Management Dynamics

Volume 16 | Number 2 Article 4

December 2016

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Recommended Citation

Uddin, Md. Aftab; Fan, Luo; and Das, Anupam Kumar (2016) "A Study of the Impact of Transformational Leadership, Organizational Learning, and Knowledge Management on Organizational Innovation," *Management Dynamics*: Vol. 16: No. 2, Article 4.
DOI: https://doi.org/10.57198/2583-4932.1068
Available at: https://managementdynamics.researchcommons.org/journal/vol16/iss2/4

A STUDY OF THE IMPACT OF TRANSFORMATIONAL LEADERSHIP, ORGANIZATIONAL LEARNING, AND KNOWLEDGE MANAGEMENT ON ORGANIZATIONAL INNOVATION

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ABSTRACT

Purpose: This study aims at finding the potential impact on organizational innovations and corporate performance through the influence of transformational leadership on knowledge management and organizational learning.

Methodology: Stratified random sampling was used to collect 273 usable responses from 500 respondents for using Structural Equation Modeling (SEM). The deductive approach was adopted under positivism philosophy.

Findings: The Result shows that transformational leadership, organizational learning, and knowledge management significantly predict corporate innovation and those, in effect, foster organizational performance through organizational innovation.

Implication: One of the implications of this study is the role of transformational leadership is worth evident through empirical findings to transform knowledge management and organizational learning into organizational innovation.

Limitation: The size of the sample prevents the result to generalize the results in the home and abroad, and on the contrary, random sampling could have improved universal acceptance of the result which was not used in this study.

Keywords: *Innovation, organizational performance, knowledge management, organizational learning, transformational leadership*

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Future Research: Future studies of the intervening effect of culture and size of the organizations also affect the intensity and frequency of innovation in a country.

Originality/Value: The study contributes to the extant literature on innovation in developing countries and particularly to the literature of Bangladesh since no study relating to it was witnessed.

INTRODUCTION

Organizations are facing volatile environments compounded with keen competition, faster technological change, diverse workforce, explicit and tacit knowledge arrival, and globalization. The secret of successful organizations is to have unique resources which are rare, unique, inimitable, and valuable. These resources are unique technology, better work procedures, skilled human resource, better equipment, venture capital, etc. (Wernerfelt, 1984). To expedite continuous improvement and to the corporate bottom-line, organizations need to foster those antecedents which are already inbuilt into it (Noruzy, Dalfard, Azhdari, Nazari-Shirkouhi, & Rezazadeh, 2013). Organizational learning (OL) seems to be an excellent source of more significant competitive advantage in this knowledge economy. Knowledge management (KM) is a precursor to the organizational learning to be adopted for improving sustainable performance. OL and KM both foster an organization to be innovative and profitable in the long run (Liao, Chang, Hu, & Yueh, 2012; Liao & Wu, 2009). A company's excellence is linked with the utilization of its knowledge resources, i.e. the knowledge of the organization and its employees. KM, an essential element of OL, is a life blood of an organization that contributes to the Organizational innovation (OI). OI is a premium benefit to outweigh its counterpart. Innovation is the successful implementation of noble and useful creative ideas (Amabile, 1996). KM is a pre-requisite for creating, sharing, and storing creative ideas, and on the other hand, effective leadership plays a significant role to have a supportive climate for exposing knowledge and OL into OI.

Supervisor supports, appropriate treatments from the organization, and supportive organizational climate, preconditions to the perceived organizational supports (POSs), create superior moral obligations to a corporate performance by employees. Social exchange theory, proposed by Blau (1964), and the norms of reciprocity advocated by Gouldner (1960) forwards these same tenets that employees feel morally obliged to retreat more when employees perceive that their leaders treat their contributions well. Their perception of the value their superiors give to their effort leads them to conduct more unusual roles/activities, such as sharing knowledge, executing citizenship behavior, which is beneficial to the organizations even though those were not in their tasks part given to them by their organizations. Therefore, the firm needs supportive Transformational leadership (TL) and a moderate climate for delving to the knowledge sharing (KS) for fostering innovative performance leading to the innovative organization in the long run. TL is presumed to be a more active form of leaderships to transcend employees drive into the innovative and long-term successful initiatives. Empirical studies mirrored that TL significantly predict OI (Chang, 2016; Tajasom, Hung, Nikbin, & Hyun, 2015) and KM (Birasnav, 2014; Bryant, 2003; Han, Seo, Yoon, & Yoon, 2016) because, in one hand TL ensures an environment for individual initiative and seeing a big dream, on the contrary, it helps employees to create, transfer, and utilize of knowledge among stakeholders. Literature exhibited that leadership plays a significant role transforming OL and KM into OI and also revitalize the organizational performance (OP) (Noruzy et al., 2013).

Although substantial importance on innovation and creativity studies have been witnessed around the world, a study on it in Bangladesh is not yet noticed. It is undoubtedly true that innovation is the key to realizing competitiveness and sustainable competitive advantage (Aaker, 2007). Being a lower

middle-income country, Bangladesh requires paying attention for unearthing the antecedents of organizational innovation. Ironically, the competitive rank of Bangladesh according to global competitiveness and global innovation indices is marked away from the global emergent and even ranked 2nd from the last in the South Asian regions (WEF, 2016; WIPO, 2016). Literature review lens on the conclusion that there are very few noticeable studies, such as, Soheli (2016) conducted on innovative capabilities and painted a preview on innovative capabilities in technology sector and, on the other hand, Tahrima and Jaegal (2012) and Tahrima and Jaegal (2013) in their first research showed how innovation is failed in government sector and their second paper described the applicability of knowledge based system. All the three papers ignored the antecedents of innovation and creativity in organizations. Therefore, these authors shed light on how the influence of transformational leadership contribute to the organizational learning and knowledge management for upbringing innovation and accelerating organizational performance.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Transformational leadership and its significance

TL creates positive change among followers. It is defined as the charismatic ability of the leader which molds the supporters' dedication and motivation and aligns them with the mission and vision of the team and the organization (Bass, 1991). TL contributes to the development of a learning organization. Besides, TL also influences a team performance which is involved in knowledge creation, sharing, and implementation. Bass and Riggio (2006) reported that TL enhances creative effort in an organization and also contributes to the innovative goal. This TL is supportive to unconventional and out of the box things and work-process that fosters innovation and improve organizational performance. Empirical studies exhibited the effect of TL on OL (Abbasi & Zamani-Miandashti, 2013), KM (Birasnav, 2014; Bryant, 2003; Han et al., 2016), OI (Chang, 2016; Tajasom et al., 2015), and OP (Noruzy et al., 2013). The hypotheses of these relationships are:

H1: Transformational leadership positively influences organizational learning

H2: Transformational leadership positively impacts knowledge management

H3: Transformational leadership positively affects organizational innovation

H4: Transformational leadership positively affects organizational performance

Organizational learning and its effects

Kane and Alavi (2007, p. 796) said that 'OL as the ever-changing process of creating new knowledge and transferring it to where it is needed and used, resulting in the creation of new knowledge for later transfer and use (p. 796).' OL is also concerned with KM, and the difference lies with a way of treating knowledge. Unlike OL, KM is a static process of storing, creating, and transferring knowledge to the organization. There is considerable debate on their relationship of who is the cause is and who is the effect (Noruzy et al., 2013; Shieh, 2011). The relative competitive position of an organization depends on how far innovative the organization is (Montes, Moreno, & Morales, 2005). Noruzy et al. (2013) reported that OL significantly affects OI and OP. The hypotheses of these relationships are:

H5: Organizational learning positively influences knowledge management

H6: Organizational learning positively impacts organizational innovation

H7: Organizational learning positively impacts organizational performance

Knowledge management and its influence

Knowledge and human capital act like antecedents to the organizational innovation and performance (Sánchez, Marín, & Morales, 2015). In this information and knowledge economy, KM is essential to keep the organization updated and stay out of competitors' reach. According to Nassuora (2011, p. 31), knowledge management (KM) is all managerial activities which help employee create new knowledge and share this knowledge with another employee for improving organizational and individual performance in an organization. Darroch (2005) found that a firm that can manage KM better is likely to be innovative and perform better. A plethora of research concluded that KM contributes to innovation effort and thus help ameliorate organizational performance (Darroch, 2005; Noruzy et al., 2013). The following hypotheses have been developed considering the above literature?

H8: Knowledge management positively influences organizational innovation

H9: Knowledge management positively affects organizational performance

Organizational innovation and organizational performance

Organizational innovation is the implementation of a new way to recruit personnel, allocate resources and structure tasks, authority and rewards. It comprises innovations in organizational structure and the management of people (Damanpour, 1987, p. 677). Continuously improving performance is the ultimate goal of an organization and the word 'continuous' senses nothing if there is no innovative effort. OI helps an organization to improve its performance. Empirical studies conducted by Huang, Wu, Lu, and Lin (2016) examined the impact of innovation of outcomes of the organization and found that OI affects OP significantly. Thus the following hypothesis is proposed for this study:

H10: Organizational innovation positively influences organizational performance

A conceptual model (figure 1) has been developed to exhibit relationships among TL, OL, KM, OI, and OP as follows which shows how those antecedents of OP and OI are connected with each other:

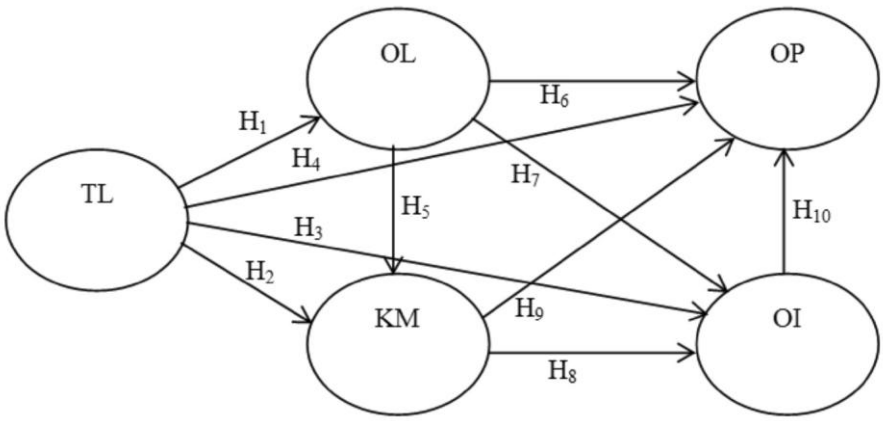

Figure 1: Hypothetical model of OI

RESEARCH METHODS

Research setting

Considering the present state of research about innovation and creativity at the workplace in Bangladesh, an emerging lower-middle income country in South Asia, researchers opted to go for exploratory study. Data were collected were collected from all levels of management from multiple organizations located around Chittagong Export Processing Zone (CEPZ) to deeper understand the relationship among TL, OI, and OP. Organizations around CEPZ were selected not only because those organizations is connected to export-oriented but also because they are fast growing and subjected to change due to the turbulent global business environment. Cross-sectional data representing leaders along with their subordinates from various departments of CEPZ were used in this study. The deductive approach was adopted under positivism philosophy since researchers formulated hypotheses basing of literature review and tested them by conducting questionnaire survey (Saunders, Lewis, & Thornhill, 2009; Zikmund & Babin, 2007).

Sampling Design

Purposive sampling techniques for selecting the research zone since Chittagong division are convenient for researchers to collect the required data. A physical visit to the facilities, email sending, and phone calls were used while administering the questionnaire. Using stratified random sampling, 300 cross-sectional responses were received from 500 questionnaires. Those questionnaires were previously sent to different organizations, such as ready-made garments, financial institutions, IT firms, and others. In screening tests, 15 responses were dropped due to the problems of missing value and outliers' effect(Mostafa, 2013).

Common method bias

Research in social science and management science on sensitive issues or topics is prone to the threat of social desirability bias or common method bias (Konrad & Linnehan, 1995). It causes a substantial effect on observed variables because variables being measured used informants' responses from the same source or the method (Mostafa, 2013; Podsakoff, MacKenzie, & Podsakoff, 2012). As a matter of fact, while screening the data via Excel 2016, another 12 informants were reported to contain common method bias fact in their response which might prevent to generate an accurate result, and thus took them out from these replies used for final data analysis. In line with the approaches of Scott and Bruce (1994), Konrad and Linnehan (1995), and Simonin (1997), Harman's one-factor test on the questionnaire measurement items was executed. Principal component analysis (PCA) reveals five (5) factors with an Eigenvalue more than one (1) that account for 66 per cent of the variance and not a single factor accounts for the majority (more than 50 per cent) of the variance (first factor scores only 37 per cent). To address the problem of social desirability problem, authors in this study guaranteed to informants that the survey will be designed and implemented ensuring their anonymity (Simonin, 1997). Accordingly, it is inferred that common method bias has been neutralized to a large extent.

Informants' Profile

Table I shows that 83 per cent male and 17 per cent female participated in this survey. Respondents were serving different organizations at different levels, i.e., top level (6 per cent), mid-level (68 per

cent), and lower level (26 per cent). They have been serving their organizations for more than one year (25 per cent), five years (51 per cent), fifteen years (20 per cent), and twenty years (4 per cent). The survey shows that respondents were representing readymade garments (35 per cent), finance (24 per cent), telecommunication (20 per cent), and others organizations (21 per cent). Education profile shows that they completed bachelor, master, and others by 14 per cent, 77 per cent, and 9 per cent respectively. Researchers adopted five (5) different instruments and used a 5-point Likert scale to administer the survey.

Table I: Demographic Profile of the Respondents (n=273)

Aspects	Frequency	%	Aspects	Frequency	%
Age			**Organization**		
Above 18	8	3	RMG	66	24
Above 25	139	51	Finance	96	35
Above 35	104	38	ICT	54	20
Above 45	22	8	Others	77	21
Education			**Position**		
Bachelor	38	14	Lower-level	71	26
Master	210	77	Mid-level	186	68
Others	25	9	Top-level	16	6
Experience			**Gender**		
Above 1 Years	68	25	Male	227	83
Above 5 Years	140	51	Female	46	17
Above 10 Years	54	20			
Above 15 Years	11	4			

Measurement items and analysis technologies

Five (5) survey instruments for measuring the results were adopted by authors of other countries. These five tools are Transformational leadership (Podsakoff, MacKenzie, & Bommer, 1996), organizational learning (García Morales, Lloréns Montes, & Verdú Jover, 2008), knowledge management measured by (Gold, Malhotra, & Segars, 2001), organizational innovation (Miller & Friesen, 1983), and organizational performance (Cho, Ozment, & Sink, 2008). The items were being arranged on a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). Statistical research technologies, such as Microsoft Excel 2016, IBMSPSS21 and SmartPLS2 (Hair Jr., Hult, Ringle, & Sarstedt, 2014) software packages, were used for generating the results.

FINDINGS AND DISCUSSION

Model evaluation

Structural equation model (SEM) is used in this study to analyze the data because it is the most accepted and widely used for regression analysis. Furthermore, it integrates both measurement model and structural model evaluations for accurately calculating the results to explain the observed variables. In this regard, factor analysis using PCA method and path analysis using SmartPLS2 are administered.

Measurement model evaluation

Table II reports the convergent validity, and it shows that the factor loadings (all > 0.50), average variance extracted (AVE> 0.50) and composite reliability (>0.919) are within the rule of thumb. Discriminant validity (Table III) analysis reports an excellent result which presents that the square root of the average variance extracted (AVE) of each construct is higher than the construct's highest correlation with any other construct in this study. Both validity and reliability analyses suggest that these constructs are valid and reliable for further advance (Hair Jr. et al., 2014). Finally, it is assured that measurement items converge to distinct latent constructs and accurately represents what they were intended to.

Table II: Convergent validity test

	AVE	Composite Reliability	R^2	.	Communality
TL	0.713	0.925	0	0.899	0.713
KM	0.720	0.912	0.608	0.870	0.720
OL	0.679	0.894	0.729	0.843	0.679
OI	0.732	0.891	0.798	0.816	0.732
OP	0.728	0.915	0.807	0.875	0.728

Table III: Correlation matrix for discriminant validity test

	Mean	SD	KM	OI	OL	OP	TL
KM	2.14	0.72	**0.849**				
OI	2.33	0.84	0.821*	**0.855**			
OL	2.18	0.72	0.827*	0.837*	**0.824**		
OP	2.01	0.69	0.831*	0.849*	0.819*	**0.853**	
TL	2.08	0.67	0.780*	0.829*	0.777*	0.828*	**0.844**

**. Significant at p<0.00, SD. Standard Deviation*

Structural model evaluation

Figure 2 shows the path diagram in the structural equation model. It shows standardized coefficient (β), percentage of variance explained (R2), and items' factor loading in their path relationships. Hair Jr. et al. (2014) reported that path coefficients with standardized values above 0.20 up to a sample size of 1000 are usually significant. Analysis (Figure 2) shows that standardized coefficients (βs) of TL KM is 0.35 (t-value=3.47; p<.00), TL OL is 0.78 (t-value=16.97; p<.00), TL OI is 0.36 (t-value=3.78; p<.00), TL OP is 0.27 (t-value=2.41; p<.02), OL KM is 0.56 (t-value=5.91; p<.00), OL OI is 0.35 (tvalue=3.54; p<.00), OL OP is 0.17 (t-value=1.53; p<0.13), KM OI is 0.25 (t-value=2.70; p<.007), KM OP is 0.26 (t-value=2.44; p<.015), OI OP is 0.27 (t-value=2.44; p<.02). Therefore, all path relationships (excepting OL OP) were found significant.

Furthermore, TL, KM, OL, and ON altogether explains 81% (R2) variance in OP, TL, OL, and KM entirely explains 798% (R2) variation in IN, TL, and OL together describes KM by 73.2% (R2) and TL alone explains OL by 60.4% (R2).

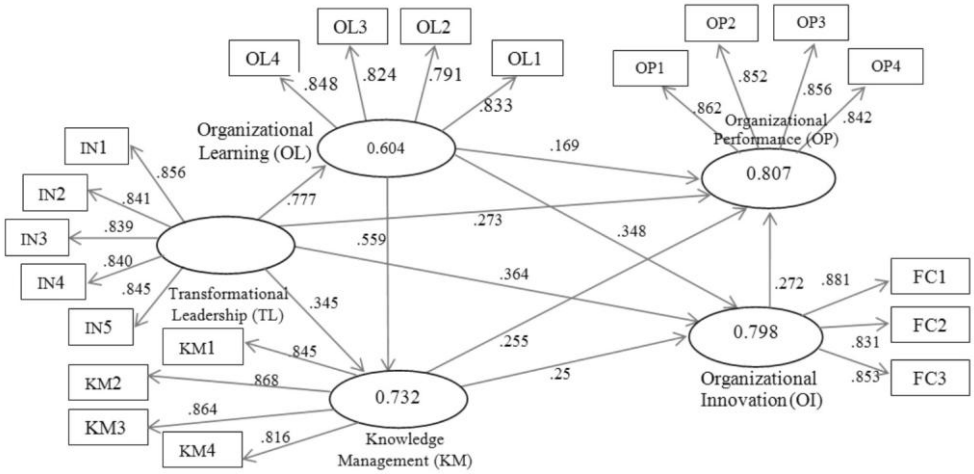

Figure 2: Path structural model

Discussion

The study focuses on the antecedents of organizational innovation and organizational performance in organizations. It, specifically, contrives to unearth the potential impact of KM, OL, and TFL on OI and OP. All hypothesis but H6 have been significantly supported by empirical results which are exhibited in Table (IV). These findings are also found consistent with the previous empirical findings that TL predicts OL (Abbasi & Zamani-Miandashti, 2013; García Morales, Matías Reche, & Hurtado Torres, 2008), KM (Birasnav, 2014; Bryant, 2003; Han et al., 2016), OI (Afsar, F. Badir, & Bin Saeed, 2014; Chang, 2016; Tajasom et al., 2015), and OP (Abbasi & Zamani-Miandashti, 2013; Noruzy et al., 2013) respectively. OL is also found consistent with previous findings that it affects KM (Liao & Wu, 2009; Noruzy et al., 2013; Shieh, 2011), IN (Noruzy et al., 2013) respectively. Interestingly, calculated result rejects hypothesis 6 that there is not a significant effect of OL on OP. Previous studies supported that KM influences OI (Al-Hakim & Hassan, 2016; Noruzy et al., 2013) and OP (Al-Hakim & Hassan, 2016; Darroch, 2005; Noruzy et al., 2013). Finally, OI is found affecting OP like other previous empirical research (Huang et al., 2016; Walker, Chen, & Aravind, 2015). Result advocated that TL impacts OL and KM because TL empowers and encourages the employee to contribute to creating, accumulate, and share knowledge. Sharing and disseminating knowledge among leaders and their subordinates prevent the later from the psychological worry of losing both their face and jobs in their workplace. The psychological safety belief fosters employees' self-efficacy belief per see and, thereby, engages in unconventional activities, such as creative and innovative activities. The result contended that OP is enhanced by the innovative outcome from creative employees' effort.

Table IV: Summary of the tested results in consistence with the previous findings

Hypothesis	Coefficient	T-Statistics	*p*.value	Related empirical findings
H_1=TLàOL	0.78	16.97	0.00*	Abbasi and Zamani -Miandashti (2013) , García-Morales, Matías-Reche, et al. (2008).
H_2=TLàKM	0.35	3.47	0.00*	Birasnav (2014), Bryant (2003), Han et al. (2016).
H_3=TLàOI	0.36	3.78	0.00*	Afsar et al. (2014) , Chang (2016) , Tajasom et al. (2015).
H_4=TLàOP	0.27	2.41	0.02*	Abbasi and Zamani -Miandashti (2013) , Noruzy et al. (2013).
H_5=OLàKM	0.56	5.91	0.00*	Liao and Wu (2009) , Liao and Wu (2009) , Noruzy et al. (2013).
H_6=OLàOP	0.17	1.53	0.13^{ns}	Rejected.
H_7=OLàOI	0.35	3.542.7	0.00*	Noruzy et al. (2013).
H_8=KMàOI	0.25	2.70	0.01*	Al-Hakim and Hassan (2016).
H_9=KMàOP	0.26	2.44	0.02*	Al-Hakim and Hassan (2016) , Noruzy et al. (2013) , Darroch (2005).
H_{10}=OIàOP	0.27	2.44	0.02*	Huang et al. (2016), Walker et al. (2015) .

*Hypothesis accepted; ns. Not significant

CONCLUSION

This study aims at finding the predictor variables of OI and OP in Bangladesh at different organizational units. The result shows that TL, OL, and KM significantly affect OI at different levels. Besides, TL, KM, and IN are also found to be significant predictors of OP. Unlike many other studies, this study shows that OL is not significantly affecting OP which is a new direction for further research. Studies on KM and OL are relatively new; however, this study shows that they affect OI significantly.

Contribution and implication

Apart from the gap in the literature in Bangladesh, there is a huge vacuum to the innovation and creativity fields in the South Asian Nations. It will fill in the literature blank in Bangladesh and so is in the South Asian research arena. The generated result which proves hypothesis strengthens the findings across the world that those antecedents have same degrees of impact on OI and OP like the studies executed other than in Bangladesh. Creativity or innovation, whatsoever it is argued, comes from the employees' entrepreneurial bent of mind. Therefore, it's immensely important to keep them alive, aligned, engaged and enthusiastic for fostering their never giving up mindset towards their innovative journey.

The organization needs to drive employees from creativity mission to continuously innovate the things. Organizational climate and transformational leadership role were increasingly used for instigating KS, creativity, and OI (Amabile, 1988; Ekvall, 1996; Jaiswal & Dhar, 2015; Oldham & Cummings, 1996; Qu, Janssen, & Shi, 2015; Sethibe & Steyn, 2016). It is advised to create such a climate by organizations for practicing TL leadership to enhance KS and OL towards OI and OP. Organizations also need to store and share the KM, and TL is learning to transcend them for the future. Academics should conduct more research on the usefulness of those variables to amalgamate those into real practices.

Limitation and future research

Like other studies, this study contains several methodological limitations which open new avenues for further investigations. Unlike many other studies, this study shows that OL is not significantly affecting OP which is a new direction for future research. The sample size is very limited to generalize entire world phenomena. Future research is suggested to include more studies rather on the particular industry than on a group of industry. Also, moderation effect of control variables and others, such as gender, the age of the informants, organizational size, corporate culture, culture in a given country, affects the OI and OP, and the way they are being supervised. Sampling techniques, i.e., stratified sampling, and the choice of data collection time, such as cross-sectional data were used in this research, however, changing the techniques, such as random sampling, and choice of data collection time, for example, longitudinal data, would give a better result.

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