Identifying tween fashion consumers' profile concerning fashion innovativeness, opinion leadership, internet use for apparel shopping, interest in online co-design involvement, and brand commitment

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Abstract

This study identifies tween fashion consumers' profiles in relation to fashion change agent (FCA) characteristics, such as fashion innovativeness and opinion leadership, and examines how the tweens' FCA characteristics influence their Internet innovativeness, interest in online co-design involvement, and brand commitment. A survey was conducted with tween-aged girls in the Midwest region of the U.S., who were recruited through the snow ball sampling method. A total of 53 responses were acceptable for data analysis including cluster analysis, MANOVA, and multiple regression analyses. Results show the tween consumers were divided into two fashion consumer groups— fashion leaders and fashion followers—significantly different in fashion innovativeness and opinion leadership. This study also found positive effects of tweens' FCA characteristics on Internet innovativeness, interest in online co-design involvement, and brand commitment. As FCAs with higher fashion innovativeness and opinion leadership influence the adoption and purchase behavior of other tween fashion consumers, marketers and retailers need to develop more fashion innovative, Internet-mediated, interactive, and brand-oriented marketing efforts. While the tween consumers in the children's wear market has been featured, the prevailing literature on tween consumers' fashion adoption and consumption is limited, particularly with regards to their FCA characteristics. This study highlights the important role of tween fashion consumers' FCA characteristics in their online shopping orientation and brand commitment.

Keywords: Tweens, Fashion innovativeness, Opinion leadership, Internet innovativeness, Interest in online co-design involvement, Brand commitment

Introduction

The U.S. children's wear market is expected to drive the market to a value of $72.7 billion by the end of 2019 with an anticipated compound annual growth rate of 4.5% for the 5-year period 2014–2019 (Market Line 2015). The children's wear market has demonstrated steady, moderate growth insusceptible to the economic recession and fluctuations, as contrasted with other market segments, such as men's wear and women's wear

(Jones 2016; Market Line 2015). Additionally, the birth rate in the United State rose in 2014, after declining since 2007 (Abnett 2016). The total population of children in the United States was 73.06 million in 2014 and projected to increase slightly to 74.1 million by 2020 (The Federal Interagency Forum on Child and Family Statistics 2016).

The 21 million tweens in America account for $43 billion in spending power and apparel represents the primary purchase categories (Cotton Inc. 2012; Drake-Bridges and Burgess 2010). The economic strength of tweens has captured marketers' attention; they are currently exploring ways to gain the trust of this segment in hopes of satisfying them and establishing life-long customer relationships (Cassidy and van Schijndel 2011; Drake-Bridges and Burgess 2010).

Definitions of tweens vary in age range, but they are typically children from ages 7 to 12, sometimes as old as 13 or 14 (Brock et al. 2010). Tweens are very aware of fashion trends, have money to spend, feel confident in dressing themselves, and enjoy making buying decisions and apparel shopping (Abnett 2016: Brock et al. 2010; Jones 2016; Grant and Stephen 2005). Tweens tend to be exposed to many brands, aware of brand names, and have purchase preferences for branded apparel, indicating they define or develop their identity through styling themselves with fashion brands (Smith 2013; Teo et al. 2013). According to Cotton Inc., (2012), 29% of 13-year-old children loved shopping, while 35% enjoyed it. Tweens frequently go to shopping malls for specialty stores as well as department stores; they also like shopping centers, and over half of them stated they shop at discount stores sometimes (Drake-Bridges and Burgess 2010). Today's tweens are tech-savvy, evidenced by their regular use of the Internet and mobile phones, one of tweens' favorite communications platforms, especially for playing online games or downloading music (Smith 2013) in making consumer decisions (Ekström 2007; Smith 2013).

While tween consumers in the children's wear market have been featured, the prevailing literature on tween consumers' experience and behavior in relation to fashion adoption and consumption is limited, particularly with regards to their fashion change agent (FCA) characteristics, such as fashion innovativeness and fashion opinion leadership (Edwards, 2009; Harper et al. 2003; Pilcher 2010; Ross and Harradine 2004). Since fashion trends are adopted and diffused throughout a social system, consumer groups can be identified according to their role in the adoption and diffusion process (Workman and Johnson 1993). There are different consumer groups who exhibit FCA characteristics— adopting new styles and influencing others in the adoption of new styles (Workman and Johnson 1993). Despite the identification of fashion consumer groups and their emphasis in developing effective marketing strategies, little research has been undertaken that recognizes the tweens' FCA characteristics, which may influence online apparel shopping and brand commitment (Edwards 2009; Harper et al. 2003; Pilcher 2010; Ross and Harradine 2004).

According to prior studies, consumers with higher fashion innovativeness and opinion leadership tend to be more innovative in apparel shopping by using more technologies, such as the Internet and online mass customization (Cho and Workman 2011; Choy and Loker 2004; Goldsmith and Flynn 2005; Goldsmith and Goldsmith 2001; Fiore et al. 2004), as well as more brand conscious (Workman and Cho 2012a, b) and brand-switching tendency (Workman et al. 2015). Tween consumers with higher FCA characteristics

may use the Internet for apparel shopping and try advanced technologies, such as online co-design available at online apparel websites like NIKEiD. Tweens' apparel shopping utilizing the Internet and advanced online technology has been overlooked in prior studies, so there is limited information about how tween consumers use the Internet for apparel shopping and how tech savvy they are in their online apparel shopping. In addition, there are few studies identifying their brand commitment despite tweens tend to be more exposed to brands and increase their commitment to brands (Ji 2008; Ross and Harradine 2004; Grant and Stephen 2005).

To fill the literature gap, exploring tweens' FCA characteristics by focusing on fashion innovativeness and opinion leadership would be useful to identify tweens' consumer profiles in this market as well as their online shopping orientations and brand commitment. Thus, the purpose of this study was to identify tween fashion consumer groups in relationship to fashion innovativeness, opinion leadership, Internet use for apparel shopping, interest in online co-design involvement, and brand commitment. Also this study examined how tweens' fashion innovativeness and opinion leadership influence Internet use for apparel shopping, interest in online co-design involvement, and brand commitment.

Literature review

Fashion adoption theory

Fashion adoption theory (Sproles 1979) is employed to identify key characteristics of the tween fashion consumer groups. Fashion adoption is an individual decision-making process to adopt any given style (Forsythe et al. 1991). Fashion adoption theory explains consumers' information seeking and decision-making process of fashion adoption, which includes awareness of fashion objects, interest, evaluation, identification of alternatives, decision, inventory of clothing, use, and obsolescence (Forsythe et al. 1991; Sproles 1979). According to this theory, the fashion adoption process is influenced by the adopter's identity and psycho-social motivations. The adopter's identity influencing the fashion adoption process includes age, sex, socioeconomic characteristics, and physical profile, such as body size/shape and appearance. The adopter's psycho-social motivations include cognitive orientation toward dress (e.g. awareness, interest, knowledge, innovativeness, perceived risk, expectations, attitudes, and values), psychological identity (e.g. self-concept, personality, and individuality-conformity), and social influences on adopter (e.g. collective behavior, socialization, reference groups, social communications, and opinion leadership). This theory underscores the role of awareness of new fashion, which can be embodied by fashion innovativeness, and social influences, represented by opinion leadership, in the decision-making process of fashion adoption.

Sproles' theory is utilized as the conceptual framework for the present study to explain how tween fashion consumers differ, depending on the two key psycho-social motivations, fashion innovativeness and opinion leadership, as well as how tweens' fashion innovativeness and opinion leadership influence their fashion adoption process in online apparel shopping. Based on this fashion adoption theory, it was hypothesized tween consumers who exhibit more fashion innovativeness and opinion leadership may utilize more technology, especially Internet, for apparel shopping, browsing, and fashion information search; have a greater interest in online co-design involvement for new shopping

experiences; and have stronger brand commitment toward their preferred fashion brands than those who retain less fashion innovativeness and opinion leadership.

Fashion innovativeness and opinion leadership of fashion change agents

Fashion innovativeness refers to one's willingness to try a new fashion product earlier than other members of society (Goldsmith and Flynn 1992; Goldsmith 2000). Consumers' fashion innovativeness tends to influence their fashion adoption process (Blackwell et al. 2001; Park et al. 2010). Fashion innovators with a high level of fashion innovativeness constitute a small segment of the overall consumer market, but they are a catalyst for mass adoption of products/brands (Goldsmith and Flynn 1992). Fashion innovators are apt to adopt a product sooner than other consumers (Beaudoin et al. 2003; Beaudoin and Lachance 2006) even though the purchase of these brands involves potential risk (Muzinich et al. 2003).

Opinion leadership refers to leadership by those who actively learn from and form opinions from the mass media and influence the decisions of others from the theory of two-step flow of communication (Katz and Lazarsfeld 1955). This theory explains people are not directly influenced by mass media but by opinion leaders who have more understanding of messages or contents from the media, explain and diffuse these to others. Opinion leaders are "individuals who are influential on the attitude and decision making of people in their social circle" (Brannon 2010, p. 407).

The fashion consumer groups retaining the FCAs characteristics—fashion innovativeness and opinion leadership—become involved in the diffusion process in which new innovative styles are adopted and then spread throughout society (Workman and Johnson 1993; Brannon 2010). The fashion consumer groups can be broken into four groups according to their role in adopting and diffusing new fashions: fashion innovators, fashion opinion leaders, innovative communicators, and fashion followers (Workman and Johnson 1993). Three of these four groups assist the advancement of new trends and styles: fashion innovators, fashion opinion leaders, and innovative communications. Collectively, these groups are considered fashion change agents (Workman and Kidd 2000).

FCAs who have more fashion innovativeness and opinion leadership tend to be more knowledgeable and interested in fashion, communicate, and spread new and innovative fashion trends within their social group (Brannon 2010; Cho and Workman 2015). FCAs tend to have a greater need for variety or change, enjoy shopping, and spend more money on fashion products as compared to non-FCAs (Workman 2010; Workman and Johnson 1993). FCAs are likely to value more hedonic and adventure shopping offering enjoyment and excitement (Goldsmith and Stith 1992). It is common for fashion opinion leaders to have a greater need for stimulation and seek a greater level of sensation and/or exciting experiences (Stanforth 1995; Studak and Workman 2004). Fashion innovators and opinion leaders also tend to use multi-channels for information search and apparel shopping, indicating more active use of information technology, social media, and so on (Cho and Workman 2011). Additionally, FCAs have relatively higher brand sensitivity (Beaudoin and Lachance 2006) and are more brand conscious (Workman and Cho 2012a, b), while demonstrating lower brand attachment, brand love, and brand trust than fashion followers (Workman et al. 2015).

Overall, FCAs with higher levels of fashion innovativeness and opinion leadership are different from fashion followers in fashion adoption and consumption. Based on the literature review of FCAs, it is hypothesized tween consumers can be segmented into FCAs and fashion followers in terms of fashion innovativeness and opinion leadership. It was assumed FCAs in the tween consumer group may lead the tween fashion market.

Hypothesis 1 Tween consumers can be segmented into different fashion consumer groups, based on fashion innovativeness, opinion leadership, Internet use for apparel shopping, interest in online co-design involvement, and brand commitment. There are significant differences for these characteristics among segmented fashion consumer groups.

Internet use and interests in co-design involvement

In a media-saturated society, technology, especially the Internet, is a means through which tween consumers become exposed to fashion information (Boden 2006). The Internet creates a competitive market place by presenting more options and experiences for consumers (Kim and Kim 2004), and Internet apparel shopping continues to increase (Rueter 2012). According to prior research, FCAs with higher fashion innovativeness and opinion leadership tend to become involved in shopping apparel products by utilizing multi-channels, including online and non-store channels (Cho and Workman 2011). Online apparel shoppers tend to be more innovative and knowledgeable about the Internet and use the Internet more frequently for shopping than non-online apparel shoppers (Goldsmith and Goldsmith 2001; Cho and Workman 2015). Park et al. (2007) also found fashion innovativeness positively relates to online shopping for purchasing foreign fashion goods beyond national borders. They also found that Internet use—a domain-specific innovativeness, which determines consumer adoption of the Internet for shopping—moderates the positive relationship between fashion innovativeness and attitude toward online apparel shopping for purchasing foreign fashion goods. Goldsmith and Flynn (2005) also found that consumers' fashion innovativeness was positively associated with shopping in stores, catalogs, and the Internet. In particular, heavy shoppers of apparel products were more fashion innovative and more innovative for online apparel shopping than lower and medium shoppers. However, they did not find a significant relationship between opinion seeking from others and multi-channel shopping.

Additionally, technology allows consumers to participate in the co-design process through mass customization, a process that involves the customer in product development operations (Choy and Loker 2004). Co-design is defined as "the process of mass customization that allows a customer to interact with a set number of choices to individualize the product style, fabric, color, and size" (Choy and Loker 2004, p. 82). Co-design as part of an exciting consumer experience was more likely used among individuals with a higher level of optimum stimulation level (OSL)—individuals' preferred level of stimulation from environmental stimuli (Fiore et al. 2004). According to Steenkamp and Baumgartner (1992), individuals with higher OSLs are more likely to have innovative behaviors by trying out new brands as well as exhibit more variety-seeking in a product category than individuals with lower OSLs. The relationship

between fashion innovativeness and co-design was not investigated, but it is probable that individuals with higher fashion innovativeness would be more likely to try co-design for an exciting shopping experience.

Based on the literature, it is hypothesized that tween consumers with high FCA characteristics would use the Internet more for apparel shopping because they may possess more Internet use, while acquiring more interest in the co-design involvement for more experiential shopping experiences. These linkages between tweens' FCA characteristics, and Internet use for apparel shopping and interests in co-design involvement may explore a better understanding of tween fashion consumers' individual differences in online shopping orientations.

Hypothesis 2   Tween consumers' (a) fashion innovativeness and (b) opinion leadership positively influence use of the Internet for apparel shopping.

Hypothesis 3   Tween consumers' (a) fashion innovativeness and (b) opinion leadership positively influence interest in online co-design involvement for new shopping experiences.

Brand commitment and children's wear market

Brand commitment is an emotional, psychological attachment to a brand within a product class from an attitudinal perspective, while brand loyalty is repeated purchase of a single brand over time from a behavioral perspective (Warrington and Shim 2000). Brand commitment and brand loyalty are positively related, but brand commitment is a stronger indicator of consumers' brand choice behavior because brand-committed consumers are less likely to switch to an alternative brand than brand-loyal consumers when a preferred brand is absent (Warrington and Shim 2000).

Children are exposed to brands at a young age, ranging from food to clothing (Ji 2008). Brand awareness has been found to commence at an early age and grow stronger with time (Ross and Harradine 2004). While tweens have been characterized as having brand awareness, they do not necessarily display characteristics of brand loyalty (Grant and Stephen 2005). They understand their expectations for a product, and if they are not satisfied, they do not hesitate to consider the alternatives (Grant and Stephen 2005).

Previous studies show consumers with a higher level of fashion innovativeness tend to be more brand conscious (Workman and Cho 2012a, b) and more brand sensitive (Beaudoin and Lachance 2006). However, Workman et al. (2015) have found fashion change agents showed weaker brand attachment, brand love, and brand trust than fashion followers, indicating more brand-switching tendency among fashion change agents with higher levels of fashion innovativeness. Further investigation on these mixed results is needed to explore the relationships between the FCA characteristics and brand commitment. While the tweens market group has been identified and labeled, the literature available on tween consumers' brand commitment is limited,

particularly information on tweens as fashion-oriented consumers. Exploring characteristics of this fashion consumer group's brand commitment would be beneficial to understand their attitudinal attachment or connection to brand. Thus, the following hypothesis investigating consumer-brand relationship is proposed.

Hypothesis 4   Tween consumers' (a) fashion innovativeness and (b) opinion leadership negatively influence brand commitment toward their preferred fashion brands.

Methods

Sample

The sample for this study was composed of tween-aged girls (ages 8–12) from the Midwest region because girls have demonstrated more interest in fashion and online apparel shopping than have boys (Hayta 2008). The focus of this study is narrowed from girls aged 7–14 to girls aged 8–12. This is due to concerns that the questionnaire content would be difficult for a 7-year-old to understand; additionally, while some studies define tweens as old as 14, other studies consider 13 and 14-year-olds to be teens as opposed to tweens. As accessing tween subjects was limited and difficult, the snowball sampling method was used to recruit more future subjects from existing study subjects' acquaintances. Participants were recruited through the local Girl Scouts organization, local school districts, and community programs.

Survey instrument

Established scales from previous studies were utilized or modified to measure the key variables: fashion innovativeness, opinion leadership, Internet use for apparel shopping, interest in online co-design involvement, and brand commitment. Fashion innovativeness and fashion opinion leadership were assessed by the innovativeness and opinion leadership scale (Hirschman and Adcock 1978). This scale contains items that measure the level of trying new fashions and the level of influencing the types of clothing friends buy on a 5-point Likert-type scale with reported reliabilities ranging from .73 to .76 (Hirschman and Adcock 1978).

Internet use for apparel shopping was measured with four items adapted from the Park et al. (2007). study of fashion innovativeness. Adoption and use of the Internet for apparel shopping, browsing, and information search was evaluated to determine tweens' Internet use. Its reported reliability was .76 (Park et al. 2007). Interest in online co-design involvement for customization was also assessed with three items on a 5-point Likert-type scale. These items were adapted from the Design Involvement Scale (Choy and Loker 2004), used in a study of mass customization of wedding gowns. The reliability for these items was not reported in their study. Finally, brand commitment was assessed with 7 selected items on a 5-point Likert-type scale originated from Mittal and Lee (1989). The reliability for this scale was reported above .75 (Mittal and Lee 1989). Four items were used to assess how tweens became aware of fashion brands and shop for their preferred fashion brands. Survey instruments were pre-tested with five children and their parents, and were revised to simplify language, based on their comments.

Data collection

The snowball method was utilized to select the sample. Friends and family were reached through email and asked to contact children's groups. Schools near the university were also recruited. This recruitment process took 2 months. Initial contact was made to supervisors or to parents, who had been contacted by the supervisors, via e-mail or in person via the researchers' personal networks; when further contact was necessary, in-person meetings were scheduled. Email invitation, personal invitations, and parental and minor consent forms were all approved by the Institutional Review Board (IRB) prior to data collection.

A link to the online survey was emailed with an explanation of the study, not directly to the girls but to an adult. The first question of the survey was parental permission. After the parent's approval, daughters completed the remainder of the survey beginning with a minor consent form, which explained the procedures of the survey. For those who participated by completing a hard copy, the survey was distributed and then the children were given a brief description of the study. They then took the hard copy home to their parents to sign the first page of the survey (the parental permission form). After this was completed, the girls answered the remainder of the survey. The surveys were collected at a later date.

Data analysis

Data analysis consisted of descriptive analysis, factor analysis, reliability, correlation, cluster analysis, MANOVA, and multiple regression analyses.

Results

Participants

A total of 210 questionnaires were distributed through email or in-person with 63 returned for a response rate of 30%. After deleting the missing data, a total of 53 responses were deemed acceptable for data analysis. Participants included 53 tween-aged girls, aged 8–12, with a mean age of 9.96 (SD = 1.20) years. Most participants were Caucasian American (67.3%), followed by African American (14.5%), Asian or Pacific Islander (14.5%), and others (3.6%).

Preliminary analysis

Exploratory factor analysis was conducted to determine the underlying dimensions of multiple measurement items for each variable. The results are summarized in Table 1. Principle component analysis was used with orthogonal varimax rotation; Kaiser normalization and the requirement of an eigenvalue greater than 1.0 were adopted for factor identification. Factor loadings exceeding .55 were considered evidence for construct validity (Nunnally 1967). For all five variables, one factor was identified for each variable, indicating uni-dimensionality of the multi-item measurement variables. Internal consistency was examined using Cronbach's *alpha*. Cronbach's *alpha* coefficients ranged from .75 to .85, indicating reliabilities in the multi-measurement scales.

Using LISREL 8.72, a confirmatory factor analysis (CFA) with a maximum-likelihood estimation procedure was also conducted to examine how well the five

Table 1 Results of exploratory factor analysis

Constructs	Factor loading	Cronbach's alpha
Fashion innovativeness		.78
How often do you want to try new ideas about clothing fashions?	.60	
How often do you try something new in the next season's fashions?	.76	
How often are you usually among the first to try new clothing fashions?	.70	
How often do you read or look at fashion information in magazines?	.58	
I own a lot of fashion items.	.76	
Compared to my friends, I know a lot about designer and brand name clothing.	.78	
Eigenvalue = 2.93 *Total percent variance explained = 48.86%*		
Fashion Opinion Leadership		.85
How often do you influence the types of clothing your friends buy?	.79	
How often do others turn to you for advice on fashion and clothing?	.78	
When talking about fashion or style with your friends or peers, how often do you feel confident?	.73	
How often do you enjoy shopping for clothing?	.74	
Eigenvalue = 2.31 *Total percent variance explained = 57.62%*		
Internet Use for Apparel Shopping		.81
How often do you use the Internet to purchase clothing?	.83	
How often do you use the Internet to browse clothing?	.82	
How often do you use the Internet to look at a blog or magazine that is fashion related?	.82	
I prefer to look at an online magazine rather than a printed magazine	.73	
Eigenvalue = 2.57 *Total percent variance explained = 64.16%*		
Interest in online co-design involvement		.77
I would prefer to design my own features (sleeves, neckline, style, color) of a product on a website than to buy one that has already been designed	.71	
I would be interested in co-designing a unique clothing product on the internet.	.87	
The co-design process on the Internet seems like an exciting experience	.91	
Eigenvalue = 2.21 *Total percent variance explained = 69.60%*		
Brand Commitment		.75
I enjoy looking at my preferred brand advertising	.83	
I often pay attention to my preferred brand	.73	
I really do enjoy shopping for me preferred brand	.72	
I often find myself noticing what brands others are wearing	.77	
Eigenvalue = 2.33 *Total percent variance explained = 58.22%*		

hypothesized factors fit the observed data. A model composed of 21 observed variables and five latent variables was tested. A test of the hypothesized five-factor model showed a satisfactory fit to the data within acceptable fit parameters: χ^2 (199, $N = 53$) = 227.00, $p = .08$; RMSEA = .052; CFI = .95; NNFI = .94; IFI = .95. Results verified the five characteristics—fashion innovativeness, opinion leadership, Internet use for apparel shopping, interests in online co-design involvement, and brand commitment—represented the tweens' consumer group's fashion adoption and diffusion behaviors. Concerning a small sample size issue for the CFA analysis, there are

various rules about a minimum sample size for CFA and SEM. For example, Bentler and Chou (1987) suggested a ratio of sample size to number for parameters as low as 5:1 would be sufficient when latent variables have many indicators. A widely accepted rule is a ratio of at least 10:1 (Hair et al. 2014). The larger ratio of sample size to number of parameters tends to have more proximity with population parameters and obtain more trustworthy, better estimates of parameters and Chi squared probabilities. However, recent studies indicate marginal sample sizes of 50 to 70 were associated with an acceptable Chi square, satisfactory fit, low Type-I error rates of 25%, satisfactory RMSEA values between .5 and .08, and stable model parameters in both CFA and SEM (Sideridis et al. 2014; Wolf et al. 2013). The small sample size for this study is not idealistic, but the CFA results are viable to explain the hypothesized factor structure.

Pearson correlation coefficients with listwise deletion of missing values were also investigated to examine associations among the five variables. The correlation analysis shown in Table 2 indicated the relatively low-to-moderate correlations supported discriminant validity of the key variables. Fashion innovativeness was strongly associated with opinion leadership as well as positively with Internet use for apparel shopping, interests in online co-design involvement, and brand commitment. Opinion leadership was also strongly associated with Internet use for apparel shopping and brand commitment, but not with interests in online co-design involvement.

Hypothesis testing through cluster analysis and MANOVA

Utilizing IBM SPSS Statistics 22, a hierarchical cluster analysis using Ward's method was conducted to group the respondents into homogeneous sub-groups, based on their responses to fashion innovativeness and opinion leadership. The squared Euclidian distance was chosen as the distance measure. Two, three, and four clusters were computed on the fashion changing agent qualities, fashion innovativeness and opinion leadership, and the researchers selected a two-group solution, considering a diffusion of innovation curve and the fashion cycle. The tween consumers were divided into two groups—FCAs and fashion followers. Univariate and multivariate analyses were further conducted among the two groups to verify the cluster solution. According to the MANOVA, all two groups were significantly different on the five variables, $F(5,47) = 21.12$, $p < .001$, Wilks' Lambda (Λ) $= .31$, partial eta squared (η^2) $= .69$, supporting Hypothesis 1.

Table 2 Correlation Analysis among the Key Variables

	FI	FOL	IUAS	IOCI	BC
Fashion innovativeness	(29.03)				
Fashion opinion leadership	.65**	(34.73)			
Internet use for apparel shopping	.42**	.45**	(35.36)		
Interest in online co-design involvement	.38**	.26	40**	(63.06)	
Brand Commitment	.47**	.60*	.46**	.18	(45.96)
Mean	2.62	2.73	1.73	2.56	2.72
Standard deviation	.75	.82	.82	1.10	.94

n $= 53$ (listwise deletion); * $p < .05$; ** $p < .01$ (two-tailed); sum of squares and cross-products in parenthesis

According to univariate analyses (ANOVA), there was a statistically significant difference among the two groups on fashion innovativeness, $F(1,51) = 58.06$, $p < .001$, $\eta^2 = .53$, and fashion opinion leadership, $F(1,51) = 73.74$, $p < .001$, $\eta^2 = .59$; Internet use for apparel shopping, $F(1,51) = 13.81$, $p < .001$, $\eta^2 = .21$; interests in online co-design involvement, $F(1,51) = 6.60$, $p < .05$, $\eta^2 = .12$; and brand commitment, $F(1,51) = 19.54$, $p < .001$, $\eta^2 = .28$.

Both MANOVA and ANOVA results supported the two groups were significantly different when considering all five variables together as well as individually. A larger sample size is desirable for MANOVA, but the minimum sample size requirement for each group is greater than the number of dependent variables included (Hair et al. 2014). So, the sample size for each group meets the minimum requirement. However, the small sample size may decrease statistical power. Although the statistical power of the results is limited in representing the tween population, the results detected differences between the tween fashion consumer groups and would offer preliminary understanding or guidance for future research on tween fashion consumers.

Cluster 1, FCAs, accounted for 49.06% ($n = 26$) of the respondents and exhibited the highest scores for all five characteristics. Cluster 2, fashion followers, accounted 50.94% ($n = 27$) and exhibited relatively the lowest scores of the five characteristics. The mean and standard deviation for each of the five variables is reported in Table 3.

Hypothesis testing through multiple regressions

Multiple regression analyses were conducted to examine effects of FCA characteristics—fashion innovativeness and opinion leadership—on Internet use for apparel shopping, interests in online co-design involvement, and brand commitment. As shown in Table 4, Hypothesis 2 was partially supported. Results indicated two predictors, fashion innovativeness and opinion leadership, explained 26% of the variance in frequency of Internet use for apparel shopping, $F(2,52) = 9.23$, $p < .001$. Interestingly, fashion opinion leadership did positively influence Internet use for apparel shopping ($\beta = .32$, $t = 2.00$, $p < .05$); whereas, fashion innovativeness did not influence Internet use for apparel shopping ($\beta = .24$, $t = 1.53$, $p > .05$). Participants who possessed greater opinion leadership tended to adopt the Internet more frequently for apparel shopping, browsing, and fashion information search than those who possessed less opinion leadership. Fashion innovativeness

Table 3 Multivariate analysis of variance on the key variables by clusters

Dependent variable	Mean (SD)		Univariate $F(1,51)$	Multivariate $F(5,47)$
	Cluster 1 Fashion change Agents ($n = 26$)	**Cluster 2 Fashion followers ($n = 27$)**		
Fashion innovativeness	3.17 (.38)	2.09 (.62)	58.06***	21.12***
Opinion leadership	3.37 (.34)	2.12 (.66)	73.74***	
Internet use for apparel shopping	2.11 (.82)	1.36 (.65)	13.81***	
Interest in online co-design involvement	2.94 (1.01)	2.19 (1.08)	6.60*	
Brand commitment	3.22 (.54)	2.24 (1.00)	19.54***	

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed)

Table 4 Results from multiple regression analyses

Dependent variable Independent variable	df	F	R^2	B	Std. error	Beta	t
Internet use for apparel shopping	2, 52	9.23***	.26				
Fashion innovativeness				.27	.18	.24	1.53
Fashion opinion leadership				.33	.16	.32	2.00*
Interest in online co-design Involvement	2, 52	4.91*	.16				
Fashion innovativeness					.26	.34	2.03*
Fashion opinion leadership					.24	.08	.45
Brand commitment	2, 52	14.83***	.37				
Fashion innovativeness					.19	.15	.99
Fashion opinion leadership					.17	.51	3.45***

n = 53 (listwise deletion); * *p* < .05; ** *p* < .01; *** *p* < .001 (two-tailed)

did not significantly influence tween consumers' adoption and use Internet for apparel shopping.

Hypothesis 3 was also partially supported. The two explanatory predictors explained 16% of the variance in interest in online co-design involvement, $F(2,52) = 4.91$, $p < .05$. Fashion innovativeness positively influenced interest in online co-design involvement ($\beta = .34$, $t = 2.03$, $p < .05$), but opinion leadership did not influence it ($\beta = .08$, $t = .45$, $p > .05$). Participants who possessed greater fashion innovativeness tended to have more interest in involving online co-design of customization for exciting, fun experiential shopping. However, opinion leadership did not influence interest in online co-design involvement.

Hypothesis 4 was not supported. The two predictors explained 37% of the variance in brand commitment, $F(2,52) = 14.83$, $p < .001$. Fashion innovativeness did not influence brand commitment ($\beta = .15$, $t = .99$, $p > .05$). Interestingly, fashion opinion leadership positively influenced brand commitment ($\beta = .51$, $t = 3.45$, $p < .001$). The results were interpreted that participants who possessed greater opinion leadership were more likely to show greater brand commitment toward their preferred brand than those who possessed less opinion leadership.

Discussion

The purpose of this study was to identify tweens' consumer profiles in relation to FCA characteristics, online shopping orientations, and brand commitment, which can be applicable to determine the tween fashion consumer groups. Significant positive effects of tweens' FCA characteristics on internet use for apparel shopping, interest in online co-design involvement, and brand commitment were also examined. This study highlights the role of tween fashion consumers' FCA characteristics in their online shopping orientations and brand commitment, and provides an understanding of two distinctive groups in the tweens' fashion market—fashion change agents and fashion followers.

Results suggest tween fashion consumers play the role of FCAs in the fashion adoption and diffusion process, different from fashion followers. It was found 26 out of 53 participants were fashion change agents. Although the sample was limited in size, the proportion of FCAs in this group is substantial. In the present study, 49.06% of the

tween participants exhibited high FCA qualities. This finding may indicate FCAs, who may lead fashion followers in the tween fashion market, as in other market segments.

This study also makes a theoretical contribution by expanding the application of fashion adoption theory to the tween fashion consumers' adoption process of new innovative fashion. Tweens' fashion innovativeness and opinion leadership played an important role in determining individual differences of the fashion adoption process in relation to Internet use for apparel shopping, interest in online co-design involvement, and brand commitment. Interestingly, tweens' fashion innovativeness was more influential in shaping their interests in online co-design involvement for new shopping experiences than their fashion opinion leadership, while tweens' opinion leadership was more prominent in influencing Internet use for apparel shopping and brand commitment toward their preferred brand. These mixed findings have not been explored in previous studies, indicating the present study contributes to reveal new findings about tween fashion consumers' online shopping and brand commitment, different from adults' fashion consumers.

Prior studies indicate both fashion innovators and opinion leaders tend to use more multi-channels and the Internet for apparel shopping (Cho and Workman 2011); furthermore, fashion innovativeness has been positively related to Internet use for apparel shopping (Goldsmith and Flynn 2005; Goldsmith and Goldsmith 2001; Park et al. 2007). According to our findings, however, tweens' opinion leadership was the significant factor to influence Internet use for apparel shopping, rather than fashion innovativeness. The FCAs with opinion leadership had a higher level of Internet use for apparel shopping, more frequently using the Internet to browse and purchase fashion products or search fashion information. This finding indicates opinion leaders use media more actively than non-opinion leaders and diffuse acquired information to others. Our finding also suggests the Internet could be a useful means for fashion marketers and retailers trying to reach this tween consumer group.

Results indicate tween FCAs with fashion innovativeness also showed higher levels of interest in online co-design involvement. This is consistent with previous studies supporting FCAs search for stimulation and exciting shopping experiences (Stanforth 1995; Studak and Workman 2004; Goldsmith and Stith 1992). Tween FCAs who show the desire and creativity to custom design elements of their clothing may know and feel confident in what they want to wear as well as seek new shopping experiences for enjoyment and excitement. It is suggested new experiential shopping environments or venues can attract tween fashion consumers who want a greater variety and more enjoyment or excitement.

Since the literature about the roles of fashion innovativeness and opinion leadership on brand-related behavior is limited, this study also contributes to expand an understanding of tweens' brand commitment depending on their FCA characteristics. FCAs tend to have a higher need for variety and are more venturesome in trying new products (Workman 2010; Workman and Johnson 1993; Goldsmith and Stitch 1992; Stanforth 1995; Studak and Workman 2004), so the FCAs are considered less brand committed and have weaker brand attachment, brand love, and brand trust compared with fashion followers (Workman et al. 2015). However, this study found tween FCAs, especially those with higher opinion leadership, possessed stronger brand

commitment than non-FCAs. Further research should investigate this discrepancy between adult and tween FCAs.

Findings from this study also identify significant differences between FCAs and fashion followers. That is, tween fashion consumers are neither homogenous nor identical in terms of FCA characteristics, online apparel shopping, and brand commitment. Additionally, tween fashion innovators and opinion leaders are different in relationship to Internet use for apparel shopping, interest in online co-design involvement, and brand commitment. Tween fashion innovators tend to have more interest in creative, fun, online co-design involvement than tween fashion opinion leaders. Tween opinion leaders tend to use more Internet for apparel shopping and have more brand commitment than tween fashion innovators. Understanding these differences between FCAs and fashion followers as well as between fashion innovators and fashion opinion leaders among tween FCAs may be useful to identify and profile tween fashion consumer cohorts.

This research may draw managerial implication by providing valuable suggestions toward tween fashion consumers. Present findings provide support for two distinct tween fashion consumer groups—FCAs and fashion followers. This suggests marketing and branding strategies should be varied, depending upon degree of fashion innovativeness and opinion leadership of tween consumers. Tween FCAs with high levels of fashion innovativeness and opinion leadership may be tempted by the fun and exciting experiences in online shopping websites, such as online co-design for customization; Internet sites offering visual, verbal, and tactile information of products; and fashion advertisements for branding. Targeting tween FCAs through new, fun ways to advertise products and brands on the Internet would be worthwhile or effective to reach more tween fashion consumers. For example, one marketing and advertising strategy targeting tweens' FCAs could be creating new, exciting online videos and market them through the brand's social media or free online platforms, such as YouTube (Young Entrepreneur Council, 2014). It may help the brand's website growth as one of the most trafficked websites on the Internet among tween FCAs. Otherwise, adopting more interactive online product visualization tools, such as virtual reality, augmented reality, and virtual model may be also effective for enhancing online and store experiences as well as marketing new customer experiences to tween FCAs. Since FCAs with higher fashion innovativeness and opinion leadership influence the adoption and purchase behavior of other tween fashion consumers, marketers and retailers need to develop more fashion innovative, Internet-mediated, interactive, and brand-oriented marketing efforts to persuade these FCAs to lead fashion followers and more actively engage in online apparel shopping.

Limitations and recommendations for future research

Tweens are an interesting consumer group because they have very little income, if any, and so must rely on another person, typically a parent, to make purchases. Fashion has been seen to trickle up from teens and young adults (Johnson, 2017; Rousso 2012), but never from an age group so young. With their growing economic power and the percentage of FCAs in the group, perhaps tweens might have more influence in the fashion market. The tween population is difficult to reach due to their young age and need for

parental permission to participate in research. This difficulty is indicated as a limitation and suggested this study be repeated with a larger sample of tween girls. Most the sample for this study came from the Midwest region. Future studies should include participants with more regional diversity, which could be also valuable.

Since this group may be showing high levels of FCA qualities, it is suggested to further explore their fashion adoption and diffusion behaviors and/or relationships among Internet use for apparel shopping, interest in online co-design involvement, and brand commitment, which critically influence the information search and decision-making process in apparel shopping. This could be achieved with exploratory focus groups or interviews. A focus group or an interview would be a good platform to better understand attitudes and behaviors toward fashion adoption and diffusion among this age group.

Additionally, this study suggests marketers and retailers for tweens' apparel market to develop more fashion innovative, Internet-mediated, interactive, and brand-oriented strategies for tween fashion consumers. Investigating tween fashion consumers' responses to new, innovative technologies or strategies, experiential shopping environments, and branding strategies would be also needed as a follow-up research to expand an understanding of tween consumers' profile.

Authors' contributions
RB planned this study as her thesis, collected data, and wrote a manuscript under guidance of HJG, her major professor, and JB, a committee member of her thesis. HJG and JB contributed to advise her to develop the manuscript. U-JY was involved in revising and developing the manuscript through additional data analysis and submitted this article for publication as a corresponding author. All authors read and approved the final manuscript.

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