

Determinants of Mass Customization Adoption in the Apparel Industry: Retail Managers' and Young Consumers' Point of View

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Abstract

The purpose of this study was to examine the relationship between the willingness to adopt mass customization and four proposed characteristics: organizational, individual, technological, and environmental. Retail managers' and consumers' point of view was separately examined to distinguish their characteristics and willingness to adopt mass customization. The sample of this study consisted of 66 managers and 274 consumers in their twenties. The researcher obtained seven findings from the hypotheses testing. The determinants of mass customization adoption were managers' technology and environmental characteristics, and consumers' individual, technology, and environmental characteristics. The most influential variables for the willingness to adopt mass customization were technology characteristics and retailer's customer relationship management process, where customer satisfaction and customer relationships are the top priority in an organization.

Key words: Mass customization, Customer relationship management, Customer centricity, Technology diffusion; 매스커스터마이제이션, CRM, 소비자 중심 경영, 기술 확산

I. Introduction

In today's fragment and heterogeneous apparel market, consumers desire personalized and individualized styles, and Mass customization became the new edge to competitive advantage. Mass customization is promoted as a revolutionary business strategy that can transform the industry through providing increased customer involvement and individuality of

products at a reasonable cost (Davis, 1987; Pine, 1993). According to Kurt Salmon Associates' 1997 Annual Consumer Outlook Survey, 36% of consumers are willing to pay up to 15% more for customized apparel, and will wait up to three weeks to receive their customized products. With this consumer interest in mass customization in mind, empirical works regarding mass customization have been emerging since the late 1980's.

Most empirical work in the area of mass customization has focused in two directions: to estimate the effects of emerging mass customization strategies

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(Fiore et al., 2001; Harvey & Tersine, 1998; Istook, 2002; Lowson, 2001) and to examine factors that are related to the mass customization implementation (Goldsberry et al., 1996; Graeber, 1999; Istook, 2002; Kamali & Loker, 2002; Segal, 1986). This research will focus on the latter flow.

It is proposed that four factors that determine mass customization adoption are organizational characteristics, individual characteristics, technological characteristics, and environmental characteristics. Organizational characteristics can have a significant influence on the successful implementation of a new strategy (Hartwick & Barki, 1994), such as mass customization. Organizational characteristics include merchandise characteristics of stores, managers' customer centricity, and user involvement. Customer centricity can be described as customer oriented managerial processes for customer interactions (Jayachandran et al., 2004, study in progress). The second determinant proposed for mass customization adoption, is individual characteristics (Ajzen, 1991), which includes managers' relationship orientation, role clarity, role conflict, and consumers' involvement, clothing interests, and consumers' store preferences. The third determinant proposed is technology characteristics, which includes innovation diffusion of technology (Rogers, 1995). The last factor proposed is, environmental characteristics which is identified as environmental dynamism (Jayachandran et al., 2004, study in progress) of stores in terms of fashion cycle of products, services and technology.

Regarding important factors that influence mass customization, no studies to date have been done regarding all four proposed characteristics: organizational, individual, technological, and environmental.

The purpose of this study is to examine the relationship between four proposed characteristics: organizational, individual, technological, and environmental, and retailers' and consumers' willingness to adopt mass customization.

II. Literature Review

1. Mass Customization in the Apparel Retailing

Gilmore and Pine (1997) emphasized the importance

of mass customization in the apparel industry. To implement mass customization, Gilmore and Pine (1997) suggested manufacturers in the apparel industry will need electronic order-acquisition systems that capture people's measurements over the web or in retail stores, order-processing software to coordinate the acquisition of raw materials and the shipment of finished goods, and databases to make sure custom clothing is designed to the right specifications.

Fiore et al. (2001) found high interest in mass customization after describing body scanning and the co-design process to subjects. Their results associated the preferred level of stimulation with the types of products, services, and experiences desired from mass customization of apparel. They also found that consumer's preferred to participate in mass customization of products (i.e., jeans, swim suits), and product features (i.e., fit and size) to a greater degree, and color and garment details to a lesser degree (Lee & Chen, 2000).

Huffman and Kahn (1998) evaluated consumer ability and interest in selecting among extensive product choices. They concluded that consumers were more satisfied with selecting attributes within a choice set rather than having extensive or few choices. These results suggested a strategic potential for mass customization, but did not analyze the level of design involvement in which consumers were willing to participate. In this manner of retailing, technologies were needed in the apparel industry to make mass customization possible.

2. Channel Theory

Channel theory explains the use of communication, transaction, and distribution channels by consumers and businesses or between two businesses (Peterson et al., 1997). Communication channels facilitate information flow, transaction channels facilitate agreement for exchange, and distribution channels facilitate the actual exchange of goods or services. Kotler (1997) applied channel theory to describe the nine functions of marketing activities (information, promotion, negotiation, ordering, financing, risk-taking, physical possession, payment, and transfer of ownership)

conducted through these channels.

Li et al. (1999) applied channel theory to the development and testing of a conceptual model for consumer on-line buying behavior. The study assumed that a consumer would choose a channel high in communication, distribution, and accessibility attributes. Consumers who made on-line purchases considered themselves knowledgeable about the Internet's communication ability, understood how to access the Internet readily and purchased products using this transaction channel. The study's findings indicated that education, convenience, experiential orientation, channel knowledge, perceived distribution utility, and perceived accessibility were predictors of the on-line buying status. In developing transaction channel between customers and business, customer's characteristics and a firm's unique marketing strategy are required. This study follows this matter of approach, and proposed retailers' and customers' characteristics that determine mass customization adoption.

3. Four Determinants for Mass Customization Adoption

1) Organizational Characteristics

Organizational characteristics can have significant influence on the successful implementation of a new strategy (Hartwick & Barki, 1994), such as mass customization. Organizational characteristics include merchandise characteristics of stores, managers' and sales associates' customer centricity, user involvement, and consumers' store preferences. Merchandise characteristics are the degree of merchandise fashionability, price, and assortment. Quality, price of merchandise and customer service are also characteristics of merchandise. Customer centricity is customer focused processes that enhance the quality of customer interactions (Jayachandran et al., 2004, study in progress). Customer centric management is the process where customer satisfaction and relationship is the top priority in organization. User involvement is the participation of the customer in considering the importance of new organizational systems. Store preferences are customer's choices in selecting a store to shop for fashion needs and convenience.

2) Individual Characteristics

The second proposed determinant of mass customization adoption, individual characteristics (Ajzen, 1991), include managers' relationship orientation, role clarity, role conflict, and consumers' involvement and clothing interests. Relationship orientation is the nature of long-term customer alliances; therefore, it refers to satisfying customers' needs over an extended period, which is consistent with both the strategic intent of being customer oriented and being concerned with the future consequences of current actions. As a result, it is proposed that being customer oriented and concerned with future consequences explains a long-term relationship orientation that the customer would have with sales people.

Role ambiguity negatively influences the adoption of a new system. When employees are uncertain about other's expectations with respect to the job, the best way to fulfill known expectations, and the consequence of role performance, should be provided. Prior research demonstrated that higher levels of role clarity and role conflict negatively influence the adoption of an innovative system (Brown & Peterson, 1993).

Involvement has been variously conceptualized as personal relevance, amount of arousal, interest, or drive evoked by a particular stimulus, a person's activation level, and goal-directed arousal capacity (Roger & Scheifer, 1993). Clothing involvement is a mediating factor in self-perceptions of sociability, emotional stability, and dominance when either satisfaction or dissatisfaction with clothing was specified (Cosbey, 2001).

Duray (1997) and Duray et al. (2000) empirically tested the concept of mass customization using three levels of validations: case studies of 15 companies using mass customization, plant visits and interviews in the furniture industry, and a survey of 639 companies in the furniture, fabricated metal products, machinery, electric and electronic equipment, transportation equipment, and instruments industries. Duray et al. (2000) used point of customer involvement and modularity in four production phases—design, fabrication, assembly, and use—to classify the firms into four categories: fabricators, involvers, modularizers and as-

semblers. Results confirmed that point of customer involvement and modularity differentiated the firms on process choice, planning technique, technology use, and business performance variables. Furthermore, Duray et al. (2000) argued that mass customization at the product design stage could integrate the marketing, manufacturing, and engineering functional areas.

3) Technology Characteristics

The third proposed determinant of mass customization adoption is technology characteristics, which includes innovation diffusion of technology (Rogers, 1995). Diffusion of innovations refers to the process whereby a new product, service, or idea spreads through a population (Rogers, 1995). Sales peoples' and consumers' positive response to technological changes in the environment and their attitude toward new technology are factors suggesting technology diffusion.

New technologies and manufacturing methods are required in the apparel industry to make mass customization possible (Istook, 2002). Pine (1993) discussed that, with advanced production technologies, mass customization allows the customer and busi-

ness to develop the product or service together so as to provide customers with exactly the product they want at the time they want it. Graeber's (1999) exploratory study with mass customization scenarios was a technological approach toward mass-customization.

4) Environment Characteristics

The last proposed factor, environmental characteristics, is described by environmental dynamism of stores in terms of fashion cycle of products, services and technology. Customers' product preferences change as related to rapid system changes (Jayachandran et al., 2004). Consumers' interpersonal influence on purchase decision making is also significantly correlated to new system adoption.

A research model has been developed from these relationships and presented in <Fig. 1>:

The relationship between willingness to adopt mass customization and the four characteristics: organizational characteristics, individual characteristics, technological characteristics, and environmental characteristics, was supported by this review of literature. Retail managers' and consumers' point of view were distinguished to witness their respective willingness

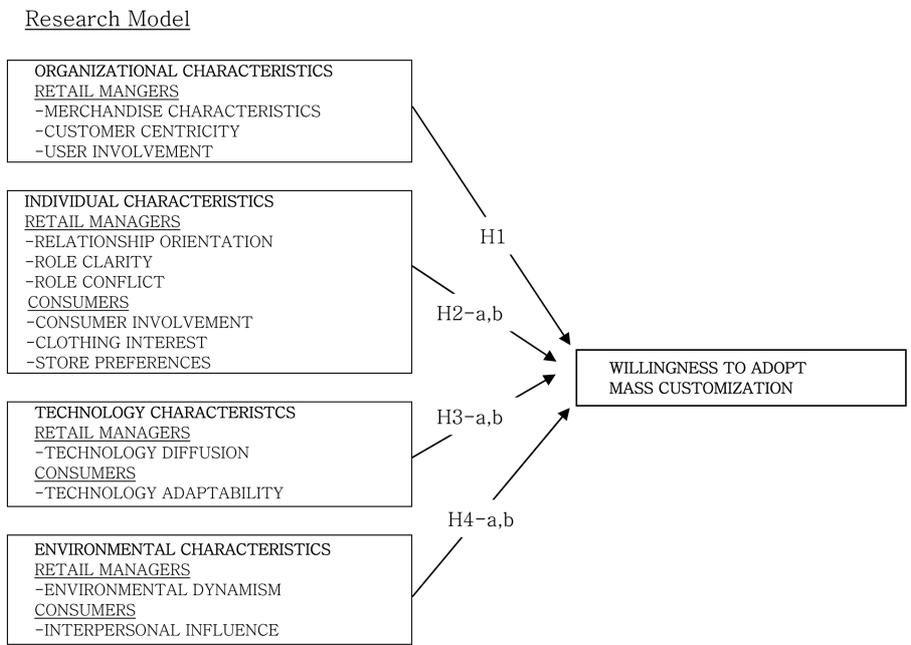


Fig. 1. Determinants of mass customization adoption.

to adopt mass customization.

III. Methods

1. Sample

The first target population for this study was retail managers in a Department Stores group in Southeast United States. The mailing survey was approved and sponsored by the Corporate Human Resources Department of the department store group. The mailing list consisted of 40 stores, located in 33 cities throughout Florida state. Sixty-six responses were returned out of a possible 120, for a 55% response rate.

The second target population was consumers of apparel products. For this sample consumers in their twenties were purposely selected since youngsters are characterized as the opinion leaders in the innovative sub-culture group of fashion adoption. Convenience sampling method is used and students were selected from five different undergraduate and graduate classes. Fashion major students, who are accustomed to Mass customization, were excluded so as to increase reliability of this sample. A total of 274 responses were obtained after excluding three uncompleted questionnaires.

2. Instruments

The questionnaire used to collect data was adopted from Jayachandran et al. (2004) (study in progress) and the measured level of mass customization implementation in the apparel industry was collected from the source: (Apparel Industry: Consumer Customization). Consumers were self-reported their perceived level of interest in mass customization in the apparel industry.

The sub-classification of organizational characteristics, merchandise characteristics was measured by merchandise fashionability, price, and assortment of the store. Items to measure customer centricity, the customer focused managerial processes to enhance the quality of customer interactions, was adopted by Jayachandran, et al.'s study (2004) (study in progress). User involvement (Barki & Hartwick, 1994) was

measured by the degree of user participation.

Sub-classifications of individual characteristics, relationship orientation (Cosbey, 2001) was measured by the degree of intense interaction and cooperative intentions, and role ambiguity, role conflict, role clarity (Choko et al., 1986) was measured by the degree to which retail managers were uncertain/certain about other's expectations with respect to their jobs. Consumer involvement (Laurent & Kapferer, 1985), the perceived importance of a product, the perceived importance of negative consequences, the perceived probability, the value attributed by consumers to the product, the hedonic value of the product and the time spent choosing a product was asked to consumers. Items to measure clothing interest (Cosbey, 2001), the self-perceptions of sociability, emotional stability, and dominance when either satisfaction or dissatisfaction with clothing exists, was asked to consumers. Store preferences, which is customer's choice of a store to shop at for their fashion needs, was self-reported by consumers.

Technology diffusion (Rogers, 1995) and technology adoptability was measured by the degree adoption of an innovative technology by retail managers and consumers over past two years.

Environmental dynamism (Jayachandran et al., 2004, study in progress), the degree of rapidity of customer's product preference changes and technological changes over time, was measured by managers. To investigate consumers environmental characteristics, interpersonal influence (Bearden et al., 1998) was measured by consumers needs to identify with or enhance their image in the opinion of significant others and their willingness to conform to the expectations of others or seeking information from others.

The questionnaire contained open as well as closed-ended questions and was subjected to a pilot-test in order to ensure validity and reliability of the instrument.

3. Data Analysis

Cronbach Alpha was used to determine the reliability of the scales that measure four characteristics: organizational, individual, technological, and environmental,

that are the independent variables of this study.

Description, means, frequencies, and Tukey test was used to determine the relationship between managers' and consumers' willingness to adopt mass customized apparel products and their demographic information. The initial step involved running frequencies on all data so that it could be inspected for errors.

Correlation and regression data analysis was conducted to test the hypotheses. The hypotheses testing was done separately for the managers and consumers. The dependent variable for the manager sample was the respondents response to eight questions related to their willingness to adopt mass customization. Consumer respondents were provided with 10 questions regarding their involvement with mass customized apparel products. The separate correlation and regression analyses for managers and consumers was used in testing four hypotheses of this study. The hypotheses were examined using chi-square analysis. In each chi-square analysis, the given independent variable was cross tabulated with the dependent variable which was the willingness to adopt mass customization.

From the multiple regression results, the correlation between dependent variable, willingness to adopt mass customization, and each independent variable was tested. According to 95% ($p \leq .05$) significance rate, the null hypotheses were supported or rejected.

IV. Results

The purpose of this study was to examine the relationship between the willingness to adopt mass customization and four proposed characteristics. Retail managers' and consumers' point of view was separately examined to distinguish their characteristics and willingness to adopt mass customization.

1. Description of Respondents

Students' mean willingness ($M=3.5580$) to adopt mass customization is higher than that of managers ($M=2.9675$). According to frequency distribution, 45% of the managers' age is ranged from 40 to 49, and 72.6% of consumers' age is distributed from 20 to 29. The frequency of gender shows 74.2% of managers

and 63.5% of students consists of female, so this rate reports that female respondents are a few more than male respondents. 68.1% of manager's education level is high, more than bachelor's degree, and the majority of the student sample (47.8%) is in the year of juniors and seniors. Managers' average working years in stores and Federated Department Stores is about 10 years, and the frequency rate shows 86.4% of managers worked more than 5 years in Federated Department Store. Retail managers were working in various department, such as women's apparel ($N=20$, 30.3%), men's apparel ($N=16$, 24.2%), children's apparel ($N=5$, 7.6%), junior's apparel ($N=20$, 30.3%), handbags ($N=3$, 4.5%), and shoes ($N=2$, 3.0%).

2. Results for Hypotheses with Managers

The correlation between the dependent variable, managers' willingness to adopt mass customization, and each independent variable, (1) organizational, (2) individual, (3) technological, and (4) environmental characteristics was tested. In terms of a 2-tailed significance rate at the 0.05 level, only technological characteristics and environmental characteristics showed a highly significant relationship with managers' willingness to adopt mass customization.

H1. Organizational characteristics will positively influence retail managers' willingness to adopt mass customization.

According to the correlation results for the organizational characteristics and manager's willingness to adopt mass customization, the relationship is not significant (Table 1). Therefore the null hypothesis is rejected. However, a significantly higher relationship was found between mass customization willingness in "certain lines" and organizational characteristics (Table 2). This result shows that managers' organizational characteristics are not correlated with mass customization willingness itself, but are highly correlated with their willingness of mass customization adoption in "certain lines", such as intimate apparel and women's apparel.

H2-a. Individual characteristics will positively influence retail managers' willingness to adopt mass customization.

Table 1. Correlations for four factors and mass customization willingness with managers

	WILLINGNESS TO ADOPT MC	ORG. CHARCS.	INDI. CHARCS.	TECH. CHARCS.	ENVIR. CHARCS.
WILLINGNESS TO ADOPT MC	1.000				
ORGANIZATIONAL CHARACTERISTICS	-.046	1.000			
INDIVIDUAL CHARACTERISTICS	.206	.166	1.000		
TECHNOLOGY CHARACTERISTICS	.243*	-.273*	.094	1.000	
ENVIRONMENT CHARACTERISTICS	.222*	-.136	-.074	.228*	1.000

* $p < .05$ **Table 2. Correlations for four factors and mass customization willingness in “certain lines”¹⁾ with managers**

	WILLINGNESS TO ADOPT MC	ORG. CHARCS.	INDI. CHARCS.	TECH. CHARCS.	ENVIR. CHARCS.
WILLINGNESS TO ADOPT MC IN CERTAIN LINES	1.000				
ORGANIZATIONAL CHARACTERISTICS	.261*	1.000			
INDIVIDUAL CHARACTERISTICS	.680***	.166	1.000		
TECHNOLOGY CHARACTERISTICS	.040	-.273*	.094	1.000	
ENVIRONMENT CHARACTERISTICS	-.190	-.136	-.074	.228*	1.000

¹⁾Managers were asked to answer if they are willing to adopt mass customization in “certain lines”, such as woman's apparel or intimate apparel.* $p < .05$, *** $p < .001$

According to the correlation and regression results for the individual characteristics and manager's willingness to adopt mass customization, the relationship <Table 1> was not significant, and the null hypothesis is rejected. However, a significantly higher relationship was found between mass customization willingness in “certain lines”. As shown in <Table 3>, all of the sub-classification of individual characteristics, such as relationship orientation and role clarity, were significantly related with their willingness to adopt mass customization.

H3-a. Technological characteristics will positively influence retail managers' willingness to adopt mass customization.

According to the correlation between the technological characteristics and manager's willingness to

adopt mass customization, the relationship was significant <Table 1>, and the null hypothesis is supported. However, in “certain lines”, technology diffusion was not correlated with managers' willingness to adopt mass customization (Table 2).

H4-a. Environmental characteristics will positively influence retail managers' willingness to adopt mass customization.

The relationship between environmental characteristics and manager's willingness to adopt mass customization was significant <Table 1>, and the null hypothesis was supported. Managers' willingness to adopt mass customization in “certain lines” and environmental dynamism, however, were not significantly correlated (Table 2).

Table 3. Correlations for sub-classification of individual characteristics and mass customization willingness with managers

	MC Adoption Willingness	Merch. Charcs.	Customer Centricity	Relationship Orient.	MC Involvem.	Role Clarity
WILLINGNESS TO ADOPT MC	1.000					
MERCHANDISE CHARACTERISTICS	-.214*	1.000				
CUSTOMER CENTRICITY	.315**	-.168	1.000			
RELATIONSHIP ORIENTATION	.417***	.160	.264*	1.000		
MC INVOLVEMENT	.479***	-.136	.067	.419***	1.000	
ROLE CLARITY	.402***	.221*	.294**	.549***	.106	1.000

* $p < .05$, ** $p < .01$, *** $p < .001$

3. Results for Hypotheses with Consumer

All correlations between three characteristics, (1) individual, (2) technological and (3) environmental, and consumer's willingness to adopt mass customization, were highly significant <Table 4>, and the following three null hypotheses are supported.

H2-b. Individual characteristics will positively influence consumers' willingness to adopt mass customization.

H3-b. Technology characteristics will positively influence consumers' willingness to adopt mass custom-

ization.

H4-b. Environmental characteristics will positively influence consumers' willingness to adopt mass customization.

In order to figure out which characteristics gave the greatest contribution to the correlation with consumers' willingness to adopt mass customized apparel products, ANOVA mean comparisons were used. According to the results, the adjusted R square rate indicates that 21% of consumer's individual characteristics was accounted for in the variance of the dependent variable. About 15% was accounted for

Table 4. Correlations for three factors and mass customization willingness in "certain lines"¹⁾ with consumers

	WILLINGNESS TO ADOPT MASS CUSTOMIZATION	INDIVIDUAL CHARACTERISTICS 1	INDIVIDUAL CHARACTERISTICS 2	TECHNOLOGY CHARACTERISTICS	ENVIRONMENT CHARACTERISTICS
WILLINGNESS TO ADOPT MASS CUSTOMIZATION	1.000				
INDIVIDUAL CHARACTERISTICS 1	.460***	1.000			
INDIVIDUAL CHARACTERISTICS 2	.538***	.576***	1.000		
TECHNOLOGY CHARACTERISTICS	.485***	.519***	.463***	1.000	
ENVIRONMENT CHARACTERISTICS	.657***	.556***	.693***	.536***	1.000

Individual characteristics 1 (product preferences)

Individual characteristics 2 (clothing interests)

¹⁾Consumers were asked to answer if they are willing to adopt mass customization in "certain lines", such as woman's apparel or intimate apparel.

*** $p < .001$

by technological characteristics, and approximately 5% was accounted for by environmental characteristics. Thus, individual characteristics gave the greatest contribution for consumers' mass customization willingness to purchase.

V. Summary

Seven findings were obtained from the hypotheses testing (Fig. 2). The determinants of mass customization adoption were managers' technology and environmental characteristics, and consumers' individual, technology, and environmental characteristics. The most influential variables for the willingness to adopt mass customization were technology characteristics and retailer's customer relationship management process, where customer satisfaction and customer relationships are the top priority in an organization.

Hypothesis 1: Organizational characteristics, which include merchandise characteristics of the industry, managers' customer centricity, managers' user involvement, positively influenced their willingness to adopt mass customization in "certain lines". The merchandising characteristics and customer centricity, which are two variables that make up organizational characteristics, positively influenced retail managers' will-

ingness to adopt mass customization.

In 1994, the significant influence of organizational characteristics on the successful implementation of a new strategy was conducted by Hartwick and Barki. However, the result of this study showed no significant relationships. The difference in these findings may be explained by the discordance of the dependent variables in the two studies. Mass customization is one example of an innovative strategy, but Hartwick and Barki (1994) laid emphasis on the information system, such as EDI and the Internet, which were already widely used in 1994. Thus the importance of those technologies had been realized. On the other hand, mass customization is not a widely accepted innovation in the apparel industry at the present time, and in terms of the result of this study, manager's willingness to adopt this innovation was not very high.

Hypothesis 2: Managers' individual characteristics positively influenced their willingness to adopt mass customization in certain lines. Also, significant correlations between customers' individual characteristics and their willingness to adopt mass customization was found.

Prior research demonstrated that higher levels of role conflict negatively influenced the adoption of an

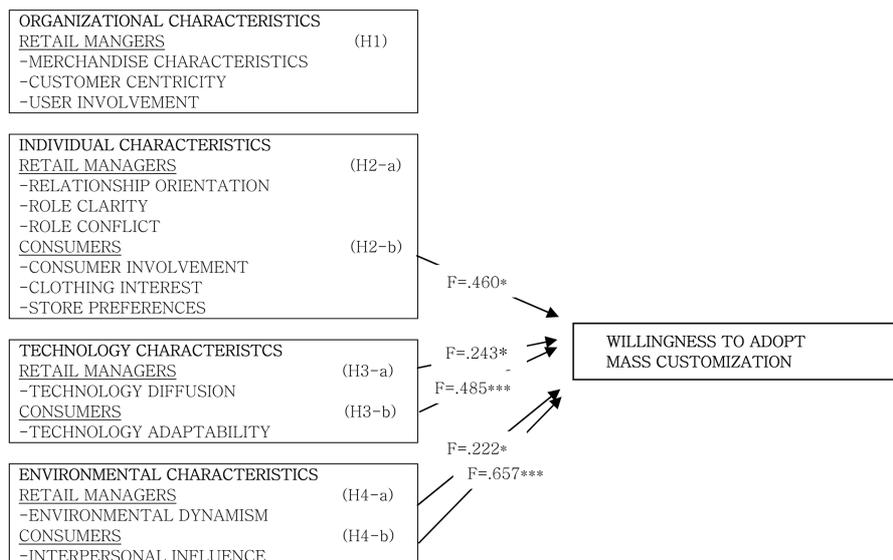


Fig. 2. Determinants of mass customization adoption: Hypotheses testing.

innovative system (Brown & Peterson, 1993). The role clarity, which is the reverse variable of role conflict, was used for this study, and the correlation was significant. Thus, there is a thread of connection between the findings of this study and the Brown and Peterson's study (1993). Brown and Peterson's study (1993) provided support for the idea that being customer oriented and concerned with future consequences explains a long-term relationship orientation among retailers. The relationship orientation that develops could have a positive effect on the role clarity that managers have for their jobs. Managers' role clarity of their jobs could positively influence their willingness to adopt mass customization for the growth of their firms.

Hypothesis 3: Technological characteristics positively influenced both managers' and consumer's willingness to adopt mass customization.

Pine (1993) discussed that, with advanced production technologies, mass customization allows the customer and business to develop the product or service together so as to provide customers with the exact product they want at the time they want it. Graeber's study (1999) also supported this assertion of a technological approach toward mass-customization. Keeling (1997) also found that new technologies and manufacturing methods are needed in the apparel industry to make mass customization possible.

Three important technologies related to mass customization of apparel products were the Internet, 3-dimensional body scanning, and computer-aided-design (CAD). Even though 3-dimensional body scanning has not been widely introduced, retailers had a positive acknowledgement and customers showed great interest in this technology.

Hypothesis 4: The relationship between managers' and consumer's environmental characteristics and their willingness to adopt mass customization was significant.

Jayachandran et al. (2004) proposed environmental dynamism of stores in terms of the fashion cycle of products, services and technology, as a determinant of adopting new technology and processes. The managers' dynamic actions on innovative apparel products

positively influenced their willingness to adopt mass customization.

Consumers' interpersonal influence on purchasing decisions was also significantly correlated to a new system adoption (Bearden et al., 1998), and, according to the results of this study, it was also highly correlated with mass customization adoption. The more customers who were willing to seek information from others, such as family, friends or advertising showed greater interest in mass customization.

VI. Conclusions and Recommendations

1. Implications for the Apparel Industry

Two suggestions are offered to apparel retailers in terms of role performance and technology proficiency. The first implication for apparel retailers who are interested in adopting mass customization would be the major determinants of mass customization adoption found in this research, which are organizational, individual, and environmental characteristics. These three characteristics were found to be correlated, so the best way to fulfill known expectations, which are the consequence of role performance, is that one of managers' individual characteristics, such as relationship orientation and role clarity should be provided in the organization. The process, where customer satisfaction and customer relationships are the top priority in an organization, could be recommended for successful mass customization adoption.

Second, technology characteristics were the most influential variable for the willingness to adopt mass customization. It could be recommended for off-line retailers who are interested in mass customization to run parallel with an on-line store. On-line retailers incorporate features to take advantage of the Internet's two-way communication possibilities such as e-mail inquiries to sales representatives, discussion forums for customers, and voice and video applications.

2. Recommendations

This research attempted to measure the relation-

ship between four independent variables and the willingness to adopt mass customization in order to identify those variables which were determinants of mass customization adoption. The researcher feels there are three areas in which this research could be further explored and evaluated. The following recommendations are offered:

1. Further research could provide more answers about the specific apparel lines where preceding adoption of mass customization would be most likely.

2. Additional research in the Mid-West and West could be conducted to verify if geographical location has an effect on the willingness of mass customization adoption. Also, customers in other age groups and with no occupation limits could be considered for a research sample to see if older people's willingness of mass customization is similar to that of college students.

3. The final area where research could be conducted involves looking at certain specialty stores such as Levi's, Nike's, and online stores such as Ie3D, where mass customization is already adopted.

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요 약

본 연구의 목적은, 의류산업 리테일 매니저의 매스커스터마이제이션 도입 의향과 의류소비자의 매스커스터마이제이션 제품 구입 의향에, 영향을 미치는 4가지 특성적 요인을 분석함에 있다. 매스커스터마이제이션 도입 의향을 결정하는 4가지 특성적 요인으로, 기업, 개인, 기술, 환경적 특성이 제시되었다. 66명의 매니저와 274명의 20대 소비자를 대상으로 설문조사하여, 제시된 가설 중 7개의 가설이 채택되었다. 매스커스터마이제이션 도입 의향에 유의한 영향을 미치는 요인으로는, 의류매장 및 매니저의 기술, 환경적 특성, 그리고 의류소비자의 개인, 기술, 환경적 특성으로 나타났다. 가장 유의한 영향을 미치는 요인으로 기술적 특성이었는데, 개인 주문생산 서비스를 실현하기 위해 소비자와 원활한 상호작용이 가능한 기술 환경적 시스템 구축이 선행되어야 할 것으로 나타났다. 이밖에 3D Body Scanning, QR, IT 기술들의 필요성 인지도 및 도입 의향과, 매스커스터마이제이션 도입 의향과는 매우 유의한 상관관계가 있었다. 본 연구의 또 한가지 결실은, CRM 도입에 대한 매니저 및 소비자의 높은 관심도였다. 의류소비자 개개인의 니즈에 맞춘 생산 설계를 통한 유연생산시스템과 함께, 고객과 직접 교류하는 소비자 중심의 경영은 매스커스터마이제이션 도입의 발판이 될 것으로 나타났다.