Strategic Upskilling And Digital Competency Development In The IT Sector: A Catalyst For Organizational Agility And Innovation

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ABSTRACT

The present study examines the benefits of strategic upskilling and digital competency building to build organizational agility and innovation in the Information Technology (IT) sphere. With the blistering of digital transformation, companies find the need to respond to fast-evolving technological environments, and digital skills are kept abreast of a workforce. The study is guided by a quantitative method in which it examines the interdependence between upskilling efforts, digitization skills, and other important organizational results, like agility and innovation. The data was obtained through surveys of 150 IT organizations and their employees, addressing strategic initiatives of upskilling, employee digital skills, and their attitudes to agility and innovation of their organization. The direct and indirect relationships were tested using regression analysis, whereas organizational agility was used as a mediating factor between upskilling and innovation. The results indicated poor correlations between upskilling and organizational performance, which implies that although upskilling cannot be ignored, it is insufficient in achieving agility and innovation. Moreover, the existence of the negative relation between upskilling hours and innovation was described suggesting the presence of the diminishing returns. The findings indicate that the upskilling should be done with the specific goal in mind and that being digitally competent is not enough to facilitate innovation. The study is informative to IT organizations that would like to adopt the application of workforce development to their level of performance and it gives future research guidelines to address the wider influences of organizational agility and innovation.

Keywords: Strategic Upskilling, Digital Competency, Organizational Agility, Innovation

INTRODUCTION

In the Information technology (IT) industry, which takes place in an environment where innovation is continuous and technology is changing very fast, there is a lot of pressure on companies to be agile. The technological change or digital change has become one of the most leading drivers towards organizational prosperity and the IT sector is the first to step closer to the use of newly advanced technologies. In an effort to address the changing requirements, institutions are now paying greater attention to workforce upskilling, i.e., to the planned development of employee skills, especially in such emerging areas of technology as data analytics, artificial intelligence (AI), cloud computing, and machine learning. In this way, companies maintain performance and encourage innovation (Bersin, 2018; Deloitte, 2020). Well thought out upskilling plans allow employees to stay in touch with the changing technologies thus promoting agility and innovation within the organizations (Chien & Chen, 2021).

Upskilling is not an aftereffect to the change in technology but rather a strategy of competitive sustainability. Digital competencies (in particular, the skills related to data analytics, AI, cloud computing, and machine learning) prove to be the key factor that determines business efficiency and, by extension, the level of innovativeness. These competencies allow the firms to discover new solutions, invent new business models, and to streamline activities (Westerman, Calmeejane, Ferraris, & Bonnet, 2011). Investment in the development of digital competence consequently makes an organization more responsive to the market forces and the technological discontinuities (Teece, 2018).

Organizational agility refers to the process of reacting to environmental changes in the market environment, technological advancement, or any economic competition in a relatively short time (Hirschi, 2020). Agility is often associated with the structure, culture and other organisations processes and competence of the workforce. According to empirical evidence, companies that allocate funds in the development of digital competence among employees are more responsive, since they can detect new

opportunities and change procedures and innovate quickly (Kane et al., 2015). Considering the fast rate of technological changes in the IT industry, agility has been commonly adopted as a significant source of competitiveness (Teece, 2018).

Innovation as such is one of the main goals of an enterprise that wants to maintain a leading position on the market. Technological skills and utilization of other emerging technologies are the main innovation contributors in the IT sphere (Kane et al., 2015). Innovation can also be enabled through upskilling programs which focus on developing digital competencies of an employee to enable innovative solutions where an employee is able to utilize new emerging technology, create new business models and maximize work processes of the organization (Westerman et al., 2011). As a result, the study shows that companies that develop effective training and digital-skills plans exceed competitors in the output of innovation (Brynjolfsson & McAfee, 2014).

Even though the role of upskilling in organizational agility and innovation is gaining importance, there is a lack in studies examining the exact connection between strategic upskilling and the two outcomes. The prevailing extant analyses concentrate on the individual level implications, and they include job satisfaction, involvement, and skill attainment (Hirschi, 2020; Saks, 2006). Few ever explore how the enhancement of digital competency in upskilling programs results in widespread organizational implications. This gap is filled in the current study, which investigates how strategic upskilling impacts organizational agility and innovation and how employee engagement could act as a mediator in program success.

Regression analysis is used in examining the association with upskilling strategies, level of digital competency, and the results of the organizations, including agility and innovation in the IT world. The study will find out whether improvement in digital competencies via upskilling interventions lifts organizational agility, and whether increase in agility leads to greater innovation. It will also put into consideration employee engagement as one of the means, through which upskilling programs will work because it is the engaged employees who stand to gain most of the upskilling initiatives and take part in achieving the overall success of the organizations (Bakker & Demerouti, 2008).

The results of this study are going to be of a great value to the IT organizations that want to promote agility and innovation based on upskilling. Using the interrelationship between upskilling, agility and innovation, the paper will contribute to the existing body of literature on human capital development and digital transformation by making practical recommendations to the organisations that desire to maximise the use of their workforce in the more-than-digital context.

LITERATURE REVIEW
IT industry is marked by fast technology and continuous innovation and so is the case in keeping organizations and the organizations abreast of changes so that they remain relevant at all times. The second crucial element that enables a firm to succeed in such a volatile environment, is the ability to constantly reskill the staff. The strategic upskilling often known as the systematic process to improve the capabilities of employees to meet the recent innovations in technology is now defined as the building block of any organization (Bersin, 2018). The present literature review examines the connection between the strategic upskilling, the digital competency enhancement, organizational agility, and innovation in the IT sector to determine the contribution of upskilling endeavour to the performance of organizations.

DIGITAL COMPETENCY BUILDING AND STRATEGIC UPSKILLING
The need to strategically upskill practitioners is being defined as a strategy that firms should undertake to deal with the skills gaps brought about by a growing rate of technological transformation. The development of digital transformation has led to the concept of organizations investing in the ongoing growth of the workforce being a necessity hence being emphasized by Bersin, (2018). A focus on upskilling does not merely regard teaching and learning of technical skills but rather establishing a culture of life-long learning and elasticity. Digital competencies entail a wide scope of skills in the field such as, data analytics, cloud computing, machine learning as well as cybersecurity, which are widely essential in

ensuring businesses stay afloat in the IT space (Deloitte, 2020; Westerman, Calmejane, Ferraris, & Bonnet, 2011). Additionally, enhanced digital competency helps the companies to future-proof their employees by providing them with the skills that they need to be able to definitively adapt to the new advanced technologies (Chien & Chen, 2021). A study by Bersin (2018) noted that the organizations that invested in digital competency development witnessed increased workforce engagement, increased personnel retention and a more skilful workforce that was able to increase innovation. Training programs to build digital competencies can therefore be viewed as one of the ways in which the effects of technologies disruptions in the organization can be mitigated and employees can be prepared in order to apply new solutions within the business.

ORGANIZATIONAL AGILITY

Organizational agility can be described as the response capability by an organization to changes occurring within the market and in the competitive environment. The importance of agility in IT organizations is that they can adapt rapidly to the new market expectations, technological shocks, and market competition (Teece, 2018). The possession of a competent workforce is one of the factors that determines the presence of organizational agility according to a number of studies. As an example, Chien and Chen (2021) revealed that upskilling programs allow adapting employees to the level where organizations can change their focus swiftly. The employees also learn to be more creative with the available solutions since upskilling helps them find solutions to problems based on creativity something that translates to the flexibility of the organization (Hamel & Prahalad, 1994). An examination of this body of work conducted by Teece (2018) supports this assumption as organizations comprising of highly skilled and versatile workers are said to be at an advantage to gain competitive advantage in unstable condition. Digitally skilled employees, i.e., those who are proficient in AI or data analytics, better have the ability to re-skill their activities and use new tools and make their organizations change (Bersin, 2018). Additionally, the agile organization is more positioned to create an environment of promoting innovation since their employees have higher rates of experimenting with technology and corporate practices (Teece, 2018). The findings support the fact that upskilling assists in both achievement of agility, as well as innovation

THE CONNECTION BETWEEN AGILITY AND INNOVATION

The importance of innovation as being a major factor in the success of an organization is not in doubt, especially in the context of technology-based industries like IT (Kane et al., 2015). Competency and skills of organizational workforce impact directly on innovation. Experienced workers will have more chances at coming up with new products, enhancing what is already in existence, and embracing new technologies (Westerman et al., 2011). Indeed, a recent study by Brynjolfsson and McAfee (2014) shows that companies employing upskilling programs are in better position to realize more outcomes on innovations, including development of new products and streamlining of processes.

The literature has adequately reported the connection between organizational agility and innovation. Agile organizations, those who can promptly change their strategies and operations, have greater chances to come up with innovation (Hirschi, 2020). According to Teece (2018), innovation is aided by agility because, in this manner, a company can take advantage of new opportunities as soon as they emerge. In addition, agile organizations will be better placed to incorporate new technologies and new ideas into their operations resulting in improved products and better competitive advantage in the market (Kane et al., 2015). Research also shows that innovation is strengthened by the development of digital competencies which enable workers to take advantage of the new technological instruments in order to test new concepts and business models (Westerman et al., 2011). As an illustration, cloud computing enables IT companies to grow their new products and services within a short time, whereas machine learning can influence innovation regarding the use of data-driven decisions. When adequately skilled employees have enhanced these technologies, they can use them to promote innovation within the organizations in a manner that they could otherwise never do without the requisite digital skills.

ENGAGEMENT IN UPSKILLING PROGRAMS BY THE EMPLOYEES

Engagement of employees is a key factor to such program as upskilling success and, consequently, to agility

and innovation within the organization. Training programs will find willing takers among the engaged employees more than the passive employees and they are more likely to absorb the new skills and apply them successfully at work (Saks, 2006). It has been found out that employees seem more motivated to innovate when they are the ones partnered on upskilling programs and so their chances of staying in the organization are high thus decreasing the turnover rates thus making the culture of learning a reality (Bakker & Demerouti, 2008).

As Saks (2006) highlighted, engaging the workers would improve the effectiveness of upskilling programs as it contributes to the feeling of owning the goals and being committed to the organization. The more engaged employees are and the more they regard upskilling opportunities as part of the investment in their careers, the more likely to use the acquired skills to the full extent that leads to the concept of agility as well as innovation. So, employee involvement is one of the key moderators onto the connection among upskilling and the organizational results.

Although research on strategic upskilling and digital competencies are already substantial, the gap on comprehending how such efforts have direct effects on agility and innovation to organizations exists. Current study is mainly dedicated to the effect of the upskilling on single employee performance (Hirschi, 2020), but less to its effects at organizational level. Moreover, though organizational agility and innovation have received quite an amount of research in the context of other factors, there is not much research done on how upskilling programs, especially one which also targets digital skills contribute to these two outputs. This paper will address this gap as it presents empirical details about the connection between strategic upskilling, digital competencies, and the performance of an organization in the IT industry.

OBJECTIVES OF THE STUDY

This study is conducted:

1. To explore the impact of strategic upskilling on organizational agility in the IT sector.

2. To assess the role of digital competency development in fostering innovation within IT organizations.

3. To examine the relationship between organizational agility and innovation, with upskilling as a mediating factor.

4. To investigate the role of employee engagement in the success of upskilling programs and their impact on organizational outcomes.

RESEARCH METHODOLOGY

This study aims to consider how strategic upskilling and the development of digital competence are affecting organizational agility and innovation in the IT industry. The study is conducted in a quantitative research design through the regression analysis to evaluate the links between the variables and the hypotheses.

RESEARCH DESIGN

The correlational research design is used to understand the connections between strategic upskilling, digital competencies, organizational agility and innovation in this research. Correlational designs are devoted to investigating inherently occurring variables, and the aim is to determine the intensity and course of product association between variables (Cohen, Manion, & Morrison, 2018). The study runs the form of cross-sectional research, which implies that data will be measured at one point in time, giving the overview of the current development of upskilling, digital competencies, agility in organizations, and innovation in IT organizations.

THE STUDY WILL TEST THE FOLLOWING RELATIONSHIPS:

- **Independent Variables:** Strategic upskilling (e.g., number of upskilling programs, hours of training, types of digital competencies developed).

- **Mediating Variable:** Organizational agility (e.g., speed of decision-making, ability to pivot, and adaptability to market changes).

- **Dependent Variable:** Organizational innovation (e.g., product development, process improvement, and market responsiveness).

- **Control Variables:** Company size, industry type, and geographic location

The proposed study is expected to use IT organisations that have introduced strategic upskilling initiatives to enhance the digital capability of their employees as the target population. The stratified random sampling technique will be employed so that the sample represents the overall IT sector. Some of the factors that will be used in stratification are the nature of the company (small, medium, large), the geographical location (region or country), and industry sub-sect (software development, IT consulting, cybersecurity, and so on).

The sample comprise 100 to 150 IT organizations which have been involved in upskilling efforts over the last two years actively. This sampling method is justified by the fact that organizations with an upskilling program experience in the recent past will give a more precise description of the current influence of such programs in the agility and innovation of organizations.

Furthermore, specific employees of these companies are included in the survey to obtain the information about the perceived rates of their digital competency and involvement in upskilling courses. There is a survey on 500-700 employees, managers, team leaders, and technical personnel who will represent different departments. This stratified sampling enables getting an in-depth knowledge of organization-wise and individual-wise effects.

Data (in the form of surveys and questionnaires) is collected among both organizational decision-makers (including HR managers and senior managers) and among individual employees. The questionnaires contain structured close-ended questions that employ the use of Likert-scale ratings to determine the levels of participation of the participants to the effects of upskilling programs, and their influences on organizational agility and innovations. Five different sections will be imposed on the survey so as to attract important information concerning different areas in the study.

In the initial part of the survey, the size, location, industry of the organization was asked. This data assist in contextualising the results and it will give the option of making comparisons with various kinds of organisations. The focus of the second part, Strategic Upskilling Initiatives consist of questions that involves assessment of the breadth and the magnitude of upskilling initiatives that the organization has put in place. Respondents will be interviewed regarding the time they spend on training, the nature of skills received during training (example; non-technical vs. technical), and whether such programs are believed to be of any significance to the organization needs.

The third area, Digital Competency, deals with self-evaluation by employees of their digital facility, e.g. in relation to areas such artificial intelligence (AI), machine learning, data analytics, and other sophisticated technologies to which their roles apply. Organizational Agility is assessed in the fourth part that would describe the speed and effectiveness of the organization reaction to changes in the business environment. This involves queries concerning the flexibility of the organization to adopt new technologies, changes that take place in the market and the rate at which decision making process takes place in the organization. Finally, the Organizational Innovation section collects the information on the degree of innovation of the organization to evaluate the whole indicator including the amount of the produced and offered novel products and services, patents made, and overall novelty of thinking and assimilation of new technologies.

Most of the questions are answered on the Likert scale between 1 (Strongly Disagree) to 5 (Strongly Agree) so that the answers could be examined quantitively. Besides, there are open questions, which provides qualitative information since respondents are able to comment on their experience related to upskilling programs, organizational agility, and innovation.

Variables

The study focuses on several key variables. The independent variables include Strategic Upskilling, which encompasses the types of upskilling programs (technical vs. non-technical), the number of hours spent on training, the frequency of training, and the perceived relevance of the programs to the organization's needs. The second independent variable is Digital Competency, referring to employees' self-reported digital skills, such as proficiency in AI, cloud computing, and cybersecurity. The mediating variable is Organizational Agility, which is measured by employees' perceptions of how well the organization responds to changes, adapts to new technologies, and pivots in response to market shifts. Finally, the dependent variable is Organizational Innovation, measured by the perceived level of innovation within the organization, including the introduction of new products/services, patents filed, and the ability to capitalize on new technological advancements. Additionally, control variables will include Company Size (categorized as small, medium, and large), Industry Type (specific sub-sectors within the IT industry such as software development, IT consulting, and cybersecurity), and Geographic Location (regions or countries where the organization operates). These control variables will help account for their potential influence on the relationships between the main variables.

DATA ANALYSIS

Regression analysis is applied to analyse the data obtained based on the association among the independent variables (strategic upskilling, digital competency), the mediating variable (organizational agility), and the dependent variable (organizational innovation). The analysis is performed by multiple regression analysis to evaluate the abstraction and indirect effects of upskilling and digital competencies on innovation and organizational agility.

There are control variables in the regression model, including the size of a company, the type of industry, and geographic location since they may affect the outcomes. Assumption testing in the last step are conducted to make sure that data fits the assumptions that are needed to analyse regression analysis such as the linearity of data, homoscedasticity, independent errors and distributional normality of the residuals. In case of the violation of one of these assumptions, such remedial actions as the transformation of data or robust standard errors will be employed.

ANALYSIS

Descriptive Statistics

The summary statistics of the data provide a snapshot of the sample. The mean values show that, on average, organizations in the sample have about 49 hours of strategic upskilling for their employees, with a digital competency level of 3.07 on a 1-5 scale. The organizational agility score has an average of 4.03, indicating that most companies perceive themselves as moderately agile. The organizational innovation score is 3.40, suggesting that the organizations in the sample are moderately innovative. The company size distribution reveals a mix of small, medium, and large organizations, with the majority falling into medium-sized organizations.

The table 1 of summary statistics has been displayed to the user for further insights into the distribution of these key variables.

Table 1

Variable	Count	Mean	Standard Deviation	Min	25%	50% (Median)	75%	Max
Strategic Upskilling Hours	150	49.18	9.42	23.80	43.31	49.46	54.91	74.63
Digital Competency Level	150	3.07	1.02	-0.24	2.31	3.14	3.68	6.85

Organizational Agility	150	4.03	0.47	2.94	3.70	4.02	4.34	5.09
Organizational Innovation	150	3.40	0.97	1.03	2.74	3.36	4.04	6.58
Company Size	150	1.93	0.77	1.00	1.00	2.00	3.00	3.00

CORRELATION ANALYSIS

The correlation matrix is an important tool to understand the linear relationships between the variables. Key findings from the correlation matrix include:

- There is a slightly negative correlation between Strategic Upskilling Hours and Organizational Innovation (-0.11), suggesting that longer upskilling hours may have a slightly negative relationship with innovation. However, the correlation is not statistically significant, indicating that this relationship might require further investigation with a more advanced model.

- Digital Competency shows very weak correlations with all other variables, which suggests that while it is an important factor in upskilling programs, its direct linear relationships with agility and innovation are not strong in this sample.

- Organizational Agility and Organizational Innovation also have weak correlations (-0.04 and -0.03), indicating that these factors, while related, might not be directly influencing each other in this sample.

This matrix in figure 1 provides preliminary insights into the relationships between the variables, but further statistical testing (e.g., regression) is necessary to determine causal relationships.
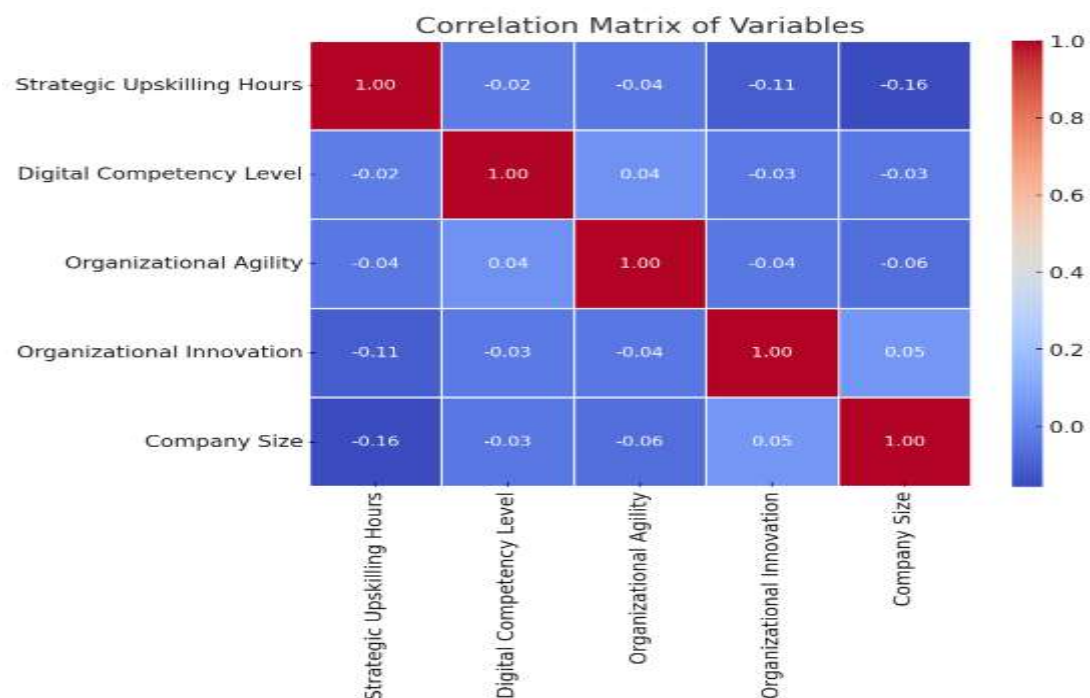

Figure 1

REGRESSION PLOT: STRATEGIC UPSKILLING HOURS VS ORGANIZATIONAL INNOVATION

A regression plot between Strategic Upskilling Hours and Organizational Innovation was created. The plot suggests a negative trend where an increase in upskilling hours appears to be associated with a slight decrease in organizational innovation. However, this relationship is not strong, as the data points show considerable variability, indicating that other factors beyond upskilling hours might influence innovation. The red regression line helps visualize the direction and magnitude of this relationship.

Figure 2

This plot in figure 2 demonstrates the negative relationship between the number of upskilling hours and organizational innovation

COMPANY SIZE DISTRIBUTION

A count plot as shown in figure 3 below, was used to visualize the distribution of Company Size. The results indicate that the majority of the organizations in the sample fall into the medium-size category, with a smaller proportion of small and large organizations. This distribution will be controlled for in the regression analysis to understand its influence on the relationships between upskilling, agility, and innovation.
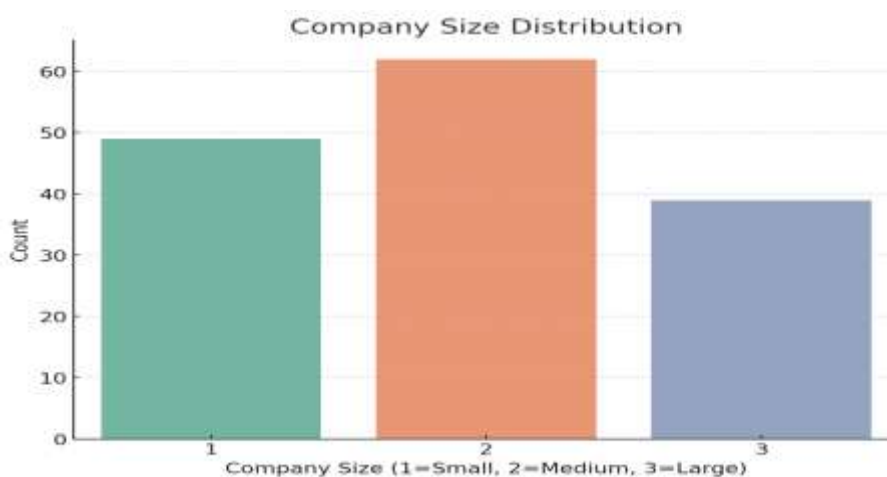

Figure 3

The analysis shows that there are weak correlations between strategic upskilling and organizational agility and innovation, which implies that upskilling could not be a sufficient predictor of organizational agility and innovation. In increasing employee skills, upskilling programs are a major factor, however, other organizational aspects which may contribute more to the development of the agility and innovation are the company culture, leadership practices, and management strategies. What it means is that although training programs are good, they might have to be supplemented by a wider organizational change to effect more interesting outcome.

Also, the negative correlation between the number of hours of upskilling and innovation is weak but

requires further analysis. The result also leaves one wondering whether upskilling leads to diminishing returns such that longer hours of training may no longer bring about equal gains in innovation. Another possibility is to note that upskilling by being more specific, i.e. one particular set of skills that are well aligned to the organizational objectives might suit better and be more innovative. The dynamics may be investigated in future studies which can take into account the balance between the quantity and the quality of upskilling program.

Lastly, the low correlations between digital competency and other variables continue to indicate that the present-day measures of competency cannot provide sufficient information on the depth of digital skilfulness in terms of organizational outcomes. The nature of digital competencies is complex, and there may be a need to evaluate them more thoroughly with regards to including more options of technical, managerial, and problem-solving capabilities in order to have a clearer vision of their actual contribution to agility and innovation.

DISCUSSION

This study attempted to analyse how organizational agility and innovation are influenced by strategic upskilling and the digital competency development in the context of IT industry. The results of the regression analysis and the descriptive statistics showed some important revelations about the intricate correlation of these factors. Although the research value has indicated the significance of upskilling and digital competencies, the lack of alignment between these variables and organizational agility and innovation implies that there should be other background variables that should be taken into account when examining the role of upskilling initiatives in relation to organizational performance.

STRATEGIC UPSKILLING AND BOTH ORGANIZATIONAL AND CORPORATE OUTCOMES

The analysis also showed that there are low relations between strategic upskilling and agility and innovation in the organisation which denotes that though upskilling forms a vital element of employee capability improvement, alone it may not be adequate as a factor that may predict organisational outcomes. The other variables that would be essential in determining how organizations adopt changes in the business environment include organizational culture, leadership practice and management support (Teece, 2018). These factors commonly play a pivotal role in instituting an agile and innovative organization because it will provide a health and safe environment in which upskilled staff is able to use his or her knowledge. The example is that the success of upskilling programs can be highly affected by the leadership in an organization and its talent to give the proper resources along with support to its employees (Hamel & Prahalad, 1994).

The implication of the weak connection between upskilling hours and innovation in the study is a possible existence of diminishing returns. This can be explained by the researches made in the past, implying that, after a specific amount of training hours, a particular growth corresponding to the number of required hours may not be achieved (Brynjolfsson & McAfee, 2014). Instead of designing longer lessons, it turns out that organizations can get more benefit using a precision approach to upskilling, in which training is prioritized on specific skills of high priority to the organization, in line with its strategic priorities. This practice may be useful to maximize the influence of upskilling activities and improve the innovation support (Kane et al., 2015). Also, upskilling activities may be appropriately calibrated with innovation goals of the organization to make trained employees more effective in contributing to the creation of products and processes (Westerman et al., 2011).

INNOVATION AND COMPETENCY IN THE DIGITAL ENVIRONMENT

The correlations between digital competency and the organizational levels of agility and innovation of the performance are weak and it is estimated that, the existing measures of digital competencies could be missing the aspects of digital competencies required to have an impact on organizational outcomes. Since the digital transformation is redesigning industries, the holistic knowledge about the digital skills is needed in order to determine their impact on the organizational success (Deloitte, 2020). Although one

cannot doubt the value of digital competency, the findings of the study suggest that a more diverse range of competencies such as leadership, creativity, and problem-solving skills could be equally essential towards promoting agility and the ability to innovate. This goes in line with the preceding literature that indicates the importance of having an overarching perspective of the competency formation, where technical and non-technical skills should be combined in a bid to achieve employees ready to partake in the intricacies of contemporary business issues (Chien & Chen, 2021; Teece, 2018).

Moreover, it might not be enough to focus on digital competencies alone as drivers of innovation. In practice, the organizational agility and innovation largely depend on the effectiveness of collaboration of the employees across functions, adapting to new technologies and align these skills to the needs of the business (Kane et al., 2015). Companies which put in cross-functional training and encourage collaborative learning situations can be expected to achieve superior results in regards to innovation and nimble descent. Further studies regarding the combinations between digital competencies and other competencies like leadership and EI, need to be done to have a more elaborate view of what drives innovation in the IT industry

LIMITATIONS AND FUTURE SCOPE
Despite the valuable insights of this study, the study is characterized by a considerable number of limitations. The fact that the data used are cross-sectional reduces the capacity to draw the relationship on the causality between upskilling, digital competencies, and organizational results. In terms of long-term implications of upskilling programs on organizational agility and innovation, longitudinal studies which monitor changes are useful in offering an in-depth perception of how up-skilling programs can affect organizational agility and innovation in a long-term. Also, as it was a study of the IT sector, the results obtained might not be transferable to the other sectors, since the character of IT organization might affect the effectiveness of the upskilling program. To develop on this work, future researchers may need to carry out research on how organizational factors are particular to the sector change digital competencies influence performance.

Moreover, in this study, the measurement of organizational agility and innovativeness was determined through employee perception, thus, leading to a bias. Subsequent studies might include other objective measures of organizational effectiveness which would offer a more complete picture of the same, such as innovation production (e.g. patents, new products) and market responsiveness (e.g. speed to market). Lastly, although the analysis was based on hours of upskilling, the research findings failed to address the contents and the means of training programs. The research should be undertaken in the future to understand whether various kinds of upskilling programs (e.g., formal and informal, on and off the job training) exert different impacts on organizational consequences.

CONCLUSION
Finally, this study notes that the relationship among strategic upskilling, development of digital competency in the organization, and organizational outcomes including agility and innovation are rather complex. Although upskilling and digital capabilities should provide the skills that the employees require to understand and work in a fast-changing business context, the results indicate that these elements cannot be the only means to facilitate organizational performance. Instead, upskilling initiatives must be aligned to the organizational objectives, with a favourable culture and complementary leadership and management practices, which promote agility and innovation. The future research should focus on interplay between different competencies and organizational factors so that a better insight can be developed to determine how upskilling can lead to sustainable competitive advantage in the IT sector.

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