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Prediction and Optimization of Sulphur Trioxide Yield from Calcination of Aluminium Sulfate Using Central Composite Design

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Abstract. Sulphur trioxides are common toxic gaseous pollutants which can be produced from alternative routes via calcination of aluminum sulfate derived from kaolin clay. Its demand increases geometrically, thus the need to optimize the yield of SO_3 from the calcination of alum is essential. The rate of alum decomposition was monitored by the formation of SO_3 via thermogravimetric analysis and X-ray fluorescence analysis. This study aimed to evaluate the effect of calcination temperature and curing time on the SO_3 conversion and yields using Face Central Composite Design and optimize the process conditions to evaluate the maximum yield of SO_3 using response surface methodology and its effects and interactions were investigated between 800–900 °C at 60-180 minutes. Results indicated that experimental data satisfied second order polynomial regression model for SO_3 conversion and SO_3 yield from TG analysis while XRF analysis satisfied first order model respectively. An increase in SO_3 conversion and yields was observed as the calcination temperature and time were increased both independently and simultaneously. The calcination temperature was found to have a stronger influence compared to the calcination time. Validation indicated agreement between experimental and predicted values with a regression value of 97.8 %, 97.77 % and 97.67 % for SO_3 conversion, SO_3 yield via TG and XRF analyses respectively. Based on the ANOVA, the SO_3 yield via XRF produced the best model with R^2_{pred} of 91.98% while SO_3 yield via TG analysis and SO_3 conversion had R^2_{pred} of 79.99% and 78.01% respectively. Optimization of the production of SO_3 was carried out and the optimal condition for SO_3 conversion, SO_3 yield via TG and XRF analyes were 90.11 %, 91.67 % and 75.81 % respectively at an optimal calcination temperature of 877.43 °C and time of 155.04 minutes respectively.

Keywords: Calcination temperature and time; Conversion; Face central composite design; Sulphur trioxide; Yield.

INTRODUCTION

Sulphur trioxide is invisible odourless but corrosive gas which is considered as an environmental pollutant [1, 2]. It can be produced in an industrial scale as a precursor to sulphuric acid which has numerous industrial applications. Sulphur trioxide is an essential reagent required in sulphonation reactions. Sulfonation and sulfation are major industrial chemical processes used to make a diverse range of products, including dyes and color intensifiers, pigments, medicinal, pesticides and organic intermediates [3]. The most common production route of SO_3 is the catalytic oxidation of sulphur dioxide which is formed from the oxidation of sulphur containing fossil fuels and industrial processes that treats and produces sulfur containing compounds [4]. Several routes for the production of SO_3, among which the decomposition of aluminium sulfate has been considered suitable from [5] research work in which the calcination of aluminum sulfate was achieved by heating at temperature between 700-900 °C and time interval 60–180 minutes. Despite the high efficiency of the production of SO_3 via catalytic oxidation of SO_2., the high cost of catalyst maintainace as well as the corrosive nature of sulphur dioxide are some of

its demerits [4]. The thermal decomposition of aluminum sulfate results in the yield of sulphur trioxide which can be influenced by the calcination temperature, time and particle size of the aluminium sulfate in which the particle size was considered to be constant.

Optimization is an essential technique employed in improving the existing condition of a process [6] such as sulphur trioxide (SO_3) production and can be achieved through the use of Response Surface Methodology (RSM). The optimization involves either variation of a given parameter per unit time while the other parameter is held constant using RSM. Its techniques can be employed to establish functional relationships between responses of interest and some inputs [7] and based on their relationships, the dependent variables can be used to predict responses that can be compared with the experimental values [8]. The use of RSM cannot be overemphasized as it assists in the evaluation of several parameters simultaneously with their interactions by limiting the number of an experiment to be conducted, as well as optimize process parameters and estimation of interactions [9, 10]. Central Composite Design (CCD) is amongst one of the several techniques of RSM employed to design experimental procedures which have the advantage of screening a wide range of parameters as well as evaluating single variable/ cumulative effect of the variables to response [11]. It can also determine the number of the experiment to be able to evaluate for optimization of variables and responses [12] and has been found to widely used for the optimization techniques for calcination processes to produce significantly better models compared to other models [13].

An understanding of the interaction of the factors is essential in evaluating their relationship because their interactions are difficult to be determined using the one-factor-at-a-time approach [14]. The three stages in implementing response surface techniques include the design of experiment i.e. Box- Behnken or Central Composite Design (CCD), development of a model equation through statistical and regression analysis and finally optimization of parameters via model equation [15]. RSM has found applications in numerous experimental designs ranging from palm oil transesterification [16], extraction processes [8], drilling process [17], biodiesel production [18], prediction of blended cement properties [19, 20, 21] and decomposition as well as other areas of engineering.

The aim of this paper is to investigate the effect of aluminum sulfate calcination temperature and time on the production of SO_3 through response surface methodology using central composite design (CCD) and interactions studied. The comparison of the SO_3 yields via TG and XRF techniques and SO_3 conversion to ascertain which produces the best yield. It also involves optimization of the process conditions for the production of SO_3 from the decomposition of aluminium sulfate derived from kaolin.

EXPERIMENTAL DESIGN

The summary of the design for responses; Sulphur trioxide conversion and yield estimation for XRF and TG values with calcination temperature and time as factors. The following parameters were chosen as independent variables: calcination temperature (800 ˚C, 850 ˚C, 900 ˚C), while the calcination time (60 min, 120 min, 180 min). Face central composite factorial design (3 level 2 factors) with 9 runs (1 block) (design expert 6.0) where -1 denotes low value of the independent variable (800 ˚C, 60 min), 0 used for the medium value (850 ˚C, 120 min) and the high value (900 ˚C, 180 min) were employed to investigate the effect of the above factors on the responses. A model was fitted to the response surface generated by the experiment.

$$Y_k = f(Calcination\ temperature, Calcination\ time), \quad (1)$$

Design-Expert 6.0.8 software was employed to analyze the best fit data and to estimate the optimal value of the factors considered. RSM was used to determine the optimal process parameters to obtain maximum SO_3 content. CCD at 3 levels, 2 factors was selected as independent variables and the interaction of variables were estimated. 9 runs were carried out to fit the general model of equation (1) and to obtain economically optimum conditions for the SO_3 removal efficiency.

$$Y = \beta_0 + \sum_{i=1}^{k} \beta_i x_i + \sum_{i=1}^{k} \beta_i x_i^2 + \sum_{i=1(i\neq j)}^{k} \beta_{ij} x_i x_j, \quad (2)$$

Where Y is the SO_3 yield, β_o is the coefficient constant, β_i is the linear coefficient, β_{ii} quadratic coef-

ficient effect, β_{ij} is the interaction coefficient effect and $X_i X_j$ is the coded values of variable *i* and *j* respectively. Y_1, Y_2, Y_3 denotes SO_3 conversion, SO_3 yield via TG and XRF analyses respectively. X_1 is the calcination temperature and X_2 is calcination time.

Table 1 indicates the experimental results for the determination of the SO_3 content via Thermogravimetric (TG) analysis and X-ray Fluorescence (XRF) analysis obtained from the calcination of alum derived kaolin to investigate its effect of calcination temperature and time on the SO_3 formation. The statistical analysis of the results was carried out by ANOVA to evaluate the model and its parameters were tabulated in Table 2.

The statistical significance was achieved by the F-test of the experimental result obtained. The model terms were selected or rejected based on the probability value with 95 % confidence level. Then, the response surface contour plots are generated to visualize the individual and the interactive effects of the variables.

Table 1 – Experimental Design and Results

Run	*Temp °C, X_1*	*Time min, X_2*	*Conversion %, Y_1*	*SO_3 TGA %, Y_2*	*SO_3 XRF %, Y_3*
1	800	60	8.30	7.55	6.33
2	800	120	12.60	12.97	8.63
3	800	180	16.97	17.46	11.59
4	850	60	48.55	49.95	25.62
5	850	120	68.29	70.25	45.91
6	850	180	80.16	82.47	57.28
7	900	60	97.40	94.44	93.75
8	900	120	97.40	97.26	95.49
9	900	180	97.40	97.36	97.23

Face central composite design was employed and the factors required include calcination temperature (X_1) and time (X_2) with the responses; SO_3 conversion (Y_1) and SO_3 yield from TG (Y_2) and XRF (Y_3) analyses. The factors and the response variables were investigated and the effect of the various factors on the responses were determined using design expert 6.0.8. Results indicated that a quadratic equation was obtained for SO_3 conversion and SO_3 yield from TG analysis whereas SO_3 yield from XRF analysis satisfied linear model:

$$Y_1 = -4037.45 + 8.67X_1 + 0.86X_2 - 0.0045X_1^2 - 0.000563X_2^2 - 0.0072X_1X_2 \quad (3)$$

$$Y_2 = -4663.90 + 10.172X_1 + 0.79X_2 - 0.0055X_1^2 - 0.00057X_2^2 - 0.0058X_1X_2 \quad (4)$$

$$Y_3 = -701.79 + 0.86X_1 + 0.11X_2 \quad (5)$$

The Equations (3) to (5) represent quantitative effect of the factor variables; calcination temperature and time (X_1, X_2) and their interactions on the response; SO_3 conversion and SO_3 yield from TG and XRF values (Y_1, Y_2, Y_3). The values of X_1 and X_2 were substituted in the equation to obtain the theoretical value of Y_1 Y_2 and Y_3 respectively. Based on the experimental design and factor combination, linear model was found to be significant for SO_3 via XRF analysis amongst other responses which were significant for quadratic models.

Table 2 indicates the analysis of variance (ANOVA) for SO_3 conversion, SO_3 yield from TG analysis and SO_3 yield from XRF analysis, all gave F value for lack of fit was 2.34, 2.33 and 1.53 respectively which also confirms that the models are significant due to the fact that it has an insignificant lack of fit. Table 2 also indicates the model F values for SO_3 conversion, SO_3 yield for TG and SO_3 yield for XRF are 62.54, 69.16 and 125.09 respectively, thus the models are significant implying that there is 0.01% possibility that the noise will be large.

Tables 3-5 indicate that the Predicted R^2 value for the three responses were in logical conformity with the adjusted R^2 value for determination of the 3 responses. The several models produced adequate precision ratios indicating a desirable signal which was greater than 4 [22].

Table 2 – ANOVA for Response Surface Quadratic Model Analysis of Variance for Conversion and Percentage SO_3 Yield for XRF & TG analyses with Central Composite Design CCD

Source	*Sum of Squares*	*DF*	*Mean Square*	*F Value*	*Prob > F*
Model Y_1	11558.43	5	2311.69	62.54	< 0.0001
X_1	10780.62	1	10780.62	291.65	< 0.0001
X_2	270.41	1	270.41	7.32	0.0304
X_1^2	357.8	1	357.8	9.68	0.0171
X_2^2	11.35	1	11.35	0.31	0.5968
X_1X_2	18.79	1	18.79	0.51	0.4989
Residual	258.75	7	36.96		
Lack of Fit	258.75	3	86.25	2.34	0.8240
Model Y_2	11567.17	5	2313.43	69.16	< 0.0001
X_1	10506.86	1	10506.86	314.08	< 0.0001
X_2	342.77	1	342.77	10.25	0.015
X_1^2	512.73	1	512.73	15.33	0.0058
X_2^2	17.68	1	17.68	0.53	0.4908
X_1X_2	12.22	1	12.22	0.37	0.5647
Residual	234.17	7	33.45		
Lack of Fit	234.17	3	78.06	2.33	0.8240
Model Y_3	11531.76	2	5765.88	125.09	< 0.0001
X_1	11259.73	1	11259.73	244.29	< 0.0001
X_2	272.03	1	272.03	5.09	0.0355
Residual	460.93	10	46.09		
Lack of Fit	460.93	6	76.82	1.53	0.1176

Table 3 – Model Summary Statistics/ Sequential Model Sum of Squares for CCD for SO_3 Conversion

Source	*Linear*	*2FI*	*Quadratic*	*Cubic*
Sum of Squares	11051.04	18.79	**4.88.60**	247.98
DF	2	1	**2**	2
Mean square	5525.52	18.79	**244.3**	123.99
F value	72.12	0.23	**6.61**	57.54
Prob> F	< 0.0001	0.6406	**0.0244**	< 0.0004
Std. Dev.	8.75	9.11	**6.08**	1.47
R^2	0.9352	0.9368	**0.9781**	0.9908
Adj. R^2	0.9222	0.9157	**0.9625**	0.9978
Pred. R^2	0.87173	0.752	**0.7801**	0.8941
PRESS	1516.96	2930.38	**2598.21**	1251.95
	Suggested		**Suggested**	Aliased

Authors [23] and [24] reported that a fitted model is said to be acceptable when the R^2 is not less than 80% and greater than 75 % respectively. In this study, the predicted values for developed models had a good correlation with the experimental results as shown in Table 3 indicated R^2 values for 97.81 %, 98.02 % and 96.16 % respectively while R^2_{adj} value for SO_3 conversion, SO_3 yield via TG and XRF analyses were 96.25 %, 96.60 % and 95.39 % respectively, indicating appropriateness of the developed model in predicting the SO_3 conversion, SO_3 yield via TG and XRF analyses for the two factors with R^2 and R^2_{adj} value close to unity. Authors [25] and [26] stated that a better empirical model fit was obtained with the experimental data when the R^2 value is close to unity and observed that a relatively high R^2 value does not imply that the model is adequate, thus, [25] suggested that a R^2_{adj} of above 90% is most appropriate to evaluate the model adequacy for the three responses which were closer to unity. Thus, indicating a good fit of the model to experimental results.

The analysis of variance showed the significant effect of the independent variables on the responses and determine the responses which were significantly affected by the various interactions. The following model terms X_1, X_2, X_1^2 were

considered significant while the model terms greater than 0.10 were considered not significant for experimental SO_3 conversion and SO_3 yield via TG analysis whereas, SO_3 yield via XRF analysis showed that only the linear model terms X_1, X_2 were considered significant. The calcination temperature, (X_1) obtained a F value of 291.65, 314.08 and 244.29, while for the calcination time (X_2) produced a F value of 7.32, 10.25 and 5.09 for the experimental SO_3 conversion, SO_3 yield for TG and XRF analyses respectively. The high F values are a strong indication that the effect of the calcination temperature is far more significant compared to the calcination time for all the models. The quadratic term of the temperature obtained a F values of 9.68 and 15.33 respectively with p values falling within $p < 0.05$ or $p < 0.10$ respectively. The quadratic term of the calcination time as well as the product of the calcination temperature and time obtained low F values, thus indicating that their effect is insignificant for the first two responses. It could be concluded that both factors X_1 and X_2 significantly affected the three responses.

Table 4 – Model Summary Statistics/ Sequential Model Sum Of Squares for CCD for SO_3 Yield with TG analysis

Source	***Linear***	***2FI***	***Quadratic***	***Cubic***
Sum of Squares	10849.63	12.22	**705.32**	227.42
DF	2	1	**2**	2
Mean square	5424.82	12.22	**352.66**	113.71
F value	57	0.12	**10.54**	84.28
Prob> F	< 0.0001	0.7401	**0.0077**	0.0001
Std. Dev.	9.76	10.22	**5.78**	1.16
R^2	0.9194	0.9204	**0.9802**	0.9994
Adj. R^2	0.9032	0.8939	**0.966**	0.9986
Pred. R^2	0.8403	0.6755	**0.7999**	0.9336
PRESS	1884.27	3829.56	**2361.51**	783.86
	Suggested		**Suggested**	Aliased

From the experimental results, statistical testing was carried out employing Fishers test for ANOVA and the statistical significance of the second-order model indicated that the regression is statistically significant (P<0.0001) for the first two responses while the third response statistical data satisfied linear model; however, the lack of fit is not statistically significant at 99% confidence level, thus the residual variance for the models were insignificant [27, 28]. The analysis of variance indicated significant effect of the independent variables on the responses.

Table 5 – Model Summary Statistics/ Sequential Model Sum of Squares for CCD for SO_3 Yield with XRF values

Source	***Linear***	***2FI***	***Quadratic***	***Cubic***
Sum of Squares	**11531.76**	0.79	197.1	248.28
DF	**2**	1	2	2
Mean square	**5765.88**	0.79	98.55	124.14
F value	**125.09**	0.015	2.62	42.08
Prob> F	**< 0.0001**	0.9037	0.1412	< 0.0007
Std. Dev.	**6.79**	7.15	6.13	1.72
R^2	**0.9616**	0.9616	0.9781	0.9988
Adj. R^2	**0.9539**	0.9488	0.9624	0.997
Pred. R^2	**0.9198**	0.8478	0.7808	0.8571
PRESS	**962.12**	1830.36	2628.47	1714.22
	Suggested			Aliased

Normal Probability and Predicted vs Actual Plots. Figures 1 (b), 2 (b) and 3 (b) also indicated that there is a strong relationship between the predicted and actual values for SO_3 conversion, SO_3 yield for TG and XRF values respectively based on the results obtained.

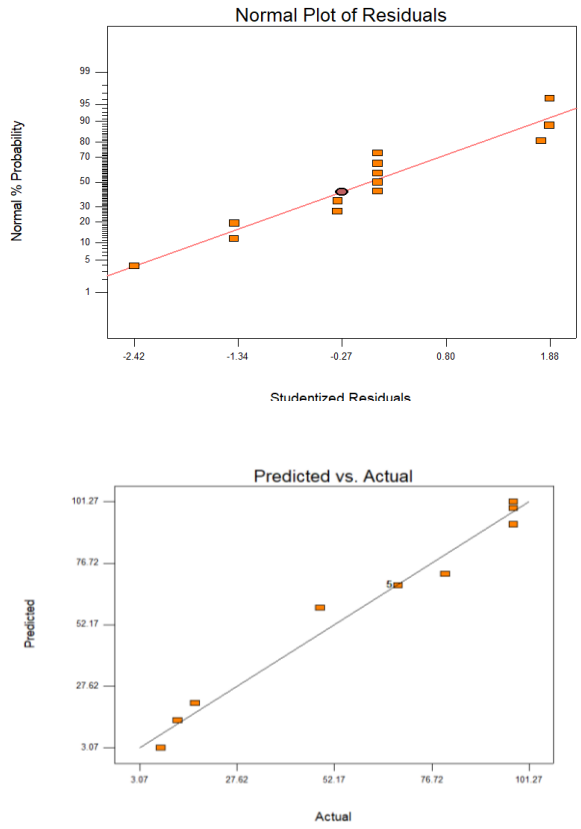

Figure 1 – (a) Normal Plot of residuals indicating significance of the model developed for SO_3 conversion and (b) Predicted vs Actual plot of the model developed for SO_3 conversion

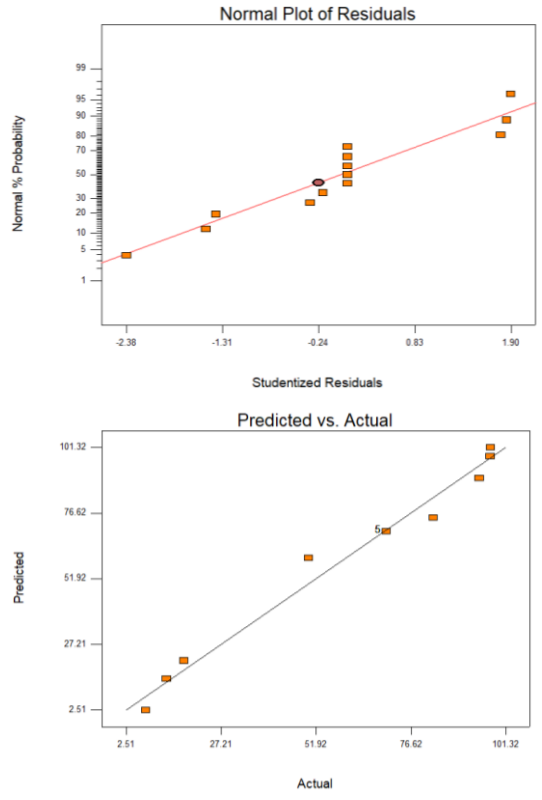

Figure 2 – (a) Normal Plot of residuals indicating significance of the model developed for SO_3 yield with TG analysis and (b) Predicted vs Actual plot of the model developed for SO_3 yield with TG analysis

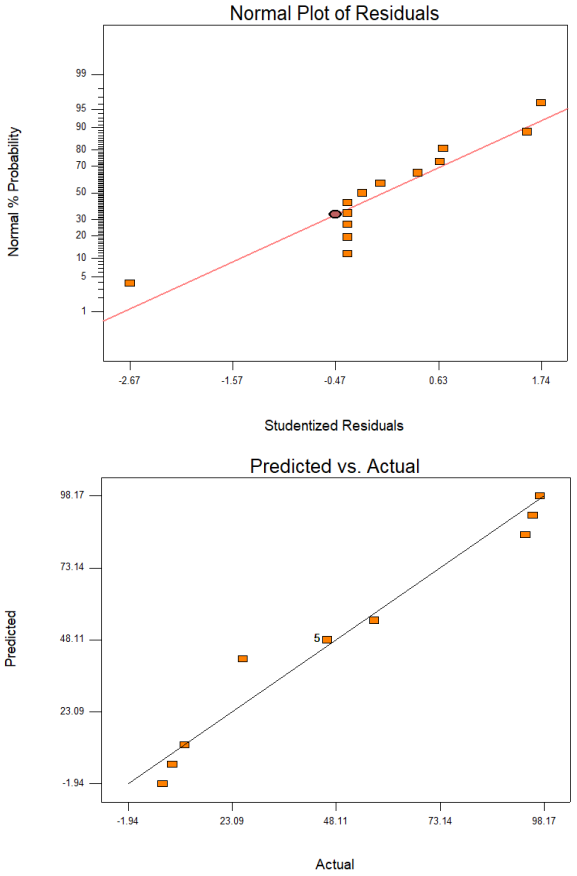

Figure 3 – (a) Normal Plot of residuals indicating significance of the model developed for SO_3 yield with XRF and (b) Predicted vs Actual plot of the model developed for SO_3 yield with XRF

It could be inferred that the predicted model obtained from the Design Expert software was significantly adequate in predicting SO_3 conversion and SO_3 yield for TG and XRF values respectively. Tables 6–8 illustrate the predicted values, actual values and residual errors of SO_3 conversion and SO_3 yield via TG and XRF analyses respectively.

Table 6 – Diagnotistic Case Statistics for SO_3 Conversion

Temp °C	*Time min*	*Actual value %*	*Predicted Value %*	*Residual %*
800	60	8.3	3.07	5.23
800	120	12.6	13.97	-1.37
800	180	16.97	20.83	-3.86
850	60	48.55	59	-10.45
850	120	68.29	67.74	0.55
850	180	80.16	72.43	7.73
900	60	97.4	92.18	5.22
900	120	97.4	98.75	-1.35

Table 7 – Diagnotistic Case Statistics for SO_3 Yield via TG Analysis

Temp °C	*Time min*	*Actual value %*	*Predicted Value %*	*Residual %*
800	60	7.55	2.51	5.04
800	120	12.97	14.35	-1.38
800	180	17.46	21.12	-3.66
850	60	49.95	59.73	-9.78
850	120	70.25	69.82	0.43
850	180	82.47	74.85	7.62
900	60	94.44	89.7	4.74
900	120	97.26	98.04	-0.78

Table 8 – Diagnotistic Case Statistics for SO_3 Yield via XRF Analysis

Temp °C	*Time min*	*Actual value %*	*Predicted Value %*	*Residual %*
800	60	6.33	-1.94	8.27
800	120	8.63	4.79	3.84
800	180	11.59	11.53	0.064
850	60	25.62	41.38	-15.76
850	120	45.91	48.11	-2.2
850	180	57.28	54.85	2.43
900	60	93.75	84.7	9.05
900	120	95.49	91.43	4.06

Contour and 3D Plots. The correlation between the responses and the factors were further explained via contour and response surface plots. The diagnostic plots represented by Figures 4–6 employed to estimate the adequacy of the regression model which shows the response plots (3D) and the contour plots for the effect of factors X_1 (calcination temperature), X_2 (calcination time) on the first response Y_1 (SO_3 conversion), second response Y_2 (SO_3 yield with TG analysis) and third response Y_3 (SO_3 yield with XRF analysis) respectively. The response surface curves illustrate the interaction between the factors and determination of the optimal level of the factors for maximum response. The non-parabolic nature of contours implies no significant interaction between both factors [29] as observed in Figure 6.

The calcination temperature and time both caused an increase in the SO_3 conversion and yield % when their values were increased from lower level to higher level as observed from the 3D surface plots. The plotted response surface curves were employed to elucidated the interaction of the factors and to determine the optimal level of each factor for a maximum response. From the predictive model, an increase in the calcination temperature from 800–900 °C at constant time of 60, 120 and 180 minutes led to a significant increase in the SO_3 conversion respectively as illustrated in Figure 7.

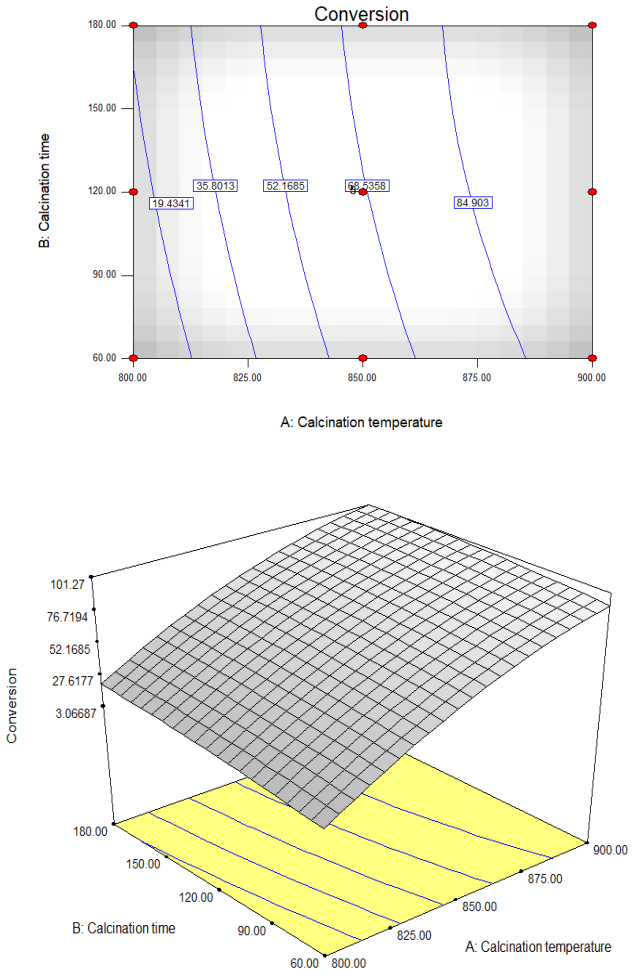

Figure 4 – Response surface plot (Contour and 3 D surface) showing the effect of different factors (X_1: Calcination temperature, X_2: calcination time) for SO_3 yield with TG analysis for quadratic model

Similar trends of an increase in the SO_3 yield from TG and XRF analyses were observed as the calcination temperature was increased at constant times of 60, 120 and 180 minutes illustrated in Figures 5–6 respectively. A significant increase in the SO_3 yield via TG and XRF analyses was experienced as both factors were gradually increased. Similarly, an increase in the SO_3 conversion was experienced as the calcination time was gradually increased from 60 to 180 min at constant calcination temperature of 800, 850 and 900 °C.

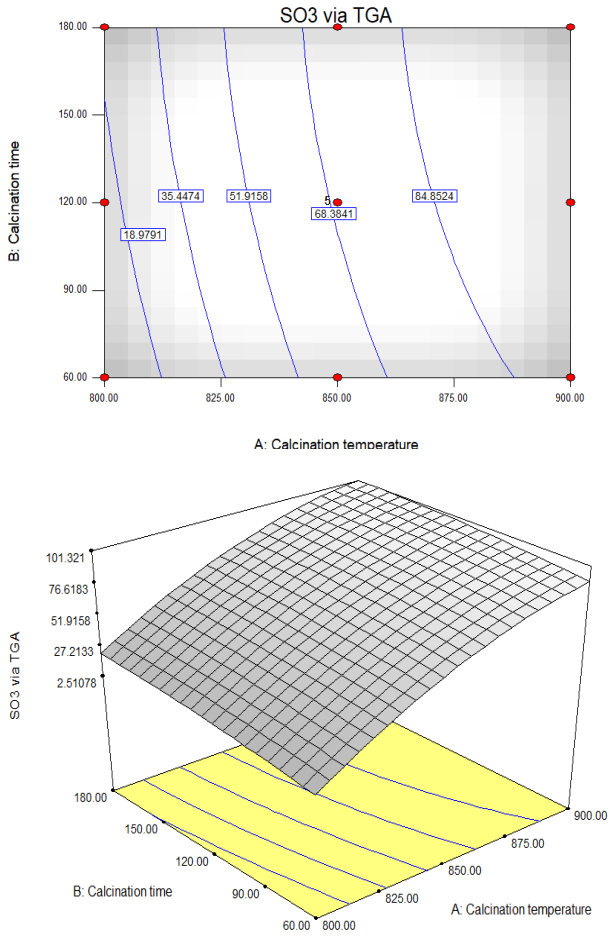

Figure 5 – Response surface plot (Contour and 3 D surface) showing the effect of different factors (X_1: Calcination temperature, X_2: calcination time) for SO_3 conversion for quadratic model

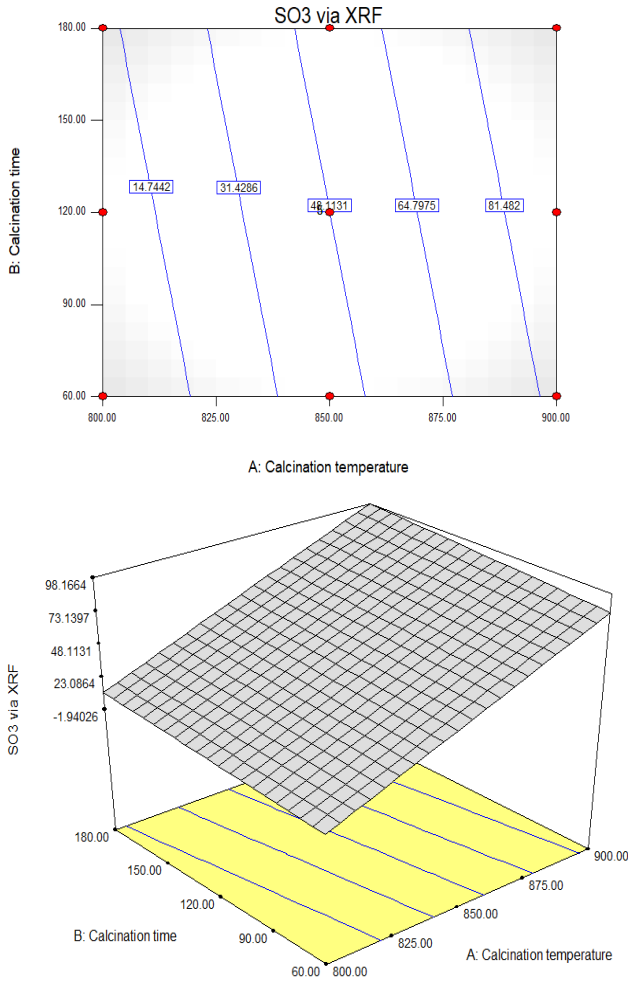

Figure 6 – Response surface plot (Contour and 3D surface) showing the effect of different factors (X_1: Calcination temperature, X_2: calcination time) for SO_3 yield with XRF for quadratic model

Figures 8 and 9 illustrate the effect of calcination time on the SO_3 yield via TG and XRF analysis at various constant calcination temperature. From the predictive model for the determination of the SO_3 via TG analysis, it could be observed that the SO_3 yield increased as the calcination time progressed from 60-180 minutes while the calcination temperature was held constant at 800, 825, 850, 875 and 900 °C respectively. The SO_3 yield via TG analysis increased from 24.32–43.54 %, 49.93–65.67 % as the calcination time progressed from 60–180 minutes at constant calcination temperature of 850 and 900 °C respectively. This increase in SO_3 yield could be attributed to the increase in the duration of calcination stemming from the increase in kinetic energy gained by the molecules to overcome the activation energy resulting in increased SO_3 yield.

Similar trend of an increase in the SO_3 yield via XRF analysis as the calcination time progressed at constant calcination temperature of 800, 825, 850, 875 and 900 °C respectively. The SO_3 yields via XRF analysis were found to be higher compared to those obtained from TG analysis. The values of SO_3 yield via XRF were also significantly close to SO_3 conversion values at various calcination temperatures and time compared to those of SO_3 yield via TG analysis. This could be attributed to the accuracy of the analyses of the SO_3 yield. The increase in yield of SO_3 from the decomposition of alum derived from kaolin clay could be attributed to the increase in amount of kinetic energy required to propagated the decomposition reaction as the temperature was increased or the calcination time progressed [29].

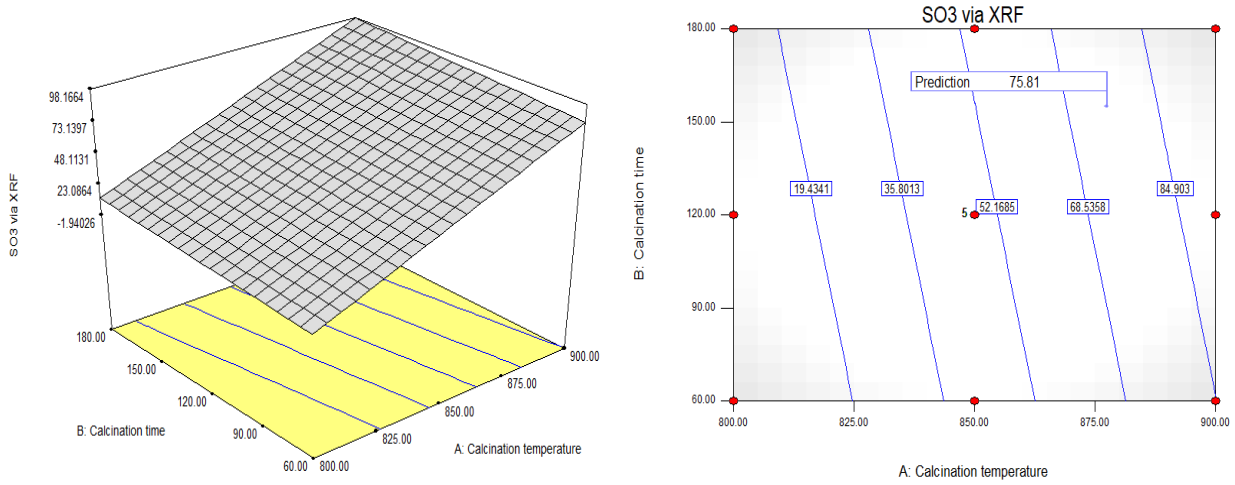

Figure 7 – Response surface plot (3D surface and Contour) indicating the optimal conditions (X_1: Calcination temperature, X_2: calcination time) for SO_3 conversion

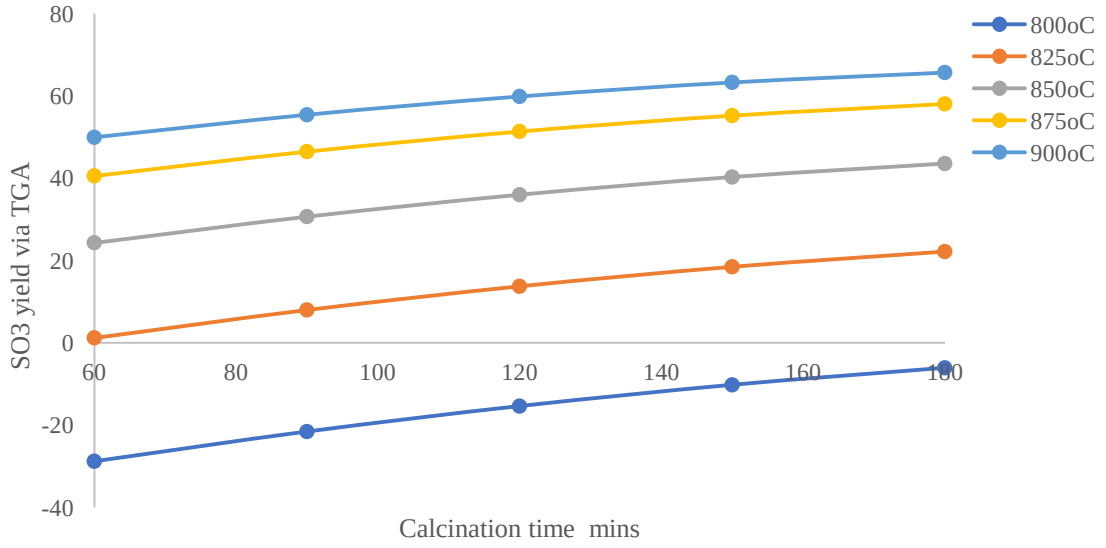

Figure 8 – Effect of calcination time on the SO_3 yield via TG analysis at various calcination temperatures

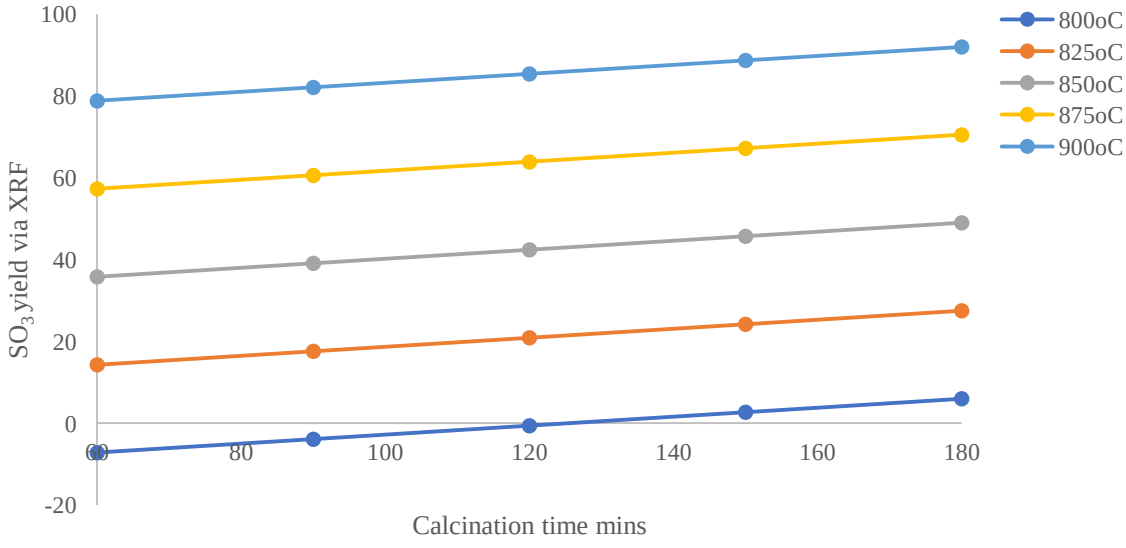

Figure 9 – Effect of calcination time on the SO_3 yield via XRF at various calcination temperatures

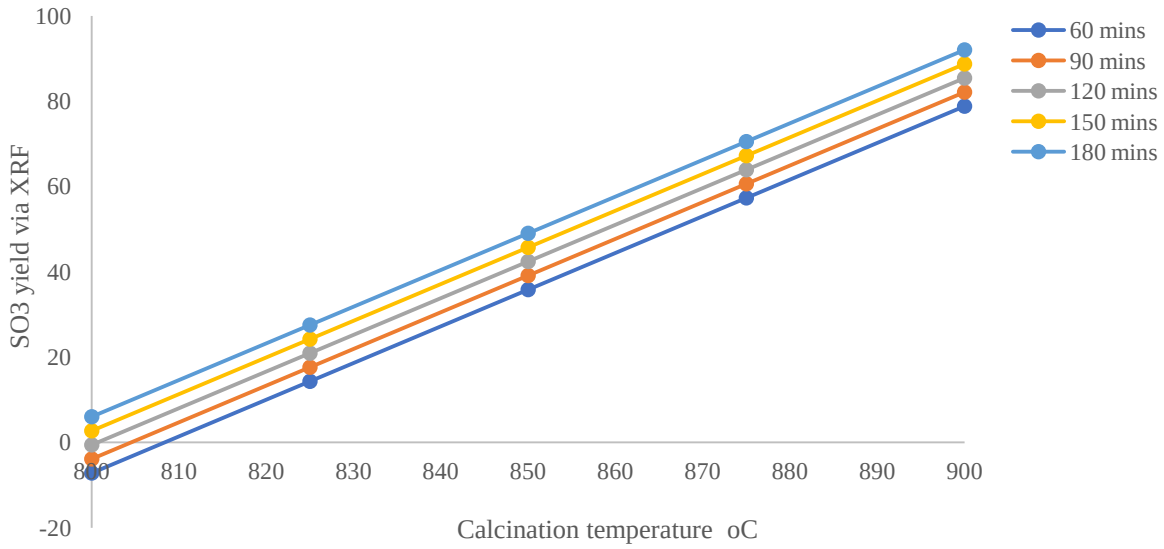

Figure 10 – Effect of calcination temperature on the SO_3 yield via XRF at various calcination times

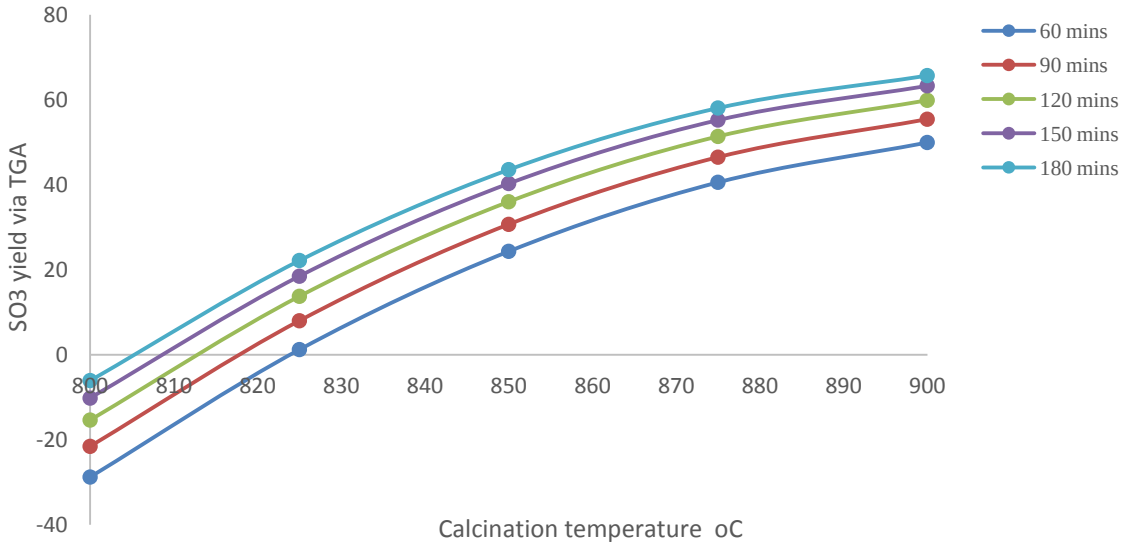

Figure 11 – Effect of calcination temperature on the SO_3 yield via TG analysis at various calcination times

It could be observed in Figure 10 and 11, that as the calcination temperature was gradually increased from 800–900 °C, there was a steady increase in the SO_3 yield for both XRF and TG analyses respectively. On the other hand, the predictive model for the determination of the SO_3 yield via XRF analysis, it could be seen that as the calcination time was held constant at 180 minutes and the calcination temperature was increased from 800–900 °C, the SO_3 yield via XRF increased from 6.01–92.01 %. Similar trend of an increase in the SO_3 yield via XRF was observed for other calcination time at 60, 90, 120 and 150 minutes respectively.

Optimization. Optimization of the production of SO_3 was conducted and the optimal conditions for optimal SO_3 conversion of 90.11 %, SO_3 yield via TG analysis of 91.67 % and SO_3 yield via XRF of 75.81 % at an optimal calcination temperature of 877.43 °C and time of 155.04 minutes. Figures 12–13 indicated similar trend of an increase in the SO_3 conversion and SO_3 yield obtained via TG and XRF analyses as the calcination temperature and time of the aluminum sulfate was simultaneously increased as illustrated by the response surface plots.

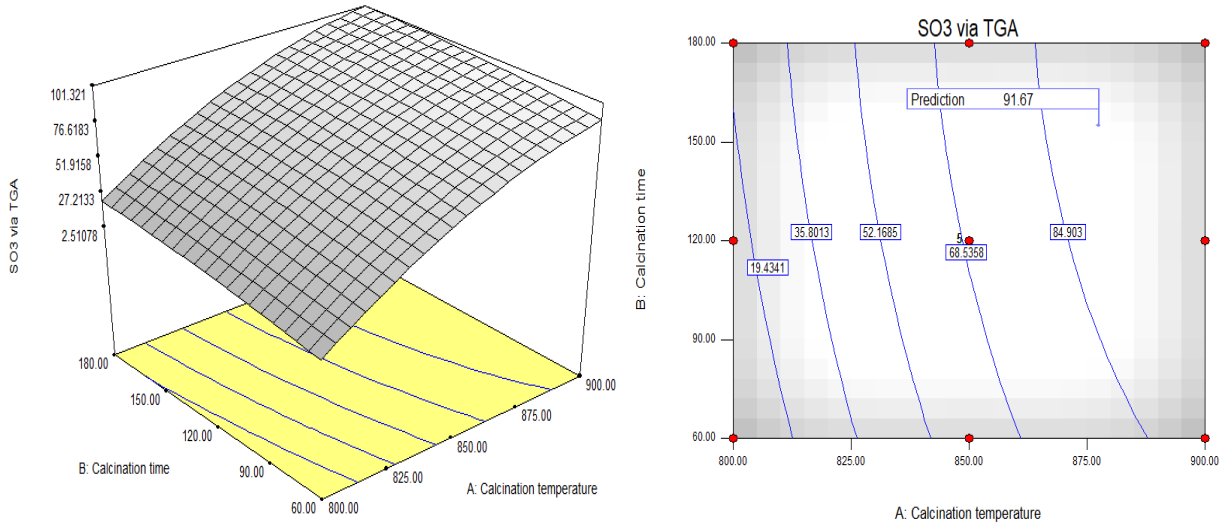

Figure 12 – Response surface plot (3D surface and Contour) indicating the optimal conditions (X_1: Calcination temperature, X_2: calcination time) for SO_3 yield via TG analysis respectively

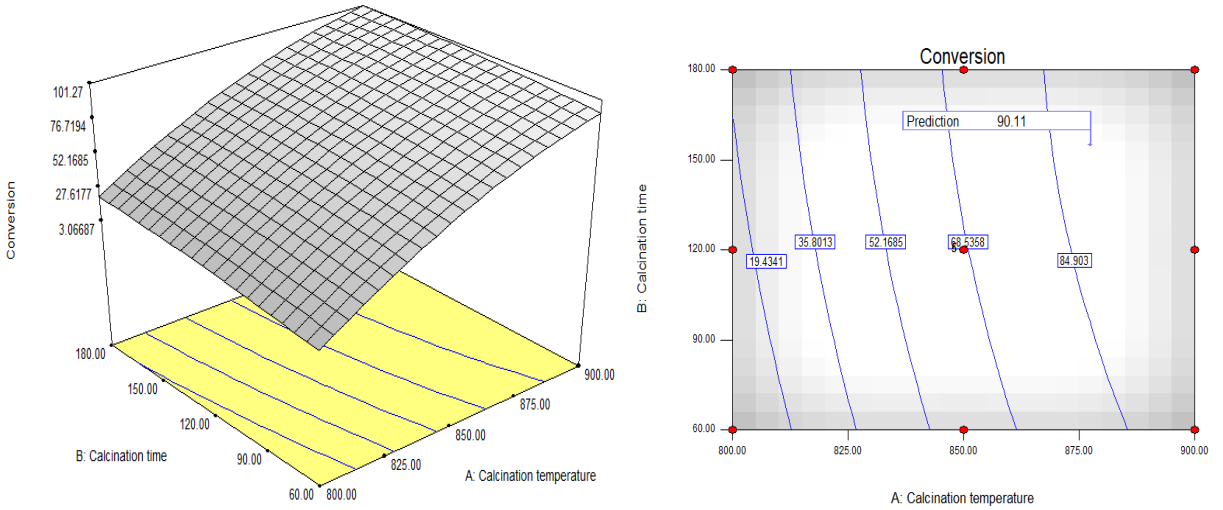

Figure 13 –Response surface plot (3D surface and Contour) indicating the optimal conditions (X_1: Calcination temperature, X_2: calcination time) for SO_3 yield via XRF

CONCLUSION

An increase in the calcination temperature and time between 800–900 °C and 60–180 minutes led to an increase in the SO_3 conversion, SO_3 yield via XRF and TG analyses respectively. Based on experimental results, an empirical relationship between the response and factors was obtained and found SO_3 conversion and SO_3 yield via TG analysis best suited with quadratic models whereas SO_3 yield via XRF satisfied a linear model. The SO_3 yields and conversion were established by the response surface and contour plots of the model-predicted responses. The SO_3 conversion and SO_3 yields via TG and XRF analyses of 90.11 %, 91.67% and 75.81 % were obtained under optimal value of process parameters for calcination temperature of 877.43 °C and time of 155.04 minutes respectively. Analysis of variance for SO_3 conversion and SO_3 yields via TG and XRF analyses indicated a high coefficient of determination value for SO_3 conversion and yields (R^2 =97.8%, R^2_{adj} = 97.06%) (97.77%, R^2_{adj}=97.03) and (R^2 =97.67 R^2_{adj}=97.06) respectively. Thus, a satisfactory agreement of the second-order regression and first order model with the experimental data for TG and XRF analyses respectively. The calcination temperature provided the most significant effect on the SO_3 yields and conversion compared with calcination time. It was also observed from the ANOVA that SO_3 yield via XRF gave the best model with (R^2_{pred} = 91.98%) compared to SO_3 yield via TG analysis (R^2_{pred}=79.99 %) and SO_3 conversion (R^2_{pred}=78.01 %) respectively.

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CONFLICT OF INTEREST

The authors declared that they have no conflict of interest.

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Culture as a Living Organism: Some Words on Danilevsky's Theory of Cultural-Historical Types

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Abstract. This paper aims to explore Danilevsky's theory of cultural-historical types. The authors used hermeneutic, cultural-historical, and integrative approaches. Denying the understanding of the history of humankind as the linear reality for the formation of the socio-cultural system of universalism, N. Danilevsky relies on the multivariate historical development and elaborates a methodology of civilizational discreteness that takes into account the originality and integrity of each particular cultural-historical type. The thinker emphasizes that the core of any cultural-historical type is a certain ethnos with its specific set of attitudes and values. Although this approach can not explain global integration tendencies, it allows to take into account the multidimensional vectors of human cultural space and the unique experience of different civilizations. N. Danilevsky introduced into the scientific discourse the idea of the integrity and self-sufficiency of each cultural-historical type. This idea was developed by a German historian, representative of the philosophy of life O. Spengler in his book "The Decline of the West", in which the theory of local civilizations was enriched with morphological studies of history, and a British historian, philosopher of history, sociologist A. Toynbee, who laid out his universalist philosophy of history in the twelve-volume work "The Study of History".

Keywords: N. Danilevsky; culture; civilization; cultural-historical type; local civilizations.

INTRODUCTION

The 21st century reveals the new phase of the world transformation that causes inter-civilizational conflicts and international terrorism. The most common and controversial features of this transformation are the process of globalization against a background of postindustrial society and simultaneously the formation of a new generation of local civilizations [1; 4; 5]. New trends towards globalization have contributed to the emergence of the ideology of globalism, which largely ignores alternative scenarios for the future of humankind. At the same time, ideologists of the anti-globalist movement believe that globalization in its current form does not contribute to the improvement of international relations. On the contrary, it became a kind of catalyst for socio-political tension and conflicts on our planet. The idea of the multipolar world is in direct collision with the ideology of unifying globalism.

The growth of national self-awareness, attempts to return to the framework of national stereotypes of thinking [7; 16], adverse effect of uncontrolled migration, weakening of the European Union, Brexit force us to take a fresh look at the theories of local civilizations that became widespread in the late 19th – early 20th centuries, when natural science ideas were actively disseminated [12]. This period became the heyday of the theories of local civilizations. In keeping with the spirit of the times and considering the need to review the commonly held views on history, N. Danilevsky, O. Spengler and A. Toynbee turned to natural science. Striving to reveal the general laws of the universe and identify the historical and natural processes, they, according to their preferences, divided human history into the history of cultural-historical types, cultures and societies, that is, the history of different civilizations, each of which was obeyed the certain laws of heyday and decay. As living nature, civiliza-

tions emerge, reach their heyday, decay, and die. The causes of their death, as well as the causes of the death of living organisms, are unidentifiable. Classifications of cultural-historical types, cultures and societies resemble animal classifications by C. Linnaeus and G. Cuvier. The traditional division of history – the Ancient World, the Middle Ages and the Modern Period – was rejected, because it did not meet the requirements of natural systems. Insofar as the theory of linear and universal civilization did not take into account the pace and orientation of the East, N. Danilevsky, O. Spengler and A. Toynbee considered them to be outdated and no longer true. They finally broke with tradition of Christian historians to consider history to be the same and historical time to be irreversible. Actually, they returned to the scheme of the cyclical history of individual nations professed by ancient thinkers. But unlike the ancient authors, they interpret the cyclical nature of the historical process through the lens of natural science.

The civilization approach to the history of humankind emphasizes the fact that human history is a constellation of non-related human civilizations. This approach is based on the concept of cyclic time that represents the eternal circular motion. The social cycle does not have a certain orientation, although it is not accidental. Any state of the system may occur in the future; moreover, it already existed in the past. Changes occur within a short time interval, but within a long period of time there is no change, because the system returns to its original state. N. Berdyaev [2], L. Gumilev [6], O. Spengler [15], A. Toynbee [18], P. Sorokin [13; 14], A. Kroeber [8; 9], C. Quigley [11] interpreted the historical-civilization process as development within the separate (local) civilizations. A prominent Russian scientist, philosopher, sociologist N. Danilevsky became the author of one of the first theories of local civilizations. In his magnum opus "Russia and Europe" he defined civilizations as the certain cultural-historical types [3].

This paper aims to explore Danilevsky's theory of cultural-historical types.

RESULTS AND DISCUSSION

Putting aside Danilevsky's concept of Pan-Slavism, due to which he earned the fame of a Russian totalitarian philosopher [10], we want to focus on his theory of cultural-historical types. The starting point of Danilevsky's theory is a rejection of the historical process as a single evolutionary flow that unites all countries and peoples of the world. He does not agree with the point of view, which considers European civilization and culture to be the apex of human development and judges the non-European cultures through the lens of Eurocentrism: "anywhere where citizenship and culture could develop, they have the same progressive character as in Europe" [3, p. 90]. N. Danilevsky rejects the Eurocentric idea of classification of history as such that does not reflect the richness of historical process.

According to N. Danilevsky, the task of humanity lies in manifestation (at different times and within different peoples) of all sides, all features, which exist potentially in the very idea of humankind. The true representatives of historical life are "natural" systems, certain cultural-historical types, which he understood as a combination of ethnic, anthropological, social, territorial, and other features.

N. Danilevsky insists on the necessity to consider the history of every nation as an independent cultural-historical type, which differs from the other cultural-historical types and has its own "face" and destiny. Only in relation to a certain cultural-historical type, one could speak of the Ancient World, the Middle Ages or the Modern Period. The specificity of any cultural-historical type is determined by a God-given idea, which humans must develop in all spheres of their lives. The full development of this idea is regarded as a progressive process for any given cultural-historical type. The more the field of historical activity of humankind will be "cultivated", the more vivid, multifaceted the manifestation of the human spirit will be. According to N. Danilevsky, this is the only possible understanding of historical progress.

N. Danilevsky emphasizes that the main reason for the division of the natural system of history lies in the fact of the existence of the cultural-historical types, which he presents in chronological order:

1) Egyptian;
2) Chinese;
3) Assyrian-Babylonian-Phoenician, Chaldean, or ancient-Semitic;
4) Indian;
5) Iranian;
6) Jewish;
7) Greek;

8) Roman;
9) New-Syrian, or Arabic;
10) Germanic-Roman, or European.

He also mentions two American types – Mexican and Peruvian, which were destroyed by the Europeans and did not have enough time to reach their full swing.

The peoples who represented these cultural-historical types were prominent figures in the history of humankind. Each of them paved their own way of development, manifested themselves both in the peculiarities of their spiritual nature and in the external conditions of life making a unique contribution to the general treasury of humankind. For N. Danilevsky, there is continuity of some cultural-historical types, namely Egyptian, Assyrian-Babylonian-Phoenician, Greek, Roman, Jewish, and Germanic-Roman. This continuity has determined the Western world progress. At the same time, N. Danilevsky stresses that the other cultural-historical types developed such aspects of life, which were not to the same extent inherent in their more successful rivals and, thus, contributed to the multilateral manifestations of the human spirit. In fact, it was a progressive way.

In addition to positively active cultural types, N. Danilevsky mentions the so-called negative figures in human history – the Huns, Mongols, and Turks. After destroying dying civilizations, these peoples disappeared from the historical arena. Some peoples, for example the Germans, were ambivalent – they played both positive and negative roles. There were also tribes (for example, the Finns), which have not played either a positive or a negative role; they have not reached historical identity and can only serve as ethnographic material for cultural-historical types [3, p. 111]. "While it sounds dismissive to call cultures outside his cultural-historical types "ethnographic material", for N. Danilevsky this was not necessarily pejorative, but merely a way to describe the embryonic stage of tribal existence where all peoples begin the life cycle. Civilizations are organic, literally growing into existence: some to bear fruit, others not, like unpollinated blossoms left to wither" [19, p. XXIII].

Being "first and foremost naturalist concerned with the proper classification of specimens by their inherent similarities or differences" [19, p. XII] and proposing the new approach to historical process, N. Danilevsky rethinks and restructures the world history as follows: cultural-historical types can not exist forever, all of them are born, attain various degrees of development, grow old and decrepit and die: "To all living things – individuals, genus, species, animals and plants – there is given only a certain span of life, and when it is finished they must die" [3, p. 92].

Although cultural-historical types are born, live, flourish and die independently, their development is subject to five general laws. The first law requires a certain language that unites a family of related peoples. Within aforementioned ten cultural-historical types, the three were of the Semitic tribes with their own languages (Chaldean, Hebrew, and Arabic). The Aryan group of languages included Sanskrit, Iranian, Hellenic, Latin, Celtic, German, and Slavic linguistic families. Five tribes related to these language families (Indian, Persian, Greek, Roman/Old-Italian and German) represented distinctive cultural-historical types that had developed into distinctive civilizations.

The second law emphasizes the political independence, the existence of the independent state for any given people or group of peoples. There is no civilization that would have emerged and developed without political independence. Though, according to N. Danilevsky, civilization having reached a certain level of development may for some time continue to exist after the loss of independence (for example, the ancient Greeks) [3, p. 115].

The third law – the law of the noninheritability of civilization – fixes the originality of the cultural-historical types. Analyzing the oldest cultural-historical types, N. Danilevsky insists on the impossibility of transferring the achievements of one civilization to another. All attempts to impose their civilization on the other peoples were not successful, because it is impossible to absorb all the cultural elements (religious, domestic, social, political, scientific, and artistic) [3, p. 121]. However, this does not mean that the interactions between the different cultural-historical types are impossible: the peoples do not live in a vacuum and there are no insurmountable boundaries between them. Cultural contacts have a complex, controversial nature; they can also be both a good and evil thing for the actors of civilizational process.

The fourth law argues that a cultural-historical type can reach completeness only if the various ethnographic elements, which constitute it, have a certain degree of independence and form a federation or a certain political system of states. These were Greek and European cultural-

historical types, the elements of which had developed independently. That is why these peoples achieved impressive success. N. Danilevsky believes that the peoples who speak the same or related languages should form a unitary state. If the peoples speak different languages within a single linguistic family that forms the basis of a cultural-historical type, they need to create a federation based on positive legislation or even exist within a political system of states.

The fifth law – the law of the brevity of the periods of the cultural-historical types – defines their periods of life: ethnographic, state period, civilizational / cultural period and a period of decline. Then they return to the ethnographic form of being, which can be used by the other positive peoples who are just starting their way.

For N. Danilevsky, every cultural-historical type realizes its own idea in the field of human activity. For instance, the civilization of the ancient Greeks brought to perfection the idea of beauty, European civilization – natural science, Semitic tribes – religious ideas and the belief in one God the Creator. Let us stress that this does not indicate the one-sidedness and limitations of the spiritual life of each type. Each of them has contributed to the other spheres of life. N. Danilevsky proposes a classification of the cultural-historical types based on the main directions of cultural activity of humankind. He highlights four areas:
– religious activity, which covers the relationship between humans and God;
– cultural activity: scientific, artistic, and industrial;
– political activity;
– social-economic activity.

CONCLUSIONS

Denying the understanding of the history of humankind as the linear reality for the formation of the social-cultural system of universalism, N. Danilevsky relies on the multivariate historical development and elaborates a methodology of civilizational discreteness that takes into account the originality and integrity of each particular cultural-historical type. The thinker emphasizes that the core of any cultural-historical type is a certain ethnos with its specific set of attitudes and values. Although this approach can not explain global integration tendencies, it allows to take into account the multidimensional vectors of human cultural space and the unique experience of different civilizations.

Thus, "Danilevsky's theory and his core concept – a cultural-historical type – had initially been of significant methodological and cognitive potential that predetermined their widespread use both in culture studies and in a number of anthropological studies of American and British scholars of the 20th century (F. Boas, B. Malinowski)" [17, p. 20]. N. Danilevsky introduced into the scientific discourse the idea of the integrity and self-sufficiency of each cultural-historical type. This idea was developed by a German historian, representative of the philosophy of life O. Spengler in his book "The Decline of the West", in which the theory of local civilizations was enriched with morphological studies of history, and a British historian, philosopher of history, sociologist A. Toynbee, who laid out his universalist philosophy of history in the twelve-volume work "The Study of History".

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Utilising Action Research to Enhance Critical Social Work Practice: Ukraine's Experience of Introducing Community Paralegals

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Abstract. The study was conducted to examine the course development process during which the perception of paralegal's role in local communities of Ukraine was shaped. Based on action research and critical social work paradigm the study demonstrates the role of training participants in constructing new knowledge, and how the understanding of paralegals concept in Ukraine had changed under their influence. The findings from a few cycles of action research reveal that there are fewer limitations to be a paralegal in Ukraine, as it was presupposed, paralegals role has shifted from only service brokerage and providing information, to conflict-solving, and providing new initiatives in local communities, moreover, the educational program for paralegals was changed in terms of their requests and according to their regional specifics.

Keywords: paralegal; Ukraine; action research; community advisers.

INTRODUCTION

The idea of paralegals is not new for a set of countries in different parts of the world: Philippines, Moldova, South Africa, China, the USA [1, 4, 9, 10]. But there wasn't any paralegals' experience in Ukraine till 2016 when the International Renaissance Foundation decided to implement paralegals work in local communities. In regional centers of Ukraine and large cities, the level of access to professional social workers or lawyers is quite high, educational institutions produce new specialists each year. But at the same time, plenty of communities do not have free access to such specialists, for example, in such communities as remote mountain villages, small towns, "dying out" rural areas, closed communities of indigenous, poor people, etc. Traditional legal aid providers do not always take into account the peculiarities of working with the poor, the vulnerable social groups, lawyers are looking for financial gain, complex legal cases. But the need of local communities is not in difficult cases but simple information and consultation. Moreover, people do not trust lawyers and think they are too expensive, so people either solve their problems in non-lawful ways or just don't solve problems. This attitude and resources distribution causes other ways to seek legal assistance and social support. Community paralegals are the answers to those problems. They are community volunteers who communicate in a clear language, have authority and trust in their communities, understand difficulties and problems, they are actively involved in community life [11].

The researcher was involved in the process of developing a community paralegals network from the very beginning within the advisory board, and decide to take the action research framework for constructing this process. Principles of action research arise from the idea of empowering people, and this is one of the main principles in social work practice. Action research in social work is based on recognizing strengths in all clients [2]. So when the researcher faced the need to develop a new construct of paralegals in Ukraine, which has to be explored and experimentally constructed, the answer to this need was action research as an intervention. The main idea was to bring people from various social and political contexts and backgrounds to identify, investigate who can be a paralegal in Ukraine, concerning the set of problems that faces local communities in Ukraine.

Action research was taken as a framework because all of the decision-making process –from

the formation of research questions to the interpretation of the findings –everything was experimental and new to Ukrainian realities. Action research in this process was considered as a participatory process carried out by people affected by a problem or concern, concerned with developing practical knowing, it seeks to bring together action and reflection, often using a cyclical process to increase their understanding of the real problem before moving towards a solution - shared new knowledge [8]. In this way, stakeholders became co-researchers: trainers, experts, the organization team, paralegals. As action research, the study was composed of cycles of reflection and action [7], and by these means, main initial ideas about who can be a paralegal, what their educational program should include, and their roles in the communities have been changed based on the participation of paralegals in the process. Their inclusion was based on the main principles of participation in action research to develop knowledge through empowering dialogue about modern views on critical social work paradigm [3, 6].

In the study researcher aimed to encourage participants to influent the process, so the closest understanding of the term "participation" in this survey is within the context of promoting development. Within the critical social work paradigm, effective participation recognizes not only the importance of involving all stakeholders in the development process [12], but also analyzing if doing so really increases the capacity of all to use the results of mutual decisions [5].

So the *aim of this study* is to review the creation of a new short-term training course and to analyze whether the less powerful group of the participants –paralegals (community advisers as they called under Ukrainian tradition) –are able to influence the study and to construct a new knowledge, and how the understanding of paralegals concept in Ukraine had changed under their influence.

There've been held 4 cycles of the research, there were a set of methods used within the research design in each cycle. Methods, cycles, groups of research participants, and the decisions which were made during each cycle are indicated in Table 1. This paper focuses on community advisers (paralegals) perceptions and statements expressed during the different stages of the cycle.

Table – Research methods in accordance to the study cycles

Cycle number	Methods	Research participants		
		Experts	Trainers	Community advisers
Actions. 1 cycle: from the initial expert meetings to the end of the 1 training module for community advisers	Desk-review analysis	Vision of the training programme topics		
	Training for trainers		Training methods selected for each topic	
	Focus groups	Primary decisions of who can be a paralegal		
	Educational process	Decisions of what was useful within the training course, course redesign		Decision of who can be a paralegal, Decisions of what was useful within the training course, request for specific topics
Reflections	Feedback forms on community adviser activities			Decision of what a paralegal can do
Actions. 2 Cycle: 2 (Southern) set of community advisers	Focus groups	Vision of paralegals' network development		Vision of the training programme topics
	Educational process	Decisions of what was useful within the training course		Requests for additional educational topics
Reflections	Feedback forms on community adviser			Decision of what a paralegal can do

Cycle number	Methods	Research participants		
		Experts	Trainers	Community advisers
Actions. 3 cycle: 3 (Eastern) set of community advisers, additional; trainings for the 1 set	Educational process	Decisions of what was useful within the training course		Requests for additional educational topics
	Case study			Paralegals' success cases
Reflections	Feedback forms on community adviser activities			Decision of what a paralegal can do
Actions. 4 cycle: community advisers Forum	Focus groups	Vision of paralegals' network development		
Reflections	Researcher is still in the process of gathering feedbacks			

RESULTS AND DICUSSION

The course development process. The process of this course development was designed in four steps.

The first step as international educational program analysis. Based on this analysis experts decided to make the course practical, designed as a set of training. All topics were united into three educational modules –"Human rights", "Community life", "System changes and cooperation", each of these modules lasts for three days, so the whole course lasts 9 days.

The second step was experts' meetings which were aimed to develop course content. According to experts' vision, the "human rights" module is dedicated to the understanding of the concept of "human rights" and introduction to basic human rights ideas. In particular, paralegals should achieve the idea of what human rights are, how to define situation of human rights violations, understanding the idea and the nature, and types of discrimination, understanding the characteristics of discrimination in different spheres of life, understanding of how to use this knowledge (consumer rights protection, labour rights, algorithm of what to do in those cases of violation, rules, and implications of contracting, including credit and online purchases. Also, the course participants should be familiarized with regional social services networks and free legal aid systems (governmental and non-governmental organizations) within this module. The second module "Community life" is focused on the understanding of community resources for problem-solving. Module "System Changes and Collaboration" provides an understanding of the process of effective communication and integration of various services into the community. Also, this section covers the attraction of funds and the writing of project applications. Each section of the curriculum is composed of three components: theory, practical examples, visualization [11].

During the third step a pool of trainers was formed by the method of "snowball" – that is, each expert advised at least two trainers on the topic they were developing. Practitioners from regions were also selected on the criteria that they have training experience so they could conduct training for paralegals based on developed educational programs. Thus, a pool of 35 trainers was formed – 12 in the first module, 12 in the second module, 11 in the third module. All trainers are practitioners in a human rights, service organization or legal aid organization.

The fourth step in the development of the educational program was training for trainers (TOT). A group of selected trainers presented the content of the program with the proposed teaching methods. The trainers were grouped in three by modules' topics, in those groups they worked in small teams on topics. After that, these teams presented their work (elements of their training sessions) for teams that represented other modules. Thus, at the end of the 3-day training, each trainer had feedback from colleagues on the relevance of the key issues, and on the training methods, they've chosen. In addition to all, TOT participants had the opportunity to discuss the content of the entire course together. All of them had an understanding of the whole course and the connections between different topics. Also as trainers were put in real situations, they could

change the methods if some of them were ineffective. An important part of the TOT was a focus group discussion where trainers and experts brainstormed around paralegals and their functions in Ukraine, as well as the results of the discussions, was the initiated decision to call the Ukrainian paralegals "community advisers".

According to the discussion results community paralegals activities in Ukraine significantly differs from paralegals activities almost all around the world. In particular, their activities supposed to be less attached to legal advice, but more to social services, and services brokerage.

Experience of engaging and training community advisers. The first all-Ukrainian competition to take part in a community adviser's educational program took place in 2017. 30 participants were selected from 450 who applied. At the end of the third module, 23 participants passed the pilot training course and became the first set of community advisers. In 2018, the community continued to be recruited and expanded - regional competitions and training of community advisers were held. Representatives from the southern regions of Odesa, Mykolayiv, Zaporizhzhia and Kherson regions studied in Odesa (Southern (2) set), and training for advisers from Kharkiv, Poltava, Donetsk and Luhansk regions were held in Kharkiv (Eastern (3) set).

The feedback from training participants allows determining changes in a vision on community advisers' decisions. In their feedback forms, community advisers left requests to the training program redesign. Such a redesign was made three times.

There were feedbacks from the first set of community advisers. They requested such changes: changes in the order of the educational modules 2 and 3, decrease attention to the decentralization process for community advisers told they are common with the topic, but increase attention to the budget processes at the local level. And also community advisers complain that the language is too difficult. The nationwide (first) set formed a request for leadership topic, but since it happened within the last module, a separate session on this topic was held for them in addition to the educational program.

After the first educational module of the second set, it appears that there were three topics of particular interest to community advisers in the region. They requested those topics to be included in the course: safety, public health, and education. Changes to the program were made in response to this request. As far as new health and education reforms in Ukraine are implemented, these topics were also included in the training program for the Eastern (third) set of community advisers.

After the third training module, community advisers of the Third (Eastern) set asked for more information about mediation, and other ways to resolve conflicts. Experts didn't take into account the regional specifics. In particular, there is an ongoing armed conflict with Russia in the Eastern part of Ukraine, and the region is divided into two parts – Ukrainian territories which are under Ukrainian rules, and Ukrainian territories that are occupied. There is only one person from occupied territory in the 3rd set, because it's difficult to go out and back to those territories, and there were more people who applied and were chosen, but they didn't come to the educational part. Still, the conflict-solving topic is of extreme interest for the whole 3rd set. They indicates many problems in their communities: destroyed buildings which are to rebuild, but the local governments have their view of what should be done in the community, they don't arrange consultations with the community members, there are also a lot of soldiers, and internally displaced people who moved from occupied territories to the closest communities. So there are many conflicts between these people who are new to the community, and usually, they have a proactive position, and the local government, who usually prefer to change nothing.

It is worth to note that community advisers influence the vision of what paralegal should do. For example, during the second cycle, it appears that community advisers do way more than was expected from them. One of the participants shares her experience of initiating a baby-club in the community.

"The idea of creating a Baby Club originated from the lessons of a community adviser with her little daughter. The community adviser decided to share her knowledge about babies' development. Since she works in the library, she decided to create a baby-club on the base of the library. For the organization of the club, the community adviser conducted a small survey among library users who have children from 2 to 5 years old and gathered a group of 5 children. So once a week community adviser or volunteers she in-

volved work with kids to develop their speech, senses, motor skills".

Another community adviser opens the education allow club based on the library. She took informational leaflets from the government legal aid provision centre, and she made a stand in the library, where everybody can take leaflets. Also, she organized public disputes on problems in rights realization to reveal problems that are actual for the community. So community advisers started to organize their volunteer initiatives in their communities.

During the third cycle, community advisers show their creativeness in their initiatives. They began to unite in groups to solve typical problems in the region. They unite in several groups for now with different topics: "School mediation", "Youth leadership support", "Action against domestic violence", "Community safety", "Roma integration", "Instruments to influence local governments". Mostly those groups are regional, except for the group that works on youth leadership support.

Community advisers influence on the vision of who can be a paralegal. During the first cycle, experts decide upon a set of limitations about who can and who can't be a paralegal. But after the first set of community advisers' education, those limitations were changed.

First of all, the limitation for priests was canceled. There was a very active participant in the first set, he is a Roma activist, he usually took leadership. At the end of the course, it reveals that he is a priest in his community. If he wrote that in his motivation letter, he won't be chosen for the course, but in fact, it wasn't a problem, and he fits all of the other criteria in his community.

The same situation was with another community counselor, who was a representative of local government but didn't mention that in his application. He also fits the criteria: he has trust, authority, and respect in his community.

After these two cases, limitations for priests and government representatives were canceled.

So, the study proves the ideas of other researchers has been widely discussed in recent social work literature internationally [2, 3, 6] that taking a participatory approach within the action research could be helpful in introducing new social work community practices and that modern educational formats must fashion itself to be 'fit for purpose of community development.

This study shows that not only community advisers have an influence on the research process of the action research, but also changes they've made were crucial to the understanding of who can be a community adviser in Ukraine, what they can do, and what they should learn.

CONCLUSIONS

In this study, the question was if community advisers (paralegals) could make changes in the decision-making process about their community. And they influenced the ideas of who can be a paralegal in Ukraine, what they can do, what they should learn. There are also some observations in the process which should be taken into account by anybody who wants to construct a new role in the society (or name an existing role that wasn't differentiated as a set of specific activities), teach a new complex constructs, and work with local activists, utilize the action research within the critical social work model . Here are those observations:

1. The experience of Ukrainian paralegals shows that experts should have taken into account the community contexts, but they couldn't because they are experts in certain topics on the national level, but not in regional communities tendencies. This can be seen in the example of the educational program design that was changed under the paralegal's influence and by the topics of community advisers initiatives, such as «mediation» and «community safety». It means that community advisers are experts in those community contexts. So this is a shift in the understanding of expertise in studies aimed to discover regional tendencies.

2. Understanding this point of expertise means that a researcher should think over the ways to involve people who usually are not considered as experts in the process of the research. In this study, it was done by the means of collecting feedbacks because those feedbacks are individual. Paralegals in a group tend to listen to leaders or «known-experts» and agree with them on public, but in their private feedbacks, they open their point of view which can be different. The idea here is to listen to everyone as everyone is an expert.

3. Such educational designs as in this study can be applied in teaching a group with a new role to society or a certain community, for new concepts usually need specifications and those changes are possible in such a model.

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Assessment of Knowledge Sharing Practices in Nigerian Construction Firms

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Abstract. Knowledge generated during construction projects is wasted as a result of a lack of awareness of the benefits of sharing knowledge. Moreover, knowledge is scattered in the construction firms through various documents and individual brains without a platform to retrieving it for sharing among the employees. Therefore, this paper aims to assess knowledge sharing practices in Nigerian construction firms. A detailed review of relevant literature was conducted with the view of collecting relevant data necessary for this paper. A total of 150 numbers of questionnaires was distributed to Engineers, Quantity surveyors, Builders and Architects in construction firms that are based in Abuja. The descriptive method of analysis was used to analyze the data obtained from the survey. The result shows the followings as methods of knowledge sharing practices in Nigerian construction firms: (1) face to face interaction, (2) site & Departmental meetings, (3) mentoring and tutoring, (4) project briefing and interviewing session, and (5) internal training courses. In addition, the followings were established as construction activities that are commonly used for knowledge-sharing practices: (1) site visitation, (2) estimation & price forecasting, (3) evaluation of BOQ, (4) preparation of scheduling for site activities, (5) development of tender programme, (6) taking off and (7) understanding of construction technologies and methods. Therefore, the paper recommended that the top management should encourage knowledge-sharing practices in the construction firms through face to face interaction, seminars/workshops, and post-project review.

Keywords: construction firms and construction projects; knowledge; knowledge management and knowledge sharing.

INTRODUCTION

Knowledge sharing across a project is vital since the knowledge transfer from a current to concurrent or subsequent projects allows employees to use existing proven knowledge to solve problems as a substitute for creating new knowledge, which can guzzle time [17, 40]. Author [46] asserted that when an organization has deficiencies in a heightened degree of knowledge sharing, knowledge leaks are the consequences. Therefore, such leakage ultimately results in organizational inefficiency like repeated mistakes, depending on a few key individuals, duplicated work, lack of sharing of good ideas, and slows in the adoption of new ideas, techniques, and technical know-how and problems solutions. Researches [50] further expressed that knowledge sharing is the heart of knowledge management (KM) practice. If professionals do not share what they know, then there is generally a little knowledge to be managed. This was supported by [37] that, the concept of KM is to create a knowledge-sharing atmosphere whereby "knowledge sharing is power," as opposed to the ancient belief that "knowledge is power. The construction firms in Nigeria are still being criticized for continuous mistakes and errors during the construction phase of the projects, dispute, poor planning and design, time and cost overruns and poor quality of workmanship [31]. This reflects that knowledge and professional experiences are not shared among the employees for re-use. This lack of knowledge sharing practice in Nigerian construction firms has been a serious challenge in developing countries like Nigeria. Therefore, the

above-mentioned gap is the motivating factor for this study to establish the methods of Knowledge sharing practices in Nigerian construction firms. And identify the construction activities that are commonly used for knowledge sharing practices in Nigerian construction firms.

Knowledge Sharing in the Construction Firms. Construction firms involve construction professionals with different backgrounds of knowledge working jointly to produce the products of these firms by contributing their knowledge and experiences to actualize the dreams of these firms as well as clients [30]. This situation provides the employees with the opportunity to gain knowledge and professional experiences to accomplish the project task. Authors [7] further stated that the procedure of the construction projects provides the employees with the opportunity to adhere to the practice of problem-solving in the construction project setting, acquiring and developing knowledge by applying different sources. In the execution of the construction project, the organizations in the construction industry as compared to other industry used project knowledge to improve the new technology and innovation. Authors [38] emphasized that construction projects can be separated from its context, like the historical background and organizational location. Authors emphasized that sharing knowledge and professional experiences within the construction firms has become a challenge depending on informal and personal relationships. KM initiatives have commonly been concentrating on capturing, codifying and transferring knowledge [3, 18, 28]. Capturing knowledge and mediating it across organizational boundaries is dependent on roles that support, connect projects and organizations [5, 36]. Mediating knowledge has been usually in line with the support of functions and domain experts who have been found to rely on personal contacts to perform the task [5, 29].

Knowledge sharing (KS) within the construction firms is vital, as it certainly leads to knowledge application, innovation, as well as a competitive advantage for the construction firms [2, 13, 25]. However, 80 % of valuable knowledge is tacit and cannot be written down. KM policy and strategies have to accept this fact and plan for way forward [48]. KS has the maximum value within the construction firms, knowledge is shared and retailed in a means that encapsulate the professional experiences and characteristic that elevates the data and information to knowledge [43]. KS enables the training curve of the recipient to accelerate once it has become the approach and system of the construction firms [49]. Authors [27] conducted a study on KS mechanisms for different types of knowledge and they observed that employees learned fairly well on how to share explicit knowledge. And further suggested that it will be better if workers can be encouraged in sharing tacit knowledge, where the process of knowledge transfer and innovation will significantly speed up. However, the KS mechanism was summarized in Table 1.

Table 1 – The knowledge sharing mechanism

No	Types of Knowledge	Method of Access	Sharing Mechanism	Media
1	Systematic knowledge	Research model	Computer imitation, scenario planning	System tools
2	Tacit knowledge	Practice	Brainstorming	Experimentation, mentoring system
3	Explicit knowledge	Listening &Reading	Communication	Publications and presentation
4	Hidden knowledge	Socialisation	Focused groups	Intelligence Model
5	Relationship knowledge	Interaction	Partnership, teamwork	Social setting

Source: [30]

According to [33] KS is the activity of transmitting or sharing knowledge among the employees of the construction firms. KS is described as the procedure through which employees of the construction firms mutually exchange their knowledge, skills, past experiences and collectively generate new knowledge and innovation within the firms [39]. KS is accomplished with the inter-

actions and conversion between tacit and explicit knowledge as suggested by Nonaka are as follows: socialization, externalization, combination, and internalization, which facilitated the KS within the construction firms [10, 32, 41]. KS relies on the mutual understanding and respect of the employees. Authors [18] argued that KS is really a process of communication among the employees of construction firms. Knowledge is not like other goods that may concede anywhere easily; it is associated with a knowing subject. KS encompasses the relationship between a minimum of two parties, in which one offers knowledge and the other one acquires knowledge. Some researchers outlined that construction firms should produce a favorable atmosphere for KS [16, 52]. They added that KS differs from information sharing for the reason that KS requires not only interacting the data to another party, KS includes enhancing the other party to comprehend the items in the information conveyed and gain knowledge from the information to rebuild the information into their own knowledge.

Based on the explanation and the views of the above previous researchers, this paper deduced and demonstrate the knowledge sharing practices in the construction firms as shown in Figure 1.

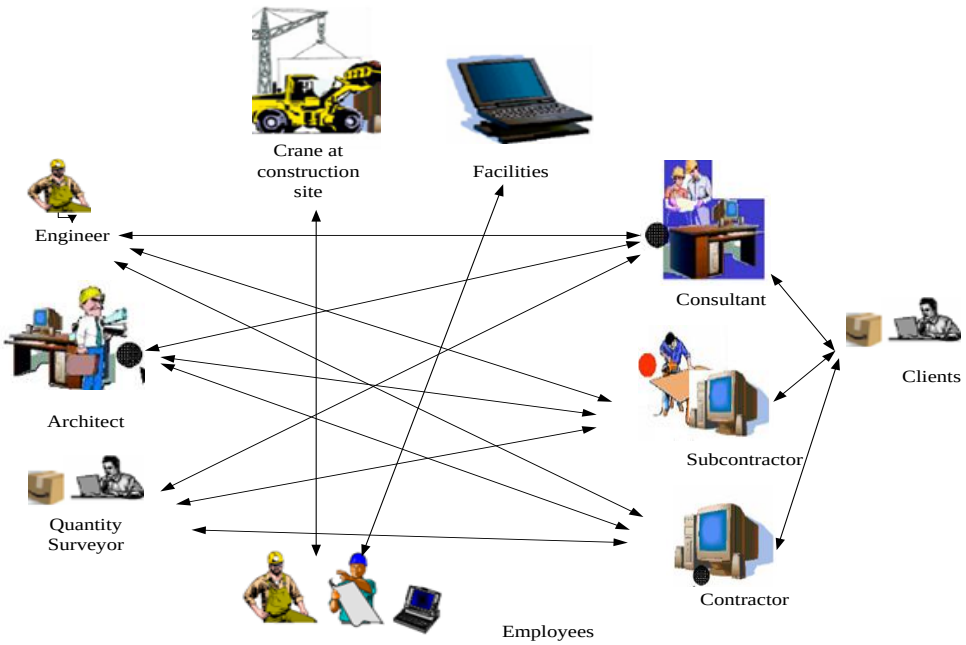

Figure 1 – Knowledge sharing practices in construction firms

The Influence of Organisational Culture on Knowledge Sharing. The organizational culture reflects the deep fundamentals that construction firms are dependent on such as their values, beliefs, background, and traditions [46]. Culture is an extremely wide concept and comprises many facets; one cultural aspect that is crucial for KS is a collaboration because KS requires employees to have social interaction and the exchange of ideas, views, and perceptions [53]. The attitudes towards KS are developing within the construction firms and extrinsically to the construction firms in the larger industry are significant. Certainly, knowledge is commonly seen by employees as a source of their advantage in the organization and thereby affected the employee willing to share knowledge [25, 34]. Many researchers discovered that cultural barriers that exist may hamper the implementation of the effective KS strategy and learning approaches within the construction firms [14, 15, 21, 45, 40]. Authors [7] conducted a study and discovered that cultural factors affect the knowledge transfer process. There is a need to establish organizational culture and senior management commitment and support to improve the incentive and reward systems for the employees to practice KS [4, 6].

Construction firm. A firm in a common word is an organization that carries together with the various factors of production, for example, labor, land, and capital to produce a product or facility that is anticipated to be sold for a profit or personal use [42]. Author [23] regarded firms as the

planned organization of collective events of a group of people seeking to accomplish a common aim or set of goals. Interpreting in the context of construction, [47] stated that contractor sells their skills to assemble structures, the management services required to syndicate manpower, machinery, and material into new construction projects. The output of construction firms can be perceived as a service rather than a product [22, 35].

Different professional firms possess different creative skills and management skills that are essential to construction firms. These skills are in four dimensions, namely: the client, the technology to find a product, the transaction kind, and the project size and difficulty [26]. For example, some construction firms practice specialization according to their customers rather than products with a defined base of major customers.

METHODS

This study adopted a quantitative research approach via a survey questionnaire to sample individuals from a population to make statistical inferences about the population using the sample [11]. And also to pull out public opinion, such as beliefs, perceptions, ideas, views and thought about the knowledge sharing practices in Nigerian construction firms. To obtain the required population for this study, the stratified random sampling technique was adopted for the selection of the construction firms that participated in this study. This selection was in line with the concept of [12] that respondents are arranged in strata for the conveniency in questionnaire distribution and assessment. Also, the simple random sampling was adopted in each of the construction firms for the selection of construction professionals from the strata.

The questionnaire that was used to record the responses of each respondent contained mainly closed-ended questions using a five-point Likert scale ranged from very high, high, slightly high, low and none. The scores of the respondents were computed based on the variables used in the questionnaire. As earlier explained that simple random sampling techniques were adopted in each of the construction firms for the selection of construction professionals. 150 numbers of professionals were selected in Nigerian construction firms that are based in Abuja. These professionals are Quantity Surveyors forty numbers (40), Architects forty numbers (40), Builders forty numbers (40) and Civil Engineers thirty numbers (30). However, one hundred and forty (140) numbers of those selected professionals were able to return the questionnaire, while four (4) of the one hundred and forty (140) were ignored for incorrect entry.

The inference statistic was adopted to summarise the sample, rather than use the data to learn about the population and sample. In this paper, the inference statistic was used to present means score, standard deviation, and frequency counts. The mean score was used to rank the respondents' opinions or responses obtained.

RESULTS AND DISCUSSION

The age groups of the respondents. The age group of the respondents is analyzed and the result is presented in Figure 2. The result shows that 36.36 % of the respondents are within the age group of 26-35 years old. Whereas 30.36 % of the respondents are within the age group of 36-45 years, and 15.02 % of the respondents are within the age group of 18-25 years. This result shows that the employees are within the age of 18-45 years. This reflects that the employees of Nigerian construction firms are within the active age to learn, share and acquire knowledge to improve the organizational performance.

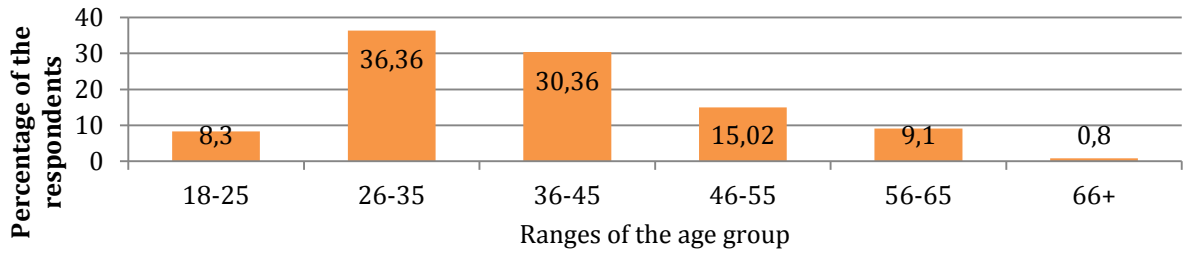

Figure 2 – The age group of the research respondents

The educational background of the respondents. The respondents of this study specialize in different areas of professions such as Engineers, Quantity Surveyors, Architects, and Builders. These professionals obtained their knowledge and training skills in the above areas of specialization as mentioned. The professionals obtained certificates in these areas, but the nature of the certificates varies. The natures of the certificates obtained by the respondents are analyzed using descriptive analysis and the results are presented in Figure 3. The result shows that 34.39 % hold a Bachelor's degree in science (BSc), 31.62 % hold a Higher National Diploma (HND). 18.18 % hold a National diploma. 13.83 % hold a Master of Science (MSc) degree and 1.98% holds a Doctor of Philosophy (Ph.D.). This implies that the respondents have the required educational training in line with the experiences acquired during the construction phase of the projects.

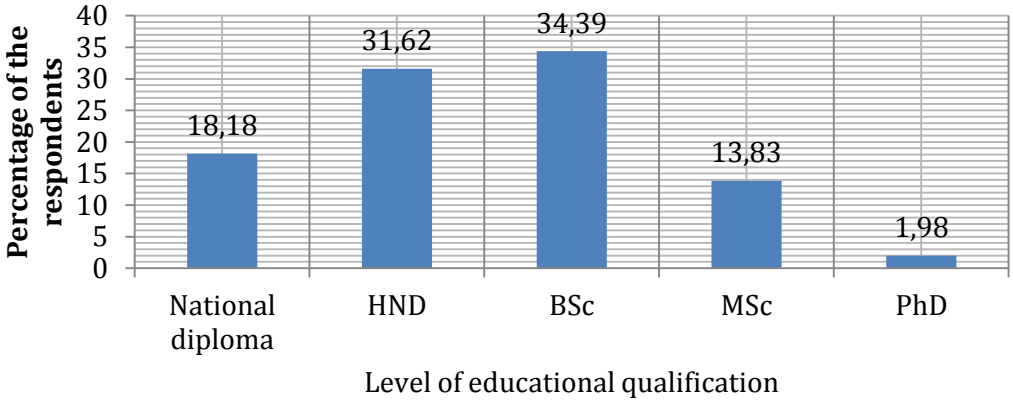

Figure 3 – The educational qualification of the respondents

The respondent's working experiences. Figure 4 shows that 42 % of the respondents are within the range of 6-10 years of working experiences. 24 % of the respondents are within the range of 11-15 years of working experiences, 22 % of the respondents are within the range of 1-5 year of working experiences and 9 % of the respondents are within the range of 16-20 years of working experiences respectively. This shows that the respondents have adequate knowledge of construction projects based on their experiences.

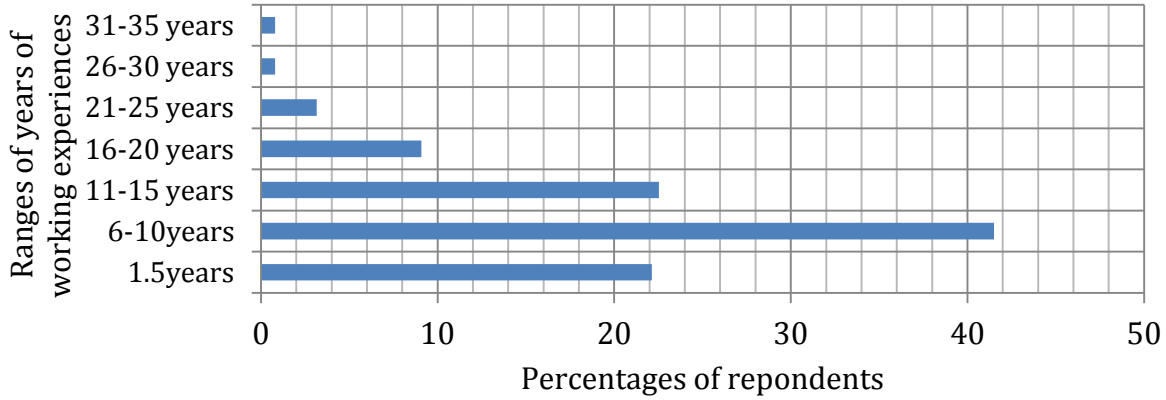

Figure 4 – The respondent's years of working experiences

The nature of the issues discussed during the knowledge sharing practice. Figure 5 shows 32 % of the respondents admitted that the nature of the issues discussed during the period of sharing knowledge is issues concerning new works, methods, and technical issues. 28.5 % of the respondents stated that the natures of the issues discussed are company news and new technology. This implies that the nature of issues discussed when sharing knowledge during construction projects are very essential since there are issues that bring innovation and improves organizational efficiency and performance.

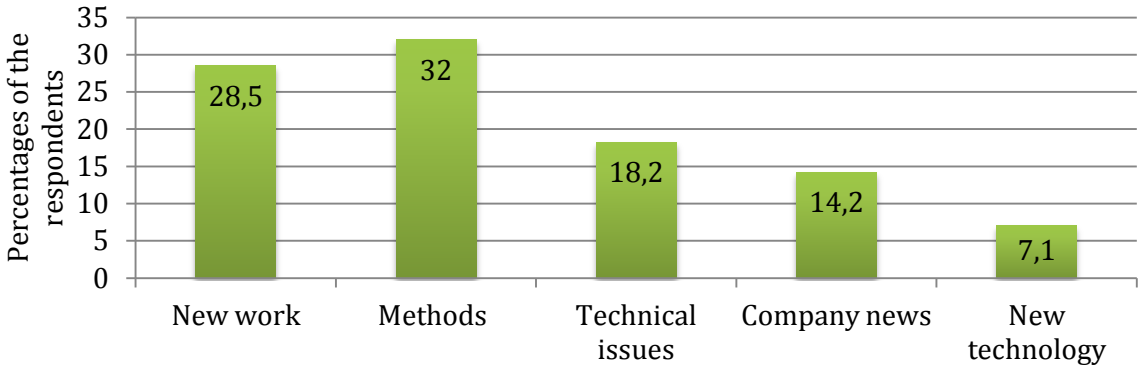

Figure 5 – The nature of the discussions

The level of knowledge sharing practices in Nigerian construction firms. The result from Figure 6 shows that 62.5% of the respondents do not practice knowledge sharing to solve the problems during the course of construction projects. However, 37.5 of the respondents acknowledged that they practice knowledge sharing during the courses of construction projects, especially when new staffs were employed and during the course of variations, errors, mistakes and reworks This reflects that knowledge sharing practices in Nigerian construction firms is still at infancy stage.

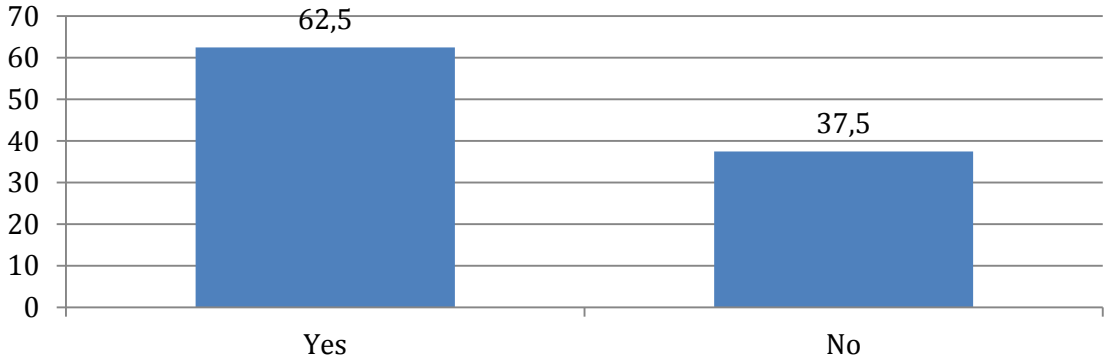

Figure 6 – Level of knowledge sharing practices in Nigerian construction firms, %

The activities of construction projects that are commonly used for KS practice. The activities of construction projects that are commonly used for knowledge sharing were examined in Table 2 as shown below.

Table 2 shows the following as the main construction activities that are commonly used for knowledge sharing practices in Nigerian construction firms. These activities are site visitation, estimating and price forecast, evaluation of BOQ returned by the subcontractors, preparation of schedules for the site activities, development of the tender program, taking off, understanding construction technologies and methods, decision making on bids, bidding strategies and evaluation of tender documents.

These aforementioned construction activities were ranked 1–10 with the mean scores of the following 4.19, 3.99, 3.94, 3.92, 3.91, 3.90, 3.87 and 3.85 respectively. This indicates that the above-mentioned construction activities are mostly used for knowledge sharing practices in Nigerian construction firms.

Authors [24] agreed with the findings that knowledge is share based on the activities of each organization especially in the construction firm's where knowledge is shared in construction activities such as method and technologies used in construction, site visitation, bidding strategies and preparation of schedules and materials, etc.

Authors [20] conducted a similar study in Quantity Surveying firms in Malaysia and agreed with the findings by outline the followings construction activities used in knowledge sharing practices such as taking off, preparation of valuation certificate/report, project monitoring, site visitation, estimating and price analysis, examination of BOQ, bidding strategies and contract administration.

Table 2 – Activities of the construction projects used for KS

Construction activities used for knowledge sharing	Mean	Std. Deviation	Ranks
Site visitation	4.19	0.982	1
Estimating and price forecasting	3.99	1.100	2
Evaluation of BOQ returned by the subcontractors.	3.94	1.167	3
Preparing the schedules for the site activities	3.92	1.161	4
Development of tender programme	3.91	1.142	5
Taking off	3.91	1.200	6
Understanding construction technologies and methods	3.91	1.198	7
Decision making on bids	3.90	1.147	8
Bidding strategies	3.87	1.140	9
Evaluation of tenders documents	3.85	1.198	10
Understanding other competitors	3.82	1.104	11
Participating in contract administration	3.79	1.257	12
Preparing specification	3.78	1.324	13
Choosing subcontractors and suppliers	3.51	1.382	14

Source: Field work, (2019)

Methods of knowledge sharing practice in Nigerian construction firms. The methods of KS practices in Nigerian construction firms were examined and the findings from the analysis are presented in Table 3 below.

Table 3 shows the following as main methods of knowledge sharing practices in Nigerian construction firms: face to face interaction, site & departmental meeting, mentoring and tutoring, project briefing and interview session and internal training courses. These methods mentioned above were ranked 1–5 with a mean score of 4.44, 4.03, 4.03, 3.89 and 3.82 respectively. This indicates that the aforementioned are the foremost methods of knowledge sharing practices in Nigerian construction firms.

Also, the followings are methods of knowledge sharing practices: post-project review, informal chatting, and storytelling, e-mail and internet were ranked 9–12 with a mean score of 3.23, 3.04, 2.61 and 2.42 respectively.

Table 3 – The methods of KS practice

Methods	Mean	Std. Deviation	Ranks
Face to face interactions	4.44	0.686	1
Site meeting and dept. meeting	4.03	0.909	2
Mentoring and tutoring	4.03	0.942	3
Project briefing and interviewing sessions	3.89	1.016	4
Internal training courses	3.82	1.119	5
Talks, seminars and workshops	3.44	1.189	6
Database system	3.42	1.329	7
Phone calls and teleconferencing	3.41	0.966	8
Post projects review	3.23	1.069	9
Informal chatting and story telling	3.04	1.149	10
Through e-mail	2.61	1.185	11
Through internet	2.42	1.119	12

Source: Fieldwork, (2019).

This signifies that the above mentioned are considered least methods of KS practices in Nigerian construction firms. Authors [9, 51] both conducted a similar study in Malaysia academic institutions and agreed with findings that the followings are a method of sharing knowledge in academic institutions such as face to face interaction, tutoring/lecturing, workshop/seminars, in-housing training, and informal chatting & storytelling. Authors [1, 44] concord with the findings that method of knowledge sharing practices are mentoring, tutoring, coaching, seminars/workshop, physical interaction, internal training and through the internet.

CONCLUSION

This paper sort to assess the knowledge sharing practices in Nigerian construction firms to establish the method of sharing knowledge and construction activities used in knowledge sharing practices. Thus, the paper was able to establish the construction activities that are commonly used for knowledge sharing practices in Nigerian construction firms. These are (1) site visitation, (2) estimation and price forecasting, (3) evaluation of BOQ returned by the subcontractor, (4) preparation of schedules for the activities, (5) development of tender programme (6) taking off, (7) understanding construction technology and methods and (8) bidding strategies. Furthermore, the paper established the followings

method of knowledge sharing practices in Nigerian construction firms. These are (1) face to face interaction, (2) site/ departmental meeting, (3) mentoring and tutoring, (4) project briefing and interviewing sessions and (5) internal training courses. Conclusively, the general level of knowledge sharing practices in Nigerian construction firms is at the infancy stage. Therefore, the paper recommended that the top management of Nigerian construction firms should adopt knowledge sharing practices to improve performance. The professional bodies should encourage the individuals to share their tacit knowledge to avoid the reinventing of the wheel. The construction activities that are commonly used to share knowledge should expand to accommodate all aspects of construction works, method and techniques. The management of construction firms should encourage the use of ICT in practice knowledge sharing to enhance the efficiency of the organizations.

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Проблеми отримання адвокатом правової інформації про зміст норм іноземного права під час представництва інтересів клієнта у цивільному судочинстві України

Problems of Obtaining by the Lawyer the Legal Information on the Content of Foreign Law Norms While Representing the Client's Interests in Civil Proceedings in Ukraine

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Анотація. Стаття присвячена дослідженню окремих проблем (проблемних аспектів) отримання адвокатом правової інформації про зміст норм іноземного права під час представництва інтересів клієнта у цивільному судочинстві України.

В ході дослідження з'ясовано, що відповідно до чинного Закону України «Про інформацію» під правовою інформацією слід розуміти будь-які відомості (інформацію, документи, тексти, дані) про право, його систему, джерела, реалізацію, а також – юридичні факти (обставини, фактори), правовідносини, правопорядок, правопорушення і боротьбу з ними та їх профілактику тощо. Водночас зроблено обґрунтований висновок про те, що законодавство України сьогодні передбачає цілий ряд (систему) можливих варіантів (напрямів) пошуку (отримання) адвокатом правової інформації (документів, даних, відомостей тощо) про норми іноземного права, кожен із яких (можливий варіант) має свої переваги і недоліки (певні проблемні аспекти).

Встановлено, що залучення іноземної правової інформації у судовий процес (у цивільному судочинстві України) доцільно звести до 3-х основних аспектів (напрямів, варіантів), а саме: 1) безпосереднє ознайомлення із іноземними юридичними документами та інформаційними джерелами (текстами, даними) – (1 аспект); 2) залучення письмових висновків (за проблемою) у судовий процес (до справи у цивільному судочинстві), в тому числі експертних висновків – (2 аспект); 3) отримання інформаційних даних (правової інформації) про іноземне право від центральних органів влади України, зокрема від Міністерства іноземних справ України або Міністерства юстиції України – (3 аспект).

За результатами дослідження визначено і доведено, що вибір найбільш ефективного (оптимального) варіанту (із можливих альтернатив) пошуку адвокатом України правової інформації про зміст норм іноземного права (під час представництва інтересів клієнта у суді) в тій чи іншій судовій справі у цивільному судочинстві України залежить, в першу чергу, від: від: 1) конкретної судової справи у цивільному судочинстві; 2) можливостей (потенціалу) та професіоналізму адвоката; 3) авторитетності суду (безпосередньо від судді).

Ключові слова: адвокат; адвокатська діяльність; правова інформація; іноземне право; правнича (правова) допомога; суд; представництво інтересів клієнта у суді; цивільне судочинство.

Abstract. The article is devoted to researching particular problems (problematic aspects) of obtaining by the lawyer the legal information about the content of foreign law norms while representing the client's interests in the civil proceedings of Ukraine.

During the research it was found out that according to the current Law of Ukraine "On Information" legal information should be understood as any information (documents, texts, data) about a law, its system, sources, realization, as well as legal facts (circumstances, factors), legal relations, law and order, legal offences, dealing with them and preventing them, etc. At the same time, it is reasonable to conclude that the present legislation of Ukraine provides for a number (system) of possible options (directions) for seeking (obtaining) by the lawyer the legal information (documents, data, texts, etc.) on the norms of foreign law, each of which (possibly) has its advantages and disadvantages (certain problematic aspects).

It is established that the involvement of foreign legal information in litigation (in the civil proceedings of Ukraine) is advisable to reduce to 3 main aspects (directions, options), namely: 1) direct familiarization with foreign legal documents and information sources (texts, data) - (1 aspect); 2) involvement of written findings (on a problem) in litigation (in civil proceedings), including expert opinions - (2 aspect); 3) obtaining information (legal information) on foreign law from the central authorities of Ukraine, in particular from the Ministry of Foreign Affairs of Ukraine or the Ministry of Justice of Ukraine - (3 aspect).

According to the results of the study, it was determined and proved that the choice of the most effective (optimal) option (from the possible alternatives) for the Ukrainian lawyer to search for legal information on the content of foreign law rules (while representing the client's interests in court) in a particular court case in the civil proceedings of Ukraine, is dependent, in the first place, on: 1) a specific civil case; 2) the lawyer's capabilities (potential) and professionalism; 3) the authority of the court (directly from the judge).

Keywords: lawyer; lawyer's activity; legal information; foreign law; legal assistance; court; representing the client's interests in court; civil proceedings.

ВСТУП

Актуальність, важливість та доцільність дослідження цього аспекту (в юридичній науці та практиці), враховуючи результати попередніх напрацювань (за проблемою), зокрема [1, 2, 3, 4], проявляється у тому, що при формуванні та удосконаленні принципу професіоналізму адвоката як засади надання кваліфікованої правничої (правової) допомоги клієнту (під час представництва інтересів клієнта) у суді (в системі принципів і засад здійснення адвокатської діяльності; в системі основних засад (принципів) цивільного судочинства) [5, 6], необхідно врахувати такий аспект, як проблеми (проблемні аспекти) застосування права іноземних держав у цивільному судочинстві України [7], зокрема – можливість пошуку (отримання) адвокатом необхідної (належної, якісної) правової інформації (документів, даних) про зміст норм іноземного права.

За результатами аналізу останніх досліджень і публікацій (у цьому напрямі) з'ясовано, що особливу увагу даній проблематиці приділяють такі вчені-юристи та практики, як Н. Плахотнюк (досліджує проблеми застосування судами іноземного права) [7], Н. Погорецька (розглядає нормативно-правові та методологічні підходи щодо встановлення змісту норм іноземного права при регулюванні цивільних відносин у спорах) [8], Л. Сопільник, Р. Сопільник (розкривають питання про порушення прав адвокатів та гарантій адвокатської діяльності в Україні) [3, 9, 10], О. Чабан (аналізує джерела міжнародного приватного права) [11], А. Філіп'єв (вивчає і досліджує особливості застосування іноземного права в цивільному судочинстві України) [12] та інші. У цьому контексті доцільно також відмітити праці іноземних авторів (наприклад, *R. Hausmann* [13], *Y. Nishitani* [14], *C. Picker* [15], *H. Smit* [16], *S. Sass* [17] та *B. Tripkovic* [18]), за результатами аналізу яких (праць) сформовано загальне уявлення стосовно зарубіжного наукового доробку та практичного досвіду з ряду важливих питань, зокрема тих, що стосуються проблемних аспектів застосування іноземного права у цивільних судових справах інших країн.

Водночас варто зазначити, що згідно ч. 3 ст. 8 Закону України «Про міжнародне приватне право» від 23.06.2005 р. № 2709-IV [19] особи, які беруть участь у справі (учасники судового процесу), зокрема, у цивільному судочинстві України, мають повне право подавати будь-які документи (службові (офіційні); загальні, спеціальні тощо), що підтверджують зміст правових норм (норм права) іноземної держави (певних країн), на які вони (тобто особи) посилаються в суді з метою (виключно для) [6]:

1) обґрунтування (дотримання) своїх позивних вимог, виходячи з правового характеру та законності, або певних заперечень, аргументів чи пояснень;

2) сприяння суду чи іншому органу (відповідно до законодавства України) у встановленні (визначення) змісту (конкретної суті, інших особливостей) цих норм.

З огляду на це очевидно, що Закон України від 23.06.2005 р. № 2709-IV [19] наділяє сторони (учасників судового процесу) у цивільній справі, в тому числі і адвоката, який представляє інтереси клієнтів в цивільному судочинстві України (відповідно до ст. 15 Цивільного процесуального кодексу України від 18.03.2004 р. № 1618-IV [20] та ст. 3 Конституції України [21], яка в повній мірі відтворює (передає) зміст (ключову сутність) концептуальних засад преамбули Загальної декларації прав людини [22]), конкретною можливістю активно (ефективно, результативно) сприяти суду за визначеною проблемою у встановленні певного змісту (суті) норм права (правових норм) іноземних держав.

Поряд з тим, підтримуючи думку А. Філіп'єва [12], варто наголосити, що ч. 3 ст. 8 Закону України «Про міжнародне приватне право» [19] не лише прямо (безпосередньо) визначає сприяння (як спосіб) щодо певного подання відповідних документів (інформації, даних), що підтверджують зміст (суть) іноземного права, а й чітко (конкретно) фіксує той факт (в юридичній площині), що цей (поданий) спосіб не є єдино можливим, виходячи із юридичного факту чи права іноземного права.

Звідси, враховуючи інформацію у працях [6, 12], виникає перше (1) головне питання про те, а яким чином адвокат України може отримати відповідну (необхідну) правову інформацію (дані, документи) про норми іноземного права з метою застосування права іноземних держав у цивільному судочинстві України для обґрунтування власної позиції при наданні правової (правничої) допомоги клієнту? З огляду на вищевикладене також відомо, що встановлення (визначення) правових норм (норм права), включаючи і іноземні, є безпосереднім обов'язком суду (процесуальним). Тому активна позиція сторін у цивільному судочинстві України в цьому відношенні (по суті справи за проблемою) є не просто бажаною, а й важливою та необхідною.

В контексті цього, також є важливим і актуальним друге (2) питання [6]: Якими є особливості пошуку інформації (даних, документів) сторонами (особами), які беруть участь у справі (учасниками судового процесу), включаючи адвоката, про норми іноземного права, що регулюють відповідні правовідносини, які є (або стали) предметом розгляду в цивільному судочинстві України? Встановлено, що представлені вище питання (1) та (2) потребують нагальної конкретної і чіткої відповіді з відповідним (належним) обґрунтуванням в даному напрямі.

Таким чином, метою статті є дослідження (аналіз та виявлення) проблем (проблемних аспектів) отримання адвокатом правової інформації (документів, даних) про зміст норм іноземного права під час представництва інтересів клієнта у цивільному судочинстві України.

РЕЗУЛЬТАТИ ДОСЛІДЖЕННЯ

Так, у праці [12] зазначено, що в контексті застосування (використання) іноземного права в українському цивільному судочинстві не доцільно говорити (зазначати) про доказування його змісту сторонами, так само, як, наприклад, у судочинстві країн англосаксонської правової системи [23], де приділено важливу і особливу увагу (в юридичній практиці) судовим прецедентам як джерелам права [24]. Звідси очевидно, що недоцільним є також і покладення на сторони (учасників судового процесу), включаючи на адвоката, певного обов'язку щодо доказування іноземного права.

Тут варто погодитись з думкою А. Філіп'єва [12], що відповідну допомогу, яку сторони, зокрема адвокат (як процесуальний предста-

вник у цивільному судочинстві при наданні правової (правничої) допомоги)), надають суду у цивільному процесі для встановлення змісту (конкретної суті, особливостей) цих норм (тобто норм іноземного права), доречно було б визначити і кваліфікувати як їх процесуальне право, а не прямий обов'язок, як вважають деякі автори, зокрема – С. Галімулліна [25].

Водночас, як свідчить судова практика в Україні, виходячи з результатів досліджень [6, 12], суд має повне безперечне право перевірити ту інформацію (документи, дані), яку йому надають сторони (особи, які беруть участь у справі), а також будь-яку іншу інформацію, що стосується поданої справи у цивільному судочинстві України. Поряд з тим, доцільно зазначити, що суд, зокрема, в першу чергу, перевіряє достовірність представленого носія інформації (даних), а також відповідність поданої інформації сучасному стану речей, що вміщується в даному носії. За результатами проведеної перевірки і на основі об'єктивного незалежного рішення суд бере (приймає) до уваги дані, які містить поданий носій інформації. Крім цього, якщо судом самостійно пізнано іноземне право, то він (тобто суд), виходячи з власного рішення, у встановленому законом порядку, може послатись на норму іноземного права, а також зазначити, яким чином (на основі чого, яким способом) вона стала відома суду. В свою чергу тут варто відмітити, що якщо сторони (особи, які беруть участь у справі) вважають (або вважатимуть), що застосування норм іноземного права судом було здійснено неправильно, виходячи з національного права та враховуючи законні особливості його застосування в Україні, то вони (особи, учасники судового процесу) мають можливість (право) висловити свою аргументовану позицію проти таких рішень (ініціатив суду) з метою переконати суд переглянути або відмінити своє рішення (у цьому напрямі), або в подальшому його оскаржити (зупинити), у встановленому законом порядку [7, 8, 12].

Таким чином, можна стверджувати, що діючі (існуючі) можливості, які є сьогодні, що стосуються пошуку, аналізу та застосування іноземної правової інформації сторонами (учасниками судового процесу) у цивільному судочинстві України, зокрема адвокатами (як процесуальними представниками у цивільному судочинстві при наданні правової (правничої) допомоги)), є необмеженими [6, 12]. З огляду на це з'ясовано, що залучення такої іноземної правової інформації у судовий процес (у цивільному судочинстві України) доцільно звести до 3-х основних аспектів (напрямів, варіантів), а саме [6, 12]:

1) безпосереднє ознайомлення із іноземними юридичними документами та інформаційними джерелами (текстами, даними) – (1 аспект);

2) залучення письмових висновків (за проблемою) у судовий процес (до справи у цивільному судочинстві), в тому числі експертних висновків – (2 аспект). Проблемні аспекти участі експерта у цивільному судочинстві України представлено у праці [26];

3) отримання інформаційних даних (правової інформації) про іноземне право від центральних органів влади України, зокрема від Міністерства іноземних справ України (https://mfa.gov.ua/) або Міністерства юстиції України (https://minjust.gov.ua/) – (3 аспект).

Встановлено, що кожен з поданих (вище представлених) варіантів (тобто 1, 2 та 3 аспекти) мають свої особливості (переваги та недоліки), які розкриті у працях [6, 12].

Так, що стосується першого (1) аспекту (щодо безпосереднього (прямого) ознайомлення із іноземними юридичними документами та інформаційними джерелами (текстами, даними)), то головними перевагами поданого способу є те, що він відносно дешевий, а також дає змогу безпосереднього (особистого) встановлення (визначення) змісту (суті, певних особливостей) норм іноземного права спочатку сторонами (особами), зокрема (в тому числі) адвокатом, а після цього і самим судом, якому подається подана інформація (документи, тексти). Однак, подані переваги цього способу (першого) можуть стати (перетворитись) і у його недоліки. Зокрема, у праці [12] зазначено, що текст (документи, дані) можуть бути не актуальними, застарілими у часі або ж неточними в окремих аспектах за проблемою.

Водночас з'ясовано, що в силу певних (різних) обставин (причин) безпосереднє (пряме) ознайомлення із текстом (документами, даними) можуть призвести до його неправильного тлумачення, виходячи із особливостей формулювання даних (змісту, перекладу) і порядку складення поданого тексту (докуме-

нтів, даних). Проте, незважаючи на недоліки поданого способу, на нашу думку, безпосереднє ознайомлення із іноземними юридичними документами та інформаційними джерелами (текстами, даними) є доцільним, важливим, бажаним та досить корисним способом щодо отримання певної (конкретної) правової інформації про іноземне право [12]. Поряд з тим, за результатами проведених досліджень [6] встановлено, що джерелами таких текстів (документів, даних) можуть бути: 1) тексти нормативно-правових актів і рішення певних судів; 2) наукова, навчальна, навчально-методична, довідкова та інша юридична література.

Окремо доцільно відмітити, що тут важливу роль в контексті особливих (ключових) можливостей для пошуку певних (конкретних) юридичних текстів (інформації) такого роду, виходячи з реалій сьогодення, відіграє інформаційно-пошукова система (або функціонування мережі) Інтернет та засоби масової інформації (ЗМІ) [27, 28], які у сукупності формують унікальний механізм (систему) обміну правовою інформацією.

В контексті цього, тут варто наголосити, що сьогодні, виходячи із специфіки і особливостей функціонування мережі Інтернет та окремих видів інформаційних технологій в адвокатській діяльності [29], будь-яка отримана правова інформація з Інтернету має бути ретельно перевірена на точність, правдивість та об'єктивність.

Що стосується другого (2) аспекту (щодо залучення письмових висновків (за проблемою) у судовий процес (до справи у цивільному судочинстві), в тому числі експертних висновків), то головними перевагами поданого способу є те, що він (як ключовий спосіб пошуку інформації про іноземне право): 1) побудований на надзвичайно високому (належному, достатньому) рівні достовірності і об'єктивності одержаної інформації; 2) є комплексним і системним [6, 12, 26].

Поряд з тим встановлено, що недоліком поданого способу є його дорожнеча. З огляду на це, у праці [12] (А. Філіп'єв) зазначено, що в цивільному судочинстві України залучення у цивільний процес такого експертного висновку можливе:

1) у формі афідевіту (англ. *Affidavit*), під яким слід розуміти пояснення, що містить зміст (сутність) законодавства іноземних держав та його тлумачення іноземними (загальними, спеціалізованими) судами, що виконано і супроводжується авторитетними фахівцями (вченими-спеціалістами, експертами) та практиками в галузі права визначеної іноземної держави, а також те, що обов'язково включає нотаріально засвідчені підписи цих осіб [30].

Сьогодні законодавство України чітко і конкретно не регламентує вимоги, що ставляться до осіб, зокрема до осіб з іноземних держав, які залучаються (або можуть залучатись) в якості таких експертів у цивільному судочинстві України. В цьому контексті, необхідно зазначити, що в основі єдиної важливої вимоги вибору такої особи, яка є обізнаною із нормами іноземного права, лежить професіоналізм адвоката – [5], виходячи із професійного досвіду. Тут варто також відмітити, що сьогодні в судовій практиці в Україні відомі випадки, коли інформація про іноземне право, а також пояснення (експертні висновки), які були надані суду особами, які мають повну юридичну освіту судом відхилялась, а інформація (документи, дані) одержані від осіб, які не мають такої (юридичної) освіти, навпаки судом приймалась і була схвалена [5, 6, 12].

2) у вигляді письмового висновку певних (конкретних, визначених) установ як іноземних, так і вітчизняних (українських).

З'ясовано, що в даний час законодавство України не передбачає конкретного (визначеного) переліку українських і зарубіжних установ чи організацій, а також не пропонує (не визначає) певних (конкретних) вимог, що повинні ставитись до них (установ, організацій), проте в юридичній (судовій) практиці в Україні, як правило (найчастіше), застосовується одержання таких висновків (експертних) від спеціалізованих наукових (науково-дослідних) інститутів (установ, організацій), торговельно-промислових палат тощо [8].

З огляду на це, враховуючи результати досліджень [6, 12], можна стверджувати, що особливо актуальним і вдалою (ефективною) юридичною (судовою) практикою є створення (формування) і розвиток інститутів (установ, і організацій), включаючи, зокрема, залучення адвокатів (за їх згодою, з метою підвищення їх професійної адвокатської діяльності в Україні), які б спеціально (цілеспрямовано) займались вирішенням проблем (окремих

проблемних аспектів) застосування іноземного права. Подібна практика вже існує, а також відома і використовується у багатьох країнах світу. Тут варто відмітити і те, що вона (практика) використовувалась також і у колишньому СРСР, хоча на досить низькому рівні з точки зору об'єктивізму (справедливості). Сьогодні це вже доконаний факт (щодо СРСР), виходячи з аналізу праці В. Гринюка [31] та оцінки відомих на сьогодні ряду резонансних справ.

Поряд з тим встановлено, що дослідники (фахівці за проблемою) в Україні дотримуються думки, що серед найбільш ефективних (досить успішних) інститутів (установ, організацій) іноземних держав такого типу є австрійські та швейцарські [12]. Так, зарубіжні автори, зокрема – *S. Geeroms* [32], виділяють: 1) Міжнародний правовий інститут, який створений в Нідерландах ще у 1918 р.; 2) Інститут міжнародного права, який створений урядом Франції [12, 32].

Водночас у науковій праці С. Галімулліної [33] зазначено, що подібні органи (установи) існують також при Верховних Судах таких зарубіжних країнах, як Німеччина та Японія. Так, в Японії функціонує Інститут правового навчання та досліджень при Верховному Суді Японії (*The Legal Training and Research Institute to the Supreme Court of Japan*), більш детальна інформація про який знаходиться за інтернет-посиланням [34]. Що стосується Німеччини, та в цій країні діє Федеральний конституційний суд (*German Federal Constitutional Court*) у м. Карлсруе, при якому також знаходиться подібний орган (установа), який займається виключно проблемами застосування іноземного права (за напрямами, за країнами) [35].

Що стосується третього (3) аспекту (щодо отримання інформаційних даних (правової інформації) про іноземне право від центральних органів влади України), то як було вже зазначено вище, адвокат України також може отримати інформацію (окремі документи, дані) про іноземне право від центральних органів влади України, а зокрема від Міністерства іноземних справ України або Міністерства юстиції України. Це обумовлено тим, що саме ці центральні органи влади України найчастіше визначаються як суб'єкти володіння і обміну правовою інформацією в різних міжнародних договорах, починаючи від двосторонніх (багатосторонніх) договорів (угод) про правничу (правову) допомогу, і закінчуючи підписанням конкретних багатосторонніх конвенцій [12], наприклад, Європейської конвенції про інформацію щодо іноземного законодавства від 07.06.1968 р. [36].

Тут варто також зазначити, що відповідно до ст. 17 Закону України «Про інформацію» від 02.10.1992 р. № 2657-XII [37] під правовою інформацією слід розуміти будь-які відомості (інформацію, документи, тексти, дані) про право, його систему, джерела, реалізацію, а також – юридичні факти (обставини), правовідносини, правопорядок, правопорушення і боротьбу з ними та їх профілактику тощо.

З огляду на це і за результатами дослідження можна стверджувати, що відомості (інформація, документи, тексти, дані) про іноземне право можна віднести до правової інформації відповідно до ст. 5, 22 Закону України «Про інформацію» [37], а реалізація права на її одержання від державних органів (установ) в Україні, включаючи зберігання, використання (поширення) або захист інформації (відомостей, даних), необхідної для реалізації і захисту своїх прав, свобод і законних інтересів гарантується будь-якій особі в Україні, а тим більше це стосується прав адвоката (як процесуального представника у цивільному судочинстві) на інформацію, який здійснює (надає) правничу (правову) допомогу клієнту (клієнтам). Сьогодні відомі факти, на жаль, що згадані вище міністерства не завжди надають відповідну правову інформацію (документи, дані) на письмове звернення адвоката (адвокатський запит) [4, 38], керуючись іншими положеннями та нормативно-правовими актами України. Поряд з тим, подані міністерства не мають обов'язку надавати таку інформацію громадянам.

ВИСНОВКИ

Таким чином, законодавство України сьогодні передбачає цілий ряд (систему) можливих варіантів (напрямів) пошуку (отримання) адвокатом правової інформації (документів, даних, відомостей тощо) про норми іноземного права, кожен із яких (можливий варіант) має свої переваги і недоліки (певні проблемні аспекти). Вибір найбільш ефективного (оптимального) варіанту (із можливих альтернатив) пошуку адвокатом України правової ін-

формації про зміст норм іноземного права (під час представництва інтересів клієнта у суді) в тій чи іншій судовій справі у цивільному судочинстві України, враховуючи при цьому також результати попередніх досліджень [2, 6, 39, 40], залежить, в першу чергу, від: 1) конкретної судової справи у цивільному судочинстві; 2) можливостей (потенціалу) та професіоналізму адвоката; 3) авторитетності суду (безпосередньо від судді).

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