

THE LOOP MODEL:

**MODELING CONSUMER INTERACTIVITY IN CAMPAIGNS COUPLING
SIMULTANEOUS MEDIA**

By

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ABSTRACT

Based on the responses of 498 consumers, this research simulates the LOOP Model, the consumer's experience of interactivity when interacting with campaigns simultaneously coupling the ubiquitous mobile channel (e.g., mobile/smartphone/iPhone/iPad) with other channels of response (internet, magazines, newspaper, mobile, television, direct mail, radio, and billboard). A confirmatory factor analysis and structural equation modeling procedure was conducted. The results showed excellent Goodness of Fit (GoF) for all model configurations. The interactive experience and purchase is optimized in a LOOP Model simulation. This occurs because reciprocity and contingency are amplified, especially when the campaign response via the mobile device is configured in a dyadic and triadic configuration between digitally mediated channels and passive stimulus channels (newspaper, magazine and TV). Synchronicity and control play a significant but medium role in the consumer's interactive experience of the LOOP. The research implications are discussed.

Key Words: LOOP Model, interactivity, conceptual model, campaign effectiveness.

The aim of this research is to model interactivity in campaigns coupling simultaneous media. This model is called the LOOP (Davis and Sajtos, 2008; Davis and Yung, 2005). In particular, this research focuses on consumers' experience of interactivity when interacting with campaigns that simultaneously couple the ubiquitous mobile channel accessed via mobile, smartphone, iPhone or iPad devices (Nysveen et al., 2005a; 2005b; Dholakia, and Dholakia, 2004; Balasubramanian et al., 2002) with other channels of stimulus and response (internet, billboard, magazines, direct mail, newspaper, mobile, television and radio).

This research is important for two reasons. First, the study extends the early work of Davis and Yung (2005) and Davis and Sajtos (2008) that developed the LOOP Model from a qualitative conceptualization and validated that model with real campaign data from New Zealand and the USA. Second, a review of the literature related to LOOP type campaigns shows significant gaps in how we should model consumers' experience of interactivity (Dholakia et al., 2010; Zhang et al., 2010; Konus et al., 2008).

Researchers who have studied campaigns coupling simultaneous channels like Venkatesh et al., (2010) argue that they are increasingly important as they create flexibility and convenience (Ofek et al., 2011), while they satisfy impulsive hedonic desires (Park and Lennon, 2006). Satisfied consumers also use the multichannel environment as a relational platform and become more aware of the value of a brand and its experience (Keller, 2010). When the use of the simultaneous media is focused upon the experience of interactivity, the consumers' information processing, service and product favorability and flow state are enhanced (Sicilia et al., 2005).

Despite the positive benefits of campaigns coupling simultaneous media, their misuse can drive customers away from the brand, resulting in ineffective campaigns. This often happens because advertisers do not understand their complexity or their effects on the interactive state and cognition (Godfrey et al., 2011). When deployed incorrectly they can also result in

channel cannibalization (Kollmann et al., 2012). This often results in simultaneous consumption when knowledge about the consumers' channel preferences and beliefs or the effect on all stages of the buying process is not understood (Kwon and Lennon, 2009), (Gensler et al., 2012).

In response, some researchers have placed greater emphasis on interactivity and its characteristics (Laszlo, 2009, and many studies have focused on consumer participation in the communication process (Deighton and Kornfeld, 2009). However, moving away from one-way to multi-directional communication with co-created forms (channels) and content (messages) creates complexity (Kohler et al., 2011) since advertisers are no longer in control. The apparent 'anarchy' amplifies when other relational models 'couple' and create momentum (Watson et al., 2002), for example human-to-human and human-to-computer interactivity (Kim et al., 2011). Game platforms (Van Reijmersdal et al., 2012; Dardis et al., 2012; Hang and Auty, 2011), interactive television (Bellman et al., 2012; Kim and Lee, 2012; Mukherjee et al., 2011) and social media (Pehlivan et al., 2011; Cui et al., 2010; Chan and Li 2010) are playing an important part in the overall interactive experience and the cognitive (information) and affective (emotion) social responses to the brand. Advertisers are confused by the apparent explosion of conversation channels and are concerned about the optimal channel configuration (Florenthal and Shoham, 2010) and the preferred modes of interactivity (Van Noort et al., 2012; Lavrakas et al., 2010).

It is argued that the problem with most of the research to date is two-fold. First, researchers have not made consumer interactivity a central model of conceptualization and measurement. Second, the process of theory development has failed to include channels of simultaneous response within the model. Consequently, this research will focus on the following research questions:

RQ₁ How do we model the consumers' experience of interactivity when interacting with

campaigns that simultaneously couple the ubiquitous mobile channel with other channels of response (internet, billboard, magazines, direct mail, newspaper, mobile, television and radio)?

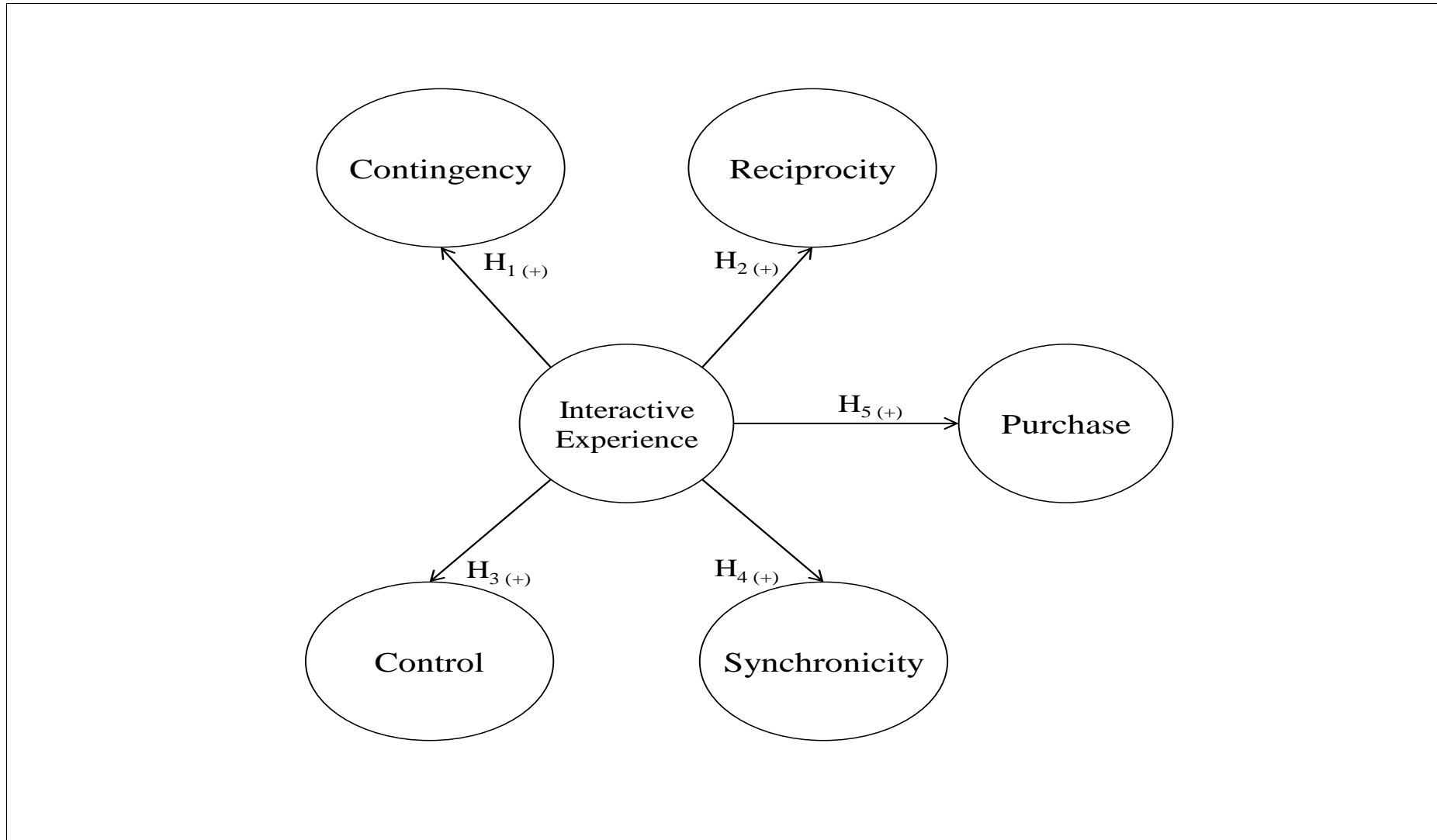
RQ₂ How do we optimize the interactive experience and purchase response in a LOOP Model simulation through the manipulation of the properties of interactivity and simultaneous channel coupling?

CONTRIBUTION AND PAPER ORGANIZATION

This research contributes to advertising in two ways. First, the work of Davis and Yung (2005) and Davis and Sajtos (2008) are extended. In this study the focus is on the perception of interactivity that combines, simultaneously, the ubiquitous mobile channel with other channels of response. Second, since the interactive experience is related to the consumers' purchase behavior, the relationship with campaign effectiveness can be modeled.

The paper takes the following form. First, there is a discussion of the characteristics of the consumers' interactivity and the development of the conceptual model and hypotheses. This discussion builds from the recent literature of Davis and Yung (2005) and Davis and Sajtos (2008). Following the discussion of the method, the empirical evidence of 506 consumers is presented in two studies that model the interactive experience of the LOOP and its relationship to purchase and usage behavior. The paper concludes with a discussion of the results, and the implications for advertisers.

FIGURE 1. CONCEPTUAL MODEL



HYPOTHESES AND CONCEPTUAL MODEL

The conceptual model is shown in Figure 1.

The first hypothesis specifies the relationship between contingency and the interactive experience (Yoo et al., 2010; Downes and McMillan, 2000; Rafaeli, 1998). In the LOOP Model the roles between sender and receiver coalesce. The consumer and advertiser co-create and are both sender and receiver (Yoon et al., 2008; McMillan and Hwang, 2002). A key objective for both actors in this communication is personalization (Vlasic and Kesic, 2007). The immediate experience of interactivity and co-created modification of form (channels) and content (messages) (Haeckel, 1998; Hoffman and Novak 1996) is defined as contingency. Contingency is the process of co-creation of the mediated conversation, fuelled by both the consumer and the advertiser's need for the benefits that arise from the interactivity (Trappey and Woodside, 2005). Recent work also shows that this bi-directionality plays an important role in the hedonic value experienced in the campaign (Yoo et al., 2010; Park and Park, 2009). Therefore, it is hypothesized that:

H₁: The interactive experience positively effects contingency.

The desire for contingent interactivity indicates the importance of reciprocity (McMillan, 2002), which is when consumer and advertiser move beyond the co-creation of monologued form and content. Cui et al. (2010) argue that this responsiveness mediates other factors such as social presence cues, which will have an important impact on word-of-mouth and social media communities (Chan and Li, 2010). It evolves and is a form of responsive dialogue that does not merely react to a message stimulus. Mollen and Wilson (2010) have argued that this type of dialogue is a commitment to the brand or part of an active relationship. Therefore, it is hypothesized that the:

H₂: Interactive experience positively effects reciprocity.

To progress the experience of interactivity that is both reciprocal and contingent, both advertiser and consumer must control the process of communication (Kohler et al., 2011; Cui et al., 2010; McMillan and Hwang, 2002). Control is important because maintaining co-creation and conversation, potentially across many coupled channels, is difficult given the level of noise and distraction, both on and offline. Furthermore, control is a form of empowerment (Pehlivan et al., 2011). To be interactive requires a move from being passive to becoming active co-participants (Liu and Shrum 2002; Downes and McMillan, 2000). Both parties have a mutual commitment to the evolution of the co-created interactive experience but this requires shared control over the communication process (Yoo et al., 2010). Steuer (1992) defines control in the LOOP Model as a form of mutual participation, where both advertiser and consumer choose to interact and maintain the conversation over time. Apart from the experience of interactivity, control allows the consumer and advertiser to mutually share information and create knowledge (Verhoef et al., 2010). Park and Park (2009) argue that control influences the consumer's perception of product value and information usefulness. It also allows co-creation to move beyond the form and content to other shared activities, such as product and service development (Wu, 2006; Trappey and Woodside, 2005). Therefore, it is hypothesized that:

H₃: The interactive experience positively effects control.

The LOOP Model takes time, since the mutual control of contingent reciprocal interactivity requires temporal action and reaction (Cui et al., 2010; Yoon et al., 2008). The velocity of response must be immediate, within seconds (Alba et al., 1997). Therefore, the LOOP Model requires synchronicity (McMillan and Hwang, 2002), which could drive rationality and utilitarian experience value (Yoo et al., 2010). The sense of timing is often amplified by flexible communication across many channels of conversation (Trappey and Woodside,

2005). Therefore:

H₄: The interactive experience positively effects synchronicity.

Finally, it is hypothesized that the interactive experience drives purchase, frequency and the types of channels simultaneously coupled in LOOP type campaigns (Kim et al., 2011). Davis and Sajtos (2008) confirmed this finding from real campaign data from New Zealand and the USA. The final set of hypotheses specifies the relationships between interactivity, purchase channel and frequency (Fiore et al, 2005) and takes into account the combined coupling effects of channel. Therefore, it is hypothesized that:

H₅: The interactive experience positively effects purchase.

METHOD

Data was gathered in December 2010 through the use of a closed online panel with 506 consumers in New Zealand from the online shopping site www.smilecity.co.nz. Smile City is an online rewards program exclusively for New Zealanders. Customers are 14 years or older and they earn reward points for engaging in online shopping and other shopper activities. To engage in these activities, customers must log in to the closed online shopping system. Points can be redeemed for real money, products or services. The respondents were randomly sampled and all the consumers of Smile City were asked to participate so that they had an equal chance to take part in the survey.

Prior to the start of the questionnaire respondents were screened by one question to check that the respondent had responded using their mobile phone or smart phone to advertising in the previous year. The common method of text response was used so that the consumers clearly understood this process of response to advertising. This established that the respondent was a regular consumer of LOOP campaigns. Table 1 and 2 shows the sample demographics, usage and purchase behavior characteristics.

**TABLE 1.
SAMPLE CHARACTERISTICS: DEMOGRAPHICS**

	Categories	Percent
Age	≤ 20	7.9
	21-25	14.0
	26-30	15.6
	31-35	14.4
	36-40	12.3
	41-45	9.5
	46-50	7.9
	51-55	6.1
	56-60	4.2
	61-65	5.3
	≥ 66	2.8
Region	Auckland	32.6
	Canterbury	13.6
	Waikato	7.5
	Wellington	10.9
	Other	35.4
Gender	Male	36.2
	Female	63.6
Ethnicity	NZ Pakeha	58.5
	Maori	6.7
	Pacific Islander	3.4
	Asian	11.3
	European	11.5
	Others	8.7
Marital Status	Single	30.2
	Widowed	1.6
	Living with partner	22.3
	Married	38.1
	Divorced/Separated	7.7
Education	Non-degree	56.5
	Degree	43.5
Employment	Student	12.1
	Full Time	42.3
	Self-employed	14.4
	Unemployed	6.7
	Homemaker	15.2
	Part-time	9.3
Annual Income	< 10,000	19.6
	10,000-20,000	14.4
	20,001-30,000	14.4
	30,001-40,000	16.2
	40,001-50,000	12.1
	50,001-60,000	7.9
	60,001-80,000	7.7
	≥ 80,000	7.7

TABLE 2.
SAMPLE CHARACTERISTICS: USAGE AND PURCHASE BEHAVIOR

	Scale	%
How often do you send TXT messages with your mobile phone in response to advertising?	Very Rarely 1	28.7
	2	27.7
	3	16.0
	4	17.2
	5	7.1
	6	1.0
	Very Often 7	2.4
Rate your skill level as a TXTer on your mobile phone.	1	3.4
	2	3.8
	3	9.9
	4	17.0
	5	23.3
	6	20.2
	7	22.5
How often do you send TXT messages in response to advertising per month?	1 TXT	41.1
	2 TXTs	24.9
	3 - 5 TXTs	20.9
	6 - 10 TXTs	7.9
	11 - 15 TXTs	2.4
	16 - 20 TXTs	1.8
	31 - 40 TXTs	0.2
More than 40 TXTs	0.8	
How long have you been sending TXT messages in response to advertising?	Less than 6 months	21.5
	7 - 11 months	16.0
	1 - 2 years	37.0
	3 - 5 years	21.5
	6 - 10 years	3.4
	16 - 20 years	0.4
	More than 20 years	0.2

The questionnaire and items are provided in Appendix 1. The following primary references were used to measure the constructs:

1. Purchase Behavior (Frequency and Channel) - Davis and Sajtos (2008), Davis and Lang (2011).
2. Reciprocity - Dufwenberg and Kirchsteiger (2004), Malhotra (2004), McCabe et al., (2003), Powell and Takayoshi (2003), Sethi and Somanathan (2003), Davis and Sajtos (2008), and Davis and Yung (2005).
3. Contingency - Davis and Sajtos (2008) and Davis and Yung (2005).
4. Synchronicity - Bond and Feather (1988), Mainemelis (2001), McMillan and Hwang (2002), Davis and Sajtos (2008), and Davis and Yung (2005).
5. Control - Morris and Marshall (2004), Davis and Sajtos (2008), and Davis and Yung (2005).

To make the completion of questions easier for respondents, a seven-point Likert scale was used to measure the interactive experience constructs (1 = “Strongly Disagree”, 7 = “Strongly Agree”). Purchase behavior used a similar scale (1 = Very Rarely, 7 = Very Often).

RESULTS

The analysis adopted a two-stage process of model development and testing (Bagozzi and Yi, 2012) using AMOS 19. First, the measurement model was developed using a confirmatory factor analysis (CFA). Second, the hypothesized relationships followed, using structural equation modeling (SEM).

Confirmatory Factor Analysis

Before the CFA was implemented the data was cleaned for missing values, outliers and normality to maintain consistency with the assumptions of CFA and SEM (Hair, Black, Babin and Andersen, 2010). Appendix 1 shows the original questionnaire with notation of variables

removed in all phases of the data cleaning and model modification. Outliers were assessed using the Mahalanobis distance statistic with observations removed where both p_1 and p_2 were significant. Normality was tested with measures of skewness and kurtosis. Variables with a kurtosis and skewness value of greater than ± 2.0 were deleted (Curran, West, & Finch, 1996). Multicollinearity was also measured, with variables of a VIF (variance inflation factor) greater than 5 being deleted (Curto and Pinto, 2011). Further model refinements were made to determine the optimal measurement model through deletion of observed variables with a standardized residual covariance of >2.0 (Hair, Black, Babin and Andersen, 2010). Correlations between variables were also determined to ensure that they support single rather than multiple constructs (Bagozzi and Yi, 2012). No correlations between error terms have been added to the model to improve GoF.

To avoid common method bias, a split sample procedure was used, that is, the sample was halved ($n=251$) (Bagozzi and Yi, 2012). For the CFA measurement model, the results for discriminant validity, convergent validity and Goodness of Fit (GoF) are shown in Tables 3 and 4. It is concluded that the model has good discriminant and convergent validity as well as acceptable GoF (Table 5). The measures of validity and fit are based on Bagozzi and Yi (2012) and others (Hair et al. 2010; Baumgartner and Homburg, 1996; Bacon et al 1995; Browne and Cudek, 1993; Bentler, 1990):

1. Discriminant Validity: The implied correlations for each construct are less than the corresponding square root of the Average Variance Extracted (AVE).
2. Convergent Validity: Construct Cronbach Alpha and Construct Reliability are greater than 0.70 and the Average Variance Extracted (AVE) is greater than 0.50 (Fornell & Lacker, 1981; Nunnally, 1978).
3. Goodness of Fit (GoF): (1) CMIN/DF (chi-squared/degrees of freedom) ratio is <5.0 , (2) a significant p value, (3) Normalized Fit Index (NFI), GFI=Goodness of Fit, Comparative

Fit Index (CFI) and Tucker Lewis Index (TLI) is preferably greater than 0.90 and, that the (4) root mean square error of approximation (RMSEA) and standardized root mean-squared residual (SRMR) is preferably less than 0.05, but values up to 0.08 are acceptable.

Structural Equation Modeling (SEM)

The SEM focused on the analysis of the structural conceptual model using the maximum likelihood method to test the hypothesized relationships (Figure 1). No correlations between error terms have been added to the model to improve GoF. The whole sample was used for the analysis (n=498). Table 6 show the results of the SEM using the same Goodness of Fit (GoF) as in the CFA with the addition of the standardized regression weight, path estimate, critical ratio and p value for level of significance. Table 7 summarizes the R^2 value for each construct. Cohen (1988, p. 413) notes that an $R^2 \approx 0.0196$ is a small effect, 0.13 is a medium effect, and 0.26 is considered large. In the structural modeling procedure, the following was tested:

1. The Original: Un-modified and Alternative (ALT) (Modified Models) to accept or reject the hypotheses. The only difference between these two models is an additional pathway where synchronicity affects purchase.
2. Different purchase channel configurations created by manipulating the observed factors of the purchase construct. The configurations included:
 - a. Digital and Non-Digital purchase channels.
 - b. Dyadic Coupling: Purchase channels individually configured with *mobile frequency response* (Internet, Magazine, Newspaper, Mobile, TV and mobile frequency only).
 - c. Triadic Coupling: Purchase channels configured with two other response channels and *mobile frequency response* (Internet-Magazine, Internet-Newspaper, Internet-TV, Mobile-Magazine, Mobile-Newspaper, Mobile-TV, Mobile – Internet, Magazine – Newspaper, Magazine – TV, Newspaper – TV).

TABLE 3. DISCRIMINANT VALIDITY

	Purchase	Synchronicity	Reciprocity	Control	Contingency
Variance Extracted	0.565	0.504	0.653	0.565	0.710
Construct Reliability	0.886	0.750	0.849	0.793	0.878
Purchase	0.75				
Synchronicity	-0.051	0.71			
Reciprocity	0.515	0.271	0.81		
Control	0.238	0.039	0.312	0.75	
Contingency	0.386	0.328	0.546	0.271	0.84

TABLE 4. CONVERGENT VALIDITY

	Question	Loading	<i>p</i>	Cronbach Alpha	Construct Reliability	Average Variance Extracted
	<i>I send TXT messages with my mobile phone in response to advertising because...</i>					
Contingency: (H ₁)	...I have the ability to change the content of the advertisement.	0.694	<0.001	0.863	0.878	0.710
	...I will have an effect on the advertised brand.	0.962	<0.001			
	...I will influence the way the advertised brand communicates with me.	0.850	<0.001			
Reciprocity: (H ₂)	...I feel a strong desire to respond to the advertising.	0.797	<0.001	0.845	0.849	0.653
	...it is expected that I will do so.	0.756	<0.001			
	...most people should.	0.867	<0.001			
Control: (H ₃)	...I know all the steps required without instructions.	0.859	<0.001	0.793	0.793	0.565
	...it requires little or no thought on my part.	0.725	<0.001			
	...the objective I can pursue is not dictated.	0.656	<0.001			
Synchronicity: (H ₄)	...after I have sent a few messages I am often unsure of what to do next.	0.588	<0.001	0.752	0.750	0.504
	...I often get bored.	0.766	<0.001			
	...I give up easily.	0.761	<0.001			
Purchase: (H ₅)	<i>How often do you send TXT messages in response to...</i>					
	...internet advertising	0.679	<0.001	0.894	0.886	0.565
	...magazine advertising	0.773	<0.001			
	...newspaper advertising	0.781	<0.001			
	...mobile advertising	0.736	<0.001			
	...TV advertising	0.779	<0.001			
	How often do you send TXT messages with your mobile phone in response to advertising?	0.757	<0.001			

TABLE 5. CFA AND SEM GOODNESS OF FIT (GoF)

Model	N	X ₂	d.f.	CMIN/DF	p	NFI	CFI	TLI	GFI	RMSEA	SRMR	
CFA	251	229.662	137	1.676	<0.001	0.904	0.958	0.948	0.910	0.052	0.051	
SEM Original: Un-modified	498	392.084	130	3.016	<0.001	0.915	0.941	0.931	0.917	0.064	0.067	
SEM Alternative (ALT): Modified	498	365.916	129	2.837	<0.001	0.921	0.947	0.937	0.922	0.061	0.058	
SEM Individual	Digital	498	249.162	84	2.966	<0.001	0.929	0.951	0.939	0.936	0.063	0.058
	Non-Digital	498	279.929	98	2.856	<0.001	0.928	0.951	0.941	0.932	0.061	0.059
	Internet	498	216.028	71	3.043	<0.001	0.931	0.952	0.939	0.939	0.064	0.060
	Magazine	498	209.749	71	2.954	<0.001	0.932	0.954	0.941	0.941	0.063	0.059
	Newspaper	498	213.814	71	3.011	<0.001	0.931	0.952	0.939	0.940	0.064	0.059
	Mobile	498	240.137	71	3.382	<0.001	0.928	0.946	0.931	0.934	0.069	0.060
	TV	498	217.806	71	3.068	<0.001	0.931	0.952	0.939	0.938	0.065	0.060
SEM Dyadic	Frequency	498	205.428	60	3.424	<0.001	0.929	0.948	0.933	0.938	0.070	0.061
	Internet-Magazine	498	224.891	84	2.677	<0.001	0.934	0.957	0.946	0.941	0.058	0.057
	Internet-Newspaper	498	227.247	84	2.705	<0.001	0.932	0.956	0.945	0.941	0.059	0.058
	Internet-TV	498	232.075	84	2.763	<0.001	0.932	0.955	0.944	0.938	0.060	0.059
	Mobile-Magazine	498	250.168	84	2.978	<0.001	0.928	0.951	0.939	0.936	0.063	0.058
	Mobile-Newspaper	498	263.818	84	3.141	<0.001	0.924	0.947	0.933	0.933	0.066	0.059
	Mobile-TV	498	255.598	84	3.043	<0.001	0.928	0.950	0.937	0.934	0.064	0.060
	Mobile – Internet	498	249.162	84	2.966	<0.001	0.929	0.951	0.939	0.936	0.063	0.058
	Magazine - Newspaper	498	254.313	84	3.028	<0.001	0.927	0.939	0.937	0.934	0.064	0.062
Magazine – TV	498	233.790	84	2.783	<0.001	0.932	0.955	0.944	0.938	0.060	0.058	
SEM Triadic	Newspaper – TV	498	247.459	84	2.946	<0.001	0.928	0.951	0.939	0.935	0.063	0.059
	Internet-Mobile-Magazine	498	238.528	84	2.840	<0.001	0.930	0.953	0.941	0.938	0.061	0.058
	Internet-Mobile-Newspaper	498	250.514	84	2.982	<0.001	0.926	0.949	0.936	0.936	0.063	0.059
SEM Tetradic	Internet-Mobile-TV	498	241.009	84	2.869	<0.001	0.929	0.952	0.940	0.937	0.061	0.059
	Internet-Mobile-Magazine-Newspaper	498	294.339	98	3.001	<0.001	0.922	0.947	0.935	0.930	0.063	0.061
	Internet-Mobile-Magazine-TV	498	260.944	98	2.663	<0.001	0.930	0.955	0.945	0.936	0.058	0.058
	Internet-Mobile-Newspaper-TV	498	281.994	98	2.877	<0.001	0.925	0.949	0.938	0.932	0.061	0.060

CFA=Confirmatory Factor Analysis, SEM=Structural Equation Model, CMIN/DF=Chi-squared/degrees of freedom ratio, P=significance <0.001, NFI=Normed Fit Index, GFI=Goodness of Fit, TLI=Tucker Lewis Index, CFI=Comparative Fit Index, RMSEA=Root-Mean-Square Error of Approximation, SRMR=Standardized Root-Mean-Squared Residual.

- d. Triadic Coupling (*without mobile frequency response*): Purchase channels configured with three other response channels (Internet-Mobile-Magazine, Internet-Mobile-Newspaper, Internet-Mobile-TV).
- e. Tetradic Coupling (*without mobile frequency response*): Purchase channels configured with four other response channels (Internet-Mobile-Magazine-Newspaper, Internet-Mobile-Magazine-TV).

Summary

It is concluded that:

1. Goodness of Fit (GoF) is acceptable for all model configurations.
2. For all models, purchase ($R^2 > 36\%$), reciprocity ($R^2 > 63\%$) and contingency ($R^2 > 54\%$) have a strong significant effect in their hypothesized relationships. Purchase, reciprocity, and contingency had a stronger effect when mobile frequency response was configured in: (1) Dyadic Configuration - digitally mediated channels (Internet and Mobile), individually with passive stimulus channels (newspaper, magazine and TV), and (2) Triadic Configuration - when digitally mediated dyadic channels (Internet and Mobile) were coupled with passive stimulus channels (newspaper, magazine and TV).
3. For all models, synchronicity ($R^2 > 10.7\%$) and control ($R^2 > 12.2\%$) have a significant effect in their hypothesized relationships.

TABLE 6. STRUCTURAL MODEL HYPOTHESES

Model	Hypothesis		Standardized Regression Weight	Estimate	Critical Ratio	Sig. (P)	Accept/Reject
Original: Un-modified	H ₁	Interactive Experience → Contingency	0.769	2.998	5.031	<0.001	Accept
	H ₂	Interactive Experience → Reciprocity	0.827	3.905	5.152	<0.001	Accept
	H ₃	Interactive Experience → Control	0.352	1.343	4.059	<0.001	Accept
	H ₄	Interactive Experience → Synchronicity	0.327	1.000	-	<0.001	Accept
	H ₅	Interactive Experience → Purchase	0.616	2.571	4.905	<0.001	Accept
Alternative (ALT): Modified	H ₁	Interactive Experience → Contingency	0.766	2.502	5.631	<0.001	Accept
	H ₂	Interactive Experience → Reciprocity	0.814	3.209	5.795	<0.001	Accept
	H ₃	Interactive Experience → Control	0.349	1.114	4.347	<0.001	Accept
	H ₄	Interactive Experience → Synchronicity	0.389	1.000	-	<0.001	Accept
	H ₅	Interactive Experience → Purchase	0.749	2.610	5.911	<0.001	Accept

TABLE 7. SQUARED MULTIPLE CORRELATIONS (R²)

Model	Purchase		Synchronicity		Reciprocity		Control		Contingency	
Original: Unmodified	37.9%		10.7%		68.4%		12.4%		59.2%	
Alternative (ALT): Modified	47.6%		15.2%		66.2%		12.2%		58.6%	
ALT Channel Configurations		+/- ^(a)		+/- ^(a)		+/- ^(a)		+/- ^(a)		+/- ^(a)
Internet	55.7%	8.1%	15.0%	-0.2%	69.0%	2.8%	11.5%	-0.7%	56.7%	-1.9%
Digital (Mobile – Internet)	54.4%	6.8%	15.1%	-0.1%	67.3%	1.1%	11.5%	-0.7%	58.4%	-0.2%
Magazine	54.1%	6.5%	15.1%	-0.1%	68.0%	1.8%	11.9%	-0.3%	57.3%	-1.3%
Internet-Newspaper	53.8%	6.2%	15.0%	-0.2%	69.7%	3.5%	11.7%	-0.5%	56.0%	-2.6%
Mobile	53.6%	6.0%	15.2%	0.0%	67.4%	1.2%	11.6%	-0.6%	58.1%	-0.5%
Internet-Magazine	53.4%	5.8%	15.1%	-0.1%	67.0%	0.8%	11.7%	-0.5%	58.3%	-0.3%
Newspaper	53.1%	5.5%	15.0%	-0.2%	70.9%	4.7%	11.9%	-0.3%	54.9%	-3.7%
Mobile-Magazine	52.3%	4.7%	15.2%	0.0%	66.0%	-0.2%	11.8%	-0.4%	59.2%	0.6%
Internet-Mobile-TV	52.0%	4.4%	15.2%	0.0%	64.6%	-1.6%	11.9%	-0.3%	60.4%	1.8%
Internet-TV	51.8%	4.2%	15.1%	-0.1%	67.4%	1.2%	12.2%	0.0%	57.6%	-1.0%
Mobile-Newspaper	51.3%	3.7%	15.1%	-0.1%	68.0%	1.8%	11.7%	-0.5%	57.5%	-1.1%
Mobile-TV	51.2%	3.6%	15.2%	0.0%	66.5%	0.3%	12.2%	0.0%	58.5%	-0.1%
Internet-Mobile-Magazine	51.1%	3.5%	15.2%	0.0%	64.4%	-1.8%	11.4%	-0.8%	60.8%	2.2%
Internet-Mobile-Newspaper	50.5%	2.9%	15.1%	-0.1%	66.9%	0.7%	11.4%	-0.8%	58.5%	-0.1%
TV	48.9%	1.3%	15.1%	-0.1%	68.3%	2.1%	12.3%	0.1%	56.7%	-1.9%
Internet-Mobile-Magazine-TV	48.4%	0.8%	15.2%	0.0%	63.9%	-2.3%	12.1%	-0.1%	60.8%	2.2%
Magazine – TV	47.7%	0.1%	15.2%	0.0%	65.5%	-0.7%	12.6%	0.4%	58.9%	0.3%
Internet-Mobile-Newspaper-TV	47.3%	-0.3%	15.1%	-0.1%	66.2%	0.0%	12.1%	-0.1%	58.6%	0.0%
Newspaper – TV	45.6%	-2.0%	15.1%	-0.1%	67.7%	1.5%	12.6%	0.4%	56.9%	-1.7%
Internet-Mobile-Magazine-Newspaper	44.5%	-3.1%	15.2%	0.0%	66.1%	-0.1%	11.7%	-0.5%	58.9%	0.3%
Non-Digital	43.0%	-4.6%	15.1%	-0.1%	66.7%	0.5%	12.4%	0.2%	57.9%	-0.7%
Magazine - Newspaper	42.1%	-5.5%	15.1%	-0.1%	67.7%	1.5%	12.0%	-0.2%	57.3%	-1.3%
Frequency	36.5%	-11.1%	15.0%	-0.2%	70.4%	4.2%	11.7%	-0.5%	55.4%	-3.2%

+/- ^(a) = difference between R² of ALT Channel Configurations and Alternative (ALT): Modified.

DISCUSSION

RQ₁ The Consumers' Experience of Interactivity Coupling the Ubiquitous Mobile Channel

The first research question focuses on modeling the consumers' experience of interactivity when interacting with campaigns that simultaneously couple the ubiquitous mobile channel with other channels of response. It is concluded that to optimize the effective response of LOOP campaigns, advertisers should focus on 4 core properties of interactivity; contingency, reciprocity, control and synchronicity (Davis and Sajtos, 2008; Davis and Yung, 2005).

Interactivity is a shared process of co-creation where the roles in the communication process are becoming irrelevant (Yoo et al., 2010). The LOOP Model now mandates that we move away from thinking about advertiser and consumer towards the totality of actors involved in the creation of contingency. The interactive experience includes groups (e.g., social media communities) and non-human forms of organization (e.g., games). All actors seek to contribute, own, and value the outcomes of contingent interactivity (Vlasic and Kesic, 2007). This mutual conversation is largely fueled by its own internal subjectivity (Yoo et al., 2010). Interactivity is defined by responsive dialogue and it creates shared meaning. Together this dialogue becomes an intense form of 'chatter' that creates commitment and momentum (Mollen and Wilson, 2010). Reciprocal interactivity plays an important role in permeating the conversation through the social media, which is channeled through consumers, advertisers, groups, and technology.

Interactivity requires rationality (Kohler et al., 2011; Cui et al., 2010). Contingent reciprocity has a defined objective even though that end point is often unclear at the beginning of the campaign's implementation. Control helps navigate towards that objective, and form and content are empowered (Pehlivan et al., 2011). The co-actors maintain, mutually share, and learn (Verhoef et al., 2010) to move from message-based conversation to shared activities.

Interactive experience transforms advertising and communication to service provision. Possibly the embodiment of control is in the form of an app. Interactivity requires temporal action and reaction (Cui et al., 2010; Yoon et al., 2008), within seconds, almost at the speed of sound. Synchronicity mediates and amplifies the conversation. Therefore, LOOP campaigns move beyond the simplistic definition of interactivity in terms of time. This requires some rethinking about how advertisers define time, vs. consumers vs. digital actors.

RQ₂ Optimal Channel Couplings

The second research question determines the optimal configuration of the properties of interactivity and channel coupling. In the LOOP Model findings it was interesting to find that reciprocity and contingency had the strongest effect on the consumer's interactive experience. Further, these constructs had stronger effects when the LOOP campaign model was configured in a dyadic and triadic configuration between digitally mediated channels and passive stimulus channels (newspaper, magazine and TV) (Hoffman and Novak 1996). These findings support the proposition that the consumers' interactive experience is optimized when the passive media channel stimulates a response via a non-passive digitally mediated channel (Davis and Sajtos, 2008; Davis and Yung, 2005).

This can be interpreted from two perspectives. First, it allows the consumers to be involved in the campaign's conversation (Trappey and Woodside, 2005) since they become both advertiser and consumer through a co-produced communication process and outcome. The consumer gains value from the dialogue as the mass-communicated campaign content is transformed into a personalized, fun experience (Yoo et al., 2010; Park and Park, 2009; Vlastic and Kesic, 2007). Second, it allows the consumer and advertiser to unite in an active relationship (Mollen and Wilson, 2010) of response dialogue.

MANAGERIAL IMPLICATIONS

There are a number of managerial implications that arise from this study but the focus of this discussion will be on two. The first relates to campaign control. Traditional advertising practice mandates the common principle of strategic control- we control inputs and we measure outputs to conclude whether the campaign was effective. The LOOP Model promotes an uncontrolled platform of interactive experience where the effectiveness of the campaign revolves around coupling two or three passive and non-passive channels, thereby placing emphasis on reciprocity and contingency. It is proposed that the LOOP Model is further enhanced through the consumer's persuasive adoption of both social media and smart phone technologies. Practitioners wishing to further investigate uncontrolled implementation have a wide range of examples to observe. For example, from a social democracy perspective, communications between people in the Egyptian Revolution was largely fueled by the uncontrolled interactivity across the offline space, through mobile, web-based social media, into the living rooms of users of traditional media. In contrast, at the 9th anniversary of Virgin Blue, 1000 plane tickets were sold for \$9 each and Twitter, Facebook and mobile channels played an important role permeating this campaign. The meaning of the campaign moved beyond the sale of cheap plane tickets because uncontrolled social media chatter defined the personal relevance of the interactive experience by creating meaningful reciprocal conversation around the brand.

The second implication relates to integration. The LOOP Model suggests that the integration of a number of different actors contributes to the consumers' interactive experience. Like bricolage, they all play a role that may not necessarily be apparent or planned. Challenges may exist to co-ordinate offline and online media, human with non-human actors, individuals with groups and so on – there is no simple answer to integration. Rather, during the campaign implementation it is vital to know what works together and what will be disjointed.

RESEARCH IMPLICATIONS

Future research could model the interactive experience and overall purchase frequency and channel response in terms of other antecedent factors such as:

1. Perceived risk: Consumers perceive that there is risk associated with engaging in LOOP campaigns. Will their privacy be respected? Does the campaign create harm? What will other consumers think if they engage in this particular campaign? Further research is required to see whether risk mediates the cognitive process of interactivity and level of response.
2. Trust in the advertised brand: Trust plays an important role in the consumers' belief in a brand and whether its promises will be delivered. Trust is amplified in digital channels because of the lack of physical interaction. Therefore, there is a need to determine its role in the LOOP Model.
3. Brand attitudes: What is the effect of the consumers' attitude towards the advertised brand in a campaign? Comparative studies may also help clarify the impact of existing brand equity vs. attitudes towards new brands.
4. Technology acceptance: What is the effect of the technology platform on the interactive experience? Future work may help to clarify the effectiveness of different consumer technology platforms (e.g., iPhone vs. Android-based smart-phone).

Research limitations relate to the lack of comparative empirical evidence to help explore these findings. First, a qualitative study may help to understand why different channel configurations are more effective. This study would create conceptual linkages to the four properties of interactivity. Second, while the New Zealand population can be generalized to other markets relatively easily, it would be better to compare these results with those from the USA, Asia, Europe, and the Pacific.

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APPENDIX 1. QUESTIONNAIRE ITEMS

Notes: 1=retained in CFA and SEM; VIF = deleted because of high variance inflation factor, K=deleted because of high kurtosis, SRC = deleted because standardized residual covariances > +/- 2.

STRONGLY DISAGREE (1) to STRONGLY AGREE (7)		Note
CONTINGENCY I send TXT messages with my mobile phone in response to advertising because...	..I have the ability to change the content of the advertisement.	1
	..I will have an effect on the advertised brand.	1
	..I will influence the way the advertised brand communicates with me.	1
RECIPROCITY: I send TXT messages with my mobile phone in response to advertising because...	..it has my interests at heart.	SRC
	..it exists to make money for the advertised brand.	SRC
	..it helps me win prizes.	SRC
	..it benefits me.	SRC
	..the more messages I send to the same Ad, the more benefits I receive.	SRC
	..it has consequences.	SRC
	..my friends do.	VIF
	..I see other people doing it.	VIF
	..I often like to do it over and over again.	SRC
	..I find it difficult to stop.	SRC
	..I feel a strong desire to respond to the advertising.	1
	..it is expected that I will do so.	1
..most people should.	1	
CONTROL When I send TXT messages with my mobile phone in response to advertisingIt is easy for me to visualize the way in which it works.	SRC
	..campaigns all work fundamentally the same.	SRC
	..I can make decisions about the way I send a message.	SRC
	..I can devise my own plans for how to send a message.	VIF
	..the sequence in which I send a message is not dictated.	SRC
	..the amount of time I can spend sending a message is not limited.	SRC
	..I know all the steps required without instructions.	1
	..It requires little or no thought on my part.	1
..the objective I can pursue is not dictated.	1	

SYNCHRONICITY When I send TXT messages with my mobile phone in response to advertisingit takes a long time to 'get going' before sending a message.	SRC
	..I always perform a specific task before sending a message.	VIF
	..it seems faster if I perform a specific activity before doing it.	VIF
	..after I have sent a few messages I am often unsure of what to do next.	1
	..I often have a specific goal in mind.	SRC
	..there is no challenge to me.	SRC
	..I receive useful feedback.	SRC
	..I receive feedback almost instantaneously.	SRC
	..I often get bored.	1
	..I give up easily.	1
	..I sometimes find it difficult to finish once I've started.	SRC
	..I am aware of my emotional state.	SRC
	..it has an effect on my emotions.	SRC
	..it doesn't seem to matter.	SRC
	..it is aimless, with no definite purpose.	SRC
	..it is enjoyable.	VIF
	..it is fun.	VIF
..I can control what happens.	SRC	
..I often do not notice time passing.	SRC	
VERY RARELY (1) to VERY OFTEN (7)		
PURCHASE BEHAVIOR	How often do you send TXT messages with your mobile phone in response to advertising?	1
	How often do you send TXT messages in response to...	
	Internet advertising	1
	Billboard advertising	K
	Advertising in Magazines	1
	Direct mail	SRC
	Newspaper advertising	1
	Mobile advertising	1
	Television advertising	1
	Radio advertising	SRC