

# Factors Affecting the Liquid Workforce in Different Organizations and its Effectiveness

\* *Debarun Chakraborty*

\*\* *Adrinil Santra*

\*\*\* *Soumya Kanti Dhara*

## Abstract

**Background :** Ushering in the edge of digital economy has instituted changes in different spheres of people management. Understanding the importance of talent management and the adaptability of employees to various functional domains of the business, corporate houses slowly brought about infusing inescapable changes to keep abreast with the rhythm of future changes.

**Purpose :** The purpose of this study was to determine the relative importance of certain factors that enhance the efficiency of liquid workforce in improving the overall performance of the organization, and it elaborated a practical approach of deploying liquid workforce in improving organizational economy.

**Design/Methodology:** Researchers used descriptive research with cross-sectional design. The study used multiple regression analysis to get the results which were collected from different organizations.

**Findings :** We found from the survey that four factors were mainly influencing liquid workforce and these are : organizations seeking creativity, virtual organizations, flexi-time, and multi-skilled workers, with the last one being the most significant.

**Research Limitations :** This study was conducted in Kolkata with a sample size of 200 respondents taken only from IT, ITES, and telecom organizations. The term 'liquid workforce' is quite new, and respondents had some hesitation during answering questions regarding the same.

**Keywords:** adaptability, digital technology, disruption, flexi-time, integration, liquid workforce, multi-skilled, people first, workforce agility

**JEL Classification:** M100, M140, 0150

**Paper Submission Date :** May 21, 2018 ; **Paper sent back for Revision :** December 5, 2018 ; **Paper Acceptance Date :** February 20, 2019

**T**ransformation of a traditional business into digital business is no more a big challenge, but to transform people, talent, and culture of an organization to go digital is the biggest issue for achievement oriented digital success. Adapting to the changes due to managerial obsolescence in the most effective way is the

---

\**Assistant Professor*, Department of Management & Social Sciences, Haldia Institute of Technology, Haldia - 721 657, West Bengal. Email : debarun84@gmail.com

\*\**Assistant Professor*, Department of Management & Social Sciences, Haldia Institute of Technology, Haldia - 721 657, West Bengal.

\*\*\**Assistant Professor*, Department of Management & Social Sciences, Haldia Institute of Technology, Haldia - 721 657, West Bengal.

**DOI : 10.17010/pijom/2019/v12i4/143348**

greatest challenge for strategy makers on account of the fact that it is possible to transform an organization into a digital firm by implementing new technology. However, converting the workforce of an organization to adopt such changes and getting them adapted is an impediment towards going digital (Accenture, 2016; Azuara & Alejandro, 2015).

Technology acts as a driver, but it is the people who, by harnessing the technology, may lead to transformation of the organization for the future. We are in the midst of a major technology revolution, specifically a digital revolution. Every sector of the economy is dominated by digital technology, and an important new shift is being observed as the technology revolution begins to prioritize people first. In other words, when businesses get transformed into digital, their people and cultures must become digital too (Accenture, 2016).

The state of ranking people first in the age of digitalization looks at the competitive advantage waiting for companies to create a flourishing digital culture. Achieving success in today's digital world is a challenging issue which cannot be solved by simply consuming more and more technology, or by replacing humans with technology. Deploying and consuming more technology is not the only future vision of high-performing companies, but it is also to enable their people for high acquaintance with technology to achieve more. Such organizations create new corporate cultures amalgamated with technology to enable people to adopt, adapt, and learn progressively, create new solutions, initiate change, and upgrade their existing state of affairs (Accenture, 2016).

## What is a Liquid Workforce?

To synchronize with constant change in the digital era, companies are investing in tools and technologies they need. However, in order to achieve their challenging goals, the strategy makers are convergent on a critical success factor, 'the workforce,' which is often ignored. They are looking at technology not just as a disruptor, but also as an enabler to transform their people, processes, and entire organizations into highly adaptable, and ready-to-change enterprises to embark on bold new ventures. It is being realized by business leaders that their new liquid workforce may enhance their new competitive advantage (Accenture, 2016 ; Azuara & Alejandro, 2015).

Leading business houses are re-engineering themselves to rapidly adapt to any disruption. They are creating a "liquid workforce" as an essential part of the business. The companies are realizing that only updating skills is not the specific solution to compete in today's market, and hence, they are looking beyond. To drive changes, it is necessary for companies to maximize their agility with respect to their skills, projects, and organization (Accenture, 2016).

- ↳ **Skills :** Build learning as a core competency in the organization to actively generate skills that are in demand.
- ↳ **Projects :** Use technology to coalesce and disband internal and external talent at your disposal for new innovative projects.
- ↳ **Organization :** Optimize workforce responsiveness with insightful analytics that provide a real-time view of organizational capabilities (Accenture, 2016).

By implanting firm-wide integration and responding to constant changes, companies will be able to learn critical skills faster, innovate earlier, and operate more effectively. The workforce with high digital potential will not only bring about change for "what is to be done," but also for "how it is to be done" with greater emphasis. The leaders play a crucial role in bringing about changes through the people at every organizational level supported with new technology, new machines, and development of new skill sets (Accenture, 2016 ; Azuara & Alejandro, 2015).

New horizons in businesses can be established by the market winners by embracing disruption as a part of

corporate strategy, by inspiring people with a vision for getting things done in a more efficient and effective way, and through adoption of new methods and technology. Efficiency gains through digital technology is not the ultimate focus of the market winners, but major emphasis is given to deeply plunging into the pool of emerging needs, requirements, and attitudes of customers, partners, and employees for better comprehensibility to drive such disruption. Through this, strategies are created and implemented to achieve success in the dynamic world, and the industry boundary can be reshaped to adapt to the future ecosystems (Accenture, 2016 ; Azuara & Alejandro, 2015).

## **Why Businesses are Changing Their Workforce Practices ? Shifting to Liquid Workforce**

Presently, the kernel of the labor market is changing through the injection of technology to a large extent. Adoption of digital technology has impinged on strategies, processes, job functions, and process models of businesses. In addition to the capability of meeting new demands, the workforce also needs to develop skill sets to achieve success in their new goals in the new era of globalization. For example, a graphic designer needs to understand coding languages such as HTML and others for web design and mobile devices. Similarly, a salesperson must understand the data and analytical tools used by businesses to promote growth. As a result, many enterprises are experiencing a skill gap. Indeed, a recent survey reported that 38% of the businesses throughout the world are struggling to find the right talent (Accenture, 2016).

## **Literature Review**

Azuara and Alejandro (2015) explored workforce agility from the perspective of human resource. Adaptability, proactiveness, resilience, self-awareness, and orientation towards business goals are its major determinants, and it can be developed through the intervention of performance management, training, and mentoring the existing workforce. The major barriers to such development faced by the leaders are cultural disparity and vagueness in the strategy undertaken. The study provided evidence required for further research to exhibit the features of liquid workforce, its core competencies, and model development subject to the major constraints. The study provided a confirmation that workforce agility (liquid workforce) was a crucial need for emerging organizational development.

Accenture (2016) highlighted that every business entity is tightly coupled with digital technology, but even with technology as an integral part of the organizational strategy, people who are contributing to success in a world that continues to reinvent itself at a faster pace cannot be given a backseat. Five emerging technology trends have been mentioned as shaping this new premise, and it is being observed that the 'people first' theme flows through each of them. The leaders of the future world are considering these trends in executing strategies to secure their digital competitive advantage.

**(i) Trend 1 - Intelligent Automation** : The pioneer for new growth and innovation is powered by artificial intelligence. Data from different systems will be gathered at an unprecedented scale for the next stage of solution and by binding systems, data, and people together, new solutions will be created to change organizations, their goals, policies, and procedures.

**(ii) Trend 2 - Liquid Workforce:** Investment in tools and technologies are made by companies that need to keep pace with constant change in the digital era. However, there is a critical factor that is falling behind: the workforce.

Companies need more than the right technology; they need to harness that technology to enable the right people to do the right things in an adaptable, change - ready, and responsive liquid workforce.

**(iii) Trend 3 - Platform Economy :** The next phase of disruptive innovation will arise from the technology-enabled, platform-driven ecosystems now taking shape across industries. With the use of strategically exploited technology to produce digital businesses, leaders are now creating the adaptable, scalable, and interconnected platform economy that underpins success in an ecosystem - based digital economy.

**(iv) Trend 4 - Predictable Disruption:** Every business now understands its potentiality in transforming into digital. The digital ecosystems produce powerful, predictable disruption, and whole industries and economic segments will be utterly redefined and reinvented.

**(v) Trend 5 - Digital Trust :** There are new digital issues that may create potential risk from pervasive new technologies. Without trust, businesses cannot share and use the data that supports their operations. Thus, the most advanced security systems today incorporate powerful commitment to the highest ethical standards for data.

Dyne and Soon (1998) conducted a study in Singapore, where currently there is a shortage of labor. Three parameters : (a) organizational citizenship behavior, (b) psychological contracts, and (c) affective commitment were identified for comparing the contingent workers and regular employees, and hypotheses were framed on the basis of these parameters. It was assumed that contingent workers would engage in less organizational citizenship behavior, have fewer expectations of their employers in their psychological contracts, and have lower affective commitment than regular employees. It was also assumed that two relationships between the parameters (b) and (a) and (c) and (a) would be stronger for regular employees than for contingent workers.

The results of the analysis demonstrated that on the account of severe labor shortages, regular or contingent work statuses were chosen voluntarily ; contingent workers engaged in less organizational citizenship behavior, expected less of their employers in their psychological contracts, and had lower affective commitment. The results also demonstrated significant effect of attitudes on the behavior of contingent workers, and it was concluded that contingent workers on account of high commitment to their organizations and positive attitudes about their psychological contracts with the organizations exhibited high levels of organizational citizenship.

Zimmerman, Gavrilova - Aguilar, and Cullum (2013) conducted an empirical analysis to present a framework that made a shift in HR strategies, allowing equality in treatment between standard and contingent workers within organizations a debatable issue. Despite the contributions of contingent workers in fulfilling valuable organizational needs and functioning as knowledge resources, a difference in treatment exists with respect to the standard workers in terms of on-boarding, pay for performance, and training & development practices within organizations. The paper examined the relationships of three key factors : (a) on-boarding, (b) pay for performance, and (c) training and development in developing contingent worker integration framework. Four hypotheses were framed on the basis of these three input factors that may affect company culture. These are knowledge, organizational commitment, cohesion with the standard workgroup, and knowledge sharing within the organization in relation to the contingent workers. The research further affirmed that such difference in treatment can roadblock knowledge sharing between standard and contingent workers in the organization, which could be overcome through changes in HR practices in maximizing workforce of the organization.

Osborne Clarke (2017) presented a report on the future of work based on interviews with organizations namely, The Curve Group, Talent Intelligence Partners, MBO Partners, and Staffing Industry Analysts, as well as Osborne Clarke's experts who were helping businesses in dealing with the rise of new employment models. This report focused on the trends observed with contingent workers, an evolving sophisticated support system to reassure companies about the safety in using contingent workers, effect of investment in automation towards companies'

demand for contingent workers, and the growing risks of using contingent workers. Contingent workers accounted for 20% of the workforce in 2017, which was a significant increase from the 15% share in 2014 according to Staffing Industry Analysts research. It is clear that in a business concern, an increase or decrease in the use of contingent workers will largely depend on the extent to which the risk factors, that is, tax and other obligations, employment claims, quality, customer experience, and retention of intellectual capital outweigh the benefits to its business, especially for the low-skilled contingent workers. It can be sensibly predicted that the use of highly skilled contingent workers will continue to increase.

According to Daly (1997), regular full-time, full-year work force is being scaled down by many employers, and use of contingent workers is being increased to reduce labour costs to meet the fluctuating demands of the global marketplace. To make successful implementation of the contingent work force strategy, employers must take steps to alleviate the detrimental effects of contingent work on worker health and consequently, on organizational health. If employers do not do so, their savings may add costs to decrease in productivity and in work quality. Thus, the employers must : (a) reduce tension between regular and contingent workers, (b) reduce the stress on contingent workers caused by job insecurity, (c) minimize the negative health effects of a lack of job control, (d) minimize the stress associated with underemployment, (e) assume that the voluntary contingent workers would be more productive, provided other things remaining same, (f) differentiate the work by function, purpose, and time frame that is being done by the two groups and ensure that contingent workers remain employed only for the specified duration.

MacKenzie (2008) explored union responses to restructuring and the growth of contingent workers in the context of the Irish telecommunications sector. Organizing contingent workers brought new challenges in terms of reconciling the interests of different membership cohorts, and raised questions over why contingent workers would join the union, and what union membership would mean to them. Often missing in studies of this area, the paper gave voice to new union members through interviews with a range of contingent workers.

Pedulla (2011) examined the relationships of three forms of contingent workers (temporary workers, on-call workers, and independent contractors) with the standard employees with respect to perceived job security, subjective attachment to their workplaces, earnings, and relationships between managers and co-workers. The findings provided evidence that the use of different forms of contingent workers in the workplace had different consequences for the outcomes of the standard employees. These results of the research may be underestimating the consequences of the changing economic landscape for the outcomes of standard, permanent, and full-time workers.

James and Sudha (2017) in their study discussed the directing impact of working environment support on the social life of night shift employees working in the logistics industry. The authors used night shift hassles and night shift hours as the exogenous variables and social life as the endogenous variable. They used workplace support as the moderator to find if workplace support influenced the relationship between night shift hassles and social life as well as night shift hours and social life. The discoveries recommended that the cooperation variable had a critical impact and affected the connection between exogenous factors and the endogenous variable.

Mittal, Singh, and Sharma (2017) performed a cross-sectional analysis of the impact of work-life balance on employee health in the manufacturing as well as service sectors. This sector-wise research examined the interrelationships amongst various demographic variables, health, and work-life balance. The results substantiated that pressure from work caused a work - life imbalance, which led to several health problems including stress among the workers. The results also revealed the commonalities and differences in work-life balance across the two sectors.

Pandita and Bedarkar (2015) explored the idea of worker commitment and furthermore tossed light on key drivers of representative commitment by dissecting explicitly four drivers, in particular, correspondence, work-life equalization, initiative, and authoritative culture. Moreover, this investigation likewise dissected how these drivers affected the dimension of worker execution and prosperity in the working environment. The current

writing on drivers of representative commitment demonstrated that there was a lack of research on these four drivers, and their effect on worker commitment. In this manner, the researchers concentrated on these four explicit and less examined drivers.

## Objectives of the Study

- ↳ To study the factors which affect the liquid workforce in different organizations.
- ↳ To study the effectiveness of the factors which affect the liquid workforce.

## Hypotheses Development

From the literature, the following hypotheses have been developed :

- ↳ **H1** : Organizations seeking creativity has a positive and significant impact on the liquid workforce.
- ↳ **H2** : Virtual organizations have a positive and significant impact on the liquid workforce.
- ↳ **H3** : Flexi - time has a positive and significant impact on the liquid workforce.
- ↳ **H4** : Multi-skilled workers have a positive and significant impact on the liquid workforce.

## Hypothesized Model Development

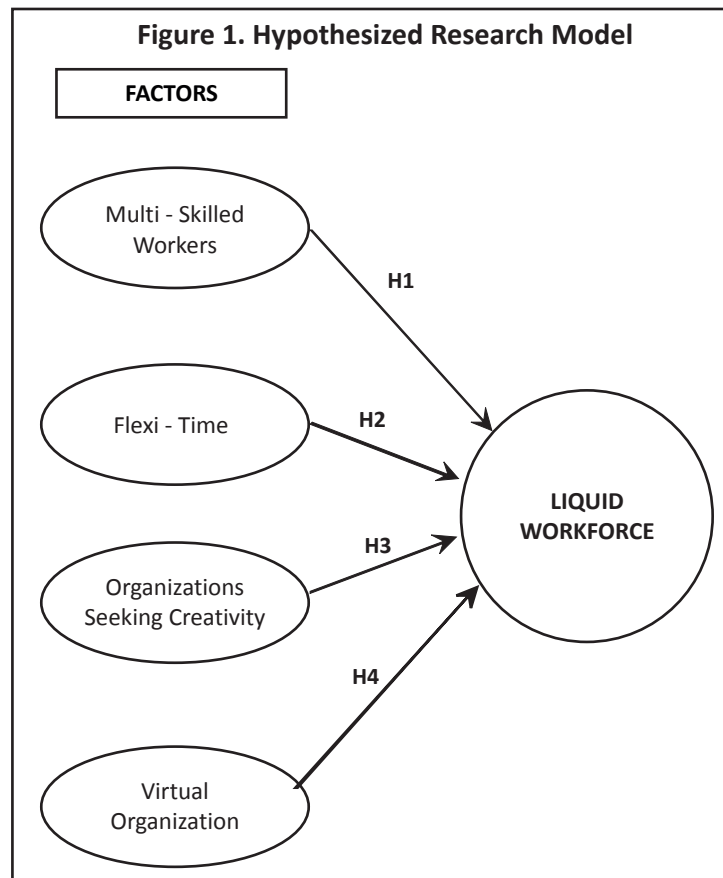
*"Creativity is the way I share my soul with the world"* - Brene Brown

Creativity of mind is a natural instinct which we human beings are primordially endowed with as an essential condition of human creation (Bergson, 1911). The thriving of creative potential, however, depends on the environment to which we are exposed (Kumar & Raghavendran, 2015). Modern organizations, especially the organizations in the era of digital revolution, not only understand the sheer importance of this very fact, but at the same time, try out ways to adapt the various conditions consensual with tapping the opportunities of advancement, and also to combat the competitive edges (Brynjolfsson, Hitt, & Kim, 2011).

In both the academic and critical quarters, it is accorded that possibly, human resource is the most complex resource as it is the only resource which works with flesh and blood (Kam, Morin, Meyer, & Topolnytsky, 2013). Human resources are also different from the other organizational resources as they have the capacity to think, decide, and act (Awasthi, 2018). Human beings also have the capacity of rationale, and they have the inherent need to get the positive impetus to act symbiotically for mutual development along with the organization (Lengnick - Hall, 1986).

A recent Forbes article by Adam Hartung suggested the consequence of multiplicity or diversity, and the role of HR in creating an intensive effort to recruit outside the company to gain a novel and innovative perspective of the usual order of business. Innovation and creative ideas are of course, not discontinued affairs for sustenance of the organization. Rather, innovations should be a perpetual affair where an organization should always aim to do such things which have not been tried out hitherto (Itigi, 2015).

'Liquid workforce' or engaging liquid workforce is a very important concept for the modern day organizations (Gupta, 2017). More than the requirement of a modernized and restructured technology, companies need to harness technology to enable the right people to do the right thing in a compliant, ready for change, and receptive liquid workforce. Technology is indeed the driver of organizational changes, but the people or the human resources are indeed the vehicles, and thus, transformation in the organization should start with people first (Betchoo, 2016).



Engaging liquid workforce is nonetheless, a non convoluted course of action which can be implemented effortlessly in organizations. Being a relatively novel concept, it requires to thaw the existing HR policies and to bring forth the 'people first' approach before witnessing the digital revolution. The consumers of today are also liquid consumers whose expectations can only be met by a liquid workforce (Accenture, 2016). Organizations are responding to the changing need of liquid customers by instilling actionable changes through human centered design, and bringing about various changes in the strategic HR policies. The Figure 1 depicts the proposed hypothesized structural model for factors affecting the liquid workforce in various organizations in Kolkata.

## Research Methodology

A research design provides the framework to be used as a guide in collecting and analyzing data. For this study, we used descriptive research and the type of research design was cross-sectional. Cross-sectional design is a one-shot research study at a given point of time, and consists of a sample (cross-section) of the population of interest. Primary data were collected for this particular study through a pre-tested questionnaire, which was simple, easy to understand, and consisted of close-ended questions. The questionnaire was distributed among the various employees of IT, ITES, and telecommunication companies in Kolkata. We assured the respondents that their responses would be kept confidential. We used two staged data collection method, which contains the pre-tested method with 40 respondents, then the full-fledged testing with 200 samples were used to conduct the study ; 40 respondents were selected to conduct the pilot study, and 34 respondents provided a positive outcome. Here, 34 out of 40 had 85% of  $p$ -value & 15% of  $(1-p)$  value.

We used the following statistical formula for calculating the sample size when the size of the population is infinite (Kothari, 2003) :

$$n = (Z_{c.l}^2 * p * q) / E^2$$

where,

$n$  = number of items in sample,

$Z_{c.l}^2$  = square of the confidence level in standard error units (here,  $Z$  value for 90% confidence interval = 1.645),

$p$  = estimated proportion of success = 85%,

$q$  =  $1 - p$ , or estimated proportion of failures = 15%,

$E^2$  = square of the maximum allowance for error between the true proportion and the sample proportion.

$$\begin{aligned} n &= (1.96)^2 (.85) (.15) / (.05)^2 \\ &= 195.92 \\ &= 196 \end{aligned}$$

On the basis of this calculation, we rounded off the sample size to 200, and collected the sample across various companies of Kolkata. The sampling method used was convenience sampling and the respondents were various professionals who were working in different companies in Kolkata, which is also the capital of West Bengal ; 225 questionnaires were distributed to various professionals working in different IT, ITES, and telecommunication companies in Kolkata, and 200 completely filled responses came back to us. After discarding 25 questionnaires, 200 valid and reliable responses were selected with 88.88% response rate. The study was conducted from September 5, 2017 to February 18, 2018.

## Data Analysis and Results

The responses were collected from 36 firms and 200 respondents participated in the study. The Table 1 shows that

**Table 1. Demographic Details of the Respondents**

Profile	Classification	Total Number of Respondents	%
<b>Gender</b>	Male	156	78
	Female	44	22
<b>Type of Companies</b>	IT	81	40.5
	ITES	63	31.5
	Telecom	56	28
<b>Age</b>	Less than 30 years	76	38
	30-39 years	55	27.5
	40-49 years	38	19
	50-59 years	31	15.5
<b>Work Experience</b>	0 - 3 years	68	34
	4 - 7 years	50	25
	8 - 11 years	33	16.5
	12 - 15 years	29	14.5
	More than 15 years	20	10



78% of the respondents were male ; whereas, 22% were female. Amongst the 200 respondents, 40.5% were working in IT companies, 31.5% were working in ITES, and 28% were working in telecommunication companies. In the age category, 38% of the respondents were in less than 30 years of age category, 27.5% were in the 30 - 39 years age category, 19% were in the 40 - 49 years age category, and 15.5 % were in the 50 - 59 years age category.

Secondary data were collected from various magazines, research articles, and reports. We also used a 5 point Likert scale which ranged from *strongly agree* to *strongly disagree* to collect the responses from various respondents. The analysis was done with SPSS software and multiple regression method had been used.

The reliability analysis with the help of Cronbach's alpha measurements was conducted with the independent variables and dependent variables. Cronbach's alpha is one of the most popular measures of reliability testing (Hogan, Benjamin, & Brezinski, 2000 ; Iacobucci, 2001 ; Peterson, 1994). If the value of Cronbach's alpha is more than 0.7, then the measure is reliable (Hair, Black, Babin, & Anderson, 2014 ; Nunnally, 1978). This is the most widely accepted technique for finding out the internal consistency of the data. The Cronbach's alpha result of 0.826 (Table 2) was acceptable and accordingly, we conducted further analysis.

In this research, face validity has been ensured since it was determined by our judgment. Content validity was determined by taking opinion of other experts in the concerned field. The construct validity contains convergent and discriminant validity. Here, between the various variables of the factors, there is a strong correlation and most of the correlation coefficients values are in higher ranges. So, here, it is proven that convergent validity exists. Though there are high correlation coefficients between the variables of a particular factor, weak correlations also exist between one factor's variable and another factor's variable. Here, it also proved that discriminant validity exists.

The four factors which have been identified from the literature are : organizations seeking creativity, virtual organizations, flexi-time, and multi-skilled workers. The liquid workforce has been used as a dependent variable and the remaining four factors have been used as independent variables. Multiple regression has been used to find the factor that influences the liquid workforce the most.

**Table 2. Reliability Statistics**

Cronbach's Alpha	N of items
0.826	5

**Table 3. Summary of the Model (Regression)**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.811 <sup>a</sup>	.658	.654	2.191	.658	252.731	4	195	.000	2.008

a. Predictors: (Constant), Organizations seeking creativity, Virtual organizations, Flexi-time, Multi-skilled workers

b. Dependent variable: Liquid workforce

**Table 4. ANOVA Table for Regression**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3246.196	4	811.549	252.731	.000 <sup>b</sup>
	Residual	1838.444	195	9.427		
	Total	5084.640	199			

a. Dependent Variable: Liquid Workforce

b. Predictors: (Constant), Organizations seeking creativity, Virtual organizations, Flexi-time, Multi-skilled workers

**Table 5. Summary of the Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.520	0.489		15.058	0.000
	Organizations Seeking Creativity	2.116	0.287	0.282	7.384	0.000
	Virtual Organizations	0.926	0.204	0.173	4.534	0.000
	Flexi-time	1.193	0.223	0.205	5.352	0.000
	<b>Multi-skilled Workers</b>	<b>3.137</b>	0.220	0.545	14.238	0.000

a. Dependent Variable: Liquid Workforce

**Table 6. Collinearity Statistics**

Factors	Tolerance	VIF
<b>Organizations Seeking Creativity</b>	0.998	1.007
<b>Virtual Organizations</b>	0.997	1.003
<b>Flexi-Time</b>	0.995	1.005
<b>Multi-Skilled Workers</b>	0.994	1.002

To test the multiple regression, it is inferred from the Table 3 that 0.811 is the correlation coefficient ( $R$ ) for Model 1. It emphasizes the amount of correlation between the independent variables and the dependent variable (liquid workforce). The  $R$  square value is 0.658 or 65.8%, which is quite acceptable for the study. The Durbin-Watson statistic mainly explains that there is no autocorrelation, though the value is quite close to 2.

The ANOVA Table 4 shows that the  $F$  value is 252.731 with degrees of freedom 4 and the significance value is 0.000, which is less than 0.05. It means that it is quite acceptable. Collinearity (Table 6) shows that multicollinearity has been checked through the variance inflation factor (VIF), which needs to be less than 3 for being in the acceptable range. Here, all VIF values are in the acceptable range and it is concluded that the variables are free from multicollinearity.

The study has provided us four factors namely, organizations seeking creativity, virtual organizations, flexi-time, and multi-skilled workers, which act as independent variables or predictors, and liquid workforce is used as the dependent variable.

From the coefficient table (Table 5), we find that multi-skilled workers has the highest unstandardized  $B$  value of 3.137. So, it is the highest influencing factor which affects the liquid workforce. After that, the second highest influencing factor is : Organizations seeking creativity with the  $B$  value of 2.116. The next important factor is : Flexi - time with an unstandardized value of 1.193, and the last one is virtual organizations with  $B$  value of 0.926.

The results of the analysis also explain that all the factors : Organizations seeking creativity, virtual organizations, flexi - time, and multi - skilled workers have a positive and significant impact on the liquid workforce.

So, the multiple regression equation can be expressed as :

$$\text{Liquid Workforce} = 7.520 + (2.116)X_1 + (0.926)X_2 + (1.193)X_3 + (3.137)X_4$$

Organizations seeking creativity =  $X_1$ ,

Virtual organizations =  $X_2$ ,

Flexi-time =  $X_3$ ,

Multi-skilled workers =  $X_4$ .

From the analysis, we observe that the hypotheses H1, H2, H3, and H4 are accepted.

## Discussion

We observe from the survey that four factors mainly influence the liquid workforce, and these are : organizations seeking creativity, virtual organizations, flexi - time, and multi - skilled workers. Out of all the four factors, multi - skilled workers is the most influencing factor, and this factor is important for various reasons. The main reason is that today's modern organizations not only want specialized people, but they also want people who can use their creativity & skills in various management activities to develop the organization from all corners. There are symbiotic benefits of employing such multi skilled and talented workers in the workforce. The first benefit is for the people of the organization, and it is quite well assumed that people are equally important just as the company processes and culture are, and from the employers' side, multi - skilled workers help to perform business activities with a reduced number of employees, and hence, provide significant positive contribution towards cost cutting.

The second most important influencing factor is : Organizations seeking creativity and the reason behind this is that employees are indeed rewarded for new ideas, and they are also encouraged to take risks up to a reasonable extent. Employees get to assume wider responsibilities in different areas of the organization and gain level headed expertise in various operational and tactical areas. In the process, the liquidity of the workforce intensifies like never before.

Flexi-time is the third most influencing factor because flexi-time provides increased opportunity to fit other commitments and activities with work, and enables meaningful usage of free time. As employees can choose their initiation and cessation time for the working day, they can afford more spare time in the week.

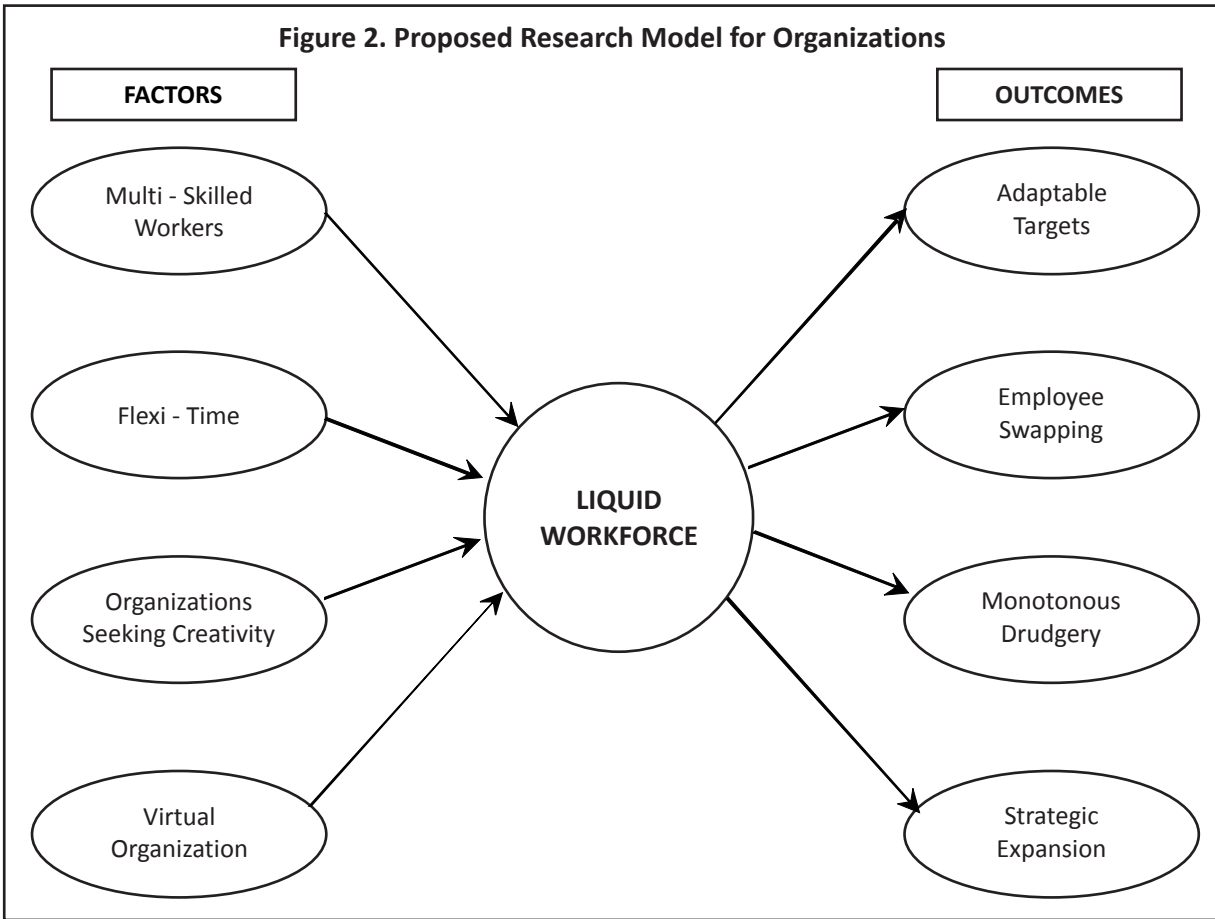
Virtual organizations is the fourth most important influencing factor of the liquid workforce because virtual organizations save time and also eliminate dependence on external experts. Additionally, virtual teams can always be organized whether or not the employees are in close proximity with each other.

The importance of multi - skilled workers, flexi-time, need of brewing creative ideas, and removing physical boundaries of the organizations to combat paucity of resources and time makes the idea of a liquid workforce a much discussed affair. If the companies are implementing the concept of liquid workforce in their organizations, then they can reduce monotony on the job, can do employee swapping, can think of strategic expansion, and can go for adaptable targets.

## Managerial Implications of Deploying Liquid Workforce in Modern Organizations

Liquid workforce is necessarily a very nascent concept in modern day organizations, and many modern organizations, especially in the field of IT, ITES, telecom, and related industries are taking the advantage of the concept of liquid workforce. There is , however, a long way to go ahead to fully utilize the potential of the liquid workforce, which can have an incredible positive contribution for marshaling towards the path of achieving higher efficiency. The factors and outcomes are depicted in the Figure 2.

**(1) Importance of Multi-Skilled Workers in Determining the Efficiency of Liquid Workforce :** One of the most important trending HR policies affecting modern day organizations is of course employment for employees and workers, or in other words, to put growing emphasis on multi - skilled workers at the workplace. The vogue now is "jack of all trades and a master of some". Modern organizations are now not only an array of a specialized workforce; rather, they sit with multi - talented individuals and teams those have creative and critical thoughts, and use their skills in a wide assortment of management activities starting from daily technical tasks to strategic



thinking, and business development tasks. There are symbiotic benefits of employing such multi - skilled and talented workers in the workforce. The first benefit is for the people of the organization, and it is quite well assumed that people are equally important just as the company processes and culture are. The employees who are multi - talented or multi - skilled have a higher sense of self-esteem because of the positive contribution which they make towards the organization.

'Nobody is indispensable' is the main way of evaluating the worth of an employee towards an organization. Furthermore, employees are not defenseless against devalorisation when an innovative technology changes the modes and the processes of production. From the employers' side, multi - skilled workers help them to perform business activities with a reduced number of workers, and hence, provide significant positive contribution towards cost cutting. The employees who are over specialized may have to sit idle occasionally and wait for their next assignment. When such multi - skilled liquid workforce exists, the company can focus on the needs of the customers, and not on the limitations of the workforce, and in the process, the organization can become more creative.

**(2) Importance of Flexi - Time Policy in Determining the Efficiency of Liquid Workforce :** Another contemporary change in the domain of human resource management is employing the concept of flexitime. There are substantiations of heavy work load and little control ensuing in a range of several downbeat consequences for employees and even extending to their family life too. It is ,therefore, quite plausible that there is then a longing to flee away from such traditions, and approve of more flexible organizational systems. In such environments,

employees have better control and can perform better. Flexi - time provides increased opportunity to fit other commitments and activities with work, and enables meaningful usage of their free time. As employees can choose their initiation and cessation times for the working day, they can afford more spare time in the week. It is wrangled that constructing such prospects enhances motivation and lifts up morale. This in turn authorizes lower stress in the work place and greater pleasure by spending more valuable time at home. As a result, employees experience increased performance at the workplace and can be in a better position to market themselves to new employers. This innovative concept of flexitime definitely facilitates the liquidity of creative workforce.

**(3) Importance of Creative Workers and Creative Organizations in Determining the Efficiency of Liquid Workforce :** This creativity of the workforce does not brew in a vacuum nor does it germinate from a mysterious source. Human beings are endowed with the primordial condition of creative bent of mind, which makes them the best creation. It is also not an exaggeration to say that this trait of creativity is possessed by the employees in an organization in different capacities. More than the proportion of endowment, what becomes more decisive for thriving is correct focus in the work environment. What is more regrettable is that most of the organizations don't understand how the creative workforce can act as a better incisive force in the organization's performance, and how the business acumen can be enhanced by the astute usage of creative workforce. According to Mary - Anne Baldwin of Criticaleye's Asia Leadership Retreat, nearly about 90% of the people leave their jobs because they find that the job position is stagnating, and there is minimal scope of exploiting creativity. Few of the important distinctive characteristics which highlight a creative organization are :

- ↳ Balanced human resource planning with improvising.
- ↳ Creativity as a core value and as an organizational discipline.
- ↳ Having faith and believing in employees.
- ↳ Excitement is not squelched; it is used to fuel creativity.
- ↳ Using both linear and non - linear ways of thinking.

Accepting McGregor's "Y" theory of motivation, creative organizations focus on embracing creative thinking in all the functioning divisions of the organization. The employees are indeed rewarded for spurring new ideas, and they are also encouraged to take risks to a reasonable extent. Employees get to assume wider responsibilities in different areas of the organization, and gain level headed expertise in various operational and tactical areas. In the process, the liquidity of the workforce intensifies like never before.

The splotch of such creative employees is wisely brought into play when the modern organizations in the era of digital revolution try to trounce the impact of various limitations, which are imperative impeters of their daily performance schedules. Though the idea sounds quite fascinating, the originators are too reluctant in experimenting to bring about a complete change in their existing organizational structure. As human resource planning activity is intertwined with the organization structure design, the creative influx of ideas is sometimes set aside because of such constraints. One way to overcome this is to make a boundary less organization, or in other words, a virtual organization.

**(4) Importance of the Virtual Organization Model and How it Determines the Efficiency of Liquid Workforce :** Virtual organizations of course have some distinctive advantages, which subjugate the limitations of the various resource constraints, mainly human resources and time. Virtual organizations save time and also eliminate dependence on external experts. Additionally, virtual teams can always be organized whether or not the employees are in close proximity with each other. Self motivated, creative, and vigorous workforce also allows members to move from one project to another, which further reinforces their quality of getting suited to various

functional areas of organizations. The liquidity of the workforce in virtual organizations also helps them to strike a balance between their personal and professional lives.

## Conclusion

The study reveals that 'multi - skilled workers' is the most influencing factor out of the four factors, which we had chosen in framing the model. The liquid workforce deployed by the business houses can bring unprecedented changes in terms of products, processes, services, and as well as the management, which strategically fits the global market, which is transforming to digital. It will create enthusiasm among workers, keep them dedicated to work, and contribute to success in the achievement of organizational goals. It also enables strategy makers to voluntarily respond and adapt to the changing environment. It can be said that in contrast with the permanent staff, flexible workforce breeds unique and explicit advantages. The liveness of the workforce enables it to respond promptly, and it is in a much more geared up position to counter the vicissitudes of a changing and turbulent environment. Liquid workforce is also one of the success mantras to access the expertise which is not readily available with in-house permanent employees. Employers have off late realized that quality outcomes are actually at risk when full-time employees are highly taxed at their respective jobs to the point of burnout. For companies that proactively accumulate and institutionalize total talent management plans, a comprehensive flexible liquid workforce can help position their businesses for perpetual victory in corporate warfare.

## Limitations of the Study and Scope for Further Research

The sample size of 200 is small and data were collected from only a few organizations. The study was conducted only in Kolkata. The term - 'liquid workforce' is quite new and respondents had some hesitation at the time of answering questions.

Creating an efficient and effective workforce has been the top priority of HR functions for decades (Sibidé & Campbell, 2015). Organizations in contemporary times are mandating digitalization in all fields of operation, and are extremely global and competition oriented. The cutting edge of competitiveness of organizations is contingent on the number and quality of liquid workforce. This study identified various factors affecting the liquid workforce in different organizations. However, further studies can be conducted in the future to explore the contribution of liquid workforce to measure team contribution and project effectiveness. Further research can be carried out in this sphere to discuss about the design work involving liquid workforce around projects with embedded training.

## References

- Accenture. (2016). *People first : The primacy of people in a digital age*. Retrieved from <https://www.accenture.com/in-en/insight-trends-insurance-technology-vision-2016-infographic>
- Awasthi, S. (2018). Study on the role of HRM in creativity and innovation with special reference to Indian organizations: A case study. *Journal of Business Management and Social Science Research*, 7 (2), 18-25.
- Azuara, V., & Alejandro, M. S. (2015). *A human resource perspective on the development of workforce agility*. California: Pepperdine University. ProQuest LLC.

- Bergson, H. (1911). The evolution of life - mechanism and teleology. In *Creative evolution* (pp. 1-97) (A. Mitchell, Trans.). New York : Henry Holt and Company.
- Betchoo, N. K. (2016). An insight into the practice of e-government a road map for contemporary public administration. *International Journal of Trend in Research and Development*, 3 (2), 526 - 530.
- Brynjolfsson, E., Hitt, L. M., & Kim, H. H. (2011). *Strength in numbers: How does data driven decision making affect firm performance ?* Global Social Service Workforce Alliance. Retrieved from <http://www.socialserviceworkforce.org/resources/strength-numbers-how-does-data-driven-decision-making-affect-firm-performance>
- Daly, K. A. (1997). *Managing the contingent work force : Lessons for success*. Industrial Relations Centre. Kingston, Ontario, Canada : Queen's University. Retrieved from <http://cxcglobal.asia/wp-content/uploads/2015/06/Queen%E2%80%99s-University-Managing-the-Contingent-Work-Force-Lessons-for-Success.pdf>
- Dyne, L. V., & Soon A. (1998). Organizational citizenship behavior of contingent workers in Singapore. *The Academy of Management Journal*, 41 (6), 692 - 703. doi: 10.2307/256965
- Gupta, M. (2017). Engaging employees at work: Insights from India. *Advances in Developing Human Resources*, 20(1), 3 - 10. doi: <https://doi.org/10.1177/1523422317741690>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7th edition). New Jersey : Pearson.
- Hogan, T. P., Benjamin, A., & Brezinski, K. L. (2000). Reliability methods: A note on the frequency of use of various types. *Educational and Psychological Measurement*, 60, 523 - 531. doi: <https://doi.org/10.1177/00131640021970691>
- Iacobucci, D. (Ed.). (2001). Methodological and statistical concerns of the experimental behavioral researcher [Special issue]. *Journal of Consumer Psychology*, 10(1-2), 1-121. doi: [http://dx.doi.org/10.1207/S15327663JCP1001&2\\_01](http://dx.doi.org/10.1207/S15327663JCP1001&2_01)
- Itegi, F. M. (2015). Improving organization performance: Project management approach sustainable in the field of globalization. *Journal of Entrepreneurship and Organization Management*, 4(3), 1 - 6. doi: 10.4172/2169-026X.1000155
- James, F., & Sudha, S. (2017). Moderating effect of work place support on the social life of night shift employees. *Prabandhan: Indian Journal of Management*, 10 (6), 49 - 56. doi: 10.17010/pijom/2017/v10i6/115375
- Kam, C., Morin, A. J. S., Meyer, J. P., & Topolnytsky, L. (2013). Are commitment profiles stable and predictable? A latent transition analysis. *Journal of Management*, 42 (6), 1462 - 1490. doi: <https://doi.org/10.1177/0149206313503010>
- Kothari, C. R. (2003). *Research methodology: Methods and techniques* (2nd ed.). Delhi : New Age International.
- Kumar, H., & Raghavendran, S. (2015). Gamification, the finer art: Fostering creativity and employee engagement. *Journal of Business Strategy*, 36 (6), 3 - 12. doi: <https://doi.org/10.1108/JBS-10-2014-0119>
- Lengnick - Hall, C. A. (1986). Technology advances in batch production and improved competitive position. *Journal of Management*, 12 (1), 75 - 90. doi: <https://doi.org/10.1177/014920638601200107>

- MacKenzie, R. (2008). *Why would contingent workers join a trade union? Union responses to restructuring and the organization of contingent workers in the Irish telecommunications sector* (Working Paper No. 2). Centre for Employment Relations Innovation and Change. UK: Leeds University Business School. Retrieved from [https://business.leeds.ac.uk/fileadmin/public/Research/Research\\_Centres/CERIC/Publications/WP2\\_MacKenzie.pdf](https://business.leeds.ac.uk/fileadmin/public/Research/Research_Centres/CERIC/Publications/WP2_MacKenzie.pdf)
- Mittal, K., Singh, K., & Sharma, G. (2017). Work - life balance and employee health: A cross-sectional analysis of manufacturing and service sectors. *Prabandhan: Indian Journal of Management*, 10 (7), 34 - 49. doi: 10.17010/pijom/2017/v10i7/116493
- Nunnally, J. C. (1978). *Psychometric theory*. NY : McGraw – Hill.
- Osborne Clarke. (2017). *The future of work - Contingent workers and new employment models*. Retrieved from <https://www.osborneclarke.com/wp-content/uploads/2017/11/OC-The-Future-of-Work-Contingent-workers-8pp-A4-36099747-SOFT.pdf>.
- Pandita, D., & Bedarkar, M. (2015). Factors affecting employee performance: A conceptual study on the drivers of employee engagement. *Prabandhan: Indian Journal of Management*, 8 (7), 29 - 40. doi: 10.17010/pijom/2015/v8i7/72347
- Pedulla, D. S. (2011). *The hidden costs of contingency: Employers' use of contingent workers and standard employees' outcomes* (Working Paper 6). Retrieved from <https://csso.princeton.edu/file/236/download?token=vSmBdKQw>
- Peterson, R. A. (1994). A meta-analysis of Cronbach's coefficient alpha. *Journal of Consumer Research*, 21 (2), 381 - 391. DOI: <https://doi.org/10.1086/209405>
- Sidibe, M., & Campbell, J. (2015). Reversing a global health workforce crisis. *Bulletin of the World Health Organization*, 93(1), DOI : 3. <http://dx.doi.org/10.2471/BLT.14.151209>
- Zimmerman, T., Gavrilova - Aguilar, M., & Cullum, P. (2013). Rethinking human resource strategies: A shift in the treatment of contingent workers. *International Journal of Business and Management*, 8 (7), 28 - 34. doi: doi:10.5539/ijbm.v8n7p28



## About the Authors

Debarun Chakraborty has done B.E. (Chemical), MBA (Marketing), and has qualified for UGC - NET in Management. He completed Ph.D. in Management (Field-Marketing). He has rich cross functional exposure across various organizations in India for more than 10 years, with 8 years in academics and 2 years in industry.

Adrinil Santra has 10 years of teaching experience and has served in various premier institutes and universities of India. He started his career at TexCorp Pvt. Ltd. and subsequently served various other companies like Windflower Hall and Sify.com. He started his teaching career at Christ College, Bangalore, and is currently serving Haldia Institute of Technology.

Soumya Kanti Dhara is working as an Assistant Professor at Haldia Institute of Technology. His areas of academic interest include information technology management, production and operations management, database management systems, etc. He completed his MBA in Systems Management from the West Bengal University of Technology.