

# **Implementation of Horizontal Strategy for Conglomerate firms: The Role of Five-Factor Model**

**Pratima Verma**

Department of Industrial & Management Engineering,  
Indian Institute of Technology Kanpur, Kanpur, India  
([pratima@iitk.ac.in](mailto:pratima@iitk.ac.in), [way2pratima@gmail.com](mailto:way2pratima@gmail.com))

**Vimal Kumar**

Department of Management Studies  
National Institute of Technology Bhopal, India  
([vimaljss91@gmail.com](mailto:vimaljss91@gmail.com))

**Vignaesh Muthukumaar**

Consultant, EXL Services, Bengaluru, India  
([vignaeshmk@gmail.com](mailto:vignaeshmk@gmail.com))

**Rahul Gajbhiye**

Department of Management Studies  
National Institute of Technology Bhopal, India  
([diamondrahul@hotmail.com](mailto:diamondrahul@hotmail.com))

**Abstract:** *The horizontal strategy is recommended for conglomerates by Porter (1985) for competitive advantage. The conglomerate firms are categorized as 'horizontal strategy' and 'non-horizontal strategy' organizations. According to Porter (1985), there is no established or standard way to execute a horizontal strategy. However, it requires advanced organizational capabilities to the execution of horizontal strategy in an organization. In this study, we explored the extent to which organizational capabilities were related to the implementation of the horizontal strategy. Five novel hypotheses addressing primary constructs, namely, conscientiousness, extraversion, agreeableness, openness, and neuroticism are explored in this study. Based on 107 responses from firms across various manufacturing and service sectors, the firms are classified as 'horizontal strategy' and 'non-horizontal strategy'. We argue through a theoretical analysis which shows that employee attributes (conscientiousness, extraversion, agreeableness, openness, and neuroticism) will be contributing to the success of the horizontal strategy and lent good support to our hypotheses.*

**Keywords:** *Horizontal strategy, conscientiousness, extraversion, agreeableness, openness, neuroticism*

## **I. Introduction**

The horizontal strategy is one of the most powerful ways to generate sustainable value. It can be defined as horizontal strategy is a way of identifying and developing those interrelationships that can create value for the organization. The development and execution of the horizontal strategy are not an easy task; it requires a strong infrastructure that can support it.

Moreover, it is not a temporary or one-time activity but it must be executed continuously into the future, the otherwise current competitive advantage will disappear, and the firm will quickly lose its competencies. There is no standard or established way to execute horizontal strategy; rather it requires advanced organizational capabilities because different businesses and people rarely collaborate spontaneously without strong control from the corporate functions. From these statements, we perceived that organization needs supporting organization culture, structure and strategy for the development of the horizontal strategy and it is needed to sustain in the future that can achieve competitive advantage. So, organization culture, structure and strategy are the key factors for the development of horizontal strategy

but we can put an extra effort to implement it in action. In this study, we considered that supportive employee attributes are a crucial factor for the implementation of the horizontal strategy.

The horizontal strategy is aligned with human resource strategy because the human resource is the main asset of the organization; the management and the organization have the responsibility to lead and control them for the development and improvement of the organization. Every organization requires the “worker bees” that show up on time, take guidance well, get the job done right, and generally keeps the work flowing. Positive employee’s characteristics obviously are important in any business. Building the appropriate workforce in the organization is difficult to grow. The success of any organization basically depend on human resources who continuously give their efforts to getting things done towards the achievement of the organizational goals; so positive employee attributes are supported to functions of the organization. The present research anchors on the five-factor model proposed by Costa and McCrae (1988). The five factors are extraversion, agreeableness, conscientiousness, neuroticism (emotional stability), and openness to experience (intellect).

The horizontal strategy needs regular attention to holding everyone together and achieves the goal. Takaoka (2011) has considered three factors such as process, evaluation system and leadership which are liable to create and execute horizontal strategy in his study. In this study, we considered employee attributes (conscientiousness, extraversion, agreeableness, openness, and neuroticism) which influence the execution of horizontal strategy. The present study is motivated by the presenting need for horizontal strategy implementation. The research objectives of the present paper are: (a). to understand the horizontal strategy in conglomerates firms, (b). to identify the relationship between horizontal strategy and employee attributes (conscientiousness, extraversion, agreeableness, openness, and neuroticism), (c). to further empirically validate these relationships, and (d). to outline further research directions.

The present paper is organized as follows. The next section is devoted to the literature review. The section 3 will discuss the theory and based on these theories we developed the hypotheses. The section 4 will focus on methodology and research design with results and analysis. Section 5 briefly outlines the conclusions.

## **II. Literature Review**

This section provides an exhaustive review of the relevant literature. First, it provides an insight into horizontal strategy. Next, it addresses the employee attributes as a five-factor model. Finally, it identifies the relationship between them.

### **A. Horizontal Strategy**

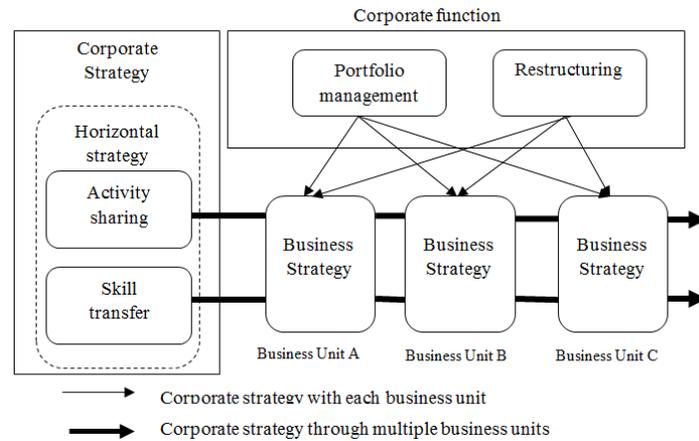
The concept of vertical and horizontal strategy is raised early in Warring States period in China (Jixin, 2010). At that time, horizontal strategy means was jointing the powers to cope with other nations while vertical strategy means jointing weak nations to fight against powers’ aggression. After that this concept rising in business fields like sales and marketing, production, and human resource etc.

#### ***Porter’s (1985) view of horizontal strategy***

Porter is one of the strongest and most popular researchers of business strategy. Porter (1985) classified strategy as business strategy and corporate strategy and states that business strategy charts the course for firm’s activities in individual industries, while corporate strategy addresses the composition of a firm’s portfolio of business units. The horizontal strategy provides for explicit coordination among business units that make corporate or group strategy more than the sum of the individual business unit strategies.

Porter (2008) provides four concepts of corporate strategy: (a) Portfolio Management, (b) Restructuring, (c) Activity Sharing, and (d) Skill Transfer. The concepts of portfolio management and restructuring do not require coordination among business units, while activity sharing and skill transfer are required for horizontal coordination. In summary, Porter’s believe that activity sharing and skill transfer are the key factors of horizontal strategy. Consequently, horizontal strategy coordinates the goals and strategies of related business units. It embraces both existing business units and new industries based on the interrelationships with existing units. In addition, Porter (2008) says that interrelationship and horizontal

strategy is inextricably linked to the organization. Moreover, formulation of horizontal strategy depends on the development and identification of interrelationships. But, there will be no systematic mechanism to identify, reinforce, and extend interrelationship without an explicit horizontal strategy. There are three broad types of interrelationships among business units: tangible interrelationships, intangible interrelationships, and competitor interrelationships. In addition, interrelationships will not occur immediately but its needs positive organizational mechanisms that encourage business unit managers to pursue interrelationships and ease the inherent coordination and communication difficulties (pp. 394).



**Figure 1: Porter's (1985) View of horizontal strategy**  
 Source: Source: Takaoka (2011)

Moreover, Porter (1985) focuses on organizational mechanisms and gives a term “horizontal organization” which facilitates the interrelationship for business units. Horizontal organization structure plays a critical role in the development of interrelationship for horizontal strategy. Figure 1 shows Porter’s view of horizontal strategy. The aim of formulating a horizontal strategy is to pursue interrelationships between business units.

***Ensign’s (1998) view of horizontal strategy***

Ensign (1998) gives two central concepts in his work, one is interrelationships and other is a horizontal strategy. An interrelationship refers to sharing of resources or skills in activities that have relatedness to achieve synergy; while horizontal strategy refers to developing those interrelationships that create value to achieve competitive advantage. It is designed to create value for the total firm. The horizontal strategy does not replace the need for business strategy. The objective is to create value by strengthening business unit’s competitive position. Below Figure 2 shows Ensign (1998) perspective of horizontal strategy and interrelationships.

Interrelationships and horizontal strategy			
	Activity	Choice	Goal
Interrelationships	Sharing of resource or skills	That have relatedness	To achieve synergy
Horizontal strategy	Developing interrelationships	That create value	To achieve competitive advantage

**Figure 2: Ensign’s (1998) View of Horizontal Strategy**

**B. Employee Attributes (FIVE-FACTOR MODEL)**

Over the last decade research into the structure of personality has converged around a five-factor model (FFM) proposed by Fiske (1949), Tupes and Christal (1992), and Norman (1963) in earlier writings

(1989). Costa and McCrae (1992) divided the personality into the five broad dimensions i.e. Neuroticism, Extraversion, Openness to experience, Agreeableness, and Conscientiousness. In addition, five-factor model of personality is a hierarchical organization of personality traits (McCrae and John, 1992). The FFM dimensions were derived from various factor analytic studies of self-report and peer reports of adjectival (e.g., Goldberg, (1990), Big Five) and questionnaire personality related data (e.g., Costa and McCrae's, (1992)).

**Extraversion**

Extraversion refers to the extent to which individuals are outgoing, active, assertive and talkative (Wehrli, 2008). In addition, expressive, outgoing, companionable, gregarious, chatty, confident and determined persons are called as extraverts (Barrick and Mount, 1991). Moreover, extraverts have a tendency to be spontaneous, communicative, energetic, positive, and enthusiastic (Goldberg, 1990), and (Watson and Clark, 1997). The presences of these features are depending on the level of extraversion. For instance, high level of extraversion indicates that an individual is outgoing and optimistic. In contrast, individuals with low levels of extraversion tend to be “introverted,” reserved, serious, and prefer to be alone or stay within close circles (Wehrli, 2008).

**Conscientiousness**

Costa and McCrae (1992) viewed conscientiousness as group-based responsibility. It is a cluster of narrow traits related to planning, organizing, and task completion. It also refers to self-control and the active process of planning, organizing and carrying out tasks (Barrick and Mount, 1991). In addition, Hogan and Ones (1997) considered conscientiousness as social conformity and impulse control. High score of conscientiousness personalities are logical, reliable, and risk averter (Goldberg, 1990). Low score of conscientiousness personalities are less logical, reliable, and risk averter in comparison to a high score of conscientiousness personalities. Moreover, diligent, attentive, vigilant, comprehensive, responsible, systematized and determined are traits of conscientiousness (Barrick and Mount, 1991).

**Table 1: Five Robust Trait Dimensions**

<b>FFM Dimensions</b>	<b>Openness(O)</b>	<b>Consciousness(C)</b>	<b>Extraversion(E)</b>	<b>Agreeableness(A)</b>	<b>Neuroticism(N)</b>
Traits	Artistic, Curious, Imaginative, Wide interests, Original	Efficient, Organized, Planful, Reliable, Responsible	Active, Assertive, Energetic, Outgoing, Talkative	Generous, Sympathetic, Kind, Trusting, Forgiving	Anxious, Tense, Touchy, Unstable, Worrying
High score	Creative, Imaginative, Eccentric	Organized, Self-directed	Outgoing, Enthusiastic	Trusting, Empathetic	Prone to stress and worry
Low score	Practical, Conventional	Spontaneous, Careless	Aloof, Quiet	Uncooperative, Hostile	Emotionally stable

*Source: Five robust trait dimensions: Development, stability, and utility, Digman (1989)*

**Agreeableness**

Agreeable defines the features such as self-sacrifice, helpful, nurturance, gentle, and emotional support at one end of the dimension, and enmity, indifference to others and self-interest on another end (Digman (1989). Agreeable consist of traits such as polite, flexible, naive, helpful, supportive, merciful, kind, and open-minded (Barrick and Mount, 1991).

In Putnam and Wilson’s (1982) model, low agreeableness would be expected to correspond to the control strategy. Conversely, high agreeableness would be expressed concern for another’s outcome and reflected in a preference for the compromise strategy. High score of agreeableness personalities are trusting and empathetic, and a low score of agreeableness personalities are uncooperative and hostile in nature.

### **Neuroticism**

Neuroticism signifies variances of individual tendency to experience suffering and is defined as emotionally insecure and uneven (McCrae and John, 1992). In other words, Costa and McCrae (1992) described neuroticism as representing emotional instability and maladjustment characterized by negative emotions such as fear, anger, disgust, sadness, anxiety, and guilt.

High score of neuroticism personalities is thought to be less able to both control their impulses and cope effectively with stress (Costa and McCrae, 1992). On the other hand, people with high scores on neuroticism tend to believe that they are not attractive to others and are fearful of rejection (Wehrli, 2008). Neurotics possess traits including annoyed, stressed, sulky, unsociable, nervous, embarrassed, uncertain, doubtful, unconfident, fearful, and dejected (Barrick and Mount, 1991), and (Judge and Bono, 2000).

### **Openness to experience**

Openness to experience refers to individual differences in the breadth and depth of consciousness and is generally thought to involve intellectual activity, cultural sophistication, thoughtfulness, originality, imagination, need for variety, and preference for cognitive complexity (McCrae, 1996). Openness dimension measures the propensity of individuals to display imagination, curiosity, originality, and open-mindedness. McCrae (1996) suggested that openness to experience may have the strongest influence on social and interpersonal phenomena among all of the five factors. High score of openness to experience personalities reveal tolerance for ambiguity and seek out risk and excitement. In contrast, low openness scores personalities are practical, traditional and down-to-earth (Wehrli, 2008).

## **III. Theoretical Framework**

We examined impact employee attributes proposed by Costa and McCrae (1992) on a horizontal strategy which is proposed by Porter (1985) for this study. The previous researches and studies focus on horizontal strategy and its relationships with a competitive advantage (Porter, 2008). However, the relationships between horizontal strategy and employee attributes did not receive research attention or actually remains uncovered. Also, there is no empirical study on this subject. However, based on a previous literature survey, we assure to claim there is a significant relationship between the employee attributes and horizontal strategy implementation.

### **A. Employee Attributes and Strategy Implementation**

Every organization requires the “worker bees” that show up on time, take guidance well, get the job done right, and generally keeps the work flowing. Positive employee’s characteristics obviously are important in any business. Building the appropriate workforce in the organization is difficult to grow. The success of any organization basically depend on human resources who continuously give their efforts to getting things done towards the achievement of the organizational goals; so positive employee attributes are supported to functions of the organization. The present research anchors on the five-factor model proposed by Costa and McCrae (1988). The five factors are extraversion, agreeableness, conscientiousness, neuroticism (emotional stability), and openness to experience (intellect). These five relatively independent construct altogether provide a meaningful classification for the study of individual’s difference in the work attitudes. It is a model of personality that uses five separate factors to describe an individual’s character. Personality has been considered as an important factor in the personality related studies specifically for predicting the job performance. Five-Factor Model (FFM) could benefit both individuals and organizations in terms of employee staffing, training, formal mentoring programs, and career counseling (Lee et al., 2000).

### **Extraversion**

Extraverts get their energy from interacting with others, while introverts get their energy from within themselves. Extraversion incorporates qualities, such as sociability, assertiveness, activity level, and positive emotions with those who are more extroverted. In addition, extraverts’ people have a tendency to

be spontaneous, communicative, energetic, positive, and enthusiastic. In other words, it refers to the extent to which individuals are outgoing, active, assertive and talkative. The employees who have a high score of extraversion prefer social interactions, groups, flexibility while those who have a low score of extraversion they are “introverted,” reserved, serious, avoid large social situations and prefer to be alone or stay within close circles. Extraverts are also an effective analyst of job performance for professions like administrations, social relation, and sales (Barrick and Mount, 1991). Extroversion is strongly related to social leadership (Costa and McCrae, 1988) and leader emergence in groups (Watson and Clark, 1997). Based on the above theory and discussion of employee attributes we posited the hypothesis as:

***H<sub>1</sub>: High score of extraversion of employee attributes is positively related to horizontal strategy implementation.***

### **Conscientiousness**

Conscientiousness refers to the extent that an individual is dependable, careful, responsible, and organized (Wehrli, 2008). Conscientiousness contains two basic factors, achievement orientation, and dependability. Additionally, it refers to goal-directed behavior in an organization. Costa and McCrae (1992) viewed conscientiousness as group-based responsibility. It is also a cluster of narrow traits related to planning, organizing, and task completion. The employees in the organization who have a high score in conscientiousness prefer planned rather than spontaneous behavior. Individuals who have a low score of conscientiousness take a more relaxed approach, are spontaneous and may be disorganized. Conscientious employees in organization avoid difficulty and achieve high levels of success through purposeful planning and endurance. Based on the above theory and discussion of employee attributes we posited the hypothesis as:

***H<sub>2</sub>: High score of conscientiousness of employee attributes is positively related to horizontal strategy implementation.***

### **Agreeableness**

Agreeableness pertains to the interpersonal behaviors and agreeable individuals tend to be friendly, altruistic, and flexible in dealing with others. Agreeable people are inclined to be polite and friendly, which facilitates teamwork and workplace functioning. Moreover, agreeableness refers to individual's general interpersonal orientation. McCarty and Green (2005) reported that agreeableness and conscientiousness were most highly correlated with personal network structure. The individuals with agreeableness are advantageous for attaining and maintaining popularity. But such individuals do not always fit in every situation; for instance, these people are not useful in situations that require tough or absolute objective decisions. Based on the above theory and discussion of employee attributes we posited the hypothesis as:

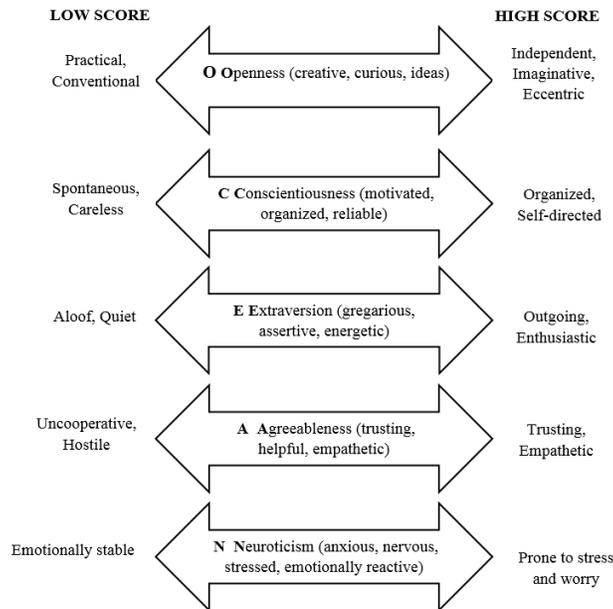
***H<sub>3</sub>: High score of agreeableness of employee attributes is positively related to horizontal strategy implementation.***

In Figure 3 describes that OCEAN structure of the five-factor model in which gives the characteristics of all five employee attributes (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience) based on the HIGH and LOW scores.

### **Openness to experience**

Openness to experience incorporates several factors, including imagination, tolerance of a range of values, appreciation for the arts, and breadth of interests. Openness reflects a person's degree of intellectual interest, creativity, and preference for innovation and diversity. In other words, it is the extent to which a person is imaginative or independent. McCrae (1996) suggested that openness to experience may have the strongest influence on social and interpersonal phenomena among all of the five factors. The employees who have a high score of openness to experience prefer novelty, while those who have a low score of openness to experience they prefer routine. Based on the above theory and discussion of employee attributes we posited the hypothesis as:

***H<sub>4</sub>: High score of openness to experience of employee attributes is positively related to horizontal strategy implementation.***



**Figure 3: Five-Factor Model**

### **Emotional stability**

Emotional stability refers to the degree to which people experience negative emotions including anxiety, anger, depression, and self-consciousness (Lee et al., 2000). In other words, neuroticism refers to an individual's degree of emotional stability and impulse control. Moreover, it refers to individual's proneness to negative emotions and anxiety. The employees in the organization who have a high score in neuroticism tend to experience emotional instability and are characterized as angry, impulsive, and hostile, consequently, such individuals feel anxious and unhappy with their life. In contrast, people who score low in neuroticism tend to be calm and even-tempered. Due to the group structure, interrelationships, and making teams in horizontal strategy; we perceived that extraversion, conscientiousness, agreeableness, and openness to experience, these factors have a significant relationship with horizontal strategy. And these types of individuals are supported by the execution of horizontal strategy in conglomerates organization. Based on the above theory and discussion of employee attributes we posited the hypothesis as:

***H<sub>5</sub>: High score of neuroticism of employee attributes is not positively related to horizontal strategy implementation.***

## **IV. Research Methodology of the Study**

The purpose of this particular research is to identify the relationships between employee attribute with the horizontal strategy. The main aim of this study is to identify how employee attributes are supported by horizontal strategy implementation. Our target organization is conglomerate type organizations who having the horizontal strategy. First, we have selected conglomerate organizations from the list of the conglomerate company; which based on the interrelationship in terms of 'Production', 'Market', 'Technology', 'Procurement', 'Infrastructure', 'Strategy' etc.. We determine the conglomerate organizations that having a horizontal strategy. For the categorization of data in terms of horizontal strategy (HS) and non-horizontal strategy (NHS), we used the cluster analysis.

### **Interrelationships**

For horizontal strategy measurement, interrelationships carried a set of 17 parameters like ‘**Production**’, ‘**Market**’, ‘**Technology**’, ‘**Procurement**’, ‘**Infrastructure**’, ‘**Strategy**’ interrelationships etc., that were extracted from the literature (Porter, 2008). These parameters were used to categorize data or organization into horizontal strategy and non-horizontal strategy from cluster analysis. The results of cluster analysis were used for the categorization.

### **A. CLUSTER ANALYSIS**

Cluster analysis is a multivariate method which aims to classify a sample of subjects (or objects) on the basis of a set of measured variables into a number of different groups such that similar subjects are placed in the same group (Cornish, 2007). Cluster analysis for categorization of the conglomerate organization into horizontal strategy and non-horizontal strategy for this thesis. The procedure of this classification as: Finally, in clusters 1, there are 62 organizations which incorporated the attributes of horizontal strategy and 45 organizations in cluster 2 which are not incorporated the attributes of horizontal strategy.

Table 2: Clustering

Number of Cases in each Cluster		
Cluster	1	62.000
	2	45.000
Valid		107.000
Missing		.000

### **B. ANALYSIS OF MULTIPLE RESPONSE DATA**

When data admitted more than one response from the list of items then it is referred to as multiple response data (Vlach and Plasil, 2015). Both variables are categorical (nominal or ordinal) in nature. Statisticians have divided the number of ways to analyze the categorical data. These methods are:

1. *Contingency table analysis* for two categorical variables.
2. *McNemar’s test* for paired dichotomous and categorical variables.
3. *Mantel-Haenszel tests* two dichotomous variables.
4. *Inter-rater reliability (kappa) tests* whether two raters looking at the same occurrence (or condition) give consistent ratings.
5. *Goodness-of-fit* test for observed group of counts matches a theoretical pattern

In other words, there are two basic concepts and hypothesis test for multiple responses variables:

- a) Multiple by Multiple Marginal Independence Test (MMI)
- b) A single by Multiple Marginal Independence Test (SPMI) (Vlach and Plasil, 2015).

In the particular section, we did the MMI test or contingency table for analysis of data. MMI reflects the situation that both variables in the contingency table are of multiple response nature (Bilder and Loughin, 2004). In our dataset employee attributes (conscientiousness, extraversion, agreeableness, openness to experience and neuroticism) and organization (horizontal strategy and non-horizontal strategy), both are categorical variables.

## **V. Results and Analysis**

### **Multiple by Multiple Marginal Independence Test (MMI) or contingency table analysis:**

Gray and Kinnear (2012) have given three steps for multiple response procedures. The first step creates multiple response sets, and second is obtain the cross tabulations, and the third step is to obtain multiple response frequencies. Here, the last step is creating a graph by using different tools like MS Excel or SPSS.

**Create a Multiple Response Set and contingency table:** In these steps first, we are creating multiple response sets of conscientiousness, extraversion, agreeableness, openness to experience and neuroticism. We used multiple response procedures to create multiple responses set for the employee attributes to implement the horizontal strategy. The multiple response set tables are given in Table 3. After creating

the multiple responses set, we create contingency table in which we get the count of all the items in all employee attributes construct of horizontal and non-horizontal strategy group.

The results and data of the Contingency table for conscientiousness, extraversion, agreeableness, openness, and neuroticism are given in the Tables 4 to 8. Along with this, we did Pearson Chi-Square tests for the test of independence between the type of organization (HS/NHS) and conscientiousness, extraversion, agreeableness, openness, and neuroticism. “A chi-square test was performed to test the null hypothesis of no association between the two variables or we can say that check the significant difference between the two variables. This test was performed on the employee attributes (conscientiousness, extraversion, agreeableness, openness, and neuroticism) and the horizontal strategy and non-horizontal strategy. The results of the Pearson Chi-Square tests are given in Table 9. The first multiple response tests were performed for conscientiousness.

**Table 3:** Multiple Response sets Table for Five Employee Attributes

<b>Multiple Response Sets</b>					
<b>Name</b>	<b>Label</b>	<b>Coded As</b>	<b>Counted Value</b>	<b>Data Type</b>	<b>Elementary Variables</b>
<b>\$Conscientious</b>	Conscientious	Dichotomies	1	Numeric	Employee is always prepared Make plans and stick to them Employee follow a schedule Employee are pay attention to details Get chores done right away Find it difficult to get down to work
<b>\$Extraversion</b>	Extraversion	Dichotomies	1	Numeric	Don't mind being the center of attention People are the life of the party Employee are skilled in handling social situations Know how to captivate people Feel comfortable around people
<b>\$Agreeableness</b>	Agreeableness	Dichotomies	1	Numeric	Feel little concern for others Employee is not interested in other people's problems Sympathize with others' feelings Have a good word for everyone Believe that others have good intentions Accept people as they are
<b>\$Openness</b>	Openness	Dichotomies	1	Numeric	Spend time reacting to things Employee is quick to understand things Carry the conversation to a higher level Enjoy hearing new ideas Avoid philosophical discussions Tend to vote for liberal political candidates
<b>\$Neuroticism</b>	Neuroticism	Dichotomies	1	Numeric	Have frequent mood swings Get upset easily Get irritated easily Am easily disturbed Worry about things Panic easily

**Table 4: Contingency for Conscientious**

		Conscientious					
		EV1	EV2	EV3	EV4	EV5	EV6
		Count	Count	Count	Count	Count	Count
Organization	Horizontal strategy	52	37	40	38	44	44
	Non-Horizontal strategy	24	22	23	24	19	26

**Table 5: Contingency for Extraversion**

		Extraversion				
		EV1	EV2	EV3	EV4	EV5
		Count	Count	Count	Count	Count
Organization	Horizontal strategy	38	46	44	31	45
	Non-Horizontal strategy	21	29	21	17	24

**Table 6: Contingency for Agreeableness**

		Agreeableness					
		EV1	EV2	EV3	EV4	EV5	EV6
		Count	Count	Count	Count	Count	Count
Organization	Horizontal strategy	39	34	42	38	43	46
	Non-Horizontal strategy	31	16	26	23	17	27

**Table 7: Contingency for Openness**

		Openness					
		EV1	EV2	EV3	EV4	EV5	EV6
		Count	Count	Count	Count	Count	Count
Organization	Horizontal strategy	30	39	28	31	32	32
	Non-Horizontal strategy	33	20	27	26	23	31

**Table 8: Contingency for Neuroticism**

		Neuroticism					
		EV1	EV2	EV3	EV4	EV5	EV6
		Count	Count	Count	Count	Count	Count
Organization	Horizontal strategy	25	17	18	15	30	24
	Non-Horizontal strategy	33	29	32	32	25	28

\*EV=elementary variables

The Table 9 shows that there are all the Chi-Square test values for conscientiousness, extraversion, agreeableness, openness, and neuroticism. The chi-square test enables us to explain whether or not two attributes are associated. In addition, it checks the independence between two attributes. A chi-square test was performed to test the null hypothesis of no association between type of organization (with HS or NHS) and conscientious, extraversion, agreeableness, openness, and neuroticism.” The table is given below:

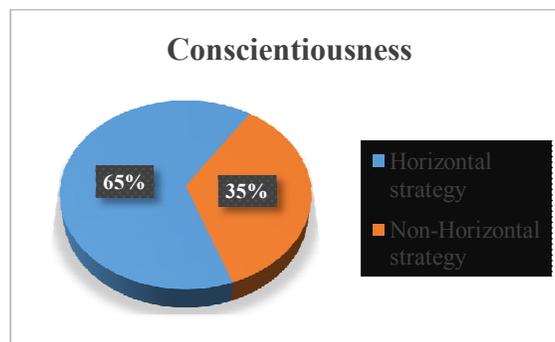
**Table 9: Pearson Chi-Square Test**

Pearson Chi-Square Tests						
		Conscientious	Extraversion	Agreeableness	Openness	Neuroticism
<b>Organization (HS and NHS)</b>	<b>Chi-square</b>	26.560	15.687	19.507	15.736	68.984
	<b>df</b>	6	5	6	6	6
	<b>Sig.</b>	.000*	.008*	.003*	.015*	.000*

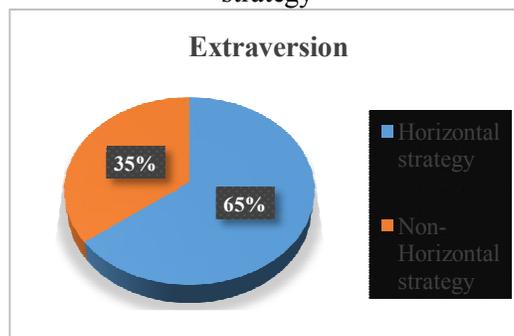
Results are based on nonempty rows and columns in each innermost subtable.  
\*. The Chi-square statistic is significant at the .05 level.

Note: HS= horizontal strategy, NHS= non-horizontal strategy

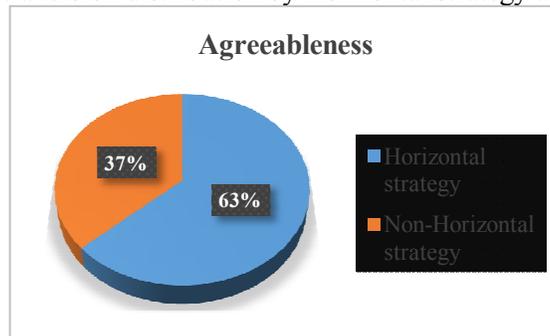
Based on the scores of employee attributes we draw a pie chart (Figures 4 to 8). This score we calculated from contingency tables. From this graphs, we will identify that in which groups' i.e. horizontal strategy and non-horizontal strategy, scores are high or low of conscientious, extraversion, agreeableness, openness and neuroticism.



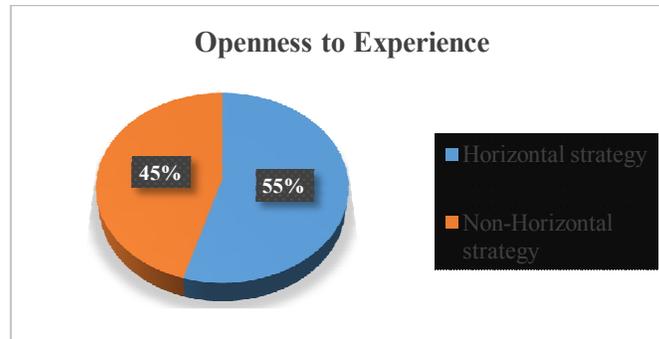
**Figure 4:** Pie Chart of Conscientiousness distribution by Horizontal strategy and Non- Horizontal strategy



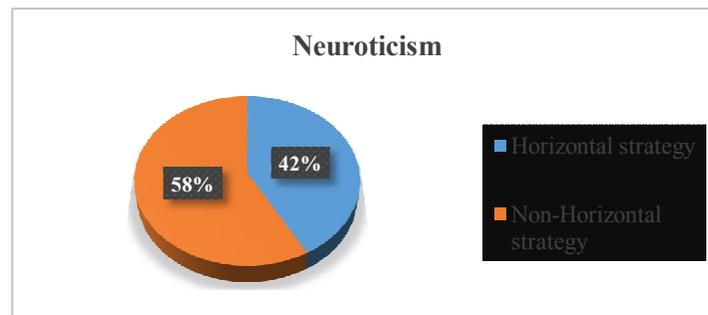
**Figure 5:** Pie Chart of Extraversion distribution by Horizontal strategy and Non- Horizontal strategy



**Figure 6:** Pie Chart of Agreeableness distribution by Horizontal strategy and Non- Horizontal strategy



**Figure 7:** Pie Chart of Openness to Experience distribution by horizontal strategy and Non-horizontal strategy



**Figure 8:** Pie Chart of Neuroticism distribution by Horizontal strategy and Non- Horizontal strategy

## VI. Interpretation

For hypotheses,  $H_1$  to  $H_5$  we see the table of chi-square test of independence and their significance values. The significance level of .000 for the chi-square test indicates that horizontal strategy and non-horizontal strategy probably differ significantly in their choices conscientiousness characteristics. Moreover, a significance level of .008 for the chi-square test indicates that horizontal strategy and non-horizontal strategy probably differ significantly in their choices extraversion characteristics. In the same way, a significance level of .003, .015, and .000 for the chi-square test indicates that horizontal strategy and non-horizontal strategy probably differ significantly in their choices agreeableness, openness, and neuroticism characteristics respectively. From the pie chart (Figure 4), we see that there was 65% of conscientiousness characteristics in horizontal strategy group while 35% of conscientiousness characteristics in non-horizontal strategy group. Based on this, the analysis we can say that there is a high score of conscientiousness in horizontal strategy. For this study, it was expected that high score of conscientiousness is positively related to horizontal strategy with hypothesis  $H_1$ .

There was 65% of extraversion characteristics; 63% of agreeableness characteristics; and 55% of openness characteristics in horizontal strategy group while 35% of extraversion characteristics; 37% of agreeableness characteristics; and 45% of openness characteristics in nonhorizontal strategy group. Based on this analysis, we can say that there is a high score of extraversion, agreeableness, and openness in horizontal strategy. For this study, it was expected that high score of extraversion, agreeableness, and openness are positively related to horizontal strategy with hypotheses  $H_2$ ,  $H_3$ , and  $H_4$ . In addition, the construct neuroticism is not supported by horizon strategy so  $H_5$  is not supported.

**Table 10:** Summary of Findings on Employee attributes for Horizontal Strategy

<i>Hypothesis</i>	<i>Construct</i>	<i>Supported /not supported</i>
$H_1$	Conscientious	Supported
$H_2$	Extraversion	Supported
$H_3$	Agreeableness	Supported
$H_4$	Openness	Supported
$H_5$	Neuroticism	Not Supported

## **VI. Conclusions and Limitations**

Due to the increasing competition in the business world, the organizations try to sustain their competitive advantage. On the other hand, the firms are focused on competing to survive in a complicated and uncertain business environment. Consequently, the horizontal strategy is provided the ways to generate sustainable value or competitive advantage of the organization. In the study, we considered employee attributes (conscientiousness, extraversion, agreeableness, openness, and neuroticism). Further, the study establishes the theoretical framework between these variables and horizontal strategic organization in conglomerate firms. Based on the empirical investigation and its analysis, the findings suggest that horizontal strategy and non-horizontal strategy groups of conglomerate firms have their different identities. Employee behavior and employee attributes are the necessary things for the success of the organizations so; we can say that positive employee attributes have been considered as valuable keys to focus strategy implementation in any organization. Finally, the hypotheses support to this study that indicates the high score of conscientiousness; extraversion, agreeableness, and openness to experience are conducive to the implementation of horizontal strategy whereas a high score of neuroticism is detrimental to the performance of the horizontal strategy.

The main limitations of this study as the business units have been classified based on the respondent's response; that raised the doubt about the feasibility of the results. Another limitation of this study is the respondents belong to the top management from different departments of the sample of the conglomerate firms. However, to minimize the biasedness in the responses in the future studies, the data needs to be collected from multiple levels of organization such as bottom level and supervisory level also.

## **References**

- Barrick, M. R., & Mount, M. K. The big five personality dimensions and job performance: a meta-analysis. *Personnel psychology*, Vol. 44, No. 1, pp. 1-26, 1991.
- Bilder, C. R., & Loughin, T. M. Testing for marginal independence between two categorical variables with multiple responses. *Biometrics*, Vol. 60, No. 1, pp. 241-248, 2004.
- Cornish, R. Statistics: Cluster analysis. *Mathematics Learning Support Centre*, UK, 2007.
- Costa, P. T., & McCrae, R. R. Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological assessment*, Vol. 4, No. 1, pp. 5, 1992.
- Costa, P. T., & McCrae, R. R. Personality in adulthood: a six-year longitudinal study of self-reports and spouse ratings on the NEO Personality Inventory. *Journal of personality and social psychology*, Vol. 54, No. 5, pp. 853-863, 1988.
- Digman, J. M. Five robust trait dimensions: Development, stability, and utility. *Journal of personality*, Vol. 57, No. 2, pp. 195-214, 1989.
- Ensign, P. C. Interrelationships and horizontal strategy to achieve synergy and competitive advantage in the diversified firm. *Management Decision*, Vol. 36, No. 10, pp. 657-668, 1998.
- Fiske, D. W. Consistency of the factorial structures of personality ratings from different sources. *The Journal of Abnormal and Social Psychology*, Vol. 44, No. 3, p. 329, 1949.
- Goldberg, L. R. An alternative "description of personality": The Big-Five factor structure. *Journal of Personality and Social Psychology*, Vol. 59, pp. 1216-1229, 1990.
- Gray, C. D., & Kinnear, P. R. IBM SPSS statistics 19 made simple. Psychology Press, 2012.
- Hogan, J., & Ones, D. S. Conscientiousness and integrity at work, 1997.
- Jixin, W. U. The Researches on Vertical and Horizontal Co-market Strategic Alliance. pp. 65-69, 2010.
- Judge, T. A., & Bono, J. E. Five-factor model of personality and transformational leadership. *Journal of applied psychology*, Vol. 85, No. 5, pp.751-765, 2000.
- Lee, F. K., Johnston, J. A., & Dougherty, T. W. Using the five-factor model of personality to enhance career development and organizational functioning in the workplace. *Journal of Career Assessment*, Vol. 8, No. 4, pp. 419-427, 2000.
- McCarty, C., and Green H.D. Personality and Personal Networks. Sunbelt XXV, Conference Contribution, 2005.

- McCrae, R. R. Social consequences of experiential openness. *Psychological Bulletin*, Vol. 120, No. 3, pp. 323-337, 1996.
- McCrae, R. R., & John, O. P. An introduction to the five-factor model and its applications. *Journal of personality*, Vol. 60, No. 2, pp. 175-215, 1992.
- Norman, W. T. Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology*, Vol. 66, No. 6, pp. 574-583, 1963.
- Porter, M. E. On competition. Harvard Business Press, 2008.
- Porter, M. E. *Competitive strategy: Creating and sustaining superior performance*. The Free Press, New York, 1985.
- Porter, M. E. *Competitive strategy: Techniques for analyzing industries and competitors*. The Free Press, USA, 1980.
- Putnam, L. L., & Wilson, C. E. Communicative strategies in organizational conflicts: Reliability and validity of a measurement scale. *Communication yearbook*, Vol. 6, No. 1, pp. 629-652, 1982.
- Takaoka, H. Horizontal strategy in a diversified corporation (A Doctoral dissertation, Massachusetts Institute of Technology), 2011.
- Tupes, E. C., & Christal, R. E. Recurrent personality factors based on trait ratings. *Journal of personality*, Vol. 60, No. 2, pp. 225-251, 1992.
- Vlach, P., & Plasil, M. Analysis of Multiple-Response Data, 2015. Accessed on 20<sup>th</sup> Oct. 2017 from the source of <http://statistika.vse.cz/konference/amse/PDF/Plasil+Vlach.pdf>.
- Watson, D., & Clark, L. A. Extraversion and its positive emotional core. In R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 767-793). San Diego, CA: Academic Press, 1997.
- Wehrli, S. Personality on social network sites: An application of the five factor model. *Zurich: ETH Sociology (Working Paper No. 7)*, 2008.

## BIOGRAPHY

**Pratima Verma** is Doctoral Candidate in Industrial & Management Engineering at IIT Kanpur, India. She received her MBA in Finance and Human Resource Management from BBDNITM, Uttar Pradesh Technical University Lucknow, India in the year 2011. She completed her graduation (B.Tech) in Information Technology in the year 2009 from BBNITM, Lucknow. She has one year of experience in teaching. She is currently working in the field of horizontal strategy. She also awarded JRF/SRF in the area of human resource management. She has published eight articles in reputable international journals and presented nine papers at international conferences. She was invited to serve as session chair for Human Factors and Ergonomics Track at the International Conference on Industrial Engineering & Operations Management at Kuala Lumpur, Malaysia. She is a contributing author in journals including *IJPMB*, *IJISE*, *IJBIS* and *Benchmarking: An International Journal*, etc. She can be contacted at: [way2pratima@gmail.com](mailto:way2pratima@gmail.com) or [pratima@iitk.ac.in](mailto:pratima@iitk.ac.in).

**Vimal Kumar** is currently working as Assistant Professor at MANIT, Bhopal. He has done his Doctoral degree from the Department of Industrial & Management Engineering, IIT Kanpur, India in the year 2017. He completed his Masters in Supply Chain Management from the Department of Industrial & Management Engineering, IIT Kanpur in the year 2012. He completed his graduation (B.Tech) in Manufacturing Technology in the year 2010 from JSS Academy of Technical Education, Noida. Currently, he is pursuing research in the domain of TQM and Manufacturing Strategy. He has published fourteen articles in reputable international journals and presented nine papers at international conferences. He was invited to serve as session chair for Quality Control & Management at the International Conference on Industrial Engineering & Operations Management (IEOM-2016) at Kuala Lumpur, Malaysia. He is a contributing author in journals including *IJPPM*, *IJQRM*, *IJPMB*, *IJPQM*, *IJBIS*, *AJOR*, *The TQM Journal*, and *Benchmarking: An International Journal*, etc. and also a guest reviewer of reputable journal like *TQM & Business Excellence*, *Benchmarking: An International Journal*, and *JSIT*. He is corresponding author and he can be contacted at [vimaljss91@gmail.com](mailto:vimaljss91@gmail.com).

**Vignaesh Muthukumaar** is currently working as a Consultant in Decision Analytics at EXL Services, Bengaluru, India. He graduated this year 2017 from the Indian Institute of Technology, Kanpur, India, with a B.Tech in Material Science and Engineering and a Minor in Industrial and Management Engineering. He has international publications to his credit. He can be contacted at: [vignaeshmk@gmail.com](mailto:vignaeshmk@gmail.com).

**Rahul Gajbhiye** is a Doctoral candidate in the Department of Management Studies, National Institute of Technology Bhopal, India. He can be contacted at [diamondrahul@hotmail.com](mailto:diamondrahul@hotmail.com).