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BARRIERS TO CUSTOMER INTEGRATION INTO NEW PRODUCT DEVELOPMENT PROCESS: A CASE OF APPAREL INDUSTRY IN PAKISTAN

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Abstract

In recent years, multinationals developed close relationship with customers by integrating them into NPD process which reduced switching and increased satisfaction. While SMEs faced severe breakdowns due to product failures led by customer dissatisfaction. A reason for this switching is prohibition of customer integration into NPD process. Within this context, the objective is to identify those potential reasons which become the source of non-integration. Data for this study was derived for a survey carried out in 25 SMEs (apparel). An exploratory factor analysis, correlation analysis, ANOVA and descriptive stats were utilized to discover the potential of various barriers. Out of all barriers, lack of awareness, trust and compatibility were potential barriers found positively related with non-integration. Non/less experienced firms showed lack of awareness which led them to lack of trust while experienced firms lacked flexibility in integrating customers. Locally operating SMEs showed lack of awareness and trust while firms at regional level were found more aware but refused the importance of integration. This study is focusing on customer integration into the SMEs sector has many implications for professionals and organizations.

Keywords:

NPD, customer integration, SMEs, barriers, apparel industry

1. INTRODUCTION

This is an exploratory research intended to identify the reasons of prohibition regarding the customer integration into new product development process by the SMEs of fashion industry in Pakistan. Fashion industry is the high involvement industry (product category) by the consumers. The study was conducted on the basis of two product categories – apparel and shoe. Later on the difference of the opinion was checked among those respective product categories. Scope and experience differences were also tested to observe the impact on the factors which found to be influential on the behavior of the SMEs regarding the C.I approach.

1.2. Background of the study

Channel integration with different processes is acknowledged in the literature (Chopra, 1998). And most importantly, customer integration into the new product development process was very much emphasized by many academicians and practitioners (Christopher, 1992). Researchers concluded that those products which are ranked as high involvement products by the consumers must be designed, manufactured and distributed in accordance with the consent of those consumers and customers (Chopra, 1998; Christopher, 1992; Harland, 1996; Khan, Omera, Christopher & Martin, 2012).

Multinational firms use customer integration approach for making new and innovative designs with the help of customers' opinions. Fashion industry is one of the leading industries in the world. The designs of the products (apparel & shoe) are getting Importance by firms. These designs are developed by the designers and creative teams who use creativity during the design process. but there are firms which prohibit C.I approach due to the customers' less exposure about the market trends or the structural complexity of the organization and many more hidden reasons are present (Tollin, 2002; Ameeta, 2004; Joshi & Sanjay, 2004). But we found no prior research regarding C.I approach in Pakistani perspective. Thus, it is significant to know that why these SMEs prohibit C.I approach into NPD process.

1.3. Problem Statement

The problem statement is: "What are the barriers to customer integration into new product development process faced by the SMEs of apparel industry in Pakistan".

2. LITERATURE REVIEW

2.1. Supply chain management

Increased uncertainty in the market trends (Cristina & Helena, 2008), reduced customer service (Abid, C., D'amours, S. & Montreuil, 2004), order delays & cancellation (Ch. Chandra, S. Kumar, 2000), late deliveries (Copacino, W.C., 1996), increased inventories (Costanza J.R., 1998), reduction in market share (Fisher M.L., W.R. Raman, 1994), and dissatisfied customers (Fraser J., 1998) are such issues which led the companies to reconsider their supply chain performance rather than to have a focus on the performance of individual firm (Stone & Keating, 2010). Because it's not a single firm but the whole supply chain which competes with other supply chains (Lambert, Cooper and Pagh, 1998). The ultimate success of an individual firm is dependent on the performance of the whole supply chain and vice versa (Lambert, Cooper and Pagh, 1997). Wall mart and Dell are the firms which built their success on better planning,

design and operation of their supply chain (Khan, Christopher, & Creazza, 2012). Conversely, some of the e-businesses failed in the market because of the wrong planning and design of their supply chain which led them to the shutdown of their business (Christopher, 2012).

Thus, a need for proper management of the supply chain is present (Lambert, Cooper & Pagh, 1997). There are companies who perceive supply chain management as a source of enhancing customer satisfaction and profitable growth (Wisner, Joel D., Ch. Tan, 2000). Even a complex supply chain, if properly and effectively coordinated may create a positive impact on the financial performance of every firm (Lambert, Cooper & Pagh, 1997). Through the proper management the above stated issues e.g. customer service reduction, uncertainty etc can be reduced (Hughes, Jon & M. Ralf, 1998). The management of business function is only possible through coordination in the supply chain (Malone, Thomas W. & Crownston K., 1994). But managing the supply chain is a complicated task because it includes product/service and informational flows from the point of origin to the point of consumption (Rhonda R., Lummus, Robert J., & Vokurka, 1999) which is a challenging task for the companies.

For the proper management of the supply chain, there is a need for firms and practitioners to understand what actually supply chain is, how it can be managed and how it affects the performance of individual firms (Lambert, Cooper & Pagh, 1997). There are many researchers who tried to define the supply chain management but fewer consensus are found regarding the definition (Gibson, Mentzer & Cook R.L., 2007). But for the purpose of understanding, The Global Supply Chain Forum (GSCF), defined supply chain management as the proper integration of the key business processes from the end-users through suppliers which provide product/service and information in order to add value for the customers (Lambert, Cooper & Pagh, 1997). Same concept Gibson (2007) discussed in his pursuit of a consensus definition of the supply chain management that actually the supply chain management is the planning and management of the business activities which involve business functions and logistics management activities. It also includes the coordination and collaboration of the organizations and the key business processes in order to provide value to the customers (Gibson, Mentzer & Cook R.L., 2007).

2.2. Scope & span in supply chain management

Several other researchers also defined supply chain management as it remained a hot issue among academicians and practitioners and a need of the firms to compete collectively against other rivals (Stone & Keating, 2010). Researchers (Lambert, Cooper & Pagh, 1997; Croom S., 2000; W.B. Macebeth, 1998; CSCMP, 1998; GSCF, 1997) mostly emphasized the term integration of key business processes and functions for the management of the supply chain. So it is important to consider that which business processes should be a part of the supply chain and how these processes and functions should be integrated (Harland, 1996). The selection and integration of the processes and functions is dependent on the scope and span of the supply chain (Michael C., Joel D. Wisner, 2001) which is determined through the product nature & complexity and objective of the supply chain (Khan, Christopher, & Creazza, 2012). If the product to be developed is complex, then it may require suppliers and retailers to remain connected with the manufacturer in order to design that product (Creazza, 2012).

Thus, product nature and complexity and the supply chain objective are determining that which organizations and processes should be integrated and to what extent they must be integrated (Christopher & Creazza, 2012). Through the network structure, firms can identify their scope and span (Michael C., Joel D. Wisner, 2001). Michael, Joel & Wisner (2001) mentioned that scope of a supply chain is the no of tiers present in the supply chain (NRCC, 2000) while the

span is the no of firms present in each tier (Michael C., Joel D. Wisner, 2001). For example, when a firm integrates its order fulfillment process with 1st tier (immediate to manufacturer) supplier and customers then it is having a scope of 3 tiers while if the same firm is having 3 firms in each tiers then this is the span of the supply chain (Wisner, Joel, 2000). As the scope and span increases, the complexity in handling the supply chain increases (Michael C., Joel D. Wisner, 2001). This complexity can be reduced if the firms have a strong sense of integrating the right functions and processes in the supply chain (Lambert, Cooper & Pagh, 1997).

2.3. Process view in supply chain management

In the above stated definitions, the integration of key business processes is highlighted (Lambert, Cooper & Pagh, 1997) because the performance of the functions and the whole supply chain is dependent on the output of the processes (Sharifi, Pawar, & K.S, 2002). We know that in a single function, there may be several processes involved (Dale, 2004) so it can be argued that performance of the processes will determine the performance of the function. Lambert, Cooper & Pagh (1997) identified eight key business processes which were utilized and integrated in many companies from food, transport, chemicals etc (Lambert, Cooper & Pagh, 1998). These business processes were integrated with other functions (procurement, manufacturing, marketing, distribution and customer service) and organizations (channel partners) involved in their supply chain. The processes are: customer relationship management (CRM), customer service management (CSM), order fulfillment process (OFP), demand management process (DMP), manufacturing flow management (MFM), new product development and commercialization process (NPDC), supplier relationship management (SRM) and returns management (RM). All of these processes are important because the performance of individual process is dependent on the performance of other seven processes if one process fails to contribute to the other processes then the supply chain will face failure (Ragatz, handfield & Scannel, 1997).

2.4. New product development & commercialization process

It is commonly believed that the success of supply chain is dependent on the rapid product development and reduction in the time to market (Olsen, Eric M., Orville, 2001). NPD can lead – procurement function to purchase the required material, manufacturing function to make the design of the product and manufacture it, marketing function to create awareness in the market, distribution function to make the product available and the customer service function to reduce the post purchase dissonance in the customers' minds (Khan, Christopher, & Creazza, 2012). Supply chain becomes value chain when all the partners put their exceptional inputs in order to create value for the customers (Chopra, 1998). The first process of the value chain is NPD in which customers are integrated in order to make the product according to the customers' priorities (Karkainen, Piippo, & Tuominen, 2001).

2.5. Integration & Coordination

All functions, processes including NPD and are interlinked and striving for the attainment of a common goal (Lambert, Dale, 2004). Interdependencies or links among functions, processes and organizations are very complex and sometimes, it becomes difficult for firms to handle (Riikka Kaipia, 2007). Here comes the need for integration in order to reduce the complexity of the tasks (Lambert, Cooper & Pagh, 1997). But the question is that what extent of integration is required and at what level. Through supply chain literature, we found that for the management of the supply chain, authors have used different terms like negotiation, interaction and collaboration

(Mentzer et al., 2001; Deloitte, 2002; Aberdeen, 2006; Barrat & Oliveira, 2001; Peterson et al., 2005 and Edward et al., 2001). Later studies by (Senge, 1990; Lee et al., 2000; MacNeil, 1980; Campbell, 1997; Simchi et al., 1999) emphasized that management terms are basically the modes of integration which are used in the process named “Continuum of integration” in the supply chain (spekman, 1998). So, integration can be found even in the definition of the supply chain management (Lambert, Cooper & Pagh, 1997). But the extent of integration may vary according to the importance of integration (Lagrosen, 2001).

2.6. Integration in NPD process

Same is the case with new product development process that it is the process with which all the processes are integrated and dependent (Dale S. Rogers, 2004). Dale (2004) also suggested that to remain competitive in the market, firms must be able to sustain innovation by integrating two processes: new product development (NPD) and supply chain management (SCM). The NPD is not only affecting the functions but also the processes because processes are integrated in the functions to enhance their performance level (Lambert, Cooper & Pagh, 1997). The integration of the functions and processes in NPD process is dependent on the stages of the new product development process. As the stage changes, there may be a need to integrate different process, function and organization in that stage (Dale, 2004). The first stage of the NPD process is “idea generation” (Dale S. Rogers, 2004). This is the start of innovation. A good idea may leads towards an innovative and successful product but it depends on the market conditions, supply chain efficiency, customers’ demand (Dale, 2004).

Dale (2004) also recommended that for making a new product, suppliers must be integrated because for every product, the organization require materials and if these materials aren't available at the supplier, then the product designing can't be initiated. For making a quick availability of the material required by the organization (manufacturer), supplier must be involved in the product development (Davidow, 1989). Suppliers can even contribute in the idea generation phase by giving innovative suggestions to organization (Khan, Christopher, & Creazza, 2012). There are companies which evaluate their products by testing their prototypes with the help of customers. On the basis of the prototype evaluation, the accepted products are launched in the market (Matzler & Hinterhuber, 1998). Many software companies offer trial versions of their software just to get the acceptance/rejection criteria of the customers through ranking and feedback system so that these companies can improve or re-launch their products (Lagrosen, 2001).

2.7. Customer integration into NPD process

Among the integration of suppliers, retailers and cross-functional teams at different level or stages of the NPD process, customers are of prime importance as the acceptance and rejection decision in their hands (Dale, 2004). Involving customers in the NPD process is the strategy of the customer relationship management (Franz & Wolkingner, 2003) so it means that CRM is integrated in the NPD process (Joshi & Sharma, 2004). Many of the firms in service industry focus on customers' feedback regarding the service quality level. Firms in manufacturing sector also pay attention to the evaluation made by the customers about their products (Gummesson, 1999). Hence customer relationship management is coordinated with product development process in order to enhance the strength of the relationship with customers while reducing time to market and increasing the growth in profitability (Gummesson, 1999).

Mass customization is a concept followed by Nike in order to meet customer needs with the help of customer integration into the production process. Nike has flexible technologies and production processes which supports customer integration. They integrate customers into the value creation during product configuration, specification and co-design (Tseng & Piller, 2001). Nike followed co-value creation with customers by empowering them to specify their product choice and getting the requested product within no time (Enkel, Perez, Freije, & Gassmann, 2005). International brand BMW has made a virtual innovation agency in which customers come and design cars according to their taste and choice and can place order after designing them. Company will make those cars on orders. This step was taken because they need to have a life lasting strong relationship with customers which are the goal of every firm whether competing for profitability or sales (Stone & Keating, 2010).

2.8. Past researches regarding customer integration barriers

Through the past researches, the trend of customer integration can be seen (Franz & Wolkingner, 2003). Firms have developed different methods of customer integration and used technology as a primary source of the integration (Joshi & Sharma, 2004). Through, internet, firms are connected with the end-users or consumers of the product who can provide the possible evaluation of their product/service (Geib, Kolbe, & Brenner, 2006). Majority of the large enterprises are focusing on the customer integration approach (Enkel, Perez, Freije, & Gassmann, 2005). Customer integration is not a new approach and is in use from hundreds of years (Karkainen, Piippo, & Tuominen, 2001). In this fast paced customer oriented environment, still there are firms which

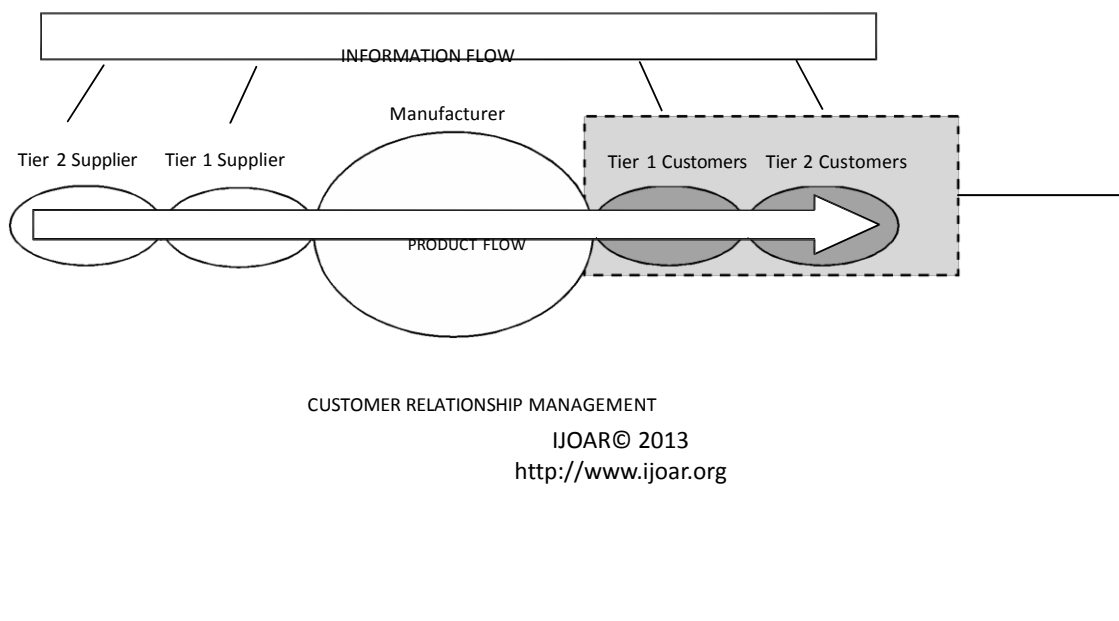
avoid from the integration of customers into the new product development process (Tollin, 2002; Geib, 2006). Some of the prior researches regarding customers' non-integration are as follows:

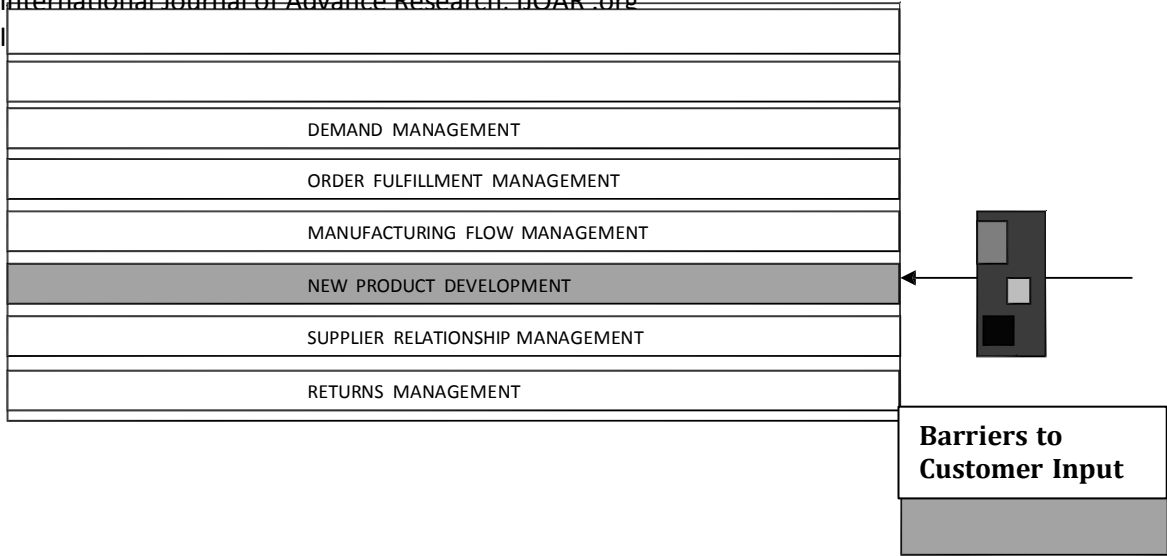
- Stoneman & Karshenas (1993) claimed that firms having fewer resources use avoidance technique regarding new investments even in potential opportunities.
- Lambert, Cooper and Pagh (1997) claimed that several firms are missing communication and integration networks. They additionally argued that for the integration of a new process, all the processes need to be reengineered if dependent otherwise requires proper adjustments.
- Bakos (1998) suggested that it is not feasible for an organization to alter its traditional processes because its time consuming and requires lots of resources to utilize.
- OECD (2000) also suggested that top management of the organizations and even their subordinates are not ready to switch to a new method or technology because they aren't familiar with the new methods and have a strong believe that new methods aren't profitable.
- Tollin (2002) revealed that there is a prohibition in the acts of the firms in the initiation of a new method integration into a process. Additionally argued, that firms believe whenever integration is placed between a process and an organization, there needs to be the process reengineering because all the processes are integrated and interdependent on each other which makes this integration more complex. Firms avoid this complexity and don't go for the integration of customers.
- Joshi & Sanjay (2004) suggested that strategic process flexibility means cross functional teams are missing or not appropriate and according to the new method of integration.
- Ameeta (2004) narrated that due to certain structural complexity and in-adaptation of updated technology several firms are avoiding the integration of customers into their product innovation and design process.
- Geib (2006) also suggested that there are firms which believe that customer integration approach must not be adopted because they can't rely on the knowledge of the customers as they are in-experienced.

These are some barriers found in the literature but we also found many other barriers through pilot survey. After classifying those numerous barriers, five prominent barriers were selected which are: cost of integration, lack of awareness, lack of trust, lack of infra-structure and lack of compatibility.

Theoretical Framework

Integration and management of new product development process with tiers of customers.





3. METHODOLOGY

3.1. Research Design

Due to the less emphasis made by the researchers i.e. Tollin (2002), Ameeta (2004), Joshi & Sanjay (2004), and Geib (2006) on supply chain especially NPD process, the field of NPD with a customer driven focus is found rarely touched. This study has a focus on customer integration in apparel industry which is never emphasized before. That's why exploratory research design is used.

3.2. Research Objective

- Identification of those barriers which are inhibiting SMEs from integrating customers into NPD process.
- Critically compare and contrast Apparel and Shoe Industries.
- Making SMEs realize about the importance of customer integration approach in their NPD process.

3.3. Population definition

According to economic survey (2011), SMEs are giving 30% to GDP and 25% to exports of manufacturing units. Apparel as a separate product category is a high involvement category and contributes maximum in the overall economy of any country. That's why apparel firms from small and medium enterprise sector were selected which located in Punjab region.



3.4. Sampling method

Snow ball sampling method is used in this research because the required information is possessed by limited people – only owners of the respective firms can provide answers regarding the customer integration barriers in NPD process. Secondly, we focused only on SMEs which are not integrating customers in their NPD. So, pre-meditated judgment of decision is needed to be made.

3.5. Sample size

There are one hundred and ten organizations (SMEs) operating in Punjab region in which sixty are from apparel industry and fifty from shoe industry. All of the SMEs are located in 9 cities of Punjab region. From every city we selected 5 to 6 SMEs as it was depicting the half of the SMEs in a city. Selecting half of the SMEs from each city is to have a true representation of the whole population. The reason behind the Selection of Punjab region in Pakistan was that the majority of the SMEs and developments are also in this region. So, it is a better market to test the company responses regarding customer integration approach.

Sample Size Selection			
Apparel	60	Apparel firms selected	25

3.6. Research instrument and techniques

At the start, it is a qualitative study because most of the factors (barriers) are identified through pilot surveys but by combining all the factors (barriers) attained from past researches and pilot surveys which defines the questionnaire a quantitative one. Then, we designed a questionnaire which has Likert scale of 5 in which 1= strongly disagree and 5= strongly agree. Ranking provide weight age to different factors in order to classify the most important and least important ones that's why Likert is used here. The questionnaire is designed to get response from two industries – apparel and shoe. Those SMEs are asked to fill the questionnaire which are having

Scope: local and regional

Age: more than 10 years, 5 to 9 years, less than 5 years

At the other end, we used different research techniques i.e. T test, EFA, ANOVA (Post Hoc) and descriptive statistics. As the questionnaire is designed to measure the most important and least important barriers to customer integration into NPD process so, factor analysis is used. ANOVA is used to measure the significance level w.r.t location, scope and age of the SMEs

3.7. Research question and knowledge gap

It is important to note that in the supply chain literature, the emphasis of the academicians and practitioners remained on the integration and management of the whole supply chain across organizations, processes and functions (Lambert, Cooper & Pagh, 1997). The level and extent of integration is also elaborated by the researchers Lambert, Cooper & Pagh, 1997; Sunil Chopra, 1988; Christopher, 1992 etc. They concluded that the most crucial process to be integrated is the new product development process as the success of the whole supply chain is dependent on the solution it provides to the customers or customers' customers.

Now, the question is that which member of the supply chain should be integrated and at what extent they will be integrated (Lambert, Cooper & Pagh, 1998). They suggested that according to the new product development process, in all the six phases relevant processes and members are integrated i.e. may be suppliers in production planning, customers in idea generation or retailers in customers service to get appropriate feedback.

So, types of members to be integrated will depend on the phase of the new product development process (Copper, Lambert, & Pagh, 1998). Customer integration into the NPD process is more comprehensively profiled by the researchers: Cristina & Helena, 2008; Sunil Chopra, 1998; Christopher, 1992; Enkel, Ellen & Perez, 2005 etc. they concluded that the solution is for customers which is distributed among those customers through chain members, should be produced according to the requirements of those customers (Lambert, Cooper and Pagh, 1998). So, it's better to indulge customers into the NPD process. But there were firms which refused to accept this concept as a competitive tool (Tollin, 2002). Past researchers Tollin (2002); Lagrosen (2004) showed that due to the lack of customer exposure and structural complexity, these firms avoided to adopt C.I approach. These researches were in American and Japan context. Ni prior research is found in the literature regarding the barriers to customer integration in

Pakistani settings. So this focus of the study can contribute to the knowledge of the academicians and practitioners. The research question is that “What are the barriers to customer integration into new product development process”. Research hypotheses can be made with the help of research questions. We have made the following research question:

Q1: What are the barriers to customer integration into new product development process in Apparel Industry?

On the basis of the research questions, we made three hypotheses.

H1: There are significant differences among customer integration barriers and location of the organization in Apparel Industry.

H2: There are significant differences among customer integration barriers and scope of the organization in Apparel Industry.

H3: There are significant differences among customer integration barriers and age of the organization in Apparel Industry.

4. ANALYSIS AND INTERPRETATION

Research is valid, significant and reliable and practical only and only if the analysis of the research is extra ordinary. I used Factor Analysis, Linear Regression Analysis and Descriptive Statistics to weight the variables in a right and appropriate pattern.

- **Data Reliability Test**

Cronbach's Alpha	N of Items
.838	28

This test is used to check the internal consistency of the data which should be equal to .5 at least or greater than this. Whereas (.838) alpha describes a strong internal consistency of the data available for analysis. The strength of the data determines the level of reliability of the data which is high.

4.1. Factor Analysis

Factor analysis is used for the summarization and reduction of the data. Through this analysis, no. of different variables is summarized in small factors which are classified as most important and least important. To identify the interpretability, Varimax rotation method with Kaiser Normalization has been applied (Malhotra & Birks, 2007, p 647).

Factors	Awareness	Trust	Compatibility	Variance
Lack of Awareness				28.730
Customers aren't aware of their real needs	.794			
Customers can't create or innovate ideas rather portray self interests	.738			
Customers' variation in interest and demands is the drawback of customer integration	.715			
Customers even don't buy their own suggested Products	.686			
Customer integration is not much beneficial for the organization	.597			
Lack of Trust				20.571
Organization doesn't want to get dependent on customers' self interest and views		.869		

Customers can provide false information		.855		
Customers are in-experienced and can't be Trusted		.839		
Customer integration can't lead to Profitability		.837		
A risk is present regarding the private information loss by the customers		.775		
Compatibility Issues				14.337
Top management is not willing to engage customers in NPD process			.859	
Employees are not willing to work with Customers			.729	
The mode of operation in our company is Complex			.706	
There is technology lacking to support customer integration			.823	
Communication and information sharing processes are not supportive for this			.754	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation Converged in 5 iterations.

Interpretation

Through explanatory factor analysis three factors – awareness, trust and compatibility, were found to be more influential and have significant relationship with the behavior of the organizations towards the implementation of the C.I approach while the remaining two factors – cost and infra-structure, were least significant and showed no impact on the firms behavior with a rating of .361 and .218 respectively. The factor “lack of awareness” showed a variance of 28.730% which means that the ratings by different firms in the apparel sector are varied according to their different perspectives.

From the correlation analysis, it was identified that lack of trust is related to the lack of awareness and have significant relationship with each other. And this relationship can be seen through the factor analysis that those firms which lacked awareness also showed lower level of trust in the C.I approach and 20.571% variance was observed in the ranking. And once there is lack of trust, the organizations produce certain behaviors in order to avoid this approach which became the issue of compatibility at a variance of 14.337%. but there less effect is being noticed regarding cost of integration and infra-structure on the firms' behavior towards C.I approach.

4.2.Hypothesis Testing

H: There is a significant difference in the adoption of customer integration approach due to customer integration barriers in fashion industry

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.892 ^a	.796	.742	.620

a. Predictors: (Constant), infrastructure issues, awareness issues, compatibility issues, cost of integration, trust issues

ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	28.462	5	5.692	14.819	.000 ^a
	Residual	7.298	19	.384		
	Total	35.760	24			

a. Predictors: (Constant), infrastructure issues, awareness issues, compatibility issues, cost of integration, trust issues

b. Dependent Variable: Customer Integration into New Product Development Process

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.415	4.237		.334	.042
	cost of integration	1.137	.286	.951	3.970	.401
	awareness issues	-.054	.289	-.054	-.187	.504
	Trust issues	.146	.298	.126	.489	.000
	compatibility issues	-.343	.642	.062	-.535	.009
	Infrastructure issues	-.198	.493	.047	-.401	.023

a. Dependent Variable: Customer Integration into New Product Development Process

INTERPRETATION

The data shows high significance. The significance level of any data is at least .05. Above table shows that cost of integration and awareness issues are not affecting the decision of product managers regarding customer integration into new product development. Whereas trust, compatibility and infra-structure are more affecting and changing their mind set to avoid customer integration.

4.3. Correlation analysis

Correlation is a tool with which interdependency (Relationship) among factors identified through factor analysis is checked. It also analyzes the strength and direction of the interdependency among different variables.

		cost	awareness	trust	Compatibility	Infrastructure
Cost	Pearson Correlation	1	.141	.205	.136	.437*
	Sig. (2-tailed)		.501	.325	.518	.029
	N	25	25	25	25	25
awareness	Pearson Correlation	.141	1	.958**	-.083	-.426*
	Sig. (2-tailed)	.501		.000	.692	.034
	N	25	25	25	25	25
Trust	Pearson Correlation	.205	.958**	1	.004	-.363
	Sig. (2-tailed)	.325	.000		.985	.074
	N	25	25	25	25	25
Compatibility	Pearson Correlation	.136	-.083	.004	1	.218
	Sig. (2-tailed)	.518	.692	.985		.294
	N	25	25	25	25	25
Infrastructure	Pearson Correlation	.437*	-.426*	-.363	.218	1
	Sig. (2-tailed)	.029	.034	.074	.294	
N		25	25	25	25	25

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

INTERPRETATION

Cost of integration has a strong co-relation with infra-structure and it is logical in a sense that those firms who are thinking that customer integration approach is expensive are right because they are having contradictory infra-structure in the organization with the approach. These firms if go for customer integration has to change rather improve their infra-structure in order to make proper adjustments and to make customers properly integrated.

Lack of awareness has a strong co-relation with lack of trust and infra-structure. There are firms which are having less exposure of the market and are not aware about the customer integration approaches, its tools and techniques, its evaluation methods and consequences so they less rely on the customer integration approach. It is a common sense that when a person doesn't have awareness about an item, he/she will never trust that item if placed in front of them. Thus, lack of

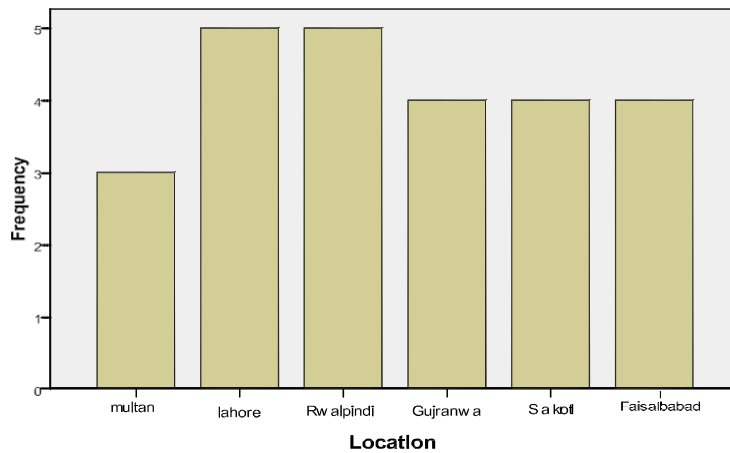
awareness contributes to lack of trust in customer integration approach. Same is the case when we compared lack of trust with other factors, then found a healthy co-relation with lack of awareness and infra-structure.

Lack of compatibility has no impact on any of the other barriers to customer integration into new product development. Those issues which are independent become healthy for an organization because if they are not handled, will not initiate other barriers. While, infra-structure has a strong co-relation with three factors: cost, trust and lack of awareness. This shows that those firms which feel that customer integration is expensive are lacking awareness in that particular field of customer engagement and therefore, don't trust this approach. They believe that for customer integration, they need to have improvements in infra-structure which is costly while they are not aware of the benefits of the approach and at last leave the approach and go for traditional ways of innovation.

4.4.Descriptive Statistics

BAR CHARTS

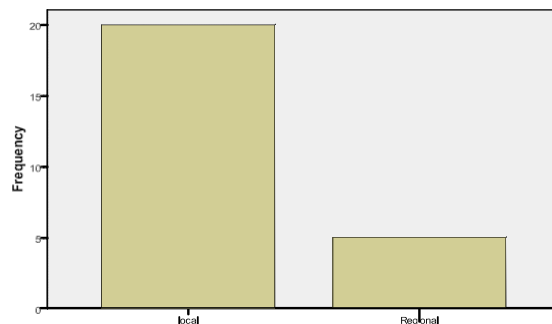
Location



Interpretation

The above bar chart shows that most of the apparel manufacturing units and firms are in Lahore and Rawalpindi. Moderate number of firms is in Gujranwala, Sialkot and Faisalabad while in Multan, very few firms are present. This trend shows that Multan apparel Market is weak when compared with the market of Lahore and Rawalpindi.

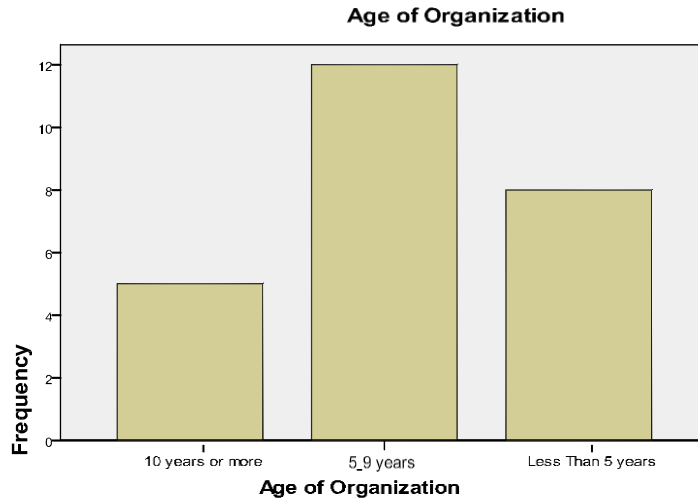
Scope of Operation



Interpretation

The above bar chart shows that most of the shoe manufacturing units and firms are locally operating and a very less number of firms are there which are handling their operations in a region. This trend also clarifies that firms are local and that's why they are having issues with cost and awareness which are diminished for those firms who are operating in a region.

Age of Organization



Interpretation

Firms which are having age and market exposure of 10 years are less in numbers. While those firms which are having experienced age of 5-9 years are in the majority. Economy of any country is dependent on the medium class people. Same concept lies in the shoe industry that those firms which are medium in experience and age are the main building block of any industry and can change the market trends effectively. Contrary, very few companies are present in the market that has an age of less than 5 years. This trend shows that there is ~~less competition in the local shoe industry and people are not entering into the shoe market~~ because of lack of awareness.

5. Conclusion

This is an exploratory research intended to identify the reasons of prohibition regarding the customer integration into new product development process by the SMEs of apparel industry in Pakistan. Apparel industry was chosen because it has become the high involvement industry (product category) by the consumers. The data was collected from Punjab region because majority of the SMEs were located in this region. Many multinational and international firms followed customer integration approach and declared abnormal profits as a result of the customer integration. But these success stories still don't work for the SMEs. Thus, a need to identify the reasons behind this prohibition is present so that SMEs perform better and can compete at local or regional level. Stat package of SPSS version 17 was

utilized for the purpose of analysis of the data gathered through questionnaire. Explanatory factor analysis, correlation analysis, analysis of variance (ANOVA) and regression analysis were being used to reach to the results.

Through factor analysis, apparel industry showed three factors (awareness, trust and compatibility) solution at a variance of 56%. This shows that whether high or low still these factors have influence on the firms' behavior towards customer integration approach. There are firms which are not aware about the possible benefits and side effects of the customer integration approach and showed less trust on the efficiency of the approach which were found in the previous research by Tollin in 2002. While other firms showed that they were having exposure regarding this approach but they lacked in the resources which were required to implement this approach which was also concluded in the research of Geib in 2004. In apparel industry, the firms lacked awareness about the customer integration approach and perhaps this became the cause of lower trust level these firms showed towards customers' opinions through customer integration approach. It was the lack of awareness which made them to observe cost as a barrier in the implementation of this approach.

Experience of the SMEs from respective industries was found to be an influential factor. Older firms were having awareness about C.I approach and trust on the possible benefits but their organizational members (top management/employees) were not comfortable with the use of this approach. Whereas there are firms with less experience lacked awareness about C.I approach and showed lack of trust. Scope of the SMEs from respective industries was also found as an influential factor because local firms showed that they were not having proper knowledge about the benefits and side effects about the C.I approach and showed lower trust level on C.I. while, those firms which were operating at regional level observed to be more aware but are not ready to trust CC.I as a profitable tool for the success of NPD.

6. Recommendation

From the research it is clear that firms are not adopting customer integration approach and reasons are also identified. When we deeply analyze the reasons, came to know that firms are having lack of awareness about the benefits of customer integration. Multinational firms are using this technique and very much successful in their operations and other activities. SMEs must focus to expand their operations and to think locally but to act globally. They must idealize multinational firms who are giving birth to customer integration approach in their production and marketing processes. Lack of Trust in customers and customer integration approach is the most rated factor by all the product managers of shoe firms. What they need today is:

- Proper research and development procedures and successful implementation
- Presence of Flexible Technology
- Listen to the voice of the customers
- Engage customers into the idea creation process in NPD process
- Look for cheap/ in-expensive ways of integrating customers in NPD process

- Properly trained employees should be hired who should always be ready to accept changes
- Top management must be flexible enough to adopt any sort of change which is beneficial for the firm and market as well
- Proper identification of attractive and result contributing methods and approaches must be identified and implemented in order to get maximum benefits from customers.
- Firm must enhance its vision.
- Proper feedback system should be developed in order to solve customers' problems because these problems are the main source of new product development.

7. Limitation

The focus of the research remained on the fashion industry, so the results can't be generalized for all the SMEs relating to different industries in Pakistan. The sample size was chosen on the basis of snow ball method which is less in numbers and may not provide comprehensive information about all the SMEs sectors.

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