A Qualitative Comparative Analysis to Identify Effective Designs of Online Promotions

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ABSTRACT

In recent years, sales promotions have been increasingly used by companies and become a large part of marketing spending worldwide to attract attention, generate excitement and increase profits. To stand out from a flood of frequent sales promotion practices, marketers need to carefully design various promotion attributes such as time limit, type of incentives and exclusivity. The mere effect of particular promotion attributes on purchase decisions have far been studied by previous researches but the findings are ambiguous and inconsistent. How the effect of promotion attribute on consumers’ response varies with the presence of other attributes is worth investigation. This study fills this gap by employing a novel and holistic view that focus on the configurative effect of promotion attributes. We posit that a promotion is best understood as a configuration of attributes. Drawing on previous research on promotion, it is hypothesized that individual promotion attributes could have either positive or negative effects when combined with other promotional characteristics. Moreover, only specific combinations of attributes rather than individual promotion attributes lead to promotion effectiveness. Specifically, we identify configurations of promotion attributes that can help companies to achieve market expansion and customer acceleration. A set-theoretic method (Qualitative Comparative Analysis) is applied to address the research question. The results show that promotion attributes should be aligned one another as well as the promotion purpose to achieve effectiveness. The research findings about causally relevant conditions of an effective promotion can help managers to formulate the design of promotions for different purpose.

Keywords: Sales promotions; Qualitative comparative analysis; Fit logic
1. INTRODUCTION

Sales promotion, as one of the promotion mix (others are advertisement, public relations and personal selling), continues to be a large part of the marketing communication expenditures (Hardesty & Bearden, 2003). While plenty of researches look into advertising, sales promotion received limited attention even if the expenditure on it outweighing that spent on advertising (Belch & Belch, 2003, DelVecchio, 2005, Raghubir, Inman, & Grande, 2004). In 2013, Samsung's sales promotion spending (US$888 million in the first three quarters) in South Korea has exceeded its advertisement spending (Yonhap News). It is proved that sales promotion campaigns can help to stimulate unplanned consumptions on both promoted and non-promoted merchandise (Inman, McAlister, & Hoyer, 1990, Mulhern & Padgett, 1995), to accelerate passenger flows (Walters & Rinne, 1986) and to reduce inventory by encouraging consumers to stockpile (Ailawadi & Neslin, 1998). To attain different goals, marketers are becoming progressively creative in providing promotion campaigns to consumers (Raghubir, et al., 2004). Wide range of promotion tactics and a variety of giveaways are being used by companies (Raghubir, et al., 2004). Consumers nowadays are being bombarded by multitudinous promotions for nearly every product category through different channels. Designing an effective promotion to arouse the recipient’s enthusiasm becomes a crux. The need to design an effective promotion shoots up with the capital and efforts spend on promotional.

Promotions are frequently used to increase sales, however, it goes beyond as economic incentive to purchase (Raghubir, et al., 2004). Promotions also affect consumers’ deal evaluations (Darke & Chung, 2005, Grewal, Krishnan, Baker, & Borin, 1998, Kim & Kramer, 2006). Consumers’ positive or negative attitude towards the campaign is a crucial determinant of how they communicate with other potential consumers through word-of-mouth (Anderson,
As WOM plays a major role when people deliberating the purchase of products and service (Bansal & Voyer, 2000, Engel, Kegerreis, & Blackwell, 1969, Schmitt, Skiera, & Van den Bulte, 2011), designing promotion to effective frame consumers’ WOM behavior is also pivotal. In this paper, we choose sales and word-of-mouth volume to measure promotion effectiveness. We posit that promotion attributes should be configured according to the purpose of sales promotion, namely stimulate sales or generate word-of-mouth. In other words, the design of promotion attributes to stimulate sales could be different from that to generate impacts.

More than a decade, researchers have put their efforts on the mere effect of particular promotion attribute on purchase decisions (Ailawadi & Neslin, 1998). For example, promotion with premium will lower consumers' willing to pay for both key products and premium (Kamins, Folkes, & Fedorikhin, 2009). While previous promotion research treats the impact of each promotion attribute separately, this paper investigates the configurative impact of multiple attributes on promotion effectiveness. Research and empirical evidence on this aspect is non-existent. We focus on three types of sales promotion attributes that most commonly used in both online and offline promotion campaigns, namely type of giveaways (monetary vs. nonmonetary), time limitation and deal exclusivity.

We develop our conceptual framework draws on fit logic and previous literature on promotion. Set-theoretical methods (QCA) will be adopted to identify multiple potentially effective configurations of promotion attributes for different purpose. Different from conventional, variable-based approaches, set-theoretical methods explicitly conceptualize cases as combinations of attributes. It emphasizes that it is the relationships and complementarities between multiple attributes give cases unique nature but not on a single attribute (Fiss, 2011,
Rihoux & Ragin, 2009). The present study jumps out of the constant controversies over individual promotion attributes by regarding all promotion attributes in a promotion campaign as a whole to influence promotion effectiveness. Each promotion campaign is treated as a single case for configurational analysis. We attempt to explore necessary and sufficient configuration of promotion attributes that can make a promotion campaign effective. Based on the results, marketers can formulate an appropriate promotion campaign that fits with different promotion purposes.

We organize the paper as follows. In the next section, we review the literature on consumer’s response to sales promotion and summarize the effect of promotional attributes on consumer perception and purchase behavior. After the literature review, we develop our theoretical framework and research propositions. A field study of 624 promotional campaigns is conducted by using qualitative comparative analysis. At the end of the paper, we discuss the implication and limitations of this study.

2. LITERATURE REVIEW

Given the importance and long history of sales promotion, the marketing literature has accumulated a vast body of knowledge about how promotion works (Grewal, Ailawadi, Gauri, Hall, Kopalle, & Robertson, 2011). Knowing the underlying mechanism of consumers’ response to sales promotion can help us to design sales promotion more effectively. Benefit is proved to be a major reason that consumers response to sales promotion. It is defined as the personal value consumers attach to a promotion, in other words, what consumers think a promotion can provide to them (Chandon, Wansink, & Laurent, 2000, Keller, 1993). Behavioral researches explained people’s response to sales promotion with individual demographic and psychographic characteristics such as coupon proneness, value consciousness,
or market mavenism (Feick & Price, 1987, Lichtenstein, Netemeyer, & Burton, 1995, Lichtenstein, Netemeyer, & Burton, 1990, Mittal, 1994). However, these individual level studies cannot examine the nature and the number of the specific consumer benefits of sales promotions (Chandon, et al., 2000). As most classifications of customer value, benefits from sales promotion can be further distinguished into utilitarian (extrinsic) and hedonic (intrinsic) benefits (Mittal, 1994, Park, Jaworski, & MacInnis, 1986). For utilitarian benefits, utility theory (Thaler, 1985) gave that the total utility of sales promotion consumers comes from both acquisition utility and transaction utility. Acquisition utility denoted by the difference between the utility of purchased good comparing to purchase price. It relates to the economic gain or loss from certain purchase transaction. The transaction utility is about the pleasure (or displeasure) associated with the financial terms that comes from the comparison between consumers’ internal reference prices with actual purchase price. In this case, monetary promotion can increase both acquisition and transaction utility as it allows consumers to pay in a lower purchase price. Non-monetary promotion makes deal recipients feel "good deals" as it increases the acquisition utility by providing extra utility (the utility of premium). Apart from utilitarian benefits (like savings, quality, and convenience), hedonic benefits can reward consumers with intrinsically experiential emotions such as entertainment pleasure, and self-esteem (Chandon, et al., 2000). Premium can provide deal recipients with hedonic benefits as it provides chance to explore new product (the premium). As hedonic benefits usually correspond to consumers’ underlying needs for social approval or expression, consumers may value exclusive promotion because it relates to their self-concept (Solomon, 1983).

Based on the analysis of consumer’s response to promotion, it can be seen that various promotion attribute can vary the perceived benefit of a promotion. The benefit is not a simple sum up effect, as some of the promotion attribute could have synergy or conflict effect with
others. To find out the combinations of promotion attributes eventually achieve effectiveness is the primary purpose. A brief review of previous research on giveaway (monetary and nonmonetary), time limitation and exclusivity will be given separately.

Monetary versus Nonmonetary Promotions

Marketers often have the option to offer monetary or non-monetary giveaways when designing promotions. Monetary promotion is framed as a loss reducing the initial purchase price while non-monetary promotion is framed as a gain segregated from the original purchase price (Chandon, et al., 2000, Thaler, 1985). Both of them can affect consumers’ perceived value of a promotion: monetary promotion decreases the denominator of the ratio (pay out) but non-monetary promotion increases the numerator (gain in) (Hardesty, 1998). Regarding promotion types, monetary promotions usually present as shelf-price discounts, coupons, rebates and price packs (Chandon, et al., 2000), which tend to be effective on traffic generation (Grewal, et al., 1998) and brand performance (Chakraborty & Cole, 1991, Dodson, Tybout, & Sternthal, 1978). Whereas non-monetary promotions present in the form of free gifts and premiums, BOGOF (buy one get one free), sweepstakes, contests and loyalty programs (Chandon, et al., 2000), which usually involve delayed rewards and are more relationship-based (Kwok & Uncles, 2005). For years, monetary promotions have played a substantial role in the promotions and purchasing of products (Blattberg & Neslin, 1990). Most prior studies have investigated consumers’ responses toward monetary promotion. However, non-monetary promotion with the value of the discounts that are uncertain at the point of purchase, such as free gifts and premiums, deserves greater intention when studying sales promotion (Choi, Stanyer, & Kim, 2010, Sinha & Smith, 2000). As marketers and scholars realizing monetary promotion can damage profitability and brand equity as well as undermine perception of quality (Abraham & Lodish, 1989, Kahn & McAlister, 1997, Mela, Gupta, &
Lehmann, 1997), they are calling for alternatives. Non-monetary promotions are gaining popularity and premium is one of the most popular types (Nunes & Park, 2003, Palazon & Delgado-Ballester, 2009). For example, non-monetary promotion can offer premium, which is simply a product or a service offered free or at a relatively low price in return for the purchase of one or many products or services (d'Astous & Jacob, 2002).

**Time Limit Promotion**

Generally speaking, every promotion can be seen as limited time offer since none of them lasts forever. However, in this research we apply a stricter definition of time limitation promotion and consider only those explicitly mention about time restriction. Time limitation has been identified as an important exogenous variable for consumer purchase decision (Howard & Sheth, 1969). Limited-time-only deals, acts as a skillful manipulation of visceral factors, arouse unexplained urgency to consumers and encourage them to make decision at the moment rather than careful deliberation (Loewenstein, 1996). The mere presence of a restriction leads consumers to infer that a deal is a good one, so restriction is regarded as “promoters” of promotions (Jeffrey Inman, Peter, & Raghubir, 1997).

Previous research has investigated the reasons why time limited promotion works. Prospective theory suggested that people are more sensitive to losses than gains (Kahneman & Tversky, 1979, Mowen & Mowen, 1991) and have stronger reaction to negative changes comparing to positive changes (Raghubir, 2006). When consumers have tendency to avoid losses associated with the promotional opportunities under scarcity conditions (Inman & McAlister, 1994), time limited promotion would be more appealing. Facing the possibility of “loss”, people will take on riskier decisions aimed at loss aversion (here is to take the promotion). When the deadline is mentioned, consumer notices the possibility of losing the opportunity to take advantage of the
promotional offer. If consumers initially frame a promotion as a potential gain, time limitation information may lead them to reframe the promotion as a potential loss (Spears, 2001). "...The shift to the loss frame should increase the probability of redemption as the expiration date approaches" (Kahneman & Tversky, 1979). Because of this, imposing a time restriction on a promotion can accelerate purchase.

Regret theory provides another theoretical basis for the expiration effect. The theory of regret states that an individual evaluates his or her expected reactions to a future event or situation which bridges the past and the future in the present (Zeelenberg & Pieters, 2007). Regret is described as an emotion stemming from comparing one’s own decision or action with the state of a forgone alternative (Bell, 1985). It was found that regret affect consumers behavior: when instructed to anticipate regret, people show higher likelihood to take the current available preferential price (Simonson, 1992). A market response model was developed to figure out how consumers’ cumulative coupon redemptions behavior over time (Ward & Davis, 1978). Based on this, Inman and McAlister 1994 proposed an “Expiration Model” with the idea that when consumers anticipate they will feel regret for missing an expired coupon's savings, their tendency to avoid regret should increase as the coupon's expiration date draws closer. Hence, as the expiration date approaches, consumers show higher likelihood to redeem the coupon (Inman & McAlister, 1994).

According to previous study (Jeffrey Inman, et al., 1997), three are three possible routes through which restrictions could affect consumer behavior: (i) the affective route, consumers may feel irritated or inconvenienced about the offer, (ii) the economic route, through making the consumer lose an opportunity to stockpile at a low price, or forcing him or her to make additional purchases; or (iii) the informative route, through changing what consumers believe
about the transaction.

**Exclusive Promotion**

Exclusive promotion is promotion that offered selectively to some consumers but not to others (Barone & Roy, 2010). Thus, it has deal recipients and deal non-recipients. Nowadays, vast databases enable marketers to make specific offers, depends on consumers’ prior purchase behavior, to individual consumers to reward repeat purchases (Acquisti & Varian, 2005, Drèze & Nunes, 2009). Marketers use exclusive promotion to build stronger company-customer relationships, increases customer satisfaction and stimulate consumption (Homburg, Droll, & Totzek, 2008, Lacey, Suh, & Morgan, 2007). The Pareto Principle (or the 80/20 rule, the law of a vital few) gives that a large fraction of a firm’s sales and profits come from a small proportion of customers, thus how to reward these small fraction loyal customers is a vital business decision (Drèze & Nunes, 2009, McFerran & Argo, 2014). Exclusive promotion is a useful tool to reward these certain consumers as it provides deal recipients hard benefits as well as recognition as soft benefits (Gaughan and Ferguson 2005; Uddin 2001). Exclusive deals adopts different pricing policies to different consumers (Barone & Roy, 2010, Bult & Wansbeek, 1995). This strategy helps companies to avoid or minimize a trade-off between universal high or low price by charging different prices to these two segments of consumers (Feinberg, Krishna, & Zhang, 2002), and more efficient than across-the-board sales to deal with price-insensitive consumers sales promotions (Feinberg, et al., 2002).

From a purely economic perspective, rational consumers should make their purchase decision solely based on the prices they received regardless of the prices offer to other consumers (Feinberg, et al., 2002). Equity frameworks suggested that consumers would not be that strong rational because people’s reaction to a promotion is not only decided by the outcomes they
received but also decided by interpersonal comparison (Adams, 1965, Bolton & Ockenfels, 2000, Greenberg, 1986). It is because people can hardly avoid social comparison, as it is pervasive both consciously and unconsciously (Gilbert, Giesler, & Morris, 1995) and forced by circumstances (Wheeler & Miyake, 1992, Wood, 1989). People feel better when they perceive themselves to be superior rather than inferior to others (Giordano, Wood, & Michela, 2000, Locke & Nekich, 2000). Preferential treatment can enhance recipients’ evaluations of the targeted promotion (Greenberg, 1987, Loewenstein, Thompson, & Bazerman, 1989). In the pre-Internet days, information is not transparent enough that few consumers can learn about firms' preferential pricing policies and have no knowledge about the prices firms offer to others. However, the spread of information is rapid nowadays, people can quickly know about firm’s preferential price (Feinberg, et al., 2002). Therefore, for deal non-recipients, they will feel less favorable preferences for a targeted deal that they are excluded from. However, recent research also suggests that exclusive promotions sometimes are not appeal, if deal recipients adopt a collectivist self-construal rather than independent self-construal (Barone & Roy, 2010). People with collectivist self-construal concern more about fairness. They perceive exclusive promotion is unfair and give less preference on it, even though they are recipients.

To summarize, previous research focuses on the mere effect of particular promotion attributes on purchase decisions. The literature on promotions suggests inconsistent effects of individual promotion attributes. However, our framework will draw on “fit logic” whose idea is “different elements are not important intrinsically but depends on how they are aligned” (Venkatraman, 1989). The different promotion attributes should follow “Fit as Gestalts”, that means the coalignment of multiple variables is important. Instead of looking at linear associations among such variables, we will try to look through the integrative effect among promotion attributes and find the effective combination of variable that will increase sales and generate more
impacts.

3. THEORETICAL FRAMEWORK

In this research, we draw from configuration theory to investigate how promotion attributes can be aligned with one another to achieve different promotion purposes.

Configuration Effects of Promotion Attributes

Previous studies suggest that individual attributes have complex trade-off effects on consumer perception and purchase (Darke & Chung, 2005, Palazón & Delgado, 2009). However, the research findings regarding the individual effects of promotion attributes have found to be ambiguous and inconsistent across different settings (Fox, Montgomery, & Lodish, 2004, Grewal, et al., 2011). According to attribute information processing literature, for a complex offering, consumer will perceive the attributes as a holistic pattern of interdependent stimuli if the attributes have relational properties rather than atomistic properties (Veryzer & Hutchinson, 1998). We propose to use configuration theory based approaches to examine the integrative effects of complex antecedent conditions for a promotion strategy (Veliyath & Srinivasan, 1995). Configuration concepts have been served as footstone for theory construction in various areas with long history (Drazin & Van de Ven, 1985, Fry & Smith, 1987). Terms like “match,” “fit,” “alignment,” “contingent,” “congruence,” “complementary,” and “consistency” are used by scholars to denote configuration that examine the holistic relationships among various variables (Vorhies & Morgan, 2003). There are three principles of configuration theory: (1) the outcomes of interest rarely result from a single causal factor; (2) causal factors rarely operate in isolation; (3) the same causal factor may have different—even opposing—effects depending on the context (Greckhamer, Koro-Ljungberg, Cilesiz, & Hayes, 2008). We consider the design of an effective promotion is a multidimensional task, in which an appropriate configuration
among promotion attributes is important. The fit implies that individual attributes in a promotion design are not important intrinsically, but the way they align with each other is determinant to achieve promotion effectiveness (Venkatraman, 1989). This line of reasoning leads to a conceptual model based on fit logic (configuration theory) and promotion literature.

Promotion attributes should be used in conjunction with one another, and fit with promotion purpose to achieve effectiveness. In other words, the effect of individual attribute is affected by the presence or absence of other attributes. For example, promotion with time limitation activates a cognitive resource that can be used to judge the attractiveness of a promotion offer. If no other informative cues available, this resource leads to an inference of “good value”; if there are other value-related cues, the resource activated by time limitation will be used to process those cues (Jeffrey Inman, et al., 1997). Therefore, time limitation could stimulate either favorable or unfavorable judgments depends on whether there are other informative cues available at the same time. Therefore, we propose that a variable can either foster or inhibit effectiveness in a promotion in different context.

**Proposition 1**: Individual attribute have bilateral effect (either foster or inhibit) on promotion effectiveness, depending upon how it is configured with other attributes.

Fit-as-gestalts is the root of configuration theory (Ragin, 2000). Miller gave a clear description of gestalts as "Instead of looking at a few variables or at linear associations among such variables we should be trying to find frequently recurring clusters of attributes or gestalts" (Miller, 1981). If there do not exist a priori criterion for evaluating configuration (Drazin & Van de Ven, 1985), fit manifests itself as gestalts (Venkatraman, 1989). Based on this, the concept of equifinality is proposed. Equifinality refers to a situation where multiple forms of
antecedent attributes combination can be equally effective to reach ideal final state through a
variety of different paths (Drazin & Van de Ven, 1985, Gresov & Drazin, 1997, Katz & Kahn,
1978) and it is highly supported by previous research (Doty, Glick, & Huber, 1993, Jennings,
Rajaratnam, & Lawrence, 2003). Draw on configuration theory, we assume that there do not
exist a priori criterion for effective promotion, every combination that reach our expected
outcome (sales or word-of-mouth impact) will be effective combination. Promotion can serve
different purpose, to either increase or generate impact among potential customers. We propose
the following:

**Proposition 2:** There is more than one configuration for effective promotion strategies for
different purposes.

4. METHODOLOGY

To test the theoretical propositions on promotion attributes configuration, Qualitative
Comparative Analysis (QCA) will be adopted as an analytic approach. Originally developed for
sociology and political science, QCA has been developing at a steady pace and approaching
maturity with the complementation of other related methods and techniques (Katz & Kahn,
1978). Now the application of QCA has been increasingly discussed and expanded to other
research filed such as management (Fiss, 2007, Greckhamer, Misangyi, Elms, & Lacey, 2008)
and innovation (Greckhamer, et al., 2008) during the last few years.

QCA is a set of systematic comparative case analysis techniques that empirically explore the
holistic relationships between the outcome of interest (sales and WOM in this study) and all
possible combinations of binary states (presence or absence) of its predictors (Longest &
Vaisey, 2008). QCA mixes qualitative-quantitative technique to perform cased-based analysis.
Configurations of attributes are treated as cases for analysis. By using set relations, it examines not only individual cases but also clusters of similar cases to explore cross-case patterns. In this paper, we use QCA to examine the relationships between promotion effectiveness and all possible combinations of predictors. The three predictors under investigation are: monetary vs. non-monetary promotion, time limitation and exclusivity. By using QCA, we try to identify the conjunctive causal recipes of promotion attributes that can boost sales or generate impact or both.

QCA has several strengths for this study. Firstly, as we propose promotion design should be examined in a holistic way, QCA is compatible with our theoretical framework and enables a holistic comparison among different promotion configurations. Secondly, every promotion attribute has contrarian cases to main effect. Because of the existence of contrarian cases, high significance in multiple regression analysis is meaningless and configurational analysis should be adopted. Thirdly, QCA have its special advantage coping with equifinality. There is no prior benchmark of what is an ideal design of promotion. There are multiple promotional combinations that can achieve the same ideal outcome. Traditional methods can hardly deal with complex equifinality relationships among various configurations. Last but not least, scholars summarized the advantages of QCA over conventional methodology. Fuzzy set QCA helps to analyze data without the need to assume a given probability distribution (Fiss, 2011). Setting of membership and threshold of outcome selection are based on theoretical and substantive knowledge, thus reduce the reliance on sample representativeness and provide more empirical insights (Fiss, 2007). While MRA’s focus on net-effect of individual variables, QCA suits best to examine theory-based, complex causal relationship of multiple antecedent conditions.
According to Fiss (2011), there are four steps to implement a QCA analysis: Firstly, definition of the property space; secondly, development to set-membership measures; thirdly, evaluation of consistency in set relations; and lastly, logical reduction. Unlike MRA and SEM rely on matrix algebra, QCA sets membership and uses Boolean algebra to identify sufficient or necessary attribution combination that models relations among variables for an outcome of interest (Ordanini, Parasuraman, & Rubera, 2013).

5. EMPIRICAL STUDY

Data Collection

We tested our proposition with the data provided by a leading fashion e-tailer in China. The name of the corporation needs to be kept anonymity due to confidentiality. Established in 2001, this company is a professional and one of the most authoritative fashion shopping sites providing various clothing options, which including underwear, clothing, accessories for different age groups and both genders. It operates both an official website for transaction and a public homepage for promotion on a social network site (QQ.com, which is the largest and most popular social media platform in China). Based on traditional B to C mode, the company enhances its service to technology upgrading, product sales, customer service and distribution services. It also cooperates with manufacturers to create its own brand. Survey done by local marketing research firm “iResearch” gave that this company is the popular fashion website by female consumers and occupied a large portion of market share and ranked the third domestic B2C clothing retailer in 2011. Its public homepage has nearly two million followers, many of whom are consumers. The company release product promotions campaigns almost every day since 2011 on QQ homepage. Consumers can like and forward the promotion and are encouraged to leave comments. They can also post reviews and give ratings to products. In the promotion campaign page, consumers are directed to the shopping cart if they find items
desirable for purchasing.

We have data for 624 promotion campaigns from January 2011 to December 2013, including product reviews, ratings and cumulative sales. The data also contains the product prices, and the associated promotions design details (promotional attributes). In this paper, cash coupon is used as indicator for monetary promotion and free gifts are used for non-monetary promotion, as these are the most popular types (Nunes & Park, 2003, Palazon & Delgado-Ballester, 2009).

**Results from Conventional Regression Analysis**

Researchers are suggested to reconsider mainstream methodological rigidity go beyond multiple regression analysis and move to more pragmatic and holistic research methodology (Gummesson, 2008, Woodside, 2013). The relationship between a causal statement and a dependent variable can be divided into symmetric and asymmetric: symmetric relationship indicates high value of X is both necessary and sufficient for high value of Y to occur while asymmetric relationship indicates high value of X is only sufficient but not necessary for high value of Y to occur, because low value of X can lead to high value of Y as well. MRA is used to test to what extend the relationship between predictors and depend variable is symmetrical; for asymmetrical relationship that includes both high and low value of predictor combinations lead similar outcome, QCA should be adopted (Woodside, 2013).

A regression analysis was conducted with promotional attributes and sales as independent and dependent variables, respectively. The linear regression model can be described by:

\[
Sales_i = X_i \beta_1 + R_i \beta_2 + \varepsilon_i \quad (1)
\]

\(X_i\) contains the control variables that have influence on how consumers response to a promotion campaign. Specifically, we include likes (the number of likes for each online
promotion campaign), QQ volume (the number of response to each online promotion campaign) and price (the price of promoted product that corresponding to each promotion campaign). Contains four promotional attributes are treated as categorical variable and was dummy coded as present=1 and absent=0.

Table 1 summarizes the standardized estimates from the regression models. Results show that inducing cash coupon (0.148*** ) in promotion can significant increase sales while setting time limitation (-0.130**) for promotion will significantly reduce sales. Premium and exclusivity has no significant impact on sales in this analysis. The result shows that three of promotion attributes have significant correlation with sales and all the correlations are under 0.8. This implied asymmetric relationships, for which QCA is a more appropriate approach than multiple regression analysis (Woodside, 2013).

Table 1 Standardized Estimate from Regression Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized Coefficients</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CashCoupons</td>
<td>0.148</td>
<td>0.000***</td>
</tr>
<tr>
<td>Premium</td>
<td>-0.004</td>
<td>0.915</td>
</tr>
<tr>
<td>LimitedTime</td>
<td>-0.130</td>
<td>0.002**</td>
</tr>
<tr>
<td>Exclusivity</td>
<td>0.038</td>
<td>0.301</td>
</tr>
<tr>
<td>DumBrand</td>
<td>-0.045</td>
<td>0.208</td>
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<tr>
<td>LNPrice</td>
<td>-0.298</td>
<td>0.000***</td>
</tr>
<tr>
<td>Likes</td>
<td>-0.063</td>
<td>0.116</td>
</tr>
<tr>
<td>QQVol</td>
<td>0.400</td>
<td>0.000***</td>
</tr>
</tbody>
</table>

Adjusted R²  0.265
F-value  29.125
Significance Level  0.000

Notes: ***p<0.001; **p<0.01; *p<0.05 ;p<0.10;

Results from QCA Approach

QCA starts by defining the property space, which locates all possible cases with different combinations of causally relevant predictors. In most applications of QCA, attributes are represented using binary states: that is, presence or absence (Ragin, 1999). Our study employs
three frequently used promotional attributes, which are monetary vs. Non-monetary, time 
limitation and exclusivity. All these attributes are presented in dichotomies. The property space 
with all possible configurations is listed as rows in Table 2, where the uppercase letters stand for 
the presence of an attribute while lowercase letters represent its absence. There are four 
attributes (cashcoupons, premium, limitedtime and exclusivity) included in property spaces, 
which are all thought to be causally relevant with outcome variable. The presence of a factor is 
coded as one and absence is coded as zero. The numbers and proportion of each condition are 
presented here.

<table>
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<tr>
<th>Configurations</th>
<th>Cases</th>
<th>%</th>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>624</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Note. Cash = cash coupons; Pre = premium; Limit = limited time; 
Exclu = exclusivity. Lowercase = attribute absent, upper case = attribute present.

As all promotional attributes are naturally dichotomous, we can easily generate membership 
accordingly. The membership scores ranges from 0 to 1, where 1 represents full membership, 
here is present, and 0 represents no membership, here is absent. In Table 3, the means, standard 
deviations, and correlations of the three promotional attributes and dependent variables for this 
analysis are presented. We observe all the binary correlations among promotional attributes are
low, indicating the promotional attributes we selected are quite independent from each other; the low correlation between each promotional attribute with dependent variable suggests no significant individual main effect exits.

Table 3 Means, Standard Deviations, and Pairwise Correlations of Variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>cash~</th>
<th>premiu</th>
<th>lim~</th>
<th>ex~</th>
<th>~sales</th>
<th>~reads</th>
<th>~vol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash coupons</td>
<td>0.673</td>
<td>0.469</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premium</td>
<td>0.138</td>
<td>0.345</td>
<td>-0.078</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited time</td>
<td>0.418</td>
<td>0.494</td>
<td>0.203</td>
<td>0.085</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exclusivity</td>
<td>0.449</td>
<td>0.498</td>
<td>0.114</td>
<td>0.097</td>
<td>0.202</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td>0.46</td>
<td>0.499</td>
<td>0.205</td>
<td>0.014</td>
<td>0.019</td>
<td>0.040</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conreads</td>
<td>0.489</td>
<td>0.500</td>
<td>0.176</td>
<td>0.028</td>
<td>-0.010</td>
<td>0.065</td>
<td>0.744</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Conqqvol</td>
<td>0.5</td>
<td>0.500</td>
<td>0.041</td>
<td>-0.074</td>
<td>-0.166</td>
<td>0</td>
<td>0.492</td>
<td>0.574</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4 shows the configuration analysis result data of 624 empirical promotion cases. These are derived from a "truth table", which is the key device used in QCA. In the crisp set context, a truth table simply shows each combination of conditions and the proportions of the cases in the configuration that achieve the outcome. Consistency and coverage are two metrics that used to evaluate the configurations in QCA. In a simple way, consistencies with sufficiency indicate the proportions of cases achieving the outcome. Based on previous researches, we set 0.75 as the threshold value for consistency to select configurations (Longest & Vaisey, 2008). Table 4 summarized results of all configurations that can achieve promotion effectiveness sorted by promotion purpose. We consider promotions serve four different purposes: sales for promotion which aims at stimulate sales, volume for WOM which aims at market acceleration and conversion rate of sales on reads or volume for promotion aiming at both sales and acceleration simultaneously. We found out that there are two configurations (#CASH*PRE*LIMIT*exclu# and #cash*PRE*limit*EXCLU#) with high consistencies in respect of the outcome conversion rate of sales on reads; two configurations (#cash*PRE* LIMIT*EXCLU# and
For conversion rate of sales on volume; one configuration (#cash*PRE*LIMIT*EXCLU#) for volume; and two configurations (#CASH*PRE*LIMIT*exclu# and #cash*PRE*limit*EXCLU#) for sales.

With the result of configuration analysis, the next task is to seek the sufficient configurations by eliminating redundant elements according to logical reduction. After obtaining the configurations that passed in the consistency test, we need to measure whether property configurations are sufficient conditions. For example, two configurations can be effective to achieve high conversion rate of sales on volume: #cash*PRE*LIMIT*EXCLU# and #cash*PRE*limit*EXCLU#. The final, “reduced” configuration in this case is simply #cash*PRE*EXCLU#, because whether set time limitation or not is irrelevant for high conversion rate. Thus, promotions give premium with no cash coupon and offer only to members is good enough for getting high conversion rate of sales on volume. Including time limitation or not is meaningless because promotion can achieve the ideal outcome independent from it.

Table 4 Configurations for Effective Promotion

<table>
<thead>
<tr>
<th>Promotion Purpose</th>
<th>Sufficient Sets</th>
<th>raw coverage</th>
<th>unique coverage</th>
<th>consistence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversion (Sales/Reads)</td>
<td>CASH<em>PRE</em>LIMIT*exclu</td>
<td>0.082</td>
<td>0.020</td>
<td>0.735</td>
</tr>
<tr>
<td></td>
<td>cash<em>PRE</em>limit*EXCLU</td>
<td>0.111</td>
<td>0.0164</td>
<td>0.739</td>
</tr>
<tr>
<td>(Sales/Volume)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>cash*PRE *EXCLU</td>
<td>0.208</td>
<td>0.016</td>
<td>0.469</td>
</tr>
<tr>
<td>Impact</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CASH<em>PRE</em>LIMIT*exclu</td>
<td>0.073</td>
<td>0.024</td>
<td>0.618</td>
</tr>
<tr>
<td></td>
<td>cash<em>PRE</em>limit*EXCLU</td>
<td>0.098</td>
<td>0.017</td>
<td>0.571</td>
</tr>
</tbody>
</table>
We now use these findings to examine the propositions. As presented in table 4, 
#CASH*PRE*LIMIT*exclu# and #cash*PRE*limit*EXCLU# are two configurations that are 
found to be effective to boost sales. One attribute germane to sales 
stimulation—premium—presents in both configurations that boost sales in Table 3. The 
absence of premium generally inhibits sales stimulation, but whose sole presence is not 
sufficient to stimulate sales. Apart from premium, the other three promotional attributes have 
trade-off effects in these two configurations. Both the present and absent of the other three 
attributes can lead to desirable outcome under different conditions. Cash coupon and time 
limitation can foster sales in the first case and inhibit sales in the second case while exclusivity 
can foster sales in the second case and inhibit sales in the first case. Both sufficient 
configurations in the final output contain no less than three promotional attributes. Thus, the 
appearance of ideal outcome requires complex configured effects among core promotional 
attributes in a configuration. Based on this result it supports our proposition 1 that individual 
attributes, depending on how they are configured with other attributes, may foster or inhibit 
adoption.

We only find one effective configuration for generate more word of mouth. However, there are 
two equifinal routes, #CASH*PRE*LIMIT*exclu# and #cash*PRE*limit*EXCLU#, can be 
used to stimulate sales and achieve high conversion rate after logic deduction. The results 
indicate that among the three promotional attributes we included in this research, effective 
configuration to achieve large volume of word of mouth is only one. If we consider more 
promotional attributes, there might be other equifinal configurations. Even though we only 
consider three promotion attributes, the equalfinality appears for promotions that stimulate 
sales and raise conversion rate. The present of more than one routes lead to ideal outcome 
actually reflect people’s different underlying motivation on how customers holistically
perceive sales promotion. Since QCA findings are “case” based rather than “variable” based (Ragin, 2000), it is not only each route reflects a configuration related to desired outcome but also adopters perceive the promotion as a distinct combination of promotion attributes. There could be multiple combinations consumers would perceive good enough to take. Proposition 2 is then supported.

6. CONCLUSIONS AND IMPLICATIONS

This paper employed set-theoretic methods for studying cases as configurations, which treats promotion configurations as different types of cases to identify sufficient or necessary attribution combination for outcome. By using Boolean algebra, it is assumed that promotional attributes affect sales and impact by the way they combine rather than attributes per se. Draws on promotion, fit logic, and construal level theory literature, we examine what makes an effective promotion design and offers insights to managers on the design of promotions that can increase sales, generate impact.

Managerial Implications

According to the results, distinct configurations that can increase sales are providing cash coupon and premium at the same time with limited time or firms can provide premium and only offered to selective consumers like members. The result is interesting that limited time and exclusivity should not appear at the same time. It can be explained that when considering making purchase, consumers concern about feasibility (Kardes, Cronley, & Kim, 2006, Kyung, Menon, & Trope, 2014, Liberman, Trope, & Wakslak, 2007). If the promotion reviewer is not the member of the firm providing sales promotion, they need to consider whether it is feasible for them to be the member within the time limitation. In that case, if a firm offers promotion to members only within a time limitation might discourage non-member consumers and further
inhibit sales.

To generate more impact, a promotion provides premium with limited time and offers exclusively to certain people is most effective. One explanation could be that premium provides consumers with product experience, which made them more likely to share with each other. At the same time, as deal-recipients they are more willing to express ideas and time limitation gives them pressure to express as soon as possible. Cash coupon does not work here, as deduction of price happened only for transactions. Spreading WOM is different from make a real purchase.

Two configurations are found to be conducive to promotion effectiveness when a promotion is designed to achieve both sales and impact. The first configuration is promotion that providing cash coupon and premium at the same time together with time restriction. Premium works well to generate impact meanwhile cash coupon can stimulate sales. With time limitation, people are more urgent to behave. A second configuration is promotion provides premium only but no cash coupon and offers only to members. A first plausible explanation is that when the new service is perceived as fun (premium provide experience) and privilege, people are more willing to take the promotion offer and share with others.

Overall, promotion that providing cash coupon and premium under limited time or provide premium and only offered to selective consumers can both stimulate sales and generate high volume of word of mouth. Providing only premium but not cash coupon to selective consumers can help to generate high conversion rate of sales over WOM volume; and if it come with time limitation, it can effectively generate impact otherwise it helps to generate sales.
7. LIMITATIONS AND FUTURE DIRECTION

With the belief that set-theoretic methods (QCA) can contribute significantly to promotion research, we acknowledge that, same as other research approach, QCA has limitations. Literature suggested that QCA is sensitivity to variables, sensitivity to the sample, and sensitivity to measures (Schneider & Wagemann, 2010). For variables selection, the variables included in our analysis were selected by a comprehensive review of the extant literature on promotion. We admit this as a limitation and caution that the sufficient configurations of promotional attributes emerging from the findings cannot be generalized to situations beyond those in which firms designed promotion with other purpose such as removing inventory. Future research in this domain might include other promotion purpose to build up a comprehensive understanding in promotion design.

Another limitation of set-theoretic methods is sensitivity to the sample. Once the sample has been identified, selection on the dependent variable during the analysis is perfectly admissible to evaluate necessary conditions (Most & Starr, 1989). In fact, only cases that showing the outcome should be included in the analysis of necessary conditions (Fiss, 2007); Otherwise, included irrelevant cases (where the outcome is not present) will mislead results generation and interpretation for hypothesis tests (Braumoeller & Goertz, 2000).

The calibrated measure of performance QCA is based on conceptual thresholds. Membership measures calibrated highly depends on scholars’ substantive knowledge about good performance, for example, the performance compared other firms, stock market expectations, and so forth (Fiss, 2007). In this research, we seek the advice from the top management of the firm who provided data for us and follow their suggestion to define the threshold of effective promotion. As they suggested, conversion rate of sales over reads or comments is a significant
cue for judging promotion effectiveness.

Apart from the promotion realm, QCA can also be applied to analyze other complex consumer reaction phenomenon that includes sophisticated trade-offs among multiple factors. For instance, set-theoretic methods can be used to investigate the complex trade-offs among advertisement elements with different brand facets. Such investigations can offer important empirical insights and provide valuable information about managerial implication.
8. Reference


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Katz, D. & Kahn, R. L. 1978. The social psychology of organizations.


