Analysis of Contextual Factors Influence on Auditors Informal Learning

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In the next decade, more than 1 billion people will need reskilling as professional roles evolve. Even more importantly, the COVID-19 pandemic is forcing organizations to rethink the entire role of organizational learning in both the short- and long-term. As a consequence of this change, professionals need to be motivated to continually further their own skill sets in addition to organizational needs. The purpose of this study was to investigate the hours auditors engage in learning activities integrated into daily work tasks and factors that support engagement in learning. Further, the study provided insight into auditors' informal learning preferences at different levels of work experience and auditors' tendency to participate given the level of the perceived organizational learning culture.

Keywords: learning culture, audit, workplace learning, informal learning

INTRODUCTION

In the next decade, more than 1 billion people will need reskilling as professional roles evolve (Zahidi, 2020). Even more importantly, the COVID-19 pandemic is forcing organizations to rethink the entire role of organizational learning in both the short- and long-term (Lutin, 2020). As a consequence of this change, professionals need to be motivated to continually further their own skill sets in addition to organizational needs. Workplace learning involves a social contract between professionals working together to achieve higher organizational goals. Organizations know that different skills and capabilities are needed to succeed today (Moldoveanu & Narayandas, 2019). In a survey by Deloitte (2019) 84% of companies are investing in reskilling programs to develop talent internally.

Learning in the workplace can be achieved through two modes, formal and informal learning. Formal learning refers to structured education and training to increase specialized knowledge and skills that occur outside the work environment (Marsick & Watkins, 2015). The problem is formal training does not adapt as quickly to job responsibility shifts in the profession (Eraut, 2004). This creates challenges when a workplace environment is in a time of rapid and continual change (Ellinger, 2005; Inanc et al., 2015).

Marsick and Watkins' (2015) informal learning model mirrors the workplace learning environment of audit firms in the performance of professional activities. The underlying construct of their model is the integration of everyday work practices, critical reflection and action, and the link between individual learning and the environment, as a continuous cycle. Billett and Choy (2013) stress that an employee's drive to engage in informal learning nor a supportive organizational learning culture alone may be sufficient

to acquire and retain knowledge. Informal learning without a regular review of work practices could lead to ineffective behaviors or bad habits (Billett & Choy, 2013; Schön, 1983). Few reinforcement methods help professionals extract lessons from experiences thus creating an opportunity for regular team gatherings to gain new understanding and develop new patterns of learning behavior (Marsick & Watkins, 2015). New knowledge is not solely created through everyday experiences but is developed through a complex process of both formal and informal learning experiences.

Few studies have quantified the time auditors spend participating in learning activities integrated into daily work tasks. This study adds to the literature gap on workplace informal learning in a specific professional context and factors that support engagement in learning. Moreover, the study provides insight into auditors' informal learning preferences at different levels of work experience and auditors' tendency to participate given the level of the perceived organizational learning culture. The first section of the paper provides a literature review and development of research questions. Then is the description of the data collection process and study methodology followed by a summary of the study results and a discussion of the study's findings. Finally, the paper concludes with some practical implications, limitations, and potential future research.

LITERATURE REVIEW

Learning in the Audit Profession

Accounting firms have long epitomized a learning culture. Deloitte built Deloitte University in 2011 and KPMG built Lakehouse in 2020 embodying investment in firms' dedication to their own people's professional development. Also, firms annually publish audit quality reports noting they go above and beyond the minimum annual CPA continuing professional education hour requirements; PWC (2020) averaged 94 training hours and KPMG (2019) averaged 90 hours per audit professional in 2019. These figures are just the formal education hours that can be quantified.

In addition to commitments to continuing professional education, accounting firms have been structurally set up to integrate informal learning into the hierarchical review process to promote meaningful on-the-job training (PWC, 2020). The reason for the commitment to integrating a learning culture is to deliver high-quality audits. EY (2019) promotes a focus "on maintaining our ratios of executives to less-experienced members for our audit teams" (p. 18). The hierarchal audit process is set up such that learning occurs while executing work tasks such that learning and work processes are interwoven (Janssens et al., 2016, p. 94) and reinforced through feedback and review.

Learning Culture

Learning in an organization is fundamental to organizational growth at both the organizational and peer levels. The accounting firm's model of integrating learning into the flow of work and "empowering people to actively develop" (Lutin, 2020, p. 3) throughout their careers is called a learning culture. The how of learning comes from "participation in group activities, working alongside others, tackling challenges, and working with clients" (Eraut, 2004, pp. 266 - 267). Liu and Ren (2019) concluded that workplace interactions, supervisory and mentoring relationships, and informational system support contribute to an effective organizational learning culture. Conversely, Berg and Chyung (2008) found that learning culture in the organization was not a predictor of the degree of informal learning that employees engage in. This suggests that individuals will seek information to complete a task regardless of whether the organization has a structure in place.

Informal learning is woven into the pyramid structure, such that the supervisory and review process provides direct and constant feedback (Andiola, 2014; Earley, 2001; Watkins & Cervero, 2000; Westermann et al., 2015). The supervisor in an audit firm acts as a mentor/coach through supervision and feedback to less-experienced professionals throughout an audit engagement (Earley, 2001; Westermann et al., 2015). The audit firm hierarchy and audit process support the continuous coaching and feedback stream at each professional level, with audit partners and managers assuming a greater role in the review process and having greater mentoring opportunities (Deloitte, 2017). Deloitte's (2015) firm culture uses partner-led

learning and mentoring to support on-the-job training and "help our people embed their learning […] into individual audit engagements" (p. 7). In their research on factors affecting informal learning for accounting professionals at major firms in Korea, Song et al. (2018) discovered high managerial level support facilitated informal learning of auditors. In research focusing on managerial support, Kusaila (2019) found tenure, age, and experience negatively correlated to managerial level support of informal learning activities.

Auditors receive and seek feedback from multiple sources with varying effects on individuals' development. Kadous et al. (2013) found higher advice justification between audit professionals and peers with the same rank or title with whom they hold a strong social bond. De Grip (2015) posited knowledge spillovers between peers benefits firm-level productivity. Van Noy et al. (2016) suggest close hierarchical mentoring is less effective than peer learning, but in an informal setting peer-to-peer learning is productive to employees. Wahab et al. (2017) found the lack of support from knowledgeable colleagues as an inhibitor to accountants' informal learning in the workplace. Song et al. (2018) examined the affecting factors of informal learning at various levels of an organization and discovered peer-level support to be the most influential factor in participation informal learning activities and acquiring new knowledge among accounting professionals. Conversely, Kusaila (2019) discovered that peer support did not significantly influence audit professionals' participation in informal learning activities. Prior research findings differ on the resulting influence of peer-level learning culture but determined that participating in informal learning was influenced, positively or negatively by workplace relationships, knowledge-sharing opportunities, and work tools and resources available.

Time has been cited as a constant professional constraint in public accounting (Wahab et al., 2017). Bishop's (2012) findings show firm size as a contributing factor to learning and growth measures with big-four firms having a formalized learning model and small firms having an informal learning model. Research by Deloitte (2017) indicated that the workplace needs to "create the right conditions, instead of the right content" (para. 10) including feedback loops and using data to empower employees in their development. Lohman (2006) suggested organizations should schedule opportunities and time for workplace interactions as well as provide adequate technology and the Internet for employees to participate in informal learning.

How auditors engage in informal learning is influenced by individual characteristics. Berg and Chyung (2008) indicated that as employees aged, they engaged in more individual informal learning activities such as searching the Internet and reading professional journals. The findings reported in Hicks et al. (2007) supported the premise that more experienced (older) employees viewed self-directed informal learning activities to obtain knowledge. This contrasts with less experienced (younger) audit staff members who generally value informal learning through practical experience and the review process including feedback (Hicks et al., 2007). Furthermore, the researchers noted that less experienced (younger) junior staff utilized Internet research more frequently than their more experienced counterparts. The first two research questions arising from prior literature regarding learning culture, informal learning, and perceived factors are:

RQ1: *To what extent does an organization's learning culture relate to the degree of informal learning participation among auditors?*

RQ2: *Do demographic characteristics (age, gender, tenure, title, and designation) influence the degree of informal learning participation among auditors?*

These research questions were answered by testing the following null hypothesis:

$H_0$1: *There is no significant correlation between an organization's learning culture as perceived by auditors, and the degree of their informal learning participation.*

$H_0$2: *There is no significant correlation between demographic variables and the time auditors participate in informal learning.*

$H_0$3: *There are no significant effects between auditors' gender and CPA status and the time auditors participate in informal learning.*

Work Resources

Za et al. (2014) recognized the importance of informal workplace learning and the prevalent use of technology for informal learning but cite the connection between the two has not received much attention in the literature. Deloitte (2017) found that organizations fall short in providing the infrastructure and development opportunities for employees to improve themselves and their work to ensure they are providing effective oversight of capital markets and protecting investors' interests. To encourage an informal learning environment, audit firms should provide the necessary tools and resources for employees to access information to support their learning and development.

Hicks et al. (2007) discovered a lack of sufficient time and increased multi-tasking as the greatest barriers to informal learning. Abdul et al. (2016) supported this finding in their case study of accountants who identified time as a key barrier to accountants' lack of participation in informal learning activities. By identifying the preferred tools and resources auditors utilize in the informal learning process, audit firms can provide adequate provision to preferred tools and resources that will facilitate informal learning in the workplace. The third and final research question will be answered using descriptive statistics:

RQ3: *What are the perceived resource factors that influence auditors' participation in informal learning?*

METHODOLOGY

To address our research questions and test our hypotheses, we solicited audit professionals from the New England Region. This population was selected as the audit profession has a strong commitment to workplace learning (Earley, 2001; Watkins & Cervero, 2000) and as former audit professionals; the researchers had contacts in the profession. Audit professionals were invited to participate in the online survey via an electronic solicitation posted on LinkedIn a professional networking group. The solicitation included a link to the online survey. This solicitation method did not interfere with the empirical results because all usable responses were included and only responses from non-audit professionals and incomplete responses were excluded.

An initial posting was made, and a follow-up post was made two weeks later. There was a total of 311 views of which, 120 respondents submitted a survey, and 92 were deemed usable responses. The 28 unusable responses were either incomplete or not from the target population. The usable response rate was 25%. The total usable sample size of 92 was acceptable. In all, slightly more participants were male (55%) than female (45%). The average age was 33.51 years old with an average professional tenure of 7.36 years. Sixty-two percent were staff/senior auditors while 38% of participants were in a manager and/or partnership role. Twenty-nine percent of the respondents were employed with a big 4-audit firm, and 17% were employed with public audit firms with less than 16 audit partners.

Instrument and Data Collection

All data were collected using a single self-reported online questionnaire measuring individual perceptions of the amount of time spent monthly on informal learning activities. The questionnaire ensured confidentiality and consent. IRB approval was obtained to use the instrument and procedures used in this research. Constraints include instrument limitations including the self-reported nature of the questionnaire as the measures are based on individual perceptions. The authors note constraints on variations in perceptions in estimated time spent per month on the seven informal learning activities. The authors also know the seven informal learning activities time spent may overlap between activities. Therefore only 1 extreme outlier (720 hours per month reported for collaborate with others variable) was removed. Results were run with and without the extreme outlier for sensitivity analysis and no changes were noted in the results. Demographic information collected is noted in the results below.

RESULTS

Types of Learning Activities

Participation in various informal learning activities was measured through respondents' rating the estimated monthly frequency of the various informal learning activities when learning something new on the job to perform their job tasks. The mean scores of each informal learning activity were rank-ordered, see Table 1. The most frequently used informal learning activity was *collaborate with others such as your boss, coworkers, and peers* and the least frequently used informal learning activity was *reading professional publications*. The overall mean number of monthly hours spent on informal learning activities was 91.14 hours per month.

Table 2 presents the results of the mean number of monthly hours spent on informal learning activities by firm size. A noteworthy comparison is the extent to which audit professionals in mid-size firms participate in informal learning activities over their counterparts. Further examination reveals that audit professionals in mid-size firms spend the most time *collaborating with others* while those in small firms spend less than average time in collaborative activities such as *talking with other*s and *share materials and resources with others*. T-tests were run showing no significance between variables.

TABLE 1
RANK ORDER INFORMAL LEARNING ACTIVITIES

	Rank	Min	Max	M	SD
Collaborate with others (e.g., your boss, coworkers, peers)	1	0	160	22.64	33.89
Talk with others (e.g., your boss, coworkers, peers)	2	0	140	19.99	23.41
Share materials and sources with others (e.g., your boss, coworkers, peers)	3	1	160	11.70	19.93
Search the Internet	4	0	50	11.16	11.84
Observe others (e.g., your boss, coworkers, peers)	5	0	120	10.51	16.09
Try different ways to solve a problem (trial and error)	6	0	50	9.57	10.09
Read professional publications	7	0	40	5.40	6.43
Total informal learning activities		9	392	91.14	86.73

Note: N = 92

TABLE 2
INFORMAL LEARNING PARTICIPATION BY FIRM SIZE (MONTHLY HOURS)

	Big 4	16 or More Audit Partners	Less Than 16 Audit Partners	Total
	27	49	16	92
Collaborate with others (e.g., your boss, coworkers, peers)	21.70	30.22	20.44	22.64
Talk with others (e.g., your boss, coworkers, peers)	21.41	20.98	14.56	19.99
Share materials and sources with others (e.g., your boss, coworkers, peers)	9.70	15.65	7.88	11.70
Search the Internet	10.30	12.57	13.19	11.61
Observe others (e.g., your boss, coworkers, peers)	12.85	14.76	7.69	10.51
Try different ways to solve a problem (trial and error)	9.89	12.24	10.06	9.57
Read professional publications	5.07	8.04	6.00	5.40
Total informal learning activities	90.93	103.86	79.81	91.14

Relationship Between Organizational Learning Culture and Informal Learning Participation

Normality tests showed that both variables (learning culture and degree of participation) were normally distributed, however, the scatter plot showed weak linearity between variables. Therefore, Spearman's rho was used to determine the relationship between the levels of learning culture and the time spent on informal learning. There was a statistically significant, strong positive correlation between the levels of learning culture and the time spent on informal learning, see Table 3. Therefore, the first null hypothesis was rejected. When a bivariate correlation was calculated between informal learning participation and each learning culture level, the correlations that were significant at the 0.05 level (using the Bonferroni method) were the peer level and organizational level.

TABLE 3
CORRELATIONS BETWEEN LEARNING CULTURE LEVEL AND INFORMAL LEARNING PARTICIPATION

	Informal Learning	
	Spearman's rho	p(1-tailed)
Learning Culture (Overall)	0.225	0.016*
Organizational Level	0.189	0.036*
Manager Level	0.121	0.126
Peer Level	0.224	0.016*

*Correlation is significant at the 0.05 level (1-tailed).

Informal Learning Participation Based on Demographic Factors

Pearson's r was used to test the relationship between demographic variables (age, gender, tenure, title, and designation [CPA vs No CPA]) and the monthly hours auditors participate in informal learning activities. Table 4 presents the correlation between the *tenure* ($r = 0.248$, $p < .01$) *title* ($r = 0.189$, $p < .05$) and *read professional publications* was significant. The correlation between *CPA designation* and *try different ways to solve a problem* was significant ($r = -0.237$, $p < .05$). The demographic variables *age* ($r = -0.104$, $p > .05$) and *gende*r ($r = -0.023$, $p > .05$) were not significant and not presented in Table 4. Therefore, the second null hypothesis was partially retained. In other words, *age* and *gender* are not strong predictors of the hours an auditor spends engaging in informal learning activities. However, *tenure*, *title*, and *designation* do correlate to certain informal learning activities. This suggests those with longer professional tenure and higher titles are more correlated to reading professional publications. Further, those with a CPA designation are less correlated to trying different ways to solve a problem.

TABLE 4
CORRELATIONS BETWEEN INFORMAL LEARNING PARTICIPATION

	Tenure		Title		Designation	
	Pearson's r	p (1-tailed)	Pearson's r	p (1-tailed)	Pearson's r	p (1-tailed)
Informal Learning (Hours combined)	0.066	0.267	-0.035	0.369	-0.073	0.245
Collaborate with others (e.g., your boss, coworkers, peers)	0.063	0.277	-0.047	0.329	-0.023	0.416
Talk with others (e.g., your boss, coworkers, peers)	0.015	0.445	0.001	0.495	-0.051	0.314

Share materials and sources with others (e.g., your boss, coworkers, peers)	0.051	0.314	-0.078	0.229	-0.067	0.264
Search the Internet	0.094	0.186	0.068	0.26	-0.026	0.403
Observe others (e.g., your boss, coworkers, peers)	-0.023	0.414	0.109	0.151	-0.015	0.443
Try different ways to solve a problem (trial and error)	0.023	0.414	-0.042	0.346	-0.237	0.011*
Read professional publications	0.248	0.009**	0.189	0.036*	0.026	0.404

Note: N = 92

**Correlation is significant at the 0.01 level (1-tailed)

*Correlation is significant at the 0.05 level (1-tailed)

Informal Learning Participation Based on Gender and CPA Certification

Both the variables (CPA designation [no designation] and gender) were dichotomous thus testing of all instances was included in the analysis, see Table 5. The sizes of the four factorial groups were approximately equal (29, 22, 22, 19). Normality tests were conducted on the four factorial groups' informal learning variables and revealed that the normality assumptions were not met for the groups (Shapiro-Wilk = .725 - .805, p = .00). The Levene's test revealed the assumption of homogeneity of variances was satisfied F(3, 88) = 2.283, p = .085. The ANOVA assumptions were not markedly violated; a two-way ANOVA was applied to test the three sub null-hypotheses. As presented in Table 6, the two-way ANOVA reveals *gender* and *CPA status* do not influence informal learning participation among auditors, nor the interaction effects. Thus, Hypothesis 3 was retained.

TABLE 5
INFORMAL LEARNING PARTICIPATION BY GENDERS AND CPAS STATUS

Gender	CPA Status	M	SD	N
Male	CPA	85.48	76,02	29
	Non-CPA	102.73	96.33	22
	Total	92.92	84.90	51
Female	CPA	85.55	71.24	22
	Non-CPA	92.84	109.70	19
	Total	88.93	89.97	41
Total	CPA	85.51	73.26	51
	Non-CPA	98.15	101.55	41
	Total	91.14	86.73	92

TABLE 6
TWO-WAY ANOVA RESULTS TABLE

Source	*df*	F	p
Corrected Model	3	0.20	1.90
Intercept	1	97.72	0.00
Gender	1	0.07	0.79
CPA Status	1	0.44	0.51
Gender*CPA Status	1	0.07	0.79
Error	88		
Total	92		
Corrected Total	91		

Note: R Squared = .007 (Adjusted R Squared = -.027)

Resource Factors Affecting Participation in Informal Learning

Finally, the seven resource factors affecting participation in informal learning are rank-ordered by mean values, see Table 7. The respondents indicated using the Internet as the top resource factor affecting participation in informal learning. Time constraints ranked lowest 5 – 7, noting time being a constraint to participate in informal learning activities.

TABLE 7
RANK ORDER OF RESOURCE FACTORS AFFECTING PARTICIPATION IN INFORMAL LEARNING

Rank Ordered Factors	Rank	Min	Max	M	SD
I use the Internet to learn informally on the job.	1	2.00	5.00	4.34	0.68
I have access to the Internet to solve work-related problems.	2	2.00	5.00	4.32	0.66
I can use the Internet when I need to find information to help me perform my job.	3	2.00	5.00	4.17	0.70
When faced with challenging work situations, I can use the Internet to find answers	4	2.00	5.00	3.95	0.84
I have time to seek information I need for my job.	5	2.00	5.00	3.97	0.82
I have time to learn informally on a daily basis.	6	1.00	5.00	3.45	1.04
I have time to read professional publications to stay current on topics related to my job.	7	1.00	5.00	3.17	1.03

Note: N = 92

DISCUSSION

This study found the level of learning culture in the organization was a strong predictor of the time auditors participate in informal learning activities at the peer level and organizational level. These findings are consistent with prior research (Liu & Ren, 2019; Watkins & Cervero, 2000) as public accounting firms are known to have a strong culture of learning. Also, this is consistent with (Salleh et al., 2012) who note accountants view learning as part of their job and continue to seek out learning opportunities on their own. No relationship was found at the manager level, contradicts the literature (Song, et al., 2018) nor with the makeup of the organizational structure of public accounting firms (Andiola, 2014; Earley, 2001; Watkins & Cervero, 2000; Westermann et al., 2015).

The most frequently used type of informal learning was collaborating with others such as *your boss*, *coworkers*, and *peers* with the least frequently used type of informal learning activity noted as *reading professional publications*, see Table 1. The overall mean number of monthly hours spent on informal activities was 91.14 hours per month, interesting to note this approximates the amount of time KPMG (2019) and PWC (2020) spend on formal learning activities annually furthering the collaborative aspects between formal and informal learning.

When looking specifically at the firm size and monthly informal learning participation, in Table 2, there are slight variances in more time spent in *collaborative activities* in larger firms than small (less than 16 audit partner) firms, although there is no correlation between firm size and participation in activities as seen in Table 4. This could be explained by the firm's learning culture overall and-or fewer people to collaborate with. Plant et al. (2017) posited that formal, structured, relevant development programs are necessary for large firms. Bishop (2012) explored the learning process within small firms and discovered a progression from informal learning to formal learning activities as the firms' size increased creating a more structured learning architecture similar to large firms.

In addition to firm size variances, age and gender were not strong predictors for the hours an auditor spends engaging in informal learning activities. Correlational analysis, Table 4, indicates those with longer professional *tenure* and higher *titles* are more likely to participate in *reading professional publications* suggesting those with more experience can recognize the value of published resources and better utilize

information in specific situations. Further, audit professionals early in their job *tenure* (less experienced) rely upon informal learning activities such as task performance, feedback, and collaboration with team members for knowledge acquisition and skills development. This is in line with prior research that found more experienced professionals engaged in more purposeful informal learning while less experienced professionals engage in informal learning as part of their daily routines to acquire core skills and knowledge (Berg & Chyung, 2008; Hicks et al., 2007).

The third research question was exploratory in looking at what perceived resource factors influence auditors' participation in informal learning. Several factors were identified that influence participation in informal learning with time constraints ranked the lowest. This result is inconsistent with Wahab et al. (2017) that indicated that lack of time, is a key reason why accountants would not participate in informal learning activities. However, this study's results were consistent with firms creating a culture of learning (Wahab et al., 2017) with all the time constraint results ranked above a 3.0 Agree rating, suggesting confirmation of firms' commitment to a strong learning culture. The highest-ranking attributes were questions relating to access to technology resources. Firms should provide access to adequate technology and the Internet to less experienced auditors who engage in informal learning to solve problems that will lead to knowledge acquisition. These results are consistent with the technology revolution and firm commitment to investment in digital upskilling (PWC, 2020; EY, 2019). Results are consistent with Berg and Chyung (2008) noting these technology attributes are just *tools* for participating in informal learning activities.

Although this study contributes to the existing literature related to workplace informal learning in a specific professional context, it does have potential limitations. The scope of the study was narrowed to investigating audit professionals which may limit the generalizability of the study findings. In the auditing sector, professionals are continuously learning new tasks and acquiring new knowledge to meet client needs and maintain relevance in the profession. The tendency to participate in informal learning is growing given the advancement in technology and multilevel support in audit firms. Subsequent studies involving other professional accounting groups such as tax professionals, internal auditors, and general accounting practitioners could extend the results and generalization of informal learning participation. The data collection occurred before the full impact of the COVID-19 pandemic was realized, therefore the results may not apply to auditors' informal learning activities in the post-pandemic environment. Given the abrupt change in personal interaction because of the COVID-19 restrictions, future research on the effects of participation in informal learning activities and available resources in the context of social distancing and effects on collaboration and interaction could make the study more complete.

CONCLUSION

The results of this study are important for several reasons, first, today's accountants must be adaptable to the changing professional landscape. As firms change their learning culture to increase accountability and performance (KPMG 2019), audit professionals develop their critical thinking skills and apply the knowledge they gain exponentially (EY, 2019) through embedded learning through task performance. As firms seek consistency, quality, and productivity while optimizing cost and value (Lutin, 2020) auditors can realize the full potential of their learning culture. These findings are important to educators who seek to help accounting students develop a perspective of lifelong learning and as they develop courses with experiential learning which is important at the graduate level and transition into professional workplace learning.

The purpose of this study was to quantify how much time auditors spend executing work tasks where learning and work processes are interwoven. A clear commitment has been made by accounting firms at the organization level to a culture of learning as findings note auditors spend approximately 90 hours per month on informal learning activities. As organizations are changing and businesses seek to create a more purpose-driven learning culture the aspects of learning at the individual level can support the investment in their people and their people's investment in developing themselves for effective work.

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