

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, new product development and commercialization, supply chain integration, supply chain management*

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. Channel integration with different processes is acknowledged in the literature [1], [2], [23], [29], [16]. And most importantly, customer integration into the new product development process was very much emphasized by many academicians and practitioners [1], [2], [3], [24], [31], [22]. 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 [1], [2], [11], [13].

Multinational firms use customer integration approach for making new and innovative designs with the help of customers' opinion. Fashion industry is one of the leading industries in the world [12]. The designs of the products (apparel) 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 [1], [09], [07]. 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.

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 [1], [3], poor customer service [2], [5], late deliveries [3], order delays and cancellation [4], [6], mismanaged inventories [5], reduction in market share [6], [18], dissatisfied customers [7] etc are such issues which led the firms to reconsider

their supply chain performance rather than to have a focus on the performance of individual firm. It is always stressed that the ultimate success of an individual firm is dependent on the performance of the whole supply chain and vice versa [3]. Planning, design and operations are the key strategic ingredients of supply chain observed in the success/failure of several firms [1], [5].

Thorough insights should be taken by the researchers and practitioners in order to properly manage the supply chain [1], [2], [4], [8]. What actually supply chain is, how it works and affects the performance of the firms are the basic concepts which must be considered while developing supply chain strategy [1], [2], [5], [26], [28]. Few consensus among researchers is found regarding the definition of supply chain management but for the matter of understanding Global Supply Chain Forum has been approved as the most appropriate source of supply chain management. It states that supply chain management is the proper integration of key business processes from the end-users through suppliers which provide product/service and information in order to add value for the customers [1], [2], [12], [14]. Gibson narrated that supply chain management involves business functions and logistics management activities [1]. Proper integration requires coordination and collaboration among key supply chain partners in order to maximize customer value [8].

2.2 Scope and Span in Supply Chain Management

It is stressed that integration among supply chain partners is a crucial decision to be made in order to perform function efficiently [9]. But the question is to make decision regarding the extent of integration which is required and with whom (organization & processes) [1]. This decision is primarily dependent on the scope and span of the supply chain [8]. Defining of scope in supply chain is based on two elements: product (nature & complexity) and supply chain objective. For complex products and being responsive close relationship among all members is required while for others in-direct relationship may also work [11]. Perkins mentioned that scope is the no. of tiers in present in supply chain while span is the no. of firms in each supply chain [17]. As the scope and span increases, the complexity of the supply chain also increases [2]. Anyhow, this complexity can be reduced if the firms are having strong sense of integrating appropriate functions and processes in their supply chain [1].

2.3 Process View in Supply Chain Management

Several definitions have highlighted the element of integration as most important in the business processes [1] because the performance of the function and even whole supply chain is dependent on the output of the processes

[2]. It is also commonly believed that in a single function, there may be several processes involved that is why argued that the performance of processes will determine the performance of the function [34]. Lambert, Cooper & Pagh identified eight key business processes which were utilized and integrated in many firms from food, transport, chemical industries etc [1]. These business processes are integrated with other functions (procurement, manufacturing, marketing, distribution and customer service) and organizations (channel partners) involved in supply chain management [6]. 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 [1]. All of these processes if properly integrated and operated may produce abnormal positive results but the case may become reverse if any of the process fails to provide maximum input [16].

2.4 New Product Development and Commercialization Process

The survival of every firm is highly dependent on the solution it provides to its customers [2]. Delivering the desired solution to customers is a potential tool to retain customers for life time [1]. Dale defined new product development process as a process which forms a structure for the development of products effectively with the joint efforts of suppliers and customers [1], [2], [3]. Although, the processes are interlinked but other processes are more dependent on new product development process [11]. So, new product development has a huge impact on the processes and functions [12]. It is also believed that the success of supply chain is entirely comprised of the rapid product development and reduction in the time to market [14]. Because new product development can lead – procurement function to purchase the required material manufacturing function to make the design of the product, marketing function to create awareness in the customers, distribution function to make the product available and the customer service function to reduce the post purchase dissonance in the customers' minds [15]. Chopra stated that supply chain becomes value chain when the desired product/service is delivered to the customers [2]. So, product development is a source of value creation for the customers and that's why is of prime importance [18].

2.5 Integration and Coordination

All functions processes and organizations are interlinked and striving for the attainment of a common goal [1]. In a single function, there may be several processes involved and at the same time a single process may be part of many processes [2]. These interdependencies among functions,

processes and organizations are very complex and sometimes it becomes difficult for firms to handle [32]. Here comes the decision to integrate in order to reduce the complexity of tasks [27]. 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 [11]. Later studies by [1], [2], [3], [5], [9], [11] emphasized that management terms are basically the modes of integration which are used in the process named "Continuum of integration" in the supply chain [2]. So, integration can be found even in the definition of the supply chain management [12]. But the extent of integration may vary according to the importance of integration [16].

2.6 Integration in New Product Development Process

New product development process is the process with which all the processes are integrated and dependent [2]. 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 new product development is not only affecting the functions but also the processes because processes are integrated in the functions to enhance their performance level [1]. 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 [15]. The first stage of the NPD process is "idea generation" [17]. 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 [6], [11]. 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 [2], [5]. Suppliers can even contribute in the idea generation phase by giving innovative suggestions to organization [7]. 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 [1], [2]. 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 [14].

2.7 Customer Integration into New Product Development 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 [1]. Involving customers in the NPD process is the strategy of the customer relationship management [2] so it means that CRM is integrated in the NPD process [11]. 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 [9]. 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 [7]. 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 [21]. Nike followed co-value creation with customers by empowering them to specify their product choice and getting the requested product within no time [31]. 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 [5].

2.8 Past Researches regarding Customer Integration Barriers

Through the past researches, the trend of customer integration can be seen [1], [31], [32], [33], [35], [36], [37]. Firms have developed different methods of customer integration and used technology as a primary source of the integration [1], [19], [11], [21], [24], [25]. Through, internet, firms are connected with the end-users or consumers of the product who can provide the possible evaluation of their product/service [1], [08], [18], [23], [26], [29]. Majority of the large enterprises are focusing on the customer integration approach [1], [2], [3], [4]. Customer integration is not a new approach and is in use from hundreds of years. In this fast paced customer oriented environment, still there

are firms which avoid from the integration of customers into the new product development process [32], [33], [34], [35], [36], [37]. 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 (1998) 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 inexperienced.

i. Factors Identified through Literature

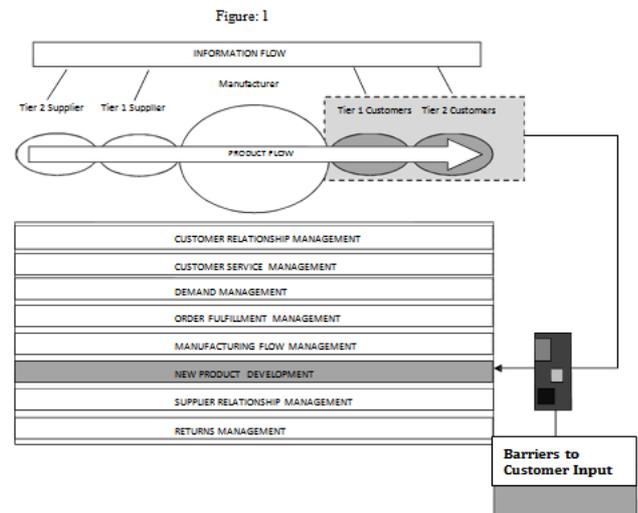
- Lack of resources
- Lack of communication and integration networks
- Lack of awareness

- Lack of skills
- Lack of infra-structure
- Lack of trust

ii. Factors Identified through Pilot Survey

- Huge cost of integration
- Proper channel treatment missing
- Lack of knowledge
- Lack of expertise

3. Theoretical Framework



4. Methodology

4.1 Research Design

Due to the less emphasis made by the researchers i.e. [1], [2], [32], [27], [36], [37] etc 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.

4.2 Research Objective

- Identification of 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.

4.3 Population Definition

According to economic survey (2011) [34], 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.



4.4 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.

4.5 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

4.6 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

4.7 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 [1], [2], [11], [15]. The level and extent of integration is also elaborated by the researchers [1] 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 [1], [3], [6], [34]. 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 [16], [19], [21], [25]. Customer integration into the NPD process is more comprehensively profiled by the researchers: [1], [11], [13], [17], [19], [22] 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 [1]. 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 [1]. Past researchers [1], [32], [33], [34], [35], [36], [37] 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 question, 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.

5. Analysis and Interpretation

Research is valid, significant and reliable and practical only and only if the analysis of the research is extra ordinary. We used Factor Analysis, ANOVA and Correlation Analysis 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.

5.1 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 [35].

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.

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.

5.2 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		.995	.074
	N	25	25	25	25	25
Compatibility	Pearson Correlation	.136	-.083	.004	1	.218
	Sig. (2-tailed)	.518	.692	.995		.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).

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.

5.3 ANOVA Test

i. ANOVA w.r.t scope

H: There are significant differences among customer integration barriers and scope of the organization.

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Cost	Between Groups	27.674	1	27.674	61.853	.000
	Within Groups	10.290	23	.447		
	Total	37.964	24			
awareness	Between Groups	.194	1	.194	.125	.727
	Within Groups	35.764	23	1.555		
	Total	35.958	24			
Trust	Between Groups	.256	1	.256	.130	.721
	Within Groups	45.209	23	1.966		
	Total	45.466	24			
Compatibility	Between Groups	.167	1	.167	1.327	.261
	Within Groups	2.889	23	.126		
	Total	3.056	24			
Infrastructure	Between Groups	3.425	1	3.425	3.815	.053
	Within Groups	20.648	23	.898		
	Total	24.073	24			

ANOVA w.r.t scope will tell us about the trends of apparel industry regarding the adoption of customer integration approach and what barriers are in place to make them to prevent decisions about adoption. The above table shows that cost of integration (.000) and infra-structure (.053) are affected by the scope of the firms in apparel industry as both the factors are showing significant relationship with each other.

The means (4.21) of the firms' ratings show that those firms which are working locally are more conscious about the cost of resources which will be required, training expenses (employee & customer), new departmental development expenses. And they feel that cost is the major issue due to which they are avoiding customer involvement in the NPD process. While those firms which

are working regionally are not considering cost as a barrier because they have a scope of operations in a complete region and getting much profit which complements the adoption of customer integration approach are having a mean value of 2.06. So, they reject the statement by stating that cost is not an issue for C.I adoption. In case of awareness all the firms whether their scope of operation is local or regional are disagreeing to consider awareness as a barrier in the path of adoption of customer integration approach. They think that majority of the firms are aware about the tools and techniques, benefits, evaluation techniques and troubleshooting techniques of customer integration approach and having a great knowledge about latest market trends. That's why their relationship is not significant (.727, .721). So, they reject the statement that lack of awareness is a barrier. Same is the case with factors: lack of trust and compatibility. The firms think that they trust customers, customers have prior knowledge, customers don't provide false information, and customer integration is beneficial for the firm and customers as well.

So, they believe that their avoidance to customer integration approach is not due to lack of trust and compatibility by showing insignificant relationship (.721, .261). Whereas there are firms which declare that their infra-structure is not supportive in adopting customer involvement. They feel that their mode of operation is already complex and can't afford integration of another process (customers in NPD) with other processes. They have placed a significant relationship among barrier and scope of operation .053. Firms which are locally operating are suggesting infra-structure problems as barriers as their mean value is 4.10 while other firms having regional scope are less emphasizing on infra-structure as a barrier because their mean value is 3.34.

ANOVA w.r.t Location

H: There are significant differences among customer integration barriers and location of organization in apparel industry.

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Cost	Between Groups	29.816	8	3.727	7.319	.000
	Within Groups	8.148	16	.509		
	Total	37.964	24			
awareness	Between Groups	25.052	8	3.131	4.594	.005
	Within Groups	10.907	16	.682		
	Total	35.958	24			
Trust	Between Groups	31.172	8	3.897	4.362	.006
	Within Groups	14.293	16	.893		
	Total	45.466	24			
Compatibility	Between Groups	.479	8	.060	.372	.920
	Within Groups	2.576	16	.161		
	Total	3.056	24			
Infrastructure	Between Groups	15.819	8	1.977	3.833	.011
	Within Groups	8.255	16	.516		
	Total	24.073	24			

When the barriers to the adoption of customer integration approach are cross-checked with the location of the organization in apparel industry, I came to know that cost of integration, awareness, trust and infra-structure issue are the hurdles in the path of C.I adoption. While, compatibility issues are not affecting firms' decision regarding the adoption of C.I approach. From the above table, it is clear that location has significant (.000) impact on cost of integration which means that different firms located in different cities of Punjab sector have different opinion about cost factor.

These firms located in Multan, Lahore, Gujranwala and Faisalabad has mentioned cost of integration as barrier in the adoption of C.I approach. While firms in other cities like Islamabad, Sahiwal, Rawalpindi and Sialkot are refusing the cost factor as a barrier. So, in upper Punjab firms are not avoiding C.I approach due to expensive integration of this approach and they don't believe that customer integration is expensive. In case of awareness, firms from Multan, Lahore and Gujranwala are having a significant (0.05) relationship with awareness and they are agreeing with the statement that they lack awareness about customer integration approach, its tools and techniques and evaluation methods so they accept awareness as a barrier in their path to adopt C.I approach. While firms in Faisalabad, Sialkot, Islamabad, Khanewal and Sahiwal are stating that they are aware of the tools and techniques and benefits of the customer integration into NPD process and don't think that it is a barrier in their path. There are some firms which feel that they can't trust customers and list their ideas in no importance box by just saying that customers are less experienced and know little about the market trends and even can provide false information intentionally. This particular and significant (0.05) trend is present in firms which are located in Multan, Lahore and Gujranwala.

Whereas, there are some other firms which are supporting this concept that customers can and must be trusted and have all the knowledge about the latest market trends. They think that customers is the name of truth and authority and say that customers' ideas must be listen and implemented to reduce customer dissatisfaction and show high significant relationship with among trust barrier and location. But there is no significant impact of compatibility issues with the location of the firms. It means that irrespective of the firm, no appropriate differences are observed in their ratings about compatibility as a barrier to C.I integration and showed a non-significant level of .920. But firms' location has a strong and significant impact on infra-structure issues. These firms are operating in Multan, Lahore, Gujranwala and Faisalabad and showed that infra-structure of the firm may become a problem in the adoption of C.I approach to implement which is highly significant (.011).

iii. ANOVA w.r.t Age

H: There are significant differences among customer integration barriers and age of the organization.

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Cost	Between Groups	1.248	2	.624	.374	.692
	Within Groups	36.716	22	1.669		
	Total	37.964	24			
awareness	Between Groups	20.522	2	10.261	14.625	.000
	Within Groups	15.436	22	.702		
	Total	35.958	24			
Trust	Between Groups	21.941	2	10.971	10.260	.001
	Within Groups	23.525	22	1.069		
	Total	45.466	24			
Compatibility	Between Groups	.408	2	.204	1.693	.207
	Within Groups	2.648	22	.120		
	Total	3.056	24			
Infrastructure	Between Groups	9.159	2	4.580	6.756	.005
	Within Groups	14.914	22	.678		
	Total	24.073	24			

Firms who are older in the market and serving the market for more than 10 years recommended that the actual barrier in the path of customer involvement is lack of awareness about the tools and techniques of customer involvement, benefits of this approach and other possible evaluation techniques and rated this factor whose mean value is 4.25. While firms having less than 10 years experience are not focusing lack of awareness as a barrier rather their ratings shows that they are having the prior exposure about the C.I approach and its possible outcomes while the mean value is 2.88 the variation in the mean tells us that the relationship between age of the organization and lack of awareness barrier is significant .000. Opposite is the case with two barriers which are preventing the implementation of customer involvement into the NPD process: cost of integration and lack of compatibility. Both the factors have shown in-significant relationship with the age of the organization. The firms served market for more than 10 years are not having any issue with the cost of integration. Because they are in the market for a long time and have much profit to remain in the market.

So, expense or cost which is required for the proper integration is not an issue for them. Whereas firms which are having less than 10 years experience are neutral about the cost barrier because they have never used such technique in past so they are having less exposure due to which their rating is ambiguous. Firms lacking trust in the customers' point of view and customer involvement approach shows that they are worried about the credibility of the techniques and the consequences of that technique.

Older firms are more worried about the technique and customers' credibility while less experienced firms are not worried as they are new to market or spent less time in market, so their opinion is somewhat fluctuating. In their point of view the lack of trust is not an issue. Same is the case with factor infra-structure which lacks in those firms which are less experienced but for older firms this is not an issue.

6. 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.

7. 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 new product development process
- Look for cheap/ in-expensive ways of integrating customers in new product development 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 be 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.

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. So recommendations are specifically for the apparel industry.

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