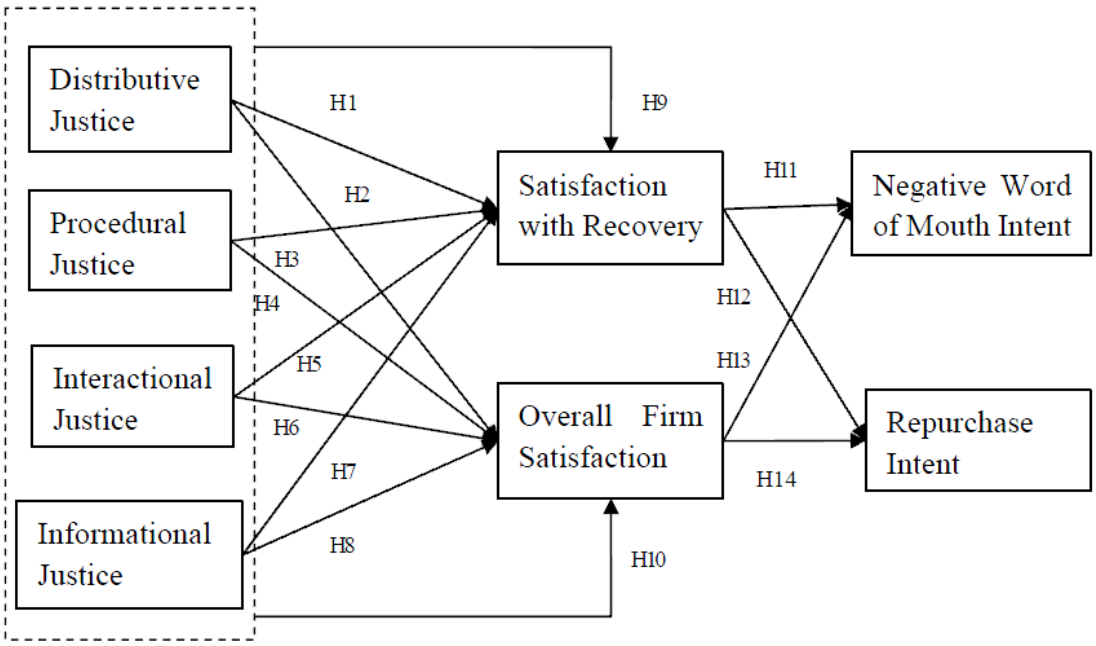
H13: Overall firm satisfaction has a negative effect on negative word-of-mouth intent.

H14: Overall firm satisfaction has a positive effect on repurchase intent.

2.4 Conceptual Framework

Based on the existing service recovery literature, the conceptual framework investigated in this master thesis is based on a four-factor justice model which includes distributive, procedural, interactional and informational justice. There are mainly two parts in the conceptual model. The first part describes the relationship between justice components and consumer's satisfaction with recovery and overall satisfaction with organization. The second part examines the impacts of consumers' satisfaction judgment on the customer relationship.

Figure 2. 1 Conceptual Framework



Note: The conceptual framework is adapted from Maxham and Netemeyer (2002).

Table 2. 1 Summary of the Hypotheses

Hypotheses	**Description**	
H1	Distributive justice → satisfaction with recovery	+
H2	Distributive justice → overall firm satisfaction	+
H3	Procedural justice → satisfaction with recovery	+
H4	Procedural justice → overall firm satisfaction	+
H5	Interactional justice →satisfaction with recovery	+
H6	Interactional justice → overall firm satisfaction	+
H7	Informational justice → satisfaction with recovery	+
H8	Informational justice → overall firm satisfaction	+
H9	Overall interaction → satisfaction with recovery	+
H10	Overall interaction → overall firm satisfaction	+
H11	Satisfaction with recovery → negative WOM intent	−

H12	Satisfaction with recovery → repurchase intent	+
H13	Overall firm satisfaction → negative WOM	−
H14	Overall firm satisfaction → repurchase intent	+

Note: "−" in H11 and H13 indicate negative effects. "+" in all the other hypotheses suggest positive effects.

3. METHODOLOGY

3.1 Experimental Design and Procedure

To test the hypotheses a mixed-design experiment approach is applied. This approach is chosen over the designs of retrospective critical incident and retrospective self-report survey for the following reasons. First, the use of an experimental scenario reduces the biases resulting from memory lapses, rationalization tendency and consistency factors which are involved in retrospective self-report design (Smith, Bolton and Wagner 1999). Second, it allows for a systematic investigation of a more representative and inclusive set of service failure and recovery encounters than with retrospective survey approaches (Smith and Bolton 2002). Third, an experimental scenario is a quite cost- and time-effective way for a management master student to conduct a master thesis study.

There are 24 scenarios created in the experiment, which are listed in Appendix 1. A 3×2×2×2 mixed between-within subjects experiment was used with three levels of distributive justice, two levels of procedural justice, two levels of interactional and two levels of informational justice manipulated. The scenarios describe a complaint-handling experience at JingDong. The scenario describes a situation in which a headset bought three months ago had some problem, and then the customer contacted the customer service center to solve it. To make the scenarios more vivid and realistic, JingDong is chosen as the online company for this study because it is the largest online direct sales company in China and many people have shopping experience with this company. SONY is chosen as the brand of the focal product considering that SONY is a well-known brand for young and old, male and female. The headset, which is one of the most frequently bought products at JingDong, is sold

at a moderate price and used by both male and female. Therefore, it increases the credibility of the scenarios.

In the experiment, distributive, procedural, interactional and informational justice are operationalized respectively by four recovery attributes: compensation, response speed, respect/politeness and explanation. Scenarios were manipulated to produce high, medium (only for distributive justice), and low levels of distributive, procedural, interactional, and informational justice in 24 combinations of situations. The manipulations were achieved by changing the experimental treatment as follows:

Distributive justice

- High: JingDong offers to give a refund or an exchange for the headset.
- Medium: JingDong offers a 50% discount when you buy a similar headset at the webstore.
- Low: JingDong offers a 15% discount when you buy a similar headset at the webstore.

Procedural justice

- High: Customer service employee replies instantly.
- Low: Customer service employee replies one week later.

Interactional justice

- High: The employee answers questions very politely and patiently.
- Low: The employee answers questions very rudely and irritated.

Informational justice

- High: The customer service employee gives an explanation of the problem to the customer and is candid in explaining it.
- Low: The customer service employee does not give an explanation of the problem.

The questionnaire for each respondent contains three different scenarios. Subjects were first asked to read an instruction of the experiment and asked to imagine that the

situation happened to them. Afterwards the first scenario was presented, followed by questions concerning the respondent's justice perception, satisfaction with recovery, overall firm satisfaction and whether he/she is willing to repurchase at this online store and how likely he/she is to spread negative word-of-mouth. After rating the questions, the respondent would see a second scenario (varied at the distributive justice level, but keeping at the same procedural, interactional and informational justice levels) followed with same questions, and then a third one (varied at the distributive justice level, but keeping at the same procedural, interactional and informational justice levels) followed with same questions. The last part of the questionnaire was about personal information. An example scenario and questionnaire is shown in Appendix 2.

3.2 Measurement

A multiple item scale was used to measure each construct. Except for the demographic information of respondents, all variables were measured on 7-point Likert scales. The measurement scales were adapted from other researches to better fit the e-commerce setting of this paper. The scales used for measuring distributive, procedural and interactional justice constructs were adapted from Blodgett, Hill and Tax (1997), three items for distributive justice, two items for procedural justice and two items for interactional justice. Informational justice was measured with two items adapted from Colquitt (2001). All the items for measuring the four justice components were anchored with "strongly disagree/neutral/strongly agree" from 1 to 7(1="strongly disagree", 7="strongly agree").

Satisfaction with recovery and overall firm satisfaction were measured with three items, which were adapted from Maxham and Netemeyer (2002). All the items of the two satisfaction constructs were anchored with "strongly disagree/neutral/strongly

agree" from 1 to 7, except one item of overall firm satisfaction was anchored with "very unsatisfied/neutral/very satisfied" from 1 to 7. Negative word-of-mouth intent and repurchase intent measurement were adapted from Blodgett, Hill and Tax (1997). Most of the items were anchored with "strongly disagree/neutral/strongly agree" from 1 to 7, two items with "very unlikely/neutral/very likely" from 1 to 7. The details can be found in Appendix 3.

The internal consistency of the items is verified by Cronbach Alpha, which measures the degree of which the items consistently measure a latent construct. The values of Cronbach's alpha range from 0.833 to 0.947, which are above the cut-off point 0.70 (Sekaran 2003). Thus, all scales show a good reliability. The results are shown in Table 3.2. A confirmatory factor analysis was conducted to test the construct validity. KMO was 0.92 and Bartlett's test of sphericity was significant at the 0.0001 level. The results are shown in Table 3.2. Convergent validity would be established if the standard loading of each item is greater than the recommended threshold 0.60 and average variance extracted (AVE) greater than the recommended threshold 0.50 (Fornell and Larker, 1981; Fan, Wu and Wu 2010). The factor loadings of each construct of this research are above 0.6 and AVE of each construct above 0.5. Discriminant validity is established if correlations among all variables demonstrate confidence intervals that do not include the unity value and the correlations of a given construct with any other construct do not exceed the square root of AVE of this given construct (Varela-Neira, Va´zquez-Casielles and Iglesias 2009; Fan, Wu and Wu 2010). The results in Table 3.3 reveal that the square root of AVE of each construct (data in shaded area) is greater than the absolute value of its correlations with any other variables. Thus, construct validity is supported.

Table 3. 1 Summary for Each Construct

Variables	Standard Loading	CR	AVE	Mean	Std. Deviation	Cronbach Alphas
DJ		0.86	0.68	4.11	0.82	0.866
Item 1	0.85					
Item 2	0.67					
Item3	0.84					
PJ		0.76	0.62	3.89	1.36	0.853
Item 1	0.93					
Item 2	0.62					
INTJ		0.76	0.61	4.11	1.64	0.865
Item 1	0.82					
Item 2	0.74					
INFJ		0.71	0.55	4.16	1.34	0.833
Item 1	0.78					
Item 2	0.70					
SWR		0.84	0.64	3.97	1.66	0.947
Item 1	0.74					
Item 2	0.84					
Item 3	0.82					
OFS		0.81	0.59	3.91	1.51	0.895
Item 1	0.80					
Item 2	0.78					
Item 3	0.73					
RPI		0.77	0.53	3.84	1.63	0.935
Item 1	0.81					
Item 2	0.71					
Item 3	0.66					
NWOM		0.85	0.65	4.10	1.42	0.867
Item 1	0.81					
Item 2	0.82					
Item 3	0.79					

Table 3. 2 Correlations among Variables and the Square Root of AVE of Each Construct

	DJ	PJ	INTJ	INFJ	SWR	OFS	RPI	NWM
DJ	0.822							
PJ	.37**	0.789						
INTJ	.40**	.38**	0.784					
INFJ	.45**	.34**	.60**	0.742				
SWR	.71**	.46**	.63**	.70**	0.798			
OFS	.61**	.35**	.61**	.63**	.792**	0.768		
RPI	.61**	.42**	.51**	.57**	.74**	.73**	0.729	
NWM	-.44**	-.32**	-.44**	-.35**	-.49**	-.37**	-.56**	0.804

Note: ** indicates correlation is significant at the 0.01 level (2-tailed).
Data in shaded area are the square roots of AVE of the constructs.

3.3 Sampling and Data Collection

The mixed-design experiment by conducting an online survey was adopted for this study. Convenience sampling was used since all the questionnaires were distributed via Chinese online social networks and instant message platform like QQ, Weibo and Weixin. The questionnaire was written in Chinese considering that some respondents may have difficulty reading English. The Survey was distributed by the author and a dozen of friends who send the questionnaires to their friends, relatives and colleagues after given instructions regarding the aim and procedure of the survey. Hence, a snowball sampling technique of data collection was used and it can be considered that each subject was randomly assigned to each set of questionnaires. All respondents are Chinese because this thesis is focus on Chinese online retailing complaint handling. The demographic characteristics of respondents are displayed in Table 3.1.

There are 24 scenarios in the experiment. The sample size for each scenario was determined according to Tabachnick and Fidell (2001) who argued that a sample size

of at least 20 in each cell for experimental design should ensure ‘robustness’. Hence, it was expected that each scenario has 20 responses. The subject was measured at one procedural, one interactional and one informational justice level, but was repeatedly measured at three distributive justice levels. Hence, each subject was asked to answer three questionnaire concerning three scenarios, which were varied by the level of compensation but manipulated only at one procedural, one interactional and one informational justice level. In the early days of data collection, the response rate was quite low. Many respondents could not open the questionnaire page because the Qualtrics link was blocked by firewall. Afterwards a Word file was used for the data collection if the respondent reported that he/she cannot open the link page. A total of 336 responses were collected, but only 181 were complete and could be used because many respondents gave up or dropped in halfway due to the very slow page display caused by network problems. As a result, it is difficult to count the exact response rate. Some scenarios get more responses than others. Considering that there might be bias introduced by large group number differences, some responses were dropped randomly to keep 24 scenarios having the same amount of cases, that is, the sample size of each scenario is 20. Hence, a total of 160 responses were finally used for study.

From Table 3.1 we can see that there are more female participants. 58.1% of respondents are female while 41.9% are male. The majority of participants are between 18 and 30 years old. The second largest group is between 30-40 years old. It is consistent with the reality that most of the online shoppers are young people. Students and employees are the major groups in this study. In addition, the results show that most participants have online purchase experience on JingDong, a real e-retailer mentioned in the questionnaire, which helps participants easily absorbed into the experiment of the research.

Table 3. 3 Demographic Characteristics of Respondents

Demographic Variable	Percentage Distribution
Gender	
Male	41.9%
Female	58.1%
Age	
Younger than 18 years old	0.625%
18-30 years old	76.875%
30-40 years old	21.25%
40-60 years old	1.25%
Older than 60 years old	0
Occupation	
Student	46.25%
Employee	36.25%
Employer	1.875%
Self-employed	6.875%
Unemployed	0
Retired	3.125%
Others	5.625%
Having Purchase Experience on JingDong	
Yes	74.4%
No	25.6%

Sample size: 160

3.4 Manipulation and Confounding Checks

To make sure that the four factors were manipulated successfully, four repeated measures ANOVA were performed with distributive, procedural, interactional and informational justice as dependent variable respectively. The value of the dependent variable was obtained by taking the average of the measurement items for each construct. The results (See Table 4.1) showed that participants perceived significant differences between low, medium and high distributive justice conditions ($M_{high\ DJ}$ =5.74, $M_{medium\ DJ}$ =3.72 and $M_{low\ DJ}$ =2.88, F=301.73, p<0.001). Pairwise comparison

between high and medium, high and low, medium and low distributive justice reported that the mean difference between each pair of distributive condition was significant at 0.01 level.

As it was expected, perceived procedural justice is also significantly different across two levels ($M_{high\ PJ}$ =4.81 and $M_{low\ PJ}$ =2.96, F=142.54, p<0.001). However, participants' perception of procedural justice was somewhat affected by the distributive justice level since partial η^2 of distributive justice is 0.206 in the ANOVA test with procedural justice as dependent variable. Hence, there was a mild confounding effect from distributive justice, which means participants who were exposed to high distributive justice condition gave higher rating to procedural justice than did participants in the low distributive justice condition.

Similarly, participants perceived a significant difference between the two interactional conditions ($M_{high\ INTJ}$ =5.38 and $M_{low\ INTJ}$ =2.85, F=281.0, p<0.001). Participants' perception of interactional justice was somewhat affected by the distributive and procedural justice levels. The total of partial η^2 of distributive justice (0.18) and procedural justice (0.10) is 0.28, much smaller than the effect size of interactional justice (0.649). Therefore, the confounding effects did not impair the validity of interpretation.

The manipulation of informational justice also produced significant difference across the two informational justice conditions ($M_{high\ INFJ}$ =4.61 and $M_{low\ INFJ}$ =3.71, F=67.72, p<0.001). The manipulation of distributive and interactional justice had mild confounding effects on informational justice. The effect sizes are 19.7% and 15% respectively. The total confounding effects 34.7% is smaller than the main effect of informational justice 36%. Besides, the interactions between distributive and interactional justice were not significant. Hence, the moderate confounding effects could be tolerated. Taken together, although there were some confounding effects on the manipulated factors, the four justice dimensions were manipulated as intended.

Table 3. 4 Manipulation and Confounding Checks

Variable	Type of Check	High	Medium	Low	F	P-value	Partial η^2
1. Dependent variable: Distributive Justice							
Distributive Justice	Manipulation	5.74 (0.89)	3.72 (1.41)	2.88 (1.25)	301.7	.000	66.5%
Procedural Justice	Confounding	4.22 (1.22)	__	4.01 (1.28)	2.72	0.10	1.8%
Interactional Justice	Confounding	4.30 (1.30)	__	3.92 (1.15)	8.88	0.003	5.5%
Informational Justice	Confounding	4.036 (1.31)	__	4.19 (1.52)	1.47	0.23	1%
2. Dependent variable: Procedural Justice							
Distributive Justice	Confounding	4.38 (1.62)	3.70 (1.21)	3.59 (1.56)	38.22	.000	20.6%
Procedural Justice	Manipulation	4.81 (1.35)	__	2.96 (1.27)	142.54	.000	48.4%
Interactional Justice	Confounding	4.10 (1.37)	__	3.68 (1.32)	3.77	0.05	4.5%
Informational Justice	Confounding	3.88 (1.35)	__	3.90 (1.37)	0.02	0.90	0%
3. Dependent variable: Interactional Justice							
Distributive Justice	Confounding	4.51 (1.66)	4.01 (1.69)	3.81 (1.96)	33.45	.000	18%
Procedural Justice	Confounding	4.42 (1.73)	__	3.80 (1.67)	5.92	0.02	10%
Interactional Justice	Manipulation	5.38 (0.79)	__	2.85 (1.23)	281.0	.000	64.9%
Informational Justice	Confounding	4.13 (1.74)	__	4.09 (1.54)	0.08	0.77	0.1%
4. Dependent variable: Informational Justice							
Distributive Justice	Confounding	4.70 (1.57)	3.95 (1.46)	3.83 (1.52)	32.23	.000	19.7%
Procedural Justice	Confounding	4.32 (1.13)	__	4.00 (1.50)	2.21	0.14	1.4%
Interactional Justice	Confounding	4.73 (1.23)	__	3.59 (1.19)	26.87	.000	15%
Informational Justice	Manipulation	4.61 (1.21)	__	3.71 (1.31)	67.72	.000	35.9%

Note: The format of the table is based on Blodgett, Hill and Tax (1997).

4. RESULTS

The relationships proposed in the conceptual framework and specified in the hypotheses are examined in this chapter. Data analyses consist of two parts, one part testing the effects of justice dimensions on satisfaction constructs, the other part testing the influence of consumers' satisfaction on repurchase intent and negative word of mouth. H1-H10 were tested by a three-way mixed MANOVA with both satisfaction with recovery and overall firm satisfaction as dependent variables, procedural, interaction and informational justice as fixed factors, distributive justice as the within-subjects factor. Those significant main effects and interactions are further examined in the univariate outcomes to check the effect of the independent variable against each dependent variable separately. In addition, significant interaction effects were followed up with simple effects tests to explore the nature of the interaction, because the effect of one independent variable depends on the level of the other independent variable (Field 2009). H11-H14 were tested by two linear regression models, negative word-of-mouth and repurchase intent as dependent variable each time with satisfaction with recovery and overall firm satisfaction as predictors.

4.1 MANOVA Test

The multivariate results shown in Table 4.1 indicate that distributive, procedural and interactional justice have significant main effects on satisfaction with recovery and overall firm satisfaction (F_{DJ}=107.13, $p<0.001$; F_{PJ}=5.56, $p<0.001$; F_{INTJ}=21.81, $p<0.001$). However, informational justice does not show significant influence on neither satisfaction with recovery nor overall firm satisfaction ($F=0.45$, $p=0.639$).

Therefore, H1, H2, H3, H4, H5 and H6 are supported. H7 and H8 are not supported. All of the two-way, three-way and four-way interactions are presented in Table 4.1. Of all the combinations of interactions there are only two two-way interactions significant. One is the interaction between distributive and informational justice (F=4.45, p=0.002, significant at 0.01 level). The other one is the interaction between distributive and interactional justice (F=2.42, p=0.05, significant at 0.10 level).

Table 4. 1 MANOVA Results

Main Effect & Interaction	**Dependent Variable**	**F**	**P-value**	**Partial η^2**
Main Effect				
Distributive Justice	SWR & OFS	F(4,149)=107.13	.000 ***	0.742
Procedural Justice	SWR & OFS	F(2,151)=5.56	.005**	0.069
Interactional Justice	SWR & OFS	F(2,151)=21.81	.000***	0.224
Informational Justice	SWR & OFS	F(2,151)=0.45	0.639	0.006
Interaction				
DJ×PJ	SWR & OFS	F(4,149)=1.21	0.31	0.031
DJ×INTJ	SWR & OFS	F(4,149)=2.42	0.05*	0.059
DJ×INFJ	SWR & OFS	F(4,149)=4.45	0.002**	0.107
DJ×PJ×INTJ	SWR & OFS	F(4,149)=0.29	0.883	0.008
DJ×PJ×INFJ	SWR & OFS	F(4,149)=0.75	0.561	0.02
DJ×INTJ×INFJ	SWR & OFS	F(4,149)=0.57	0.682	0.015
DJ×PJ×INTJ×INFJ	SWR & OFS	F(4,149)=0.34	0.853	0.009
PJ×INTJ	SWR & OFS	F(2,151)=0.64	0.527	0.008

PJ×INFJ	SWR & OFS	F(2,151)=0.36	0.674	0.005
INTJ×INFJ	SWR & OFS	F(2,151)=0.86	0.424	0.011
PJ×INTJ×INFJ	SWR & OFS	F(2,151)=0.05	0.949	0.002

Note: *** p<0.001; ** p<0.01; * p marginally significant at 0.05 level.

When performing MANOVA tests, we also need to check the univariate outcome which describes the effects of the independent variables against the dependent variable separately if we get a statistically significant test result (Mayers 2013, p.320). Therefore, those with significant main effects and interaction effects are given follow-up reports of univariate statistics in Table 4.2. Distributive justice has significant influences both on satisfaction with recovery (F=270.52, p<0.001) and overall firm satisfaction (F=89.304, p<0.001). It explains 64% of the variance of satisfaction with recovery and 37% of the variance of overall firm satisfaction. In contrast, procedural justice has a much smaller influences on satisfaction with recovery (F=10.35, p=0.002) and overall firm satisfaction (F=3.02, p=0.084) and it explains only 6.4% of the variance of satisfaction with recovery and 1.9% of the variance of overall firm satisfaction. Interactional justice has a moderate impact on satisfaction with recovery (F=38.76, p<0.001), explaining 20.3% of its variance, and on overall firm satisfaction (F=37.32, p<0.001), explaining 19.7% of its variance.

Table 4. 2 Univariate Results

Main Effect & Interaction	**Dependent Variable**	**F**	**P-value**	**Partial η^2**
Main Effect				
Distributive Justice	SWR	F(1.67,254)=270.52	.000***	0.640
Distributive Justice	OFS	F(2,304)=89.30	.000***	0.370
Procedural Justice	SWR	F(1,152)=10.35	.002**	0.064
Procedural Justice	OFS	F(1,152)=3.02	.084	0.019
Interactional Justice	SWR	F(1,152)=38.76	.000***	0.203

Interactional Justice	OFS	F(1,152)=37.32	.000***	0.197
Interaction				
DJ×INTJ	SWR	F(1.67,304)=4.79	.013*	0.031
DJ×INTJ	OFS	F(2,304)=2.80	.062	0.018
DJ×INFJ	SWR	F(1.67,304)=6.52	.002**	0.041
DJ×INFJ	OFS	F(2,304)=5.12	.006**	0.033

Notes: *** p<0.001; ** p<0.01; * p<0.05; Interactions with * or ** mark are further analyzed with simple effects test.

4.2 Interaction between Justice Dimensions

As discussed in the previous section, the interaction between distributive and interactional justice and the interaction between distributive and informational justice are significant in the MANOVA test. The univariate test results demonstrate that the distributive-interactional justice interaction is significant on satisfaction with recovery at 0.05 level (See Table 4.2, F=4.79, p=0.013), but not significant on overall firm satisfaction (F=2.80, P=0.062). It explains only 3.1% of the variance of satisfaction with recovery and 1.8% of the variance of overall firm satisfaction. Surprisingly, the distributive-informational justice interaction is significant on both satisfaction with recovery (F=6.52, p=0.002) and overall firm satisfaction (F=5.12, p=0.006) despite that the main effect of informational justice is not significant in the previous MANOVA test (See Table 4.1, F=0.45, p=0.639).

As Meyers, Gamst and Guarino (2006) suggest, if an interaction is significant, it means a different relationship is seen for different levels of the involved factor and the main effect of the factor cannot fully capture the nature of the relationship. Huck (2000) indicates there are three ways to gain insight into a statistically significant interaction: 1) to conduct simple (main) effects tests; 2) to perform a statistical comparison of cell means; 3) to investigate the graph of cell means. Therefore, this study illustrates the nature of the interaction from three perspectives as Huck (2000)

suggests. Simple effects tests in this study were performed by running syntax commands in SPSS. The interaction effects on satisfaction with recovery and overall firm satisfaction are explained separately in the following paragraphs.

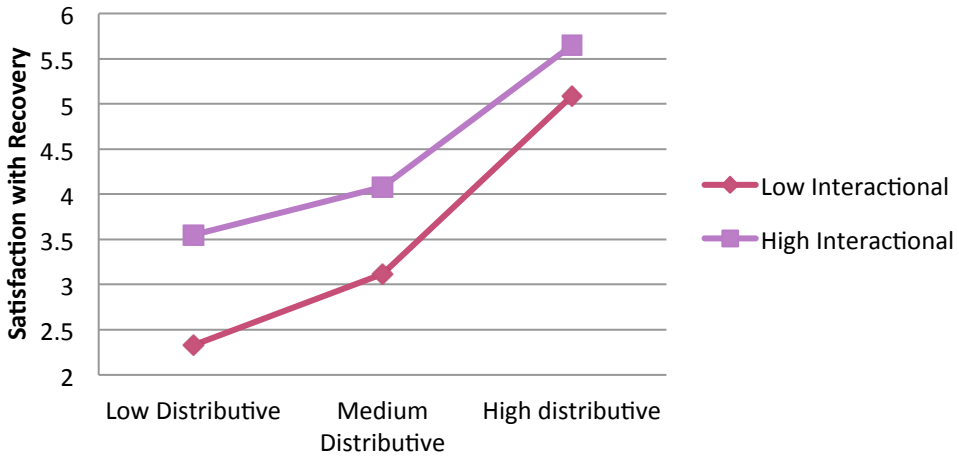
4.2.1 Interaction between Distributive and Interactional Justice on SWR

Based on the paired cell means in Table 4.3, a graph of the interaction between distributive and interactional justice on satisfaction with recovery is presented in Figure 4.1. It appears that as the compensation level increases, participants' satisfaction with recovery grows higher. However, the effect is greater following a high distributive justice (offering a refund or exchange). High interactional treatment has larger effect on satisfaction with recovery than low interactional treatment within the three distributive justice conditions. The effect is especially salient in the low distributive level.

Table 4. 3 Cell means of Distributive × Interactional Justice for SWR

Measure	INTJ level	DJ level	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
SWR	low INTJ-level	low	2.329	.129	2.075	2.584
		medium	3.117	.150	2.821	3.412
		high	5.088	.129	4.833	5.342
	high INTJ-level	low	3.550	.129	3.296	3.804
		medium	4.079	.150	3.783	4.375
		high	5.646	.129	5.391	5.901

Figure 4. 1 Two-way Interaction: Distributive × Interactional Justice for SWR



The above findings have statistic support in Table 4.4 which reveals that the simple effect of interactional justice is significant within each level of distributive justice condition ($F_{low\ DJ}$ = 44.948, p=.000, $F_{medium\ DJ}$ = 20.679, p=.000 and $F_{high\ DJ}$ = 9.368, p=0.003). It means that if a 15% discount is offered to a customer (low distributive justice), satisfaction with recovery is higher if the customer is treated politely and patiently than being treated rudely, which is also true in the 50% discount condition and offering a refund or exchange condition.

Table 4. 4 Univariate Tests of the Simple Effects of Interactional Justice for SWR

Measure	DJ		Sum of Squares	df	Mean Square	F	Sig.
SWR	Low	Contrast	59.617	1	59.617	44.948	.000***
		Error	201.606	152	1.326		
	Medium	Contrast	37.056	1	37.056	20.679	.000***
		Error	272.383	152	1.792		
	High	Contrast	12.469	1	12.469	9.368	.003**
		Error	202.322	152	1.331		

Notes: Each F tests the simple effects of interactional level within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

** p<0.001; ** p<0.01

Table 4.5 is an interpretation of the interaction from the view of distributive justice within each level of interactional justice. The significant results indicate that offering a 50% discount to customers boosts satisfaction with recovery higher than offering a 15% discount in both high and low interactional justice conditions; giving a refund or exchange works better than a 50% or 15% discount.

Table 4. 5 Pairwise Comparison of Distributive ×Interactional Justice for SWR

Measure	Interactional level	(I) distributive	(J) distributive	Mean Difference (I-J)	Std. Error	Sig.
SWR	low INTJ-level	1[a]	2	-.788	.114	.000***
			3[c]	-2.758	.168	.000***
		2[b]	3	-1.971	.169	.000***
	high INTJ-level	1	2	-.529	.114	.000***
			3	-2.096	.168	.000***
		2	3	-1.567	.169	.000***

Notes: 1. a: 1=low distributive justice; b: 2=medium distributive justice; c: 3=high distributive justice. *** $p<0.001$

4.2.2 Interaction between Distributive and Informational Justice on SWR

Figure 4.2 is the graphic representation of the cell means of the interaction in Table 4.6. It is shown in the graph that high informational justice does not necessarily lead to high satisfaction with recovery. In other words, not giving an explanation (low informational justice) produces higher score of satisfaction with recovery than giving an explanation (high informational justice) in the 15% discount (low distributive justice) condition. Whether giving an explanation or not does not show a salient different effect on satisfaction with recovery in the 50% discount (medium distributive justice) condition as the mean values of satisfaction with recovery in these two cases are very close (M=3.621 for medium DJ-high INFJ and M =3.575 for medium DJ-low INFJ). As we expect, in high distributive justice condition, high

informational justice does lead to higher satisfaction with recovery than low information justice.

Table 4. 6 Cell means of Distributive × Informational Justice for SWR

Measure	INFM level	DJ level	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
SWR	low INFJ-level	Low	3.038	.129	2.783	3.292
		Medium	3.575	.150	3.279	3.871
		High	5.083	.129	4.828	5.338
	high INFJ-level	Low	2.842	.129	2.587	3.096
		Medium	3.621	.150	3.325	3.917
		High	5.650	.129	5.395	5.905

Figure 4.1 Two-way Interaction: Distributive × Informational Justice for SWR

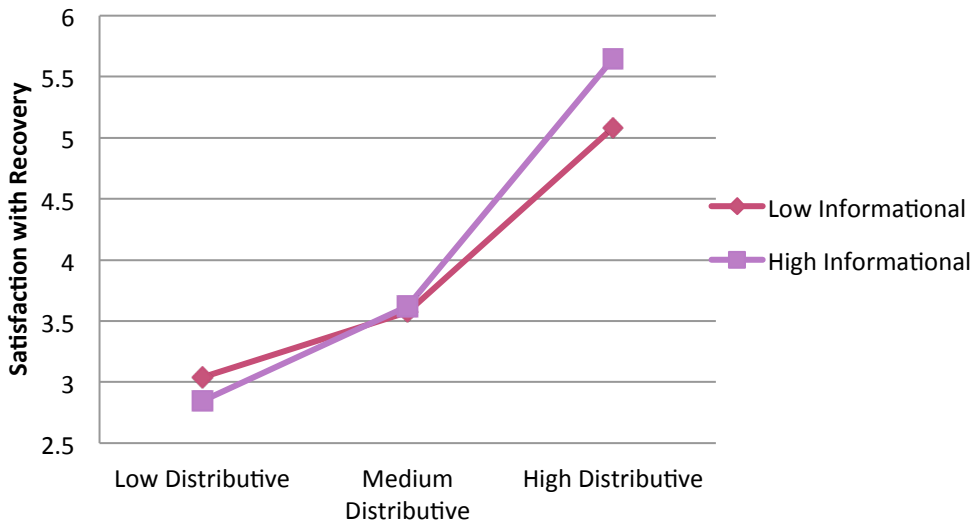


Table 4.7 provides statistic evidence for the findings in the previous paragraph. The contrast of informational justice level is neither significant in low distributive condition (F=1.157, p=0.284) nor in medium distributive condition (F=0.047, p=0.829). Informational justice level is only significant at the high distributive condition (F=9.650, p=0.002). It suggests that informational justice level only influences satisfaction with recovery in high distributive condition. That means giving

a 15% or 50% discount compensation, participants' satisfaction with recovery is not affected by providing an explanation of the service failure, but the impact of giving an explanation becomes salient in offering refund or exchange condition.

Table 4. 7 Univariate Tests of the Simple Effects of Informational Justice for SWR

Measure	DJ		Sum of Squares	df	Mean Square	F	Sig.
SWR	Low	Contrast	1.534	1	1.534	1.157	.284
		Error	201.606	152	1.326		
	Medium	Contrast	.084	1	.084	.047	.829
		Error	272.383	152	1.792		
	High	Contrast	12.844	1	12.844	9.650	.002**
		Error	202.322	152	1.331		

Note: ** p<0.01

Table 4. 8 Pairwise Comparison of Distributive ×Informational Justice on SWR

Measure	Informational level	(I) distributive	(J) distributive	Mean Difference (I-J)	Std. Error	Sig.
SWR	low INFM-level	1[a]	2	-.538	.114	.000***
			3[c]	-2.046	.168	.000***
		2[b]	3	-1.508	.169	.000***
	high INFM-level	1	2	-.779	.114	.000***
			3	-2.808	.168	.000***
		2	3	-2.029	.169	.000***

Notes: a: 1=low distributive justice; b: 2=medium distributive justice; c: 3=high distributive justice. *** p<0.001.

Another conclusion we can draw from the graph in Figure 4.2 and Table 4.8 is that in each informational justice level, offering high compensation has larger positive impact on satisfaction with recovery than medium or low compensation; offering medium compensation works better than low compensation since the pairwise

comparison of the distributive justice levels within each level of informational justice are all significant at 0.001 level.

4.2.3 Interaction between Distributive and Informational Justice on OFS

Similar to the finding of the interaction between distributive and informational justice on satisfaction with recovery, the graph in Figure 4.3 demonstrates that low informational justice produces higher score of overall firm satisfaction than high informational justice in low distributive justice level (M=3.779 for low DJ, low INFJ and M=3.608 for low DJ, high INFJ, see Table 4.9). However, the statistic results in Table 4.10 demonstrate that the informational justice levels do not influence overall firm satisfaction in low and medium distributive justice conditions since the simple effects test results are not significant (F=3.002, p=0.085 and F=1.266, p=0.262 respectively), but the informational justice levels influence overall firm satisfaction in high distributive justice condition (F=5.033, p=0.026, see Table 4.10).

Table 4. 9 Cell means of Distributive × Informational Justice for OFS

Measure	INFM level	DJ level	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
OFS	low INFJ-level	Low	3.779	.070	3.641	3.917
		Medium	3.813	.079	3.657	3.968
		High	4.383	.066	4.254	4.513
	high INFJ-level	Low	3.608	.070	3.471	3.746
		Medium	3.938	.079	3.782	4.093
		high	4.592	.066	4.462	4.721

Figure 4.2 Two-way Interaction: Distributive × Informational Justice for OFS

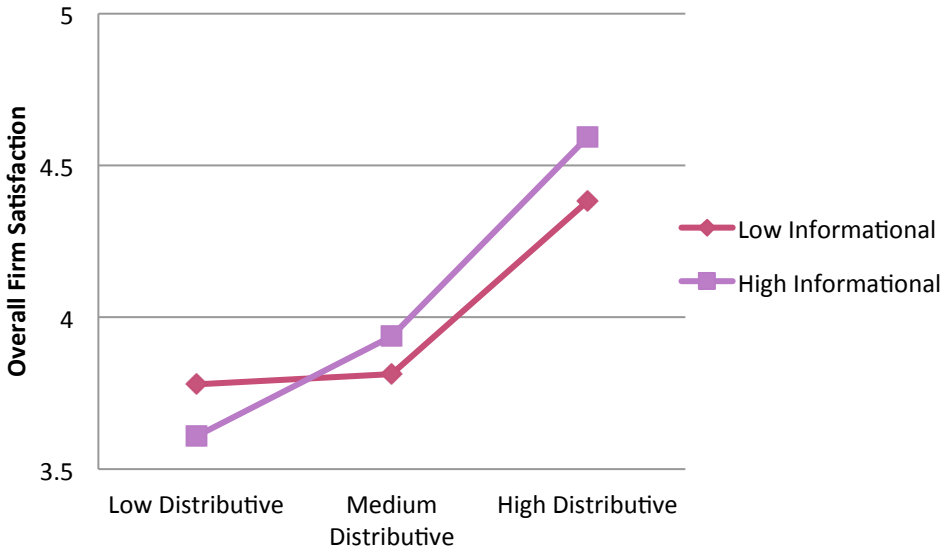


Table 4. 10 Univariate Tests of the Simple Effects of Informational Justice for OFS

Measure	DJ		Sum of Squares	df	Mean Square	F	Sig.
OFS	Low	Contrast	1.167	1	1.167	3.002	.085
		Error	59.106	152	.389		
	Medium	Contrast	.625	1	.625	1.266	.262
		Error	75.044	152	.494		
	High	Contrast	1.736	1	1.736	5.033	.026*
		Error	52.433	152	.345		

Note: * p<0.05.

Table 4. 11 Pairwise Comparison of Distributive ×Informational Justice for OFS

Measure	Informational level	(I) distributive	(J) distributive	Mean Difference (I-J)	Std. Error	Sig.
OFS	low INFM-level	1[a]	2	-.033	.080	.967
			3[c]	-.604	.090	.000***
		2[b]	3	-.571	.093	.000***
	high INFM-level	1	2	-.329	.080	.000***
			3	-.983	.090	.000***
		2	3	-.654	.093	.000***

Notes: a: 1=low distributive justice; b: 2=medium distributive justice; c: 3=high distributive justice. *** $p<0.001$.

Figure 4.2 also shows that the simple effect of low and medium distributive justice seems not significant for low informational justice. We can find statistically support in Table 4.11 that the contrast of medium and low distributive levels is not significant (p=0.967).

4.2.4 Summary of the Interactions

There are two two-way interactions affecting satisfaction with recovery, but their impacts are different. It is necessary to make a comparison to find out which justice combinations result in the largest effect and the smallest one. Taken together, the combination of low distributive with low interactional justice produces the smallest effect on satisfaction with recovery (M=2.239), followed by low distributive/high informational (M=2.842), while the combination of high distributive with high informational justice has the largest effect on satisfaction with recovery (M=5.650).

Surprisingly, the worst case for overall firm satisfaction is not the combination of low distributive with low interactional justice, but of low distributive with high informational justice. In other words, in low distributive condition, offering an explanation does not help improve customer's overall firm satisfaction, but make it worse (M=3.779 for low distributive/low informational, M=3.608 for low distributive/high informational).

The results also show that the effects of the distributive justice levels on two satisfactions from large to small, as expected, are offering a refund or exchange, giving a 50% discount, offering a 15% discount. In the low and medium distributive justice levels, treating customers in a respectful and patient manner has the highest effect on satisfaction with recovery ($M_{\text{low DJ, high INTJ}}$ =3.550, $M_{\text{medium DJ, high INTJ}}$

=4.079) while in high distributive justice condition, giving an explanation results in higher satisfaction with recovery than treating customer respectfully and patiently (M=5.650 and M=5.646 respectively).

4.3 Regression Analysis of Repurchase Intent and Negative WOM on Satisfaction Constructs

In this section the relationships proposed in the latter part of the conceptual model are reinvestigated. Two linear regression models were used to test H11and H13, H12 and H14 respectively, which posit that satisfaction with recovery and overall firm satisfaction have a positive impact on repurchase intent and a negative impact on negative word-of-mouth. All the results can be found in Table 4.7. Both of regression models are significant (adjusted R^2=0.657, F=460.6, p<0.001 and adjusted R^2=0.386, F=151.77, p<0.0001 respectively).

Table 4. 12 Regression Analysis of Repurchase Intent and Negative WOM

Dependent variable	**Independent variable**	**β**	**Std. Error**	**t-value**	**Sig.**
Repurchase Intent R^2(adjusted)=0.657 F=460.60 P=.000	Satisfaction with recovery	.33	.057	5.74	.000***
	Overall firm satisfaction	.53	.063	8.46	.000***
Negative WOM R^2(adjusted)=0.386 F=151.77 P=.000	Satisfaction with recovery	－.13	.067	－2.00	.046*
	Overall firm satisfaction	－.45	.074	－6.01	.000***

Note: *** p<0.001; * p<0.05

As expected, satisfaction with recovery and overall firm satisfaction are strong predictors of repurchase intent (t=5.74, p<0.001 and t=8.46, p<0.001 respectively). Hence, H11 and H13 are supported. However, the two satisfaction constructs exert

unequal influences on the dependent variable. Overall firm satisfaction is a better predictor than satisfaction with recovery. This is consistent with the findings of other research (Maxham and Netemeyer 2002). In the model for negative word-of-mouth, the negative coefficients indicate negative influences as hypothesized and significant p-values suggest that H12 and H14 are supported as well. Overall firm satisfaction is still a stronger predictor of negative word-of-mouth than satisfaction with recovery, which means it plays a more importance role in preventing negative words than satisfaction with recovery (β_{SWR}=−0.13, β_{OFS}=−0.45, $|\beta_{OFS}| > |\beta_{SWR}|$).

4.4 Summary of Hypotheses Test

The hypotheses test results are summarized in the following table. Further discussion of the findings is presented in the next chapters.

Table 4. 13 Summary of Hypotheses Test

Hypotheses	**Description**	**Supported**	**Rejected**
H1	Distributive justice → satisfaction with recovery ＋	✓	
H2	Distributive justice → overall firm satisfaction ＋	✓	
H3	Procedural justice → satisfaction with recovery ＋	✓	
H4	Procedural justice → overall firm satisfaction ＋		✓
H5	Interactional justice →satisfaction with recovery ＋	✓	
H6	Interactional justice → overall firm satisfaction ＋	✓	
H7	Informational justice → satisfaction with		✓

	recovery ＋		
H8	Informational justice → overall firm satisfaction ＋		✓
H9	Overall interaction → satisfaction with recovery ＋ (DJ × INTJ)	✓	
H10	Overall interaction → overall firm satisfaction ＋ (DJ × INTJ and DJ × INFJ)	✓	
H11	Satisfaction with recovery → negative WOM intent －	✓	
H12	Satisfaction with recovery → repurchase intent ＋	✓	
H13	Overall firm satisfaction → negative WOM －	✓	
H14	Overall firm satisfaction → repurchase intent ＋	✓	

Note: ＋ indicates positive relation; － indicates negative relation.

5. DISCUSSION

The purpose of this master thesis is to investigate how the four justice dimensions affect customer satisfaction with recovery and overall firm satisfaction and sequentially their impact on the customer relationship. The results from an experimental study not only support arguments of previous studies on complaint handling and service recovery, but also present a number of different findings which have implications for online consumer complaint handling and customer relationship management.

Of the four justice dimensions, distributive, procedural and interactional justice are strong predictors of satisfaction with recovery. This is consistent with the study of Lin, Wang and Chang (2011) which investigated consumer responses to online service recovery remedy as well. There are only two justice factors, distributive and interactional, which have a significant positive influence on overall firm satisfaction. Procedural justice is only related to satisfaction with recovery, which is contrary to the findings of Maxham and Netemeyer (2002) who reported that procedural justice was significant on overall firm satisfaction rather than satisfaction with recovery, based on a survey in banking and home service. In addition, the results of this master thesis show that informational justice did not have a significant main effect on satisfaction constructs, but it affects satisfaction constructs significantly in interaction with distributive justice. This is inconsistent with the results of Mattila and Cranage (2005) and Varela-Neira, Va´zquez-Casielles and Iglesias (2009) which demostrated that all four justice dimensions are important factors in forming post-recovery satisfaction judgment. One possible explanation is that previous studies were conducted in brick and mortar business, whereas this master thesis is centered on e-business where consumers may have different expectations of quality service and

remedies. On the one hand, online consumers expect that service providers supply accurate and adequate information during the service process (Zeithaml, Parasuraman and Malhotra 2002). Therefore, high informational treatment does not have great influence on consumers' satisfaction. On the other hand, providing a reasonable explanation combined with compensation can ease consumers' anger in post-complaint recovery process, as a result, increase their satisfaction.

There are controversial reports with regard to which justice facet is the most important one. Some studies argue that interactional justice is the most influential one in forming satisfaction judgments (Blodgett, Hill and Tax 1997). The results reported in this master thesis are congruent with Smith, Bolton and Wagner (1999) and Mattila (2001) who assert that distributive justice has the greatest impact on service recovery management. The explanation may lie in the fact that in an e-business environment consumers and suppliers have much fewer interactions than in a traditional business environment. Hence, online consumers care more about the outcome they receive (distributive fairness). Finally, this study found that justice dimensions were more strongly related to satisfaction with recovery rather than overall firm satisfaction. In contrast, Maxham and Netemeyer (2002) found the opposite result in an offline setting. This may reveal that online consumers are more emphasizing individual purchase experiences rather than the overall performances of the e-retailer. If consumers have an unpleasant purchasing experience, they will switch to other retailers easily.

The two-way interactions found in this study suggest that the way consumers assess complaint handling is complex. There might be several possibilities to achieve the same effects of service recovery. The significant interaction between distributive and interactional justice is consistent with previous studies in the tradition service setting (Tax, Brown and Chandrashekaran 1998; Blodgett, Hill and Tax 1997) as well as in the online business environment (Lin, Wand and Chang 2011). Since most

extant studies do not incorporate the informational justice into their models (informational justice is advocated to be incorporated into the justice concept as a distinct dimension just in 2001 by Colquitt), the author has not found a study reporting a significant interaction between distributive and informational justice in the online setting till now (Maybe there are such kind of finding in some report, just because the author's knowledge is limited).

As reported in Chapter 4, the interaction between distributive and interactional justice significantly affects satisfaction with recovery and the interaction between distributive and informational justice affects both satisfactions. Offering a refund or exchange combined with providing a sound explanation produces largest effect on satisfaction with recovery and overall firm satisfaction. If customers receive a 15% discount as compensation, which is conducted in an impatient and rude manner, consumers have the lowest satisfaction with recovery compared with other recovery options. One interesting finding of this master thesis is that if customers are offered a 15% discount (low distributive treatment), giving an explanation in a candid way can worsen the situation regarding overall firm satisfaction. One possible explanation is that customers have already been unhappy with the service failure as well as a low discount as compensation. Offering an explanation makes the customer think that the organization wants to shift the responsibility for service failure. Consequently, the customer becomes even less satisfied with the firm. If the online retailer wants to recover customers' overall firm satisfaction, offering a refund or exchange combined with explanation in a candid way works better than other recovery combinations.

When the organization offers a 50% discount to customers, treating customers in a respectful and patient manner has the highest effect on both satisfaction with recovery and overall firm satisfaction. If the organization's policy is offering a refund or exchange for service recovery, it is recommended to provide a sound explanation to

the customer because high distributive justice combined with high information treatment produces the largest effect on two satisfactions.

Subsequently, the impact of complain handling satisfaction on the consumer relationship are examined. Both satisfaction with recovery and overall firm satisfaction are significantly and positively related to repurchase intent, and negatively related to negative word-of-mouth. The results suggest that consumers who are satisfied are more likely to repatronage the store and less likely to spread negative words to others. Besides, overall firm satisfaction seems to be more influential than satisfaction with recovery on both repurchase intent and negative word-of-mouth.

6. MANAGERIAL IMPLICATIONS

How to build loyalty and retain customers for online business, especially after a service failure, is of great importance. The results suggest that online firms need to pay attention to the four facets of justice dimensions when dealing with consumer complaints. However, the magnitude of the four justice dimensions is not the same. In this study, distributive justice is found of primary importance, which confirms the findings of Tax, Brown and Chandrashekaran (1998) who asserted that in the case of service failure with no resolution, respondents believed that they were dealt with unfairly. Online firms need to reassess and design a compensation policy that is well balanced in terms of costs and consumer satisfaction. One point to emphasize here is to keep in mind the synthetic effects of the compensation combined with courtesy and respectful treatment or compensation with explanation. Customer satisfaction with recovery is not only based on how much compensation they receive, but also how they are treated in the process. Offering refund or exchange combined with giving a sound explanation has the largest effect on satisfaction with recovery and overall firm satisfaction. If the organization offers a 50% discount, treating customers in a respectful and patient manner works better than other recovery options. Management should try to avoid the low distributive/low interactional and low distributive/high informational recovery efforts which would lead to loss of customers because consumers have the lowest level of satisfaction. There is one point to be noted that offering a compensation combined with a sound explanation producing the highest effect compared to other justice combination, but it does not mean that it is a universal policy which works well in all situations. The recovery option should also be based on firm's policy, consumers' needs and the unique characteristics of each complaint incident (Mattila 2001).

How successfully the recovery strategies are, to a great extent, depends on employee's or customer service representatives' attitude and behaviors. Therefore, training frontline employees who have direct contacts with customers is crucial. Recovery skills such as how to react properly and solving customers' problems in a polite and courteously manner, and providing explanation in a pleasant way in which consumers are willing to accept should be stressed.

Furthermore, this paper found that overall firm satisfaction has stronger influences on repurchase intent and negative word-of-mouth, than satisfaction with recovery. It stresses the importance of boosting consumers' overall satisfaction. Hence, e-retailers should try best to do well in every single service to gain high cumulative and overall satisfaction in the long run, rather than put more resources and efforts to achieve excellent service recovery.

7. LIMITATION AND FUTURE RESEARCH

Though there are some interesting findings in this study, several limitations should be noted. First, the study reported in this master thesis used a mixed design experiment. The application of within subject design may introduce order and carryover effects into the data. As a result, data accuracy might be affected. Each subject answered three questionnaires which were ordered from lowest distribute level to highest. Respondents may intentionally give high score for the third questionnaire because of comparison with the previous two. There is another possibility that the results of the third questionnaire (high distributive scenario) may not be as reliable as the first one (low distributive scenario). When participants answered the third one, they had been tired of answering so many questions, so they just gave a rating arbitrarily. Second, all scenarios are imaginary. Despite that the manipulation check demonstrated that subjects were well aware of the differences between different levels. Some participants may doubt its credibility and cannot put themselves into the scenario like a real complaint experience. Third, there is some degree of confounding effects between justice dimensions, the results should be interpreted with caution.

There are several possibilities for future research. As it has been discussed in the previous chapters, overall firm satisfaction plays a very important role in customer retention. How to increase customer's overall firm satisfaction for online firms is worth of investigation. The survey was conducted on electronic products in online retailing. It is possible that the findings are different if it is conducted on other services like clothing and banking service. Online consumers' characteristics such as gender can also be considered in analyzing online service failure and recovery.

8. REFERENCES

Adams, J. Stacy. "Inequity in social exchange." *Advances in experimental social psychology* Vol. 2, New York: Academic Press (1965): 267-299

Ambrose, Maureen, Ronald L. Hess, and Shankar Ganesan. "The relationship between justice and attitudes: An examination of justice effects on event and system-related attitudes." *Organizational Behavior and Human Decision Processes* 103.1 (2007): 21-36.

Andreassen, Tor Wallin. "Antecedents to satisfaction with service recovery."*European Journal of Marketing* 34.1/2 (2000): 156-175.

Barwise, Patrick, Anita Elberse, and Kathy Hammond. *Marketing and the internet: a research review*. London Business School, 2002: 136-137.

Bies, Robert J., and Debra L. Shapiro. "Interactional fairness judgments: The influence of causal accounts." *Social Justice Research* 1.2 (1987): 199-218.

Bies, Robert J., and Joseph S. Moag. "Interactional justice: Communication criteria of fairness." *Research on negotiation in organizations* 1.1 (1986): 43-55.

Bitner, Mary Jo, Bernard H. Booms, and Mary Stanfield Tetreault. "The service encounter: Diagnosing favorable and unfavorable incidents." *Journal of marketing* 54.1 (1990).

Bitner, Mary Jo, Stephen W. Brown, and Matthew L. Meuter. "Technology infusion in service encounters." *Journal of the Academy of marketing Science* 28.1 (2000): 138-149.

Blodgett, Jeffrey G., Donald H. Granbois, and Rockney G. Walters. "The effects of perceived justice on complainants' negative word of mouth behavior and repatronage intentions." *Journal of Retailing* 69.4 (1994): 399-428.

Blodgett, Jeffrey G., Donna J. Hill, and Stephen S. Tax. "The effects of distributive, procedural, and interactional justice on postcomplaint behavior."*Journal of Retailing* 73.2 (1997): 185-210.

Boshoff, Christo. "Recovsat An Instrument to Measure Satisfaction with Transaction-Specific Service Recovery." *Journal of Service Research* 1.3 (1999): 236-249.

Bowen, David E., and Edward E. Lawler. *Empowering service employees*. MIT Press, 1995.

Brett, Jeanne M. "Commentary on procedural justice papers." *Research on negotiation in organizations* 1 (1986): 81-90.

Brockner, Joel, and Batia M. Wiesenfeld. "An integrative framework for explaining reactions to decisions: interactive effects of outcomes and procedures." *Psychological bulletin* 120.2 (1996): 189.

Chebat, Jean-Charles, and Witold Slusarczyk. "How emotions mediate the effects of perceived justice on loyalty in service recovery situations: an empirical study." *Journal of Business Research* 58.5 (2005): 664-673.

Cho, Yooncheong, I. Im, and Roxanne Hiltz. "The impact of e-services failures and customer complaints on electronic commerce customer relationship management." *Journal of Consumer Satisfaction Dissatisfaction and Complaining Behavior* 16 (2003): 106-118.

Clemmer, Elizabeth C., and Benjamin Schneider. "Fair service." *Advances in services marketing and management* 5 (1996): 109-126.

Colquitt, Jason A. "On the dimensionality of organizational justice: a construct validation of a measure." *Journal of applied psychology* 86.3 (2001): 386.

Colquitt, Jason A., et al. "Justice at the millennium: a meta-analytic review of 25 years of organizational justice research." *Journal of applied psychology*86.3 (2001): 425.

Deutsch, Morton. "Equity, equality, and need: What determines which value will be used as the basis of distributive justice?." *Journal of Social issues*31.3 (1975): 137-149.

Estelami, Hooman. "Competitive and procedural determinants of delight and disappointment in consumer complaint outcomes." *Journal of Service Research* 2.3 (2000): 285-300.

Field, Andy. *Discovering statistics using IBM SPSS statistics*. Sage, 2013.

Fisk, Raymond P., and Kenneth A. Coney. *Postchoice evaluation: an equity theory analysis of consumer satisfaction/dissatisfaction with service choices*. Vol. 81. No. 12. College of Business Administration, Oklahoma State University, 1981.

Folger, Robert. "Distributive and procedural justice in the workplace." *Social Justice Research* 1.2 (1987): 143-159.

Forbes, Lukas P., Scott W. Kelley, and K. Douglas Hoffman. "Typologies of e-commerce retail failures and recovery strategies." *Journal of Services Marketing* 19.5 (2005): 280-292.

Fornell, Claes, and David F. Larcker. "Structural equation models with unobservable variables and measurement error: Algebra and statistics."*Journal of marketing research* (1981): 382-388.

Harrison-Walker, L. Jean. "The measurement of word-of-mouth communication and an investigation of service quality and customer commitment as potential antecedents." *Journal of Service Research* 4.1 (2001): 60-75.

Heide, Jan B., and George John. "Do norms matter in marketing relationships?." *The Journal of Marketing* (1992): 32-44.

Herr, Paul M., Frank R. Kardes, and John Kim. "Effects of word-of-mouth and product-attribute information on persuasion: An accessibility-diagnosticity perspective." *Journal of consumer research* (1991): 454-462.

Hsieh, Pi-feng, and Chien-Chiang Lin. "Leveraging technology to diminish hostility in service recovery." *Management of Engineering & Technology, 2009. PICMET 2009. Portland International Conference on*. IEEE, 2009.

Hoffman, K. Douglas, Scott W. Kelley, and Holly M. Rotalsky. "Tracking service failures and employee recovery efforts." *Journal of Services Marketing* 9.2 (1995): 49-61.

Huck, S.W., *Reading statistics and research (3rd ed.)*, New York: HarperCollins, 2000.

Greenberg, Jerald. "Organizational justice: Yesterday, today, and tomorrow."*Journal of management* 16.2 (1990): 399-432.

Goodwin, Cathy, and Ivan Ross. "Consumer responses to service failures: influence of procedural and interactional fairness perceptions." *Journal of Business Research* 25.2 (1992): 149-163.

Gronroos, Christian. "Service quality: the six criteria of good perceived service quality." *Review of business* 9.3 (1988): 10-13.

Johnston, Timothy C., and Molly A. Hewa. "Fixing service failures." *Industrial marketing management* 26.5 (1997): 467-473.

Jun, Minjoon, Zhilin Yang, and DaeSoo Kim. "Customers' perceptions of online retailing service quality and their satisfaction." *International Journal of Quality & Reliability Management* 21.8 (2004): 817-840.

Kelley, Scott W., and Mark A. Davis. "Antecedents to customer expectations for service recovery." *Journal of the Academy of Marketing Science* 22.1 (1994): 52-61.

Kelley, Scott W., K. Douglas Hoffman, and Mark A. Davis. "A typology of retail failures and recoveries." *Journal of retailing* 69.4 (1994): 429-452.

Leventhal, Gerald S. *What should be done with equity theory?*. Springer US, 1980.

Lewis, Barbara R., and Sotiris Spyrakopoulos. "Service failures and recovery in retail banking: the customers' perspective." *International Journal of Bank Marketing* 19.1 (2001): 37-48.

Lin, Hsin-Hui, Yi-Shun Wang, and Li-Kuan Chang. "Consumer responses to online retailer's service recovery after a service failure: a perspective of justice theory." *Managing Service Quality* 21.5 (2011): 511-534.

Lind, E. Allan, and Tom R. Tyler. *The social psychology of procedural justice*. Springer, 1988.

Loiacono, Eleanor T., Richard T. Watson, and Dale L. Goodhue. "WebQual: an instrument for consumer evaluation of web sites." *International Journal of Electronic Commerce* 11.3 (2007): 51-87.

Maister, David H. *The psychology of waiting lines*. Harvard Business School, 1984.

Mattila, Anna S. "The effectiveness of service recovery in a multi-industry setting." *Journal of Services Marketing* 15.7 (2001): 583-596.

Mattila, Anna S., and Cathy A. Enz. "The role of emotions in service encounters." *Journal of Service Research* 4.4 (2002): 268-277.

Mattila, Anna S., and David Cranage. "The impact of choice on fairness in the context of service recovery." *Journal of Services Marketing* 19.5 (2005): 271-279.

Maxham III, James G. "Service recovery's influence on consumer satisfaction, positive word-of-mouth, and purchase intentions." *Journal of Business Research* 54.1 (2001): 11-24.

Maxham III, James G., and Richard G. Netemeyer. "Modeling customer perceptions of complaint handling over time: the effects of perceived justice on satisfaction and intent." *Journal of Retailing* 78.4 (2002): 239-252.

Mayers, Andrew. *Introduction to Statistics and SPSS in Psychology*. Pearson, 2013.

McColl-Kennedy, Janet R., and Beverley A. Sparks. "Application of fairness theory to service failures and service recovery." *Journal of service Research*5.3 (2003): 251-266.

Miller, Janis L., Christopher W. Craighead, and Kirk R. Karwan. "Service recovery: a framework and empirical investigation." *Journal of operations Management* 18.4 (2000): 387-400.

Meyers, L.S., Gamst, G., & Guarino, A. *Applied multivariate research: Design and interpretation*. Thousand Oaks, CA: Sage Publishers, 2006.

Nikbin, Davoud, Ismail, Ishak, and Marimuthu, Malliga. "Perceived justice in service recovery and switching intention: Evidence from Malaysian mobile telecommunication industry."*Management Research Review* 35.3/4 (2012): 309-325.

Parasuraman, Arun, Leonard L. Berry, and Valarie A. Zeithaml. "Understanding customer expectations of service." *Sloan Management Review* 32.3 (1991): 39-48.

Parasuraman, Ananthanarayanan, Valarie A. Zeithaml, and Arvind Malhotra. "ES-QUAL a multiple-item scale for assessing electronic service quality."*Journal of service research* 7.3 (2005): 213-233.

Parasuraman, Anantharanthan, Valarie A. Zeithaml, and Leonard L. Berry. "A conceptual model of service quality and its implications for future research."*the Journal of Marketing* (1985): 41-50.

Reichheld, Frederick F., and Phil Schefter. "E-loyalty." *Harvard business review* 78.4 (2000): 105-113.

Santos, Cristiane Pizzutti dos, and Daniel Von der Heyde Fernandes. "Perceptions of justice after recovery efforts in internet purchasing: the impact on consumer trust and loyalty toward retailing sites and online shopping in general." *BAR-Brazilian Administration Review* 8.3 (2011): 225-246.

Schoefer, Klaus, and Christine Ennew. "The impact of perceived justice on consumers' emotional responses to service complaint experiences." *Journal of Services Marketing* 19.5 (2005): 261-270.

Sekaran, Uma. "Research Methods for Business: A Skill Building Approach. 2003." *John Willey and Sons, New York*.

Smith, Amy K., Ruth N. Bolton, and Janet Wagner. "A model of customer satisfaction with service encounters involving failure and recovery." *Journal of marketing research* (1999): 356-372.

Smith, Amy K., and Ruth N. Bolton. "The effect of customers' emotional responses to service failures on their recovery effort evaluations and satisfaction judgments." *Journal of the Academy of Marketing Science* 30.1 (2002): 5-23.

Sousa, Rui, and Christopher A. Voss. "The effects of service failures and recovery on customer loyalty in e-services: an empirical investigation."*International Journal of Operations & Production Management* 29.8 (2009): 834-864.

Spreng, Richard A., Gilbert D. Harrell, and Robert D. Mackoy. "Service recovery: impact on satisfaction and intentions." *Journal of Services Marketing* 9.1 (1995): 15-23.

Tabachnick, Barbara G., and Linda S. Fidell. "Using multivariate statistics." (2001).

Tax, Stephen S., and Stephen W. Brown. "Service recovery: research insights and practices." *Handbook of services marketing and management* (2000): 271-86.

Thibaut, John W., and Laurens Walker. *Procedural justice: A psychological analysis*. Hillsdale, NJ; New York, NY: L. Erlbaum Associates, 1975.

Varela-Neira, Concepción, Rodolfo Vázquez-Casielles, and Víctor Iglesias. "Explaining customer satisfaction with complaint handling." *International Journal of Bank Marketing* 28.2 (2010): 88-112.

Walster, Elaine, Ellen Berscheid, and G. William Walster. "New directions in equity research." *Journal of personality and social psychology* 25.2 (1973): 151.

Wirtz, Jochen, and Anna S. Mattila. "Consumer responses to compensation, speed of recovery and apology after a service failure." *International Journal of Service Industry Management* 15.2 (2004): 150-166.

Wirtz, Jochen, Christopher H. Lovelock, and Jochen Wirtz. "*Services marketing: people, technology, strategy*." Prentice Hall, 7 edition (2010): 351

Weun, Seungoog, Sharon E. Beatty, and Michael A. Jones. "The impact of service failure severity on service recovery evaluations andpost-recovery relationships." *Journal of Services Marketing* 18.2 (2004): 133-146.

Yang, Zhilin, Robin T. Peterson, and Shaohan Cai. "Services quality dimensions of Internet retailing: an exploratory analysis." *Journal of services marketing* 17.7 (2003): 685-700.

Zeithaml, Valarie A., Leonard L. Berry, and Anantharanthan Parasuraman. "The nature and determinants of customer expectations of service." *Journal of the academy of Marketing Science* 21.1 (1993): 1-12.

Zeithaml, Valarie A., Leonard L. Berry, and Ananthanarayanan Parasuraman. "The behavioral consequences of service quality." *Journal of marketing* 60.2 (1996).

Zeithaml, Valarie A., Arun Parasuraman, and Arvind Malhotra. "Service quality delivery through web sites: a critical review of extant knowledge."*Journal of the academy of marketing science* 30.4 (2002): 362-375.

APPENDIX

Appendix 1: Scenario Construction

Scenario Construction

Scenario	Distributive Justice Level	Procedural Justice Level	Interactional Justice Level	Informational Justice Level
1	low	low	low	low
2	medium	low	low	low
3	high	low	low	low
4	low	high	low	low
5	medium	high	low	low
6	high	high	low	low
7	low	low	high	low
8	medium	low	high	low
9	high	low	high	low
10	low	low	low	high
11	medium	low	low	high
12	high	low	low	high
13	low	high	high	low
14	medium	high	high	low
15	high	high	high	low
16	low	low	high	high
17	medium	low	high	high
18	high	Low	high	high
19	low	high	low	high
20	Medium	high	low	high
21	high	high	low	high
22	low	high	high	high
23	Medium	high	high	high
24	high	high	high	high

Appendix 2: An example of Scenario and Questionnaire

Dear Sir/Madam,

I am currently conducting a research for my master thesis on complaint handling management for online business. It is the last but very important part of my master program study at Hasselt University. Your feedback is very valuable for my further research therefore I would highly appreciate you filling out this survey.

You're going to read three different scenarios, each of which is followed by 20 questions and it possibly takes about 10 minutes to answer each set of questions. There is no right or wrong answer. Complete and honest answer will be appreciated. Your answers will be handled anonymously and will be kept strictly confidential.

Thank you in advance for you participation.

Kind regards,

Liqiong

Please carefully read the situation described below and imagine that this happens to you.

You bought a SONY MDR400 headset at a cost of ￥149 from JingDong. You purchased the headset three months ago and it functioned very well. Today, you notice that the sound of right side of the headphones is off. You tried again and it still does not work.

You truly belief that it is not normal that the headset breaks down after just three months. Hence, you decide to contact JingDong's online service center to ask what they can do to help with this problem.

Scenario 22

One of the customer service staff named Lee **replied instantly** and answers your questions **very politely and patiently.** As to the problem of headset **Lee explained:** "It's really not common for a brand headset having problems within three months. Some headsets may be off-test products. We did not do a good job in quality control at the time of shipment. It's our responsibility". Regarding your question what JingDong can do for you given this problem, Lee tells you in these situations the company's policy is to offer a **15% discount** when you buy a similar headset at their webstore.

1. Taking everything into consideration, the outcome I received was fair.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

2. I did not get what I deserved.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

3. Given the circumstances, I feel that JingDong offered adequate compensation.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

4. The customer service employee reacted to my complaint in a very timely manner.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

5. JingDong resolved my complaint as quickly as it should have been.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

6. The employee treated me with courtesy and respect.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

7. I feel that the employee treated me rudely.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

8. The employee's explanations regarding the problem of headset were reasonable.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

9. The employee was candid in her communication with you.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

10. I think that JingDong provided a satisfactory resolution to the headset problem on this particular occasion.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

11. I am satisfied with the way JingDong handling of the problem.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

12. Overall, I am satisfied with this consumption experience.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

13. I am satisfied with my overall purchasing experience on JingDong.

Strongly disagree			Neutral		Strongly agree
1	2	3	4	5	6 7

14. As a whole, I am **NOT** satisfied with JingDong.

Strongly disagree			Neutral		Strongly agree
1	2	3	4	5	6 7

15. How satisfied are you overall with the service quality of JingDong?

Very unsatisfied			Neutral		Very satisfied
1	2	3	4	5	6 7

16. How likely would you be to warn your friends and relatives to shop at JingDong?

Very unlikely			Neutral		Very likely
1	2	3	4	5	6 7

17. If this happened to me I would complain to my friends and relatives about this online store.

Strongly disagree			Neutral		Strongly agree
1	2	3	4	5	6 7

18. If this happened to me I would make sure to tell my friends and relatives not to shop at this online store.

Strongly disagree			Neutral		Strongly agree
1	2	3	4	5	6 7

19. The next time I purchase a headset online, I will still buy from JingDong.

Strongly disagree			Neutral		Strongly agree
1	2	3	4	5	6 7

20. I would be willing to purchase from JingDong again.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

21. How likely would you be to increase your shopping activity with this online retailer?

Very unlikely			Neutral			Very likely
1	2	3	4	5	6	7

Scenario 23

One of the customer service staff named Lee **replied instantly** and answers your questions **very politely and patiently.** As to the problem of headset **Lee explained:** "It's really not common for a brand headset having problems within three months. Some headsets may be off-test products. We did not do a good job in quality control at the time of shipment. It's our responsibility". Regarding your question what JingDong can do for you given this problem, Lee tells you in these situations the company's policy is to offer a **50% discount** when you buy a similar headset at their webstore.

1. Taking everything into consideration, the outcome I received was fair.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

2. I did not get what I deserved.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

3. Given the circumstances, I feel that JingDong offered adequate compensation.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

4. The customer service employee reacted to my complaint in a very timely manner.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

5. JingDong resolved my complaint as quickly as it should have been.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

6. The employee treated me with courtesy and respect.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

7. I feel that the employee treated me rudely.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

8. The employee's explanations regarding the problem of headset were reasonable.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

9. The employee was candid in her communication with you.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

10. I think that JingDong provided a satisfactory resolution to the headset problem on this particular occasion.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

11. I am satisfied with the way JingDong handling of the problem.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

12. Overall, I am satisfied with this consumption experience.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

13. I am satisfied with my overall purchasing experience on JingDong.

Strongly disagree			Neutral		Strongly agree
1	2	3	4	5	6 7

14. As a whole, I am **NOT** satisfied with JingDong.

Strongly disagree			Neutral		Strongly agree
1	2	3	4	5	6 7

15. How satisfied are you overall with the service quality of JingDong?

Very unsatisfied			Neutral		Very satisfied
1	2	3	4	5	6 7

16. How likely would you be to warn your friends and relatives to shop at JingDong?

Very unlikely			Neutral		Very likely
1	2	3	4	5	6 7

17. If this happened to me I would complain to my friends and relatives about this online store.

Strongly disagree			Neutral		Strongly agree
1	2	3	4	5	6 7

18. If this happened to me I would make sure to tell my friends and relatives not to shop at this online store.

Strongly disagree			Neutral		Strongly agree
1	2	3	4	5	6 7

19. The next time I purchase a headset online, I will still buy from JingDong.

Strongly disagree			Neutral		Strongly agree
1	2	3	4	5	6 7

20. I would be willing to purchase from JingDong again.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

21. How likely would you be to increase your shopping activity with this online retailer?

Very unlikely			Neutral			Very likely
1	2	3	4	5	6	7

Scenario 24

One of the customer service staff named Lee **replied instantly** and answers your questions **very politely and patiently.** As to the problem of headset **Lee explained:** "It's really not common for a brand headset having problems within three months. Some headsets may be off-test products. We did not do a good job in quality control at the time of shipment. It's our responsibility". Regarding your question what JingDong can do for you given this problem, Lee tells you in these situations the company's policy is to **offer you a refund or if you like, you can have an exchange for a new one.**

1. Taking everything into consideration, the outcome I received was fair.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

2. I did not get what I deserved.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

3. Given the circumstances, I feel that JingDong offered adequate compensation.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

4. The customer service employee reacted to my complaint in a very timely manner.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

5. JingDong resolved my complaint as quickly as it should have been.

Strongly disagree			Neutral			Strongly agree

1 2 3 4 5 6 7

6. The employee treated me with courtesy and respect.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

7. I feel that the employee treated me rudely.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

8. The employee's explanations regarding the problem of headset were reasonable.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

9. The employee was candid in her communication with you.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

10. I think that JingDong provided a satisfactory resolution to the headset problem on this particular occasion.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

11. I am satisfied with the way JingDong handling of the problem.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

12. Overall, I am satisfied with this consumption experience.

Strongly disagree Neutral Strongly agree

1 2 3 4 5 6 7

13. I am satisfied with my overall purchasing experience on JingDong.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

14. As a whole, I am **NOT** satisfied with JingDong.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

15. How satisfied are you overall with the service quality of JingDong?

Very unsatisfied			Neutral			Very satisfied
1	2	3	4	5	6	7

16. How likely would you be to warn your friends and relatives to shop at JingDong?

Very unlikely			Neutral			Very likely
1	2	3	4	5	6	7

17. If this happened to me I would complain to my friends and relatives about this online store.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

18. If this happened to me I would make sure to tell my friends and relatives not to shop at this online store.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

19. The next time I purchase a headset online, I will still buy from JingDong.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

20. I would be willing to purchase from JingDong again.

Strongly disagree			Neutral			Strongly agree
1	2	3	4	5	6	7

21. How likely would you be to increase your shopping activity with this online retailer?

Very unlikely			Neutral			Very likely
1	2	3	4	5	6	7

(Personal data)

- Please state your gender:

˜ Male

˜ Female

- Which age category do you belong to?

˜ Younger than 18 years

˜ 18-25 years

˜ 26-30 years

˜ 30-35 years

˜ 36-40 years

˜ Older than 40 years

- What is your occupation?

˜ Student

˜ Employed

˜ Self-employed

˜ Unemployed

˜ Retired

˜ Other

- Have you ever bought something from JingDong?

- ˜ Yes
  ˜ No

Appendix 3: Measurement Scales

Construct	Source
Distributive Justice Taking everything into consideration, the outcome I received was fair. I did not get what I deserved. (R) Given the circumstances, I feel that the retailer offered adequate compensation to me.	Blodgett, Hill and Tax (1997)
Procedural Justice (Firm Name) reacted to my complaint in a very timely manner. (Firm Name) resolved my complaint as quickly as it should have been.	Blodgett, Hill and Tax (1997)
Interactional Justice The employee treated me with courtesy and respect. I feel that the employee treated me rudely. (R)	Blodgett, Hill and Tax (1997)
Informational Justice The employee's explanations regarding the problem were reasonable. The employee was candid in communication with you.	Colquitt (2001)
Satisfaction with Recovery I think that (Firm Name) provided a satisfactory resolution to the problem on this particular occasion. I am satisfied with the way (Firm Name) handling of the problem. Overall, I am satisfied with this consumption experience.	Maxham and Netemeyer (2002)
Overall Firm Satisfaction I am satisfied with my overall purchasing experience with (Firm Name). As a whole, I am **NOT** satisfied with (Firm Name). (R) How satisfied are you overall with the service quality of (Firm Name)?[1]	Maxham and Netemeyer (2002)
Negative Word-of-Mouth Intent How likely would you be to warn your friends and relatives to shop at this retailer?[2] If this happened to me, I would complain to my friends and	Blodgett, Hill and Tax (1997)

relatives about this store. If this happened to me, I would make sure to tell my friends and relatives not to shop at this store.	
Repurchase Intent The next time I purchase this product, I will still buy from the same retailer. I would be willing to purchase from this store again. How likely would you be to increase your shopping activity with this store?[3]	Blodgett, Hill and Tax (1997)

Note: (R) = reverse coded.

Unless otherwise indicated, all items were anchored with "strongly disagree/neutral/strongly agree from 1 to 7 (1="strongly disagree", 7="strongly agree").

[1] This item was anchored with very unsatisfied/ neutral/very satisfied from 1 to 7(1="very unsatisfied", 7="very satisfied").

[2] and [3] These two items were anchored with very unlikely/ neutral/very likely from 1 to 7(1="very unlikely", 7="very likely").

Appendix 4: MANOVA Test Results in SPSS

```
GET
DATASET NAME DataSet1 WINDOW=FRONT.
GLM SWRLOW SWRMEDIUM SWRHIGH OFSLOW OFSMEDIUM OFSHIGH BY PJ INTJ INFJ
  /WSFACTOR=DJ 3 Polynomial
  /MEASURE=SWR OFS
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(OVERALL)
  /EMMEANS=TABLES(PJ) COMPARE ADJ(LSD)
  /EMMEANS=TABLES(INTJ) COMPARE ADJ(LSD)
  /EMMEANS=TABLES(INFJ) COMPARE ADJ(LSD)
  /EMMEANS=TABLES(DJ) COMPARE ADJ(LSD)
  /EMMEANS=TABLES(INTJ*DJ)
  /EMMEANS=TABLES(INFJ*DJ)
  /PRINT=DESCRIPTIVE ETASQ HOMOGENEITY
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=DJ
  /DESIGN=PJ INTJ INFJ PJ*INTJ PJ*INFJ INTJ*INFJ PJ*INTJ*INFJ.
```

General Linear Model

Within-Subjects Factors

Measure	DJ	Dependent Variable
SWR	1	SWRLOW
	2	SWRMEDIUM
	3	SWRHIGH
OFS	1	OFSLOW
	2	OFSMEDIUM
	3	OFSHIGH

Between-Subjects Factors

		Value Label	N
procedural level	1	low PJ-level	80
	2	high PJ-level	80
interactional level	1	low INTJ-level	80
	2	high INTJ-level	80
informational level	1	low INFJ-level	80
	2	high INFJ-level	80

Descriptive Statistics

	procedural level	interactional level	informational level	Mean	Std. Deviation	N
SWRLOW	low PJ-level	low INTJ-level	low INFJ-level	2.0333	1.07551	20
			high INFJ-level	1.8500	.72123	20
			Total	1.9417	.90861	40
		high INTJ-level	low INFJ-level	3.1833	1.21624	20
			high INFJ-level	3.4500	1.47998	20
			Total	3.3167	1.34387	40
		Total	low INFJ-level	2.6083	1.27408	40
			high INFJ-level	2.6500	1.40603	40
			Total	2.6292	1.33333	80
	high PJ-level	low INTJ-level	low INFJ-level	2.9500	1.15609	20
			high INFJ-level	2.4833	.97017	20
			Total	2.7167	1.07960	40
		high INTJ-level	low INFJ-level	3.9833	1.12117	20
			high INFJ-level	3.5833	1.31512	20
			Total	3.7833	1.22312	40
		Total	low inform-level	3.4667	1.23989	40
			high inform-level	3.0333	1.26941	40
			Total	3.2500	1.26569	80
	Total	low INTJ-level	low INFJ-level	2.4917	1.19588	40
			high INFJ-level	2.1667	.90267	40
			Total	2.3292	1.06537	80
		high INTJ-level	low INFJ-level	3.5833	1.22358	40
			high INFJ-level	3.5167	1.38356	40
			Total	3.5500	1.29816	80

		Total	low INFJ-level	3.0375	1.32167	80
			high INFJ-level	2.8417	1.34486	80
			Total	2.9396	1.33274	160
SWR MEDIUM	low PJ-level	low INTJ-level	low INFJ-level	2.8667	1.47652	20
			high INFJ-level	2.6833	1.55776	20
			Total	2.7750	1.50097	40
		high INTJ-level	low INFJ-level	3.8333	1.16227	20
			high INFJ-level	4.0667	1.34903	20
			Total	3.9500	1.24847	40
		Total	low INFJ-level	3.3500	1.39994	40
			high INFJ-level	3.3750	1.59984	40
			Total	3.3625	1.49372	80
	high PJ-level	low INTJ-level	low INFJ-level	3.4833	1.04560	20
			high INFJ-level	3.4333	1.35120	20
			Total	3.4583	1.19278	40
		high INTJ-level	low INFJ-level	4.1167	1.28997	20
			high INFJ-level	4.3000	1.40550	20
			Total	4.2083	1.33480	40
		Total	low INFJ-level	3.8000	1.20256	40
			high INFJ-level	3.8667	1.42984	40
			Total	3.8333	1.31314	80
	Total	low INTJ-level	low INFJ-level	3.1750	1.30086	40
			high INFJ-level	3.0583	1.48858	40
			Total	3.1167	1.39024	80
		high INTJ-level	low INFJ-level	3.9750	1.22040	40
			high INFJ-level	4.1833	1.36490	40
			Total	4.0792	1.29072	80
		Total	low INFJ-level	3.5750	1.31632	80
			high INFJ-level	3.6208	1.52775	80
			Total	3.5979	1.42165	160
SWRHIGH	low PJ-level	low INTJ-level	low INFJ-level	4.5167	1.44883	20
			high INFJ-level	5.2000	1.20136	20
			Total	4.8583	1.35850	40
		high INTJ-level	low INFJ-level	5.1500	1.21142	20
			high INFJ-level	5.9500	.51042	20
			Total	5.5500	1.00299	40
		Total	low INFJ-level	4.8333	1.35663	40
			high INFJ-level	5.5750	.98706	40
			Total	5.2042	1.23645	80

	high PJ-level	low INTJ-level	low INFJ-level	5.3167	1.10541	20
			high INFJ-level	5.3167	1.57270	20
			Total	5.3167	1.34175	40
		high INTJ-level	low INFJ-level	5.3500	1.11594	20
			high INFJ-level	6.1333	.66138	20
			Total	5.7417	.98850	40
		Total	low INFJ-level	5.3333	1.09648	40
			high INFJ-level	5.7250	1.26060	40
			Total	5.5292	1.19032	80
	Total	low INTJ-level	low INFJ-level	4.9167	1.33493	40
			high INFJ-level	5.2583	1.38261	40
			Total	5.0875	1.36125	80
		high INTJ-level	low INFJ-level	5.2500	1.15408	40
			high INFJ-level	6.0417	.59046	40
			Total	5.6458	.99414	80
		Total	low INFJ-level	5.0833	1.25116	80
			high INFJ-level	5.6500	1.12746	80
			Total	5.3667	1.22072	160
OFSLOW	low PJ-level	low INTJ-level	low INFJ-level	3.4833	.66205	20
			high INFJ-level	3.1333	.55567	20
			Total	3.3083	.62878	40
		high INTJ-level	low INFJ-level	3.8167	.61630	20
			high INF-level	3.8833	.59506	20
			Total	3.8500	.59891	40
		Total	low INFJ-level	3.6500	.65350	40
			high INFJ-level	3.5083	.68349	40
			Total	3.5792	.66823	80
	high PJ-level	low INTJ-level	low INFJ-level	3.7500	.60093	20
			high INFJ-level	3.4167	.62008	20
			Total	3.5833	.62589	40
		high INTJ-level	low INFJ-level	4.0667	.55777	20
			high INFJ-level	4.0000	.75703	20
			Total	4.0333	.65720	40
		Total	low INFJ-level	3.9083	.59431	40
			high INFJ-level	3.7083	.74416	40
			Total	3.8083	.67667	80
	Total	low INTJ-level	low INFJ-level	3.6167	.63851	40
			high INFJ-level	3.2750	.59861	40
			Total	3.4458	.63853	80

		high INTJ-level	low INFJ-level	3.9417	.59383	40
			high INFJ-level	3.9417	.67468	40
			Total	3.9417	.63151	80
		Total	low INFJ-level	3.7792	.63411	80
			high INFJ-level	3.6083	.71703	80
			Total	3.6937	.68013	160
OFS MEDIUM	low PJ-level	low INTJ-level	low INFJ-level	3.4167	.80840	20
			high INFJ-level	3.4833	.89492	20
			Total	3.4500	.84243	40
		high INTJ-level	low INFJ-level	4.0167	.76069	20
			high INFJ-level	4.2333	.64979	20
			Total	4.1250	.70685	40
		Total	low INFJ-level	3.7167	.83222	40
			high INFJ-level	3.8583	.86029	40
			Total	3.7875	.84401	80
	high PJ-level	low INTJ-level	low INFJ-level	3.6833	.61630	20
			high INFJ-level	3.8333	.71328	20
			Total	3.7583	.66233	40
		high INTJ-level	low INFJ-level	4.1333	.46390	20
			high INFJ-level	4.2000	.62501	20
			Total	4.1667	.54433	40
		Total	low INFJ-level	3.9083	.58464	40
			high INFJ-level	4.0167	.68750	40
			Total	3.9625	.63643	80
	Total	low INTJ-level	low INFJ-level	3.5500	.72226	40
			high INFJ-level	3.6583	.81820	40
			Total	3.6042	.76875	80
		high INTJ-level	low INFJ-level	4.0750	.62469	40
			high INFJ-level	4.2167	.62952	40
			Total	4.1458	.62719	80
		Total	low INFJ-level	3.8125	.72108	80
			high INFJ-level	3.9375	.77785	80
			Total	3.8750	.75026	160
OFSHIGH	low PJ-level	low INTJ-level	low INFJ-level	4.2333	.59334	20
			high INFJ-level	4.5000	.83421	20
			Total	4.3667	.72717	40
		high INTJ-level	low INFJ-level	4.4833	.75297	20
			high INFJ-level	4.8000	.45112	20
			Total	4.6417	.63330	40

	Total	low INFJ-level	4.3583	.68099	40
		high INFJ-level	4.6500	.67916	40
		Total	4.5042	.69151	80
high PJ-level	low INTJ-level	low INFJ-level	4.3500	.50117	20
		high INFJ-level	4.3333	.62126	20
		Total	4.3417	.55720	40
	high INTJ-level	low INFJ-level	4.4667	.47634	20
		high INFJ-level	4.7333	.27784	20
		Total	4.6000	.40790	40
	Total	low INFJ-level	4.4083	.48621	40
		high INFJ-level	4.5333	.51640	40
		Total	4.4708	.50230	80
Total	low INTJ-level	low INFJ-level	4.2917	.54531	40
		high INFJ-level	4.4167	.73088	40
		Total	4.3542	.64379	80
	high INTJ-level	low INFJ-level	4.4750	.62195	40
		high INFJ-level	4.7667	.37134	40
		Total	4.6208	.52969	80
	Total	low INFJ-level	4.3833	.58845	80
		high INFJ-level	4.5917	.60233	80
		Total	4.4875	.60268	160

Box's Test of Equality of Covariance Matrices[a]

Box's M	277.482
F	1.641
df1	147
df2	27999.774
Sig.	.000

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + PJ
+ INTJ + INFJ + PJ * INTJ
+ PJ * INFJ + INTJ * INFJ
+ PJ * INTJ * INFJ
Within Subjects Design:
DJ

Multivariate Tests[a]

Effect			Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Between Subjects	Intercept	Pillai's Trace	.990	7228.313[b]	2.000	151.000	.000	.990
		Wilks' Lambda	.010	7228.313[b]	2.000	151.000	.000	.990
		Hotelling's Trace	95.739	7228.313[b]	2.000	151.000	.000	.990
		Roy's Largest Root	95.739	7228.313[b]	2.000	151.000	.000	.990
	PJ	Pillai's Trace	.069	5.557[b]	2.000	151.000	.005	.069
		Wilks' Lambda	.931	5.557[b]	2.000	151.000	.005	.069
		Hotelling's Trace	.074	5.557[b]	2.000	151.000	.005	.069
		Roy's Largest Root	.074	5.557[b]	2.000	151.000	.005	.069
	INTJ	Pillai's Trace	.224	21.812[b]	2.000	151.000	.000	.224
		Wilks' Lambda	.776	21.812[b]	2.000	151.000	.000	.224
		Hotelling's Trace	.289	21.812[b]	2.000	151.000	.000	.224
		Roy's Largest Root	.289	21.812[b]	2.000	151.000	.000	.224
	INFJ	Pillai's Trace	.006	.450[b]	2.000	151.000	.639	.006
		Wilks' Lambda	.994	.450[b]	2.000	151.000	.639	.006
		Hotelling's Trace	.006	.450[b]	2.000	151.000	.639	.006
		Roy's Largest Root	.006	.450[b]	2.000	151.000	.639	.006
	PJ * INTJ	Pillai's Trace	.008	.643[b]	2.000	151.000	.527	.008
		Wilks' Lambda	.992	.643[b]	2.000	151.000	.527	.008
		Hotelling's Trace	.009	.643[b]	2.000	151.000	.527	.008
		Roy's Largest Root	.009	.643[b]	2.000	151.000	.527	.008
	PJ * INFJ	Pillai's Trace	.005	.395[b]	2.000	151.000	.674	.005
		Wilks' Lambda	.995	.395[b]	2.000	151.000	.674	.005
		Hotelling's Trace	.005	.395[b]	2.000	151.000	.674	.005
		Roy's Largest Root	.005	.395[b]	2.000	151.000	.674	.005
	INTJ * INFJ	Pillai's Trace	.011	.863[b]	2.000	151.000	.424	.011
		Wilks' Lambda	.989	.863[b]	2.000	151.000	.424	.011
		Hotelling's Trace	.011	.863[b]	2.000	151.000	.424	.011

		Roy's Largest Root	.011	.863[b]	2.000	151.000	.424	.011
	PJ * INTJ * INFJ	Pillai's Trace	.001	.052[b]	2.000	151.000	.949	.001
		Wilks' Lambda	.999	.052[b]	2.000	151.000	.949	.001
		Hotelling's Trace	.001	.052[b]	2.000	151.000	.949	.001
		Roy's Largest Root	.001	.052[b]	2.000	151.000	.949	.001
Within Subjects	DJ	Pillai's Trace	.742	107.130[b]	4.000	149.000	.000	.742
		Wilks' Lambda	.258	107.130[b]	4.000	149.000	.000	.742
		Hotelling's Trace	2.876	107.130[b]	4.000	149.000	.000	.742
		Roy's Largest Root	2.876	107.130[b]	4.000	149.000	.000	.742
	DJ * PJ	Pillai's Trace	.031	1.207[b]	4.000	149.000	.310	.031
		Wilks' Lambda	.969	1.207[b]	4.000	149.000	.310	.031
		Hotelling's Trace	.032	1.207[b]	4.000	149.000	.310	.031
		Roy's Largest Root	.032	1.207[b]	4.000	149.000	.310	.031
	DJ * INTJ	Pillai's Trace	.059	2.420[b]	4.000	149.000	.050	.059
		Wilks' Lambda	.941	2.420[b]	4.000	149.000	.050	.059
		Hotelling's Trace	.062	2.420[b]	4.000	149.000	.050	.059
		Roy's Largest Root	.062	2.420[b]	4.000	149.000	.050	.059
	DJ * INFJ	Pillai's Trace	.107	4.453[b]	4.000	149.000	.002	.107
		Wilks' Lambda	.893	4.453[b]	4.000	149.000	.002	.107
		Hotelling's Trace	.120	4.453[b]	4.000	149.000	.002	.107
		Roy's Largest Root	.120	4.453[b]	4.000	149.000	.002	.107
	DJ * PJ * INTJ	Pillai's Trace	.008	.291[b]	4.000	149.000	.883	.008
		Wilks' Lambda	.992	.291[b]	4.000	149.000	.883	.008
		Hotelling's Trace	.008	.291[b]	4.000	149.000	.883	.008
		Roy's Largest Root	.008	.291[b]	4.000	149.000	.883	.008
	DJ * PJ * INFJ	Pillai's Trace	.020	.748[b]	4.000	149.000	.561	.020
		Wilks' Lambda	.980	.748[b]	4.000	149.000	.561	.020
		Hotelling's Trace	.020	.748[b]	4.000	149.000	.561	.020
		Roy's Largest Root	.020	.748[b]	4.000	149.000	.561	.020
	DJ * INTJ * INFJ	Pillai's Trace	.015	.574[b]	4.000	149.000	.682	.015
		Wilks' Lambda	.985	.574[b]	4.000	149.000	.682	.015
		Hotelling's Trace	.015	.574[b]	4.000	149.000	.682	.015
		Roy's Largest Root	.015	.574[b]	4.000	149.000	.682	.015
	DJ * PJ * INTJ * INFJ	Pillai's Trace	.009	.337[b]	4.000	149.000	.853	.009
		Wilks' Lambda	.991	.337[b]	4.000	149.000	.853	.009
		Hotelling's Trace	.009	.337[b]	4.000	149.000	.853	.009
		Roy's Largest Root	.009	.337[b]	4.000	149.000	.853	.009

a. Design: Intercept + PJ + INTJ + INFJ + PJ * INTJ + PJ * INFJ + INTJ * INFJ + PJ * INTJ * INFJ
Within Subjects Design: DJ

b. Exact statistic

Mauchly's Test of Sphericity[a]

Within Subjects Effect	Measure	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
						Greenhouse-Geisser	Huynh-Feldt	Lower-bound
DJ	SWR	.806	32.628	2	.000	.837	.885	.500
	OFS	.970	4.579	2	.101	.971	1.000	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept + PJ + INTJ + INFJ + PJ * INTJ + PJ * INFJ + INTJ * INFJ + PJ * INTJ * INFJ
Within Subjects Design: DJ\\

b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

Multivariate[a,b]

Within Subjects Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
DJ	Pillai's Trace	.645	72.351	4.000	608.000	.000	.322
	Wilks' Lambda	.356	102.408[c]	4.000	606.000	.000	.403
	Hotelling's Trace	1.806	136.357	4.000	604.000	.000	.475
	Roy's Largest Root	1.804	274.283[d]	2.000	304.000	.000	.643
DJ * PJ	Pillai's Trace	.017	1.315	4.000	608.000	.263	.009
	Wilks' Lambda	.983	1.315[c]	4.000	606.000	.263	.009
	Hotelling's Trace	.017	1.316	4.000	604.000	.263	.009
	Roy's Largest Root	.017	2.520[d]	2.000	304.000	.082	.016
DJ * INTJ	Pillai's Trace	.038	2.963	4.000	608.000	.019	.019
	Wilks' Lambda	.962	2.967[c]	4.000	606.000	.019	.019

	Hotelling's Trace	.039	2.971	4.000	604.000	.019	.019
	Roy's Largest Root	.033	5.037[d]	2.000	304.000	.007	.032
DJ * INFJ	Pillai's Trace	.056	4.390	4.000	608.000	.002	.028
	Wilks' Lambda	.944	4.405[c]	4.000	606.000	.002	.028
	Hotelling's Trace	.059	4.419	4.000	604.000	.002	.028
	Roy's Largest Root	.049	7.475[d]	2.000	304.000	.001	.047
DJ * PJ * INTJ	Pillai's Trace	.004	.269	4.000	608.000	.898	.002
	Wilks' Lambda	.996	.268[c]	4.000	606.000	.899	.002
	Hotelling's Trace	.004	.267	4.000	604.000	.899	.002
	Roy's Largest Root	.004	.538[d]	2.000	304.000	.584	.004
DJ * PJ * INFJ	Pillai's Trace	.007	.507	4.000	608.000	.731	.003
	Wilks' Lambda	.993	.506[c]	4.000	606.000	.732	.003
	Hotelling's Trace	.007	.505	4.000	604.000	.732	.003
	Roy's Largest Root	.006	.867[d]	2.000	304.000	.421	.006
DJ * INTJ * INFJ	Pillai's Trace	.008	.628	4.000	608.000	.643	.004
	Wilks' Lambda	.992	.627[c]	4.000	606.000	.643	.004
	Hotelling's Trace	.008	.626	4.000	604.000	.644	.004
	Roy's Largest Root	.008	1.190[d]	2.000	304.000	.305	.008
DJ * PJ * INTJ * INFJ	Pillai's Trace	.006	.489	4.000	608.000	.744	.003
	Wilks' Lambda	.994	.488[c]	4.000	606.000	.745	.003
	Hotelling's Trace	.006	.487	4.000	604.000	.746	.003
	Roy's Largest Root	.006	.911[d]	2.000	304.000	.403	.006

a. Design: Intercept + PJ + INTJ + INFJ + PJ * INTJ + PJ * INFJ + INTJ * INFJ + PJ * INTJ * INFJ

Within Subjects Design: DJ

b. Tests are based on averaged variables.

c. Exact statistic

d. The statistic is an upper bound on F that yields a lower bound on the significance level.

Univariate Tests

Source	Measure		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
DJ	SWR	Sphericity Assumed	504.139	2	252.070	270.520	.000	.640
		Greenhouse-Geisser	504.139	1.675	301.055	270.520	.000	.640
		Huynh-Feldt	504.139	1.769	284.978	270.520	.000	.640
		Lower-bound	504.139	1.000	504.139	270.520	.000	.640
	OFS	Sphericity Assumed	55.363	2	27.681	89.304	.000	.370
		Greenhouse-Geisser	55.363	1.942	28.508	89.304	.000	.370
		Huynh-Feldt	55.363	2.000	27.681	89.304	.000	.370
		Lower-bound	55.363	1.000	55.363	89.304	.000	.370
DJ * PJ	SWR	Sphericity Assumed	1.750	2	.875	.939	.392	.006
		Greenhouse-Geisser	1.750	1.675	1.045	.939	.378	.006
		Huynh-Feldt	1.750	1.769	.989	.939	.382	.006
		Lower-bound	1.750	1.000	1.750	.939	.334	.006
	OFS	Sphericity Assumed	1.537	2	.768	2.479	.086	.016
		Greenhouse-Geisser	1.537	1.942	.791	2.479	.087	.016
		Huynh-Feldt	1.537	2.000	.768	2.479	.086	.016
		Lower-bound	1.537	1.000	1.537	2.479	.117	.016
DJ * INTJ	SWR	Sphericity Assumed	8.920	2	4.460	4.786	.009	.031
		Greenhouse-Geisser	8.920	1.675	5.327	4.786	.013	.031
		Huynh-Feldt	8.920	1.769	5.042	4.786	.012	.031
		Lower-bound	8.920	1.000	8.920	4.786	.030	.031
	OFS	Sphericity Assumed	1.737	2	.868	2.801	.062	.018
		Greenhouse-Geisser	1.737	1.942	.894	2.801	.064	.018
		Huynh-Feldt	1.737	2.000	.868	2.801	.062	.018
		Lower-bound	1.737	1.000	1.737	2.801	.096	.018
DJ * INFJ	SWR	Sphericity Assumed	12.148	2	6.074	6.518	.002	.041
		Greenhouse-Geisser	12.148	1.675	7.254	6.518	.003	.041
		Huynh-Feldt	12.148	1.769	6.867	6.518	.003	.041
		Lower-bound	12.148	1.000	12.148	6.518	.012	.041
	OFS	Sphericity Assumed	3.176	2	1.588	5.124	.006	.033
		Greenhouse-Geisser	3.176	1.942	1.636	5.124	.007	.033
		Huynh-Feldt	3.176	2.000	1.588	5.124	.006	.033
		Lower-bound	3.176	1.000	3.176	5.124	.025	.033
DJ * PJ * INTJ	SWR	Sphericity Assumed	.135	2	.067	.072	.930	.000
		Greenhouse-Geisser	.135	1.675	.080	.072	.901	.000
		Huynh-Feldt	.135	1.769	.076	.072	.911	.000

		Lower-bound	.135	1.000	.135	.072	.788	.000
	OFS	Sphericity Assumed	.329	2	.165	.531	.589	.003
		Greenhouse-Geisser	.329	1.942	.169	.531	.583	.003
		Huynh-Feldt	.329	2.000	.165	.531	.589	.003
		Lower-bound	.329	1.000	.329	.531	.467	.003
DJ * PJ * INFJ	SWR	Sphericity Assumed	1.453	2	.727	.780	.459	.005
		Greenhouse-Geisser	1.453	1.675	.868	.780	.439	.005
		Huynh-Feldt	1.453	1.769	.821	.780	.445	.005
		Lower-bound	1.453	1.000	1.453	.780	.379	.005
	OFS	Sphericity Assumed	.100	2	.050	.162	.850	.001
		Greenhouse-Geisser	.100	1.942	.052	.162	.844	.001
		Huynh-Feldt	.100	2.000	.050	.162	.850	.001
		Lower-bound	.100	1.000	.100	.162	.688	.001
DJ * INTJ * INFJ	SWR	Sphericity Assumed	.189	2	.095	.102	.903	.001
		Greenhouse-Geisser	.189	1.675	.113	.102	.870	.001
		Huynh-Feldt	.189	1.769	.107	.102	.881	.001
		Lower-bound	.189	1.000	.189	.102	.750	.001
	OFS	Sphericity Assumed	.478	2	.239	.771	.463	.005
		Greenhouse-Geisser	.478	1.942	.246	.771	.460	.005
		Huynh-Feldt	.478	2.000	.239	.771	.463	.005
		Lower-bound	.478	1.000	.478	.771	.381	.005
DJ * PJ * INTJ * INFJ	SWR	Sphericity Assumed	1.554	2	.777	.834	.435	.005
		Greenhouse-Geisser	1.554	1.675	.928	.834	.417	.005
		Huynh-Feldt	1.554	1.769	.879	.834	.423	.005
		Lower-bound	1.554	1.000	1.554	.834	.363	.005
	OFS	Sphericity Assumed	.310	2	.155	.500	.607	.003
		Greenhouse-Geisser	.310	1.942	.159	.500	.602	.003
		Huynh-Feldt	.310	2.000	.155	.500	.607	.003
		Lower-bound	.310	1.000	.310	.500	.481	.003
Error(DIS)	SWR	Sphericity Assumed	283.267	304	.932			
		Greenhouse-Geisser	283.267	254.536	1.113			
		Huynh-Feldt	283.267	268.895	1.053			
		Lower-bound	283.267	152.000	1.864			
	OFS	Sphericity Assumed	94.230	304	.310			
		Greenhouse-Geisser	94.230	295.182	.319			
		Huynh-Feldt	94.230	304.000	.310			
		Lower-bound	94.230	152.000	.620			

Tests of Within-Subjects Contrasts

Source	Measure	DIS	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
DJ	SWR	Linear	471.259	1	471.259	418.917	.000	.734
		Quadratic	32.881	1	32.881	44.514	.000	.227
	OFS	Linear	50.403	1	50.403	154.487	.000	.504
		Quadratic	4.959	1	4.959	16.888	.000	.100
DJ * PJ	SWR	Linear	1.750	1	1.750	1.556	.214	.010
		Quadratic	.000	1	.000	.000	.990	.000
	OFS	Linear	1.378	1	1.378	4.224	.042	.027
		Quadratic	.158	1	.158	.540	.464	.004
DJ* INTJ	SWR	Linear	8.778	1	8.778	7.803	.006	.049
		Quadratic	.142	1	.142	.192	.662	.001
	OFS	Linear	1.050	1	1.050	3.219	.075	.021
		Quadratic	.686	1	.686	2.337	.128	.015
DJ * INFJ	SWR	Linear	11.628	1	11.628	10.337	.002	.064
		Quadratic	.520	1	.520	.703	.403	.005
	OFS	Linear	2.875	1	2.875	8.813	.003	.055
		Quadratic	.301	1	.301	1.025	.313	.007
DJ * PJ * INTJ	SWR	Linear	.009	1	.009	.008	.930	.000
		Quadratic	.126	1	.126	.171	.680	.001
	OFS	Linear	.028	1	.028	.086	.769	.001
		Quadratic	.301	1	.301	1.025	.313	.007
DJ * PJ * INFJ	SWR	Linear	.078	1	.078	.069	.792	.000
		Quadratic	1.375	1	1.375	1.862	.174	.012
	OFS	Linear	.059	1	.059	.180	.672	.001
		Quadratic	.042	1	.042	.142	.707	.001
DJ * INTJ * INFJ	SWR	Linear	.184	1	.184	.163	.687	.001
		Quadratic	.006	1	.006	.008	.930	.000
	OFS	Linear	.153	1	.153	.469	.494	.003
		Quadratic	.325	1	.325	1.107	.294	.007
DJ* PJ * INTJ * INFJ	SWR	Linear	1.378	1	1.378	1.225	.270	.008
		Quadratic	.176	1	.176	.238	.626	.002
	OFS	Linear	.184	1	.184	.563	.454	.004
		Quadratic	.126	1	.126	.429	.513	.003
Error(DIS)	SWR	Linear	170.992	152	1.125			
		Quadratic	112.275	152	.739			

OFS	Linear	49.592	152	.326			
	Quadratic	44.638	152	.294			

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
SWRLOW	1.684	7	152	.117
SWRMEDIUM	1.023	7	152	.417
SWRHIGH	4.616	7	152	.000
OFSLOW	.682	7	152	.687
OFSMEDIUM	.923	7	152	.490
OFSHIGH	2.434	7	152	.022

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + PJ + INTJ + INFJ + PJ * INTJ + PJ * INFJ + INTJ * INFJ + PJ * INTJ * INFJ

Within Subjects Design: DJ

Tests of Between-Subjects Effects

Transformed Variable: Average

Source	Measure	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	SWR	7557.823	1	7557.823	2922.797	.000	.951
	OFS	7752.169	1	7752.169	12758.878	.000	.988
PJ	SWR	26.759	1	26.759	10.348	.002	.064
	OFS	1.834	1	1.834	3.018	.084	.019
INTJ	SWR	100.223	1	100.223	38.759	.000	.203
	OFS	22.678	1	22.678	37.325	.000	.197
INFJ	SWR	2.315	1	2.315	.895	.346	.006
	OFS	.352	1	.352	.579	.448	.004
PJ * INTJ	SWR	3.333	1	3.333	1.289	.258	.008
	OFS	.469	1	.469	.771	.381	.005
PJ * INFJ	SWR	2.045	1	2.045	.791	.375	.005
	OFS	.222	1	.222	.366	.546	.002
INTJ * INFJ	SWR	3.559	1	3.559	1.376	.243	.009
	OFS	.978	1	.978	1.610	.206	.010
PJ * INTJ * INFJ	SWR	.008	1	.008	.003	.955	.000
	OFS	.019	1	.019	.031	.861	.000
Error	SWR	393.044	152	2.586			
	OFS	92.354	152	.608			

Estimated Marginal Means

1. Grand Mean

Measure	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
SWR	3.968	.073	3.823	4.113
OFS	4.019	.036	3.948	4.089

2. Procedural justice

Estimates

Measure	procedural level	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
SWR	low PJ-level	3.732	.104	3.527	3.937
	high PJ-level	4.204	.104	3.999	4.409
OFS	low PJ-level	3.957	.050	3.858	4.056
	high PJ-level	4.081	.050	3.981	4.180

Pairwise Comparisons

Measure	(I) procedural level	(J) procedural level	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
SWR	low PJ-level	high PJ-level	-.472*	.147	.002	-.762	-.182
	high PJ-level	low PJ-level	.472*	.147	.002	.182	.762
OFS	low PJ-level	high PJ-level	-.124	.071	.084	-.264	.017
	high PJ-level	low PJ-level	.124	.071	.084	-.017	.264

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.069	5.557[a]	2.000	151.000	.005	.069
Wilks' lambda	.931	5.557[a]	2.000	151.000	.005	.069
Hotelling's trace	.074	5.557[a]	2.000	151.000	.005	.069
Roy's largest root	.074	5.557[a]	2.000	151.000	.005	.069

Each F tests the multivariate effect of procedural justice. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

Univariate Tests

Measure		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
SWR	Contrast	8.920	1	8.920	10.348	.002	.064
	Error	131.015	152	.862			
OFS	Contrast	.611	1	.611	3.018	.084	.019
	Error	30.785	152	.203			

The F tests the effect of procedural justice. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

3. Interactional justice

Estimates

Measure	interactional level	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
SWR	low INTJ-level	3.511	.104	3.306	3.716
	high INTJ-level	4.425	.104	4.220	4.630
OFS	low INTJ-level	3.801	.050	3.702	3.901
	high INTJ-level	4.236	.050	4.137	4.336

Pairwise Comparisons

Measure	(I) interactional level	(J) interactional level	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
SWR	low INTJ-level	high INTJ-level	-.914*	.147	.000	-1.204	-.624
	high INTJ-level	low INTJ-level	.914*	.147	.000	.624	1.204
OFS	low INTJ-level	high INTJ-level	-.435*	.071	.000	-.575	-.294
	high INTJ-level	low INTJ-level	.435*	.071	.000	.294	.575

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.224	21.812[a]	2.000	151.000	.000	.224
Wilks' lambda	.776	21.812[a]	2.000	151.000	.000	.224
Hotelling's trace	.289	21.812[a]	2.000	151.000	.000	.224
Roy's largest root	.289	21.812[a]	2.000	151.000	.000	.224

Each F tests the multivariate effect of interactional justice. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

Univariate Tests

Measure		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
SWR	Contrast	33.408	1	33.408	38.759	.000	.203
	Error	131.015	152	.862			
OFS	Contrast	7.559	1	7.559	37.325	.000	.197
	Error	30.785	152	.203			

The F tests the effect of interactional justice. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

4. Informational Justice

Estimates

Measure	informational level	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
SWR	low INFJ-level	3.899	.104	3.694	4.104
	high INFJ-level	4.037	.104	3.832	4.243
OFS	low INFJ-level	3.992	.050	3.892	4.091
	high INFJ-level	4.046	.050	3.946	4.145

Pairwise Comparisons

Measure	(I) informational level	(J) informational level	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
						Lower Bound	Upper Bound
SWR	low INFJ-level	high INFJ-level	-.139	.147	.346	-.429	.151
	high INFJ-level	low INFJ-level	.139	.147	.346	-.151	.429
OFS	low INFJ-level	high INFJ-level	-.054	.071	.448	-.195	.086
	high INFJ-level	low INFJ-level	.054	.071	.448	-.086	.195

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.006	.450[a]	2.000	151.000	.639	.006
Wilks' lambda	.994	.450[a]	2.000	151.000	.639	.006
Hotelling's trace	.006	.450[a]	2.000	151.000	.639	.006
Roy's largest root	.006	.450[a]	2.000	151.000	.639	.006

Each F tests the multivariate effect of informational justice. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

Univariate Tests

Measure		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
SWR	Contrast	.772	1	.772	.895	.346	.006
	Error	131.015	152	.862			
OFS	Contrast	.117	1	.117	.579	.448	.004
	Error	30.785	152	.203			

The F tests the effect of informational level. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

5. DIS justice

Estimates

Measure	DIS	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
SWR	1	2.940	.091	2.760	3.119
	2	3.598	.106	3.389	3.807
	3	5.367	.091	5.186	5.547
OFS	1	3.694	.049	3.596	3.791
	2	3.875	.056	3.765	3.985
	3	4.487	.046	4.396	4.579

Pairwise Comparisons

Measure	(I) DIS	(J) DIS	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
SWR	1	2	-.658*	.081	.000	-.818	-.499
		3	-2.427*	.119	.000	-2.661	-2.193
	2	1	.658*	.081	.000	.499	.818
		3	-1.769*	.120	.000	-2.006	-1.532

	3	1	2.427*	.119	.000	2.193	2.661
		2	1.769*	.120	.000	1.532	2.006
OFS	1	2	-.181*	.057	.002	-.293	-.069
		3	-.794*	.064	.000	-.920	-.668
	2	1	.181*	.057	.002	.069	.293
		3	-.612*	.066	.000	-.742	-.483
	3	1	.794*	.064	.000	.668	.920
		2	.612*	.066	.000	.483	.742

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.742	107.130[a]	4.000	149.000	.000	.742
Wilks' lambda	.258	107.130[a]	4.000	149.000	.000	.742
Hotelling's trace	2.876	107.130[a]	4.000	149.000	.000	.742
Roy's largest root	2.876	107.130[a]	4.000	149.000	.000	.742

Each F tests the multivariate effect of DIS. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

6. INTJ* DIS

Measure	interactional level	DIS	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
SWR	low inter-level	1	2.329	.129	2.075	2.584
		2	3.117	.150	2.821	3.412
		3	5.088	.129	4.833	5.342
	high inter-level	1	3.550	.129	3.296	3.804
		2	4.079	.150	3.783	4.375
		3	5.646	.129	5.391	5.901
OFS	low inter-level	1	3.446	.070	3.308	3.584
		2	3.604	.079	3.449	3.759
		3	4.354	.066	4.224	4.484
	high inter-level	1	3.942	.070	3.804	4.079
		2	4.146	.079	3.991	4.301
		3	4.621	.066	4.491	4.751

7. INFJ * DIS

Measure	informational level	DIS	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
SWR	low inform-level	1	3.038	.129	2.783	3.292
		2	3.575	.150	3.279	3.871
		3	5.083	.129	4.828	5.338
	high inform-level	1	2.842	.129	2.587	3.096
		2	3.621	.150	3.325	3.917
		3	5.650	.129	5.395	5.905
OFS	low inform-level	1	3.779	.070	3.641	3.917
		2	3.813	.079	3.657	3.968
		3	4.383	.066	4.254	4.513
	high inform-level	1	3.608	.070	3.471	3.746
		2	3.938	.079	3.782	4.093
		3	4.592	.066	4.462	4.721

Appendix 5: Simple Effects Tests Results in SPSS

```
GLM SATISLOW SATISMEDIUM SATISHIGH OVERLOW OVERMEDIUM OVERHIGH BY
PROLEVEL INTERLEVEL INFORMLEVEL
  /WSFACTOR=DJ 3 Polynomial
  /MEASURE=SWR OFS
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(OVERALL)
  /EMMEANS=TABLES(PJ) COMPARE ADJ(SIDAK)
  /EMMEANS=TABLES(INTJ) COMPARE ADJ(SIDAK)
  /EMMEANS=TABLES(INFJ) COMPARE ADJ(SIDAK)
  /EMMEANS=TABLES(DJ) COMPARE ADJ(SIDAK)
  /EMMEANS=TABLES(INTJ*DJ)  COMPARE(DJ) ADJ(SIDAK)
  /EMMEANS=TABLES(INFJ*DJ)  COMPARE(DJ) ADJ(SIDAK)
  /PRINT=DESCRIPTIVE ETASQ HOMOGENEITY
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=DJ
  /DESIGN=PJ INTJ INFJ PJ*INTJ PJ*INFJ INTJ*INFJ PJ*INTJ*INFJ.
```

Note: The syntaxes in yellow are the exact commands for running a simple effects test. This part begins from part 6 because all the other results are exactly the same as the tables in Appendix 4.

6. INTJ * DJ

Estimates

Measure	interactional level	DJ	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
SWR	low level	1	2.329	.129	2.075	2.584
		2	3.117	.150	2.821	3.412
		3	5.088	.129	4.833	5.342
	high level	1	3.550	.129	3.296	3.804
		2	4.079	.150	3.783	4.375
		3	5.646	.129	5.391	5.901

Pairwise Comparisons

Measure	interactional level	(I) DJ	(J) DJ	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
							Lower Bound	Upper Bound
SWR	low INTJ	1	2	-.788*	.114	.000	-1.013	-.562
			3	-2.758*	.168	.000	-3.090	-2.427
		2	1	.788*	.114	.000	.562	1.013
			3	-1.971*	.169	.000	-2.306	-1.636
		3	1	2.758*	.168	.000	2.427	3.090
			2	1.971*	.169	.000	1.636	2.306
	high INTJ	1	2	-.529*	.114	.000	-.755	-.304
			3	-2.096*	.168	.000	-2.427	-1.765
		2	1	.529*	.114	.000	.304	.755
			3	-1.567*	.169	.000	-1.902	-1.232
		3	1	2.096*	.168	.000	1.765	2.427
			2	1.567*	.169	.000	1.232	1.902

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Multivariate Tests

interactional level		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Low level	Pillai's trace	.649	68.741[a]	4.000	149.000	.000	.649
	Wilks' lambda	.351	68.741[a]	4.000	149.000	.000	.649
	Hotelling's trace	1.845	68.741[a]	4.000	149.000	.000	.649
	Roy's largest root	1.845	68.741[a]	4.000	149.000	.000	.649
High level	Pillai's trace	.522	40.709[a]	4.000	149.000	.000	.522
	Wilks' lambda	.478	40.709[a]	4.000	149.000	.000	.522
	Hotelling's trace	1.093	40.709[a]	4.000	149.000	.000	.522
	Roy's largest root	1.093	40.709[a]	4.000	149.000	.000	.522

Each F tests the multivariate simple effects of DJ within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

7. INFJ * DJ

Estimates

Measure	informational level	DJ	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
SWR	low level	1	3.038	.129	2.783	3.292
		2	3.575	.150	3.279	3.871
		3	5.083	.129	4.828	5.338
	high level	1	2.842	.129	2.587	3.096
		2	3.621	.150	3.325	3.917
		3	5.650	.129	5.395	5.905
OFS	low level	1	3.779	.070	3.641	3.917
		2	3.813	.079	3.657	3.968
		3	4.383	.066	4.254	4.513
	high level	1	3.608	.070	3.471	3.746
		2	3.938	.079	3.782	4.093
		3	4.592	.066	4.462	4.721

Pairwise Comparisons

Measure	informational level	(I) DJ	(J) DJ	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
							Lower Bound	Upper Bound
SWR	low level	1	2	-.538*	.114	.000	-.763	-.312
			3	-2.046*	.168	.000	-2.377	-1.715
		2	1	.538*	.114	.000	.312	.763
			3	-1.508*	.169	.000	-1.843	-1.173
		3	1	2.046*	.168	.000	1.715	2.377
			2	1.508*	.169	.000	1.173	1.843
	high level	1	2	-.779*	.114	.000	-1.005	-.554
			3	-2.808*	.168	.000	-3.140	-2.477

		2	1	.779*	.114	.000	.554	1.005
			3	-2.029*	.169	.000	-2.364	-1.694
		3	1	2.808*	.168	.000	2.477	3.140
			2	2.029*	.169	.000	1.694	2.364
OFS	low level	1	2	-.033	.080	.678	-.192	.125
			3	-.604*	.090	.000	-.783	-.426
		2	1	.033	.080	.678	-.125	.192
			3	-.571*	.093	.000	-.755	-.387
		3	1	.604*	.090	.000	.426	.783
			2	.571*	.093	.000	.387	.755
	high level	1	2	-.329*	.080	.000	-.488	-.171
			3	-.983*	.090	.000	-1.162	-.805
		2	1	.329*	.080	.000	.171	.488
			3	-.654*	.093	.000	-.838	-.470
		3	1	.983*	.090	.000	.805	1.162
			2	.654*	.093	.000	.470	.838

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Multivariate Tests

informational level		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
low level	Pillai's trace	.497	36.846[a]	4.000	149.000	.000	.497
	Wilks' lambda	.503	36.846[a]	4.000	149.000	.000	.497
	Hotelling's trace	.989	36.846[a]	4.000	149.000	.000	.497
	Roy's largest root	.989	36.846[a]	4.000	149.000	.000	.497
high level	Pillai's trace	.667	74.737[a]	4.000	149.000	.000	.667
	Wilks' lambda	.333	74.737[a]	4.000	149.000	.000	.667
	Hotelling's trace	2.006	74.737[a]	4.000	149.000	.000	.667
	Roy's largest root	2.006	74.737[a]	4.000	149.000	.000	.667

Each F tests the multivariate simple effects of DJ within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

Appendix 6: Regression Analysis of Repurchase Intent Results in SPSS

```
GET
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT RPI
  /METHOD=ENTER SWR OFS.
```

Descriptive Statistics

	Mean	Std. Deviation	N
RPI	3.8292	1.13290	160
SWR	3.9681	1.05537	160
OFS	4.0187	.49928	160

Correlations

		RPI	SWR	OFS
Pearson Correlation	RPI	1.000	.739	.726
	SWR	.739	1.000	.792
	OFS	.726	.792	1.000
Sig. (1-tailed)	RPI	.	.000	.000
	SWR	.000	.	.000
	OFS	.000	.000	.
N	RPI	160	160	160
	SWR	160	160	160
	OFS	160	160	160

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.774[a]	.599	.594	.72206

a. Predictors: (Constant), OFS, SWR

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	122.215	2	61.108	117.205	.000[b]
	Residual	81.856	157	.521		
	Total	204.071	159			

a. Dependent Variable: RPI

b. Predictors: (Constant), OFS, SWR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.483	.525		-2.823	.005
	SWR	.473	.089	.440	5.318	.000
	OFS	.855	.188	.377	4.550	.000

a. Dependent Variable: RPI

Appendix 7: Regression Analysis of Negative Word-of-mouth Results in SPSS

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT NWOM
  /METHOD=ENTER SWR OFS.
```

Descriptive Statistics

	Mean	Std. Deviation	N
NWOM	4.1215	1.04401	160
SWR	3.9681	1.05537	160
OFS	4.0187	.49928	160

Correlations

		NWOM	SWR	OFS
Pearson Correlation	NWOM	1.000	-.494	-.368
	SWR	-.494	1.000	.792
	OFS	-.368	.792	1.000
Sig. (1-tailed)	NWOM	.	.000	.000
	SWR	.000	.	.000
	OFS	.000	.000	.
N	NWOM	160	160	160
	SWR	160	160	160
	OFS	160	160	160

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.495[a]	.245	.236	.91281

a. Predictors: (Constant), OFS, SWR

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.488	2	21.244	25.496	.000[b]
	Residual	130.816	157	.833		
	Total	173.304	159			

a. Dependent Variable: NWOM

b. Predictors: (Constant), OFS, SWR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.732	.664		8.631	.000
	SWR	-.537	.112	-.543	-4.777	.000
	OFS	.130	.238	.062	.545	.586

a. Dependent Variable: NWOM

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Richting: **Master of Management-International Marketing Strategy**
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Datum: **27/08/2014**