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# Joint Mediation of Psychosis and Mental Stress on Alcohol Consumption and Graduates' Job Performance

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# Joint Mediation of Psychosis and Mental Stress on Alcohol Consumption and Graduates' Job Performance: A PLS Structural Equation Modeling

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*Abstract: Previous research has interlinked alcohol consumption (AC), mental stress (MS), psychotic experiences (PE), and academic performance (AP) of students and psychological behavior of the general population. The current study seems to be the first to consider the joint and partial mediation effects of MS and PE in linking AC to graduates' job performance in specific areas such as teamwork (TW), communication competence (CC), customer service (CS), and job functions (JF). A virtual cross-section of 3,862 graduates with self-reported cases of having taken alcohol in the past participated in the study. These participants responded to an electronic questionnaire that was mailed to them. The instrument used for data collection had acceptable psychometric properties. The study used the partial least squares structural equation modeling (PLS-SEM) to achieve its objectives. The inner and outer models were all evaluated for quality and goodness of fit. Results showed a significant negative effect of AC and MS on graduates' job performance in terms of TW, CC, CS, and JF, respectively. AC had a significant positive effect on MS and PE. MS had a significant positive effect on PE. A significant joint mediation effect of MS and PE was found in linking AC to graduates' TW, CC, and CS, excluding JF. MS partially mediated AC's paths to all the graduates' job performance indicators. PE was only a significant partial mediator of the connection between AC to JF, but not TW, CC, and CS. This study's result can help improve graduates' work effectiveness and has revealed some negative predictors. Therefore, it is recommended that graduates avoid alcohol or only consume mild quantities of it to enable them to discharge services effectively at the workplace.*

*Keywords: Alcohol Use, Higher Education, Mental Health, Psychotic Episodes, SmartPLS*

## Introduction

The need to promote service quality in formal and informal organizations has attracted the attention of many stakeholders and researchers, who are now paying closer attention to graduates' job performance. Generally, job performance has been defined as actions or behaviors that employees engage in to achieve organizational goals (Christian, Garza, and Slaughter 2011; Wang et al. 2010). Specifically, graduates' job performance refers to how well an employer is impressed with the services of graduate employees after conducting an assessment (Odigwe, Offem, and Owan 2018). In this study, we define graduates' job performance as the extent to which holders of higher education certificates and diplomas can discharge assigned duties effectively to realize set objectives. Measures of graduates' job performance include competence, knowledge application, ability to work with minimal supervision, and resourcefulness (Abas and Imam 2016; Caballero and Walker 2010; Molefe 2012). Others include timeliness, attention to detail, speed, flexibility, and ability to work under pressure (Owan, Odigwe, et al. 2022). Other performance indicators include teamwork, communication competence, customer service, productivity, practical demonstration, discharge of assigned job functions, problem-solving, and versatility (Owan and Agunwa 2019).

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Despite these critical indicators, it has been documented that the job performance of some graduates is abysmal at the workplace (Odigwe, Offem, and Owan 2018). A misalignment between graduates' school grades and their ability to do practical tasks after gaining employment has been documented (Bassey, Owan, and Agunwa 2019; Arop et al. 2018). Other scholars have revealed that employers encounter various obstacles when hiring university graduates due to poor work performance and ineptitude (Chikazhe, Makanyeza, and Kakava 2022). Most employers have also complained about the skills gap between graduates' expected and actual performance (Muchemwa 2017). This tendency has prompted numerous researchers to question the quality of the Nigerian educational system (Sengsri and Agbi 2020).

Many reasons have been blamed for the disparity between school and employment performance. It is claimed that enormous student enrolment jeopardizes higher education service delivery and produces graduates with employability and performance issues (Chikazhe, Makanyeza, and Kakava 2022; Ekaette, Ekpenyong, and Owan 2019; Ekaette, Ameh, and Owan 2020). Other scholars have attributed it to graduates being unprepared, having too much theory and insufficient practical content, and engaging in unethical academic activities for good school grades (Arop et al. 2018; Madukwe, Nwannunu, and Owan 2019). Poor school financing (Odigwe and Owan 2019; Odigwe 2020; Akomolafe and Aremu 2016), parental socioeconomic level, nutrition (Akah, Owan, Uduigwomen, et al. 2022), residence, peer pressure, school administration, and evaluation techniques (Onyebuchukwu et al. 2015) are other suspected variables affecting graduates' job performance. For improvement, it has been suggested that rather than relying just on academic grades (which might be deceptive), higher education graduates should have their productivity in the workplace and degree of experience, talents, and competencies evaluated (Ajjawi et al. 2020; Espinoza et al. 2020; Nabulsi, McNally, and Khoury 2021).

The current study uses these issues to shed more light on other factors that could affect higher education graduates' performance in the workplace. These include alcohol consumption, mental stress, and psychotic experiences. These variables were considered since numerous physical, behavioral, and psychological changes occur throughout late adolescence and early adulthood due to obligations and expectations (Chacón et al. 2018). The influence of social groups and being away from one's family and home causes these changes in physiology, sociology, and culture (Tanner and Arnett 2016). Besides, many graduates seem to be anxious at the prospect of securing good jobs as they venture into adulthood to occupy central places in society. Failure to meet these aspirations often promotes frustrations, fear, and anxiety. As a coping strategy, most of them resort to alcohol consumption and other substance abuse (Spadola et al. 2018; Dorn-Medeiros and Doyle 2018). Since most graduates have greater freedom in making choices (Bewick et al. 2008; Karam, Kypri, and Salamoun 2007), their decisions could be effective or otherwise. For this reason, a study on alcohol consumption, mental stress, and psychotic experiences became important.

Previous studies on job performance have linked the construct to predictors such as vocational training duration (Odigwe, Offem, and Owan 2018), recruitment procedures, selection and work readiness (Caballero and Walker 2010), entrepreneurship skills, nationality and personality traits (Ajanovic, Aşkun, and Çizel 2021), among other variables. None of these studies assessed the contribution of alcohol consumption on job performance, nor the mediation of mental stress and psychotic experiences on the link. Instead, previous research had focused mainly on the general population, without a specific focus on higher education graduates. While it can be argued that graduates are a part of the general work population, not all employees are higher education graduates. This creates a population gap due to the underrepresentation of graduates in higher education studies on job performance.

Furthermore, previous research on graduates' job performance often treated the construct as being unidimensional (Odigwe, Offem, and Owan 2018; Chikazhe, Makanyeza, and Kakava 2022); whereas it has been argued that job performance, as an abstract construct, is multidimensional (Ajanovic, Aşkun, and Çizel 2021). Similarly, a study found three dimensions of job performance: job time, quality, and quantity (Na-Nan, Chaiprasit, and Pukkeeree 2018).

Even though some job performance dimensions can be generalized, some may differ between jobs (Ajanovic, Aşkun, and Çizel 2021) and others can depend on the context and operational definition of the construct. Along these lines, the current study treated graduates' job performance multidimensionally by focusing on aspects such as teamwork, communication competence, customer service, and job functions.

## Literature Review

### *Alcohol Consumption (AC)*

Studies on AC and mental stress have yielded results that tend to agree that AC affects the cognitive performance of individuals (Gunn et al. 2018; Rehm et al. 2017). According to the affect regulation model, stress and alcohol use are intertwined in a transactional process in which stressors cause discomfort and people self-medicate with alcohol to decrease the unpleasantness of stress (Grzywacz and Almeida 2008). Similarly, a previous study proved that addictive substances like alcohol and opioids are closely linked to a tendency toward risky behavior, mental problems, and poor performance (Kiepek and Baron 2019). This implies that someone who has been a heavy drinker for a long time is likelier to feel anxious in stressful situations than someone who has never consumed alcohol or drunk lightly.

Studies on AC and psychotic experiences have provided ample evidence that consistent use of alcohol may cause psychosis (known as substance-induced psychosis). For instance, it has been documented that people with alcoholism may also have a mental illness and that people with schizophrenia and other psychotic illnesses are more likely to have issues with alcohol and other drugs, with prevalence rates as high as 50 percent (Addington and Addington 2007; Petersen et al. 2007). Furthermore, other studies have proven that alcoholism is linked to PTSD symptoms and psychotic events (Kachadourian, Pilver, and Potenza 2014; Debell et al. 2014). A previous study has also documented that alcohol use as a coping mechanism is associated with violent behaviors due to mental alterations (Bonomi et al. 2018). Similarly, another study found that alcohol use was associated with anxiety and depressive symptoms among males and females since COVID-19 started (Tran et al. 2020). This also tallies with another research which found a high correlation between increased alcohol consumption and mental health problems (Jacob et al. 2021).

Previous studies on AC and performance have documented an unfavorable effect of excessive alcohol consumption on consumers' outcomes (Rehm et al. 2017; Castellanos-Perilla et al. 2022; Hakulinen and Jokela 2019; Atoyebi, Langat, and Xiong 2020). The negative effect occurs in specific areas such as mood (Alford et al. 2020), workplace productivity (Łyszczarz 2019) and presenteeism (Buvik, Moan, and Halkjelsvik 2018; Lee, Hsing, and Li 2021). Other analyses have shown marginal consequences of drinking on educational performance (Eze et al. 2017). It has been argued that alcohol consumption reduces human performance generally, regardless of whether it is consumed in a modest amount (Osain and Alekseevic 2010). Furthermore, other scholars have clarified that, while exceptions exist, high consumption of beverages such as local beer cocktails contribute to the poor performance of academic activities by students (Eze et al. 2017), leading to half-baked students in society (Dumbili 2015; Ajayi and Somefun 2020). Regarding school performance, there is evidence that substantial variations exist in the academic performance of students who consume alcohol versus others who do not (Onyebuchukwu et al. 2015). Further, students' use of alcohol in schools may likely continue even after graduation since alcohol-induced psychosis, hallucinosis, and paranoia are known to only occur in chronic alcoholics who have been drinking for a long time and in large quantities (Revadigar and Gupta 2022).

The bulk of the literature in this section tends to have a general agreement on the effect of alcohol consumption on consumers' mental health, psychotic experiences, and performance. Nevertheless, much of it has been based on the general population, with no study found using graduates' samples. Studies on AC and performance have mainly dwelt on students' school performance, with none

considering their workplace performance. This creates a gap in knowledge and population representation requiring further investigation to determine how alcohol consumption might influence graduates' out-of-school performance. The current study, therefore, addressed this gap.

### *Mental Stress*

In the general population, epidemiological studies have shown a clear correlation between (subclinical) psychotic experiences and regular exposure to critical life events that produce stress (Kelleher et al. 2013; Varese et al. 2012). Such events, defined as arising beyond sleep or drug use, may be assessed as clinically significant symptoms (hallucinations or delusions) by subclinical experiences, not triggering activity that seeks support (Yung and Lin 2016). Another study investigated the connection between stressful life experiences (SLEs) and psychotic encounters in adolescence using a structural equation model fitting (Shakoor et al. 2016). SLEs were shown to associate substantially with optimistic psychotic symptoms. Likewise, the findings of another analysis showed a strong association between perceived stress and psychotic experiences even after adjusting for depression (Turley et al. 2019). More specifically, it was proven in another research that greater stress sensitivity was linked to a higher risk of psychotic episodes even after controlling for co-occurring anxiety and depressive symptoms (DeVylder et al. 2016). Other studies have also documented a connection between psychological stress and people's experiences with psychosis (Bolhuis et al. 2018; Kelleher et al. 2015).

Another study by Jones et al. (2020) discovered that exposure to stressful events, among other variables, was linked to an increased likelihood of developing psychotic characteristics. It has also been reported that people with mood swings are more likely to develop psychotic feelings (Smith and Dubovsky 2017; Zahodne et al. 2015). After correcting for sex and age, a study has found higher family functioning to dramatically reduce the impact of perceived stress on psychotic-like symptoms (Wu, Zou, et al. 2021). Additionally, some recent studies have found a clear association between routine exposure to stressful life events and psychotic episodes in a general population (Yates et al. 2019; DeVylder et al. 2020). Research reveals that the connection mediated problems with emotional regulation between psychotic experiences and nightmares (Akram et al. 2020). Although the results of all the studies cited tend to agree that a high-stress level is connected to higher chances of individuals developing psychosis, they mostly drew their results from general populations. This study seems to be the first to assess this connection in a graduate population.

Past studies on mental stress have also documented its negative effect on the job performance of academic staff (Akah, Owan, Aduma, et al. 2022; Aduma et al. 2022; Daniel 2019) and other work-related variables such as productivity (Ma and Ye 2019; Ramos-Galarza and Acosta-Rodas 2019) and job satisfaction (An et al. 2020). This means that the more academic staff are exposed to stressful conditions, the higher the chances of their job performance declining, other things being equal. Since academic staff are all graduates, the results of the cited studies are pretty helpful to the current study focusing solely on graduates' job performance. Nevertheless, job performance in these studies was treated unidimensionally, whereas, in the current study, job performance is operationalized into four indicator areas. This was done because job performance is a multidimensional construct (Ajanovic, Aşkun, and Çizel 2021).

Another study reported that academic stress dramatically affects students' performance, impairs people's capacity to learn, work, and concentrate, all of which, in turn, contribute to subpar work and performance (Pascoe, Hetrick, and Parker 2020). A previous study found that very high levels of persistent mental stress were linked to worse academic performance (Lee, Hsing, and Li 2021) and disrupts people's thoughts (Kaiser et al. 2015), reasoning (Hidalgo, Pulopulos, and Salvador 2019), and functioning (Yaribeygi et al. 2017). In fact, there is a negative correlation between academic stress and students' performance; therefore, the more stressed a student is, the worse their academic achievement (Oduwaiye et al. 2017; Oketch-oboth 2018). While several studies have identified a link between stress and academic success, others contradict conventional

findings, arguing that students with high and moderate stress levels did better than those with lower stress levels (Mohamad et al. 2018). Going by the disagreements in the results of different researchers, the connection between mental stress and academic performance is still debatable, up for question, and requires further investigation and proof.

Previous studies on mental stress and students' performance have mostly considered students' school performance, neglecting their out-of-school performance. Thus, the degree to which mental stress affects graduates' job performance remains unclear. This often-ignored aspect of performance is the primary reason for setting up schools. Schools were designed to equip learners with skills to enable them to function independently. To date, this study seems to be the first or among the very few thinking in this direction. This study attempted to bridge this gap in the literature and contribute to the ongoing debate.

### *Psychotic Experiences*

Research showed that psychotic episodes and psychotic diseases share genetic, cognitive, and environmental risk factors (Zavos et al. 2014; Linscott and van Os 2013). Since most prospective research on psychotic experiences has focused on severe adult consequences, little is known about whether psychotic episodes hurt job performance. In the past, psychotic experiences have been linked to worse academic success in adolescents and adults (Davies, Sullivan, and Zammit 2018; Wu, Liu, et al. 2021). It has also been documented that cognitive impairment is linked to an increased risk of psychosis (Khandaker et al. 2011). Consequently, children with psychotic experiences had worse educational results than their non-affected counterparts (Steenkamp et al. 2021). As with the preceding sections, research on psychosis and performance has dwelt solely on students' academic achievement. To our knowledge, no previous study has considered psychotic experiences among the graduate population, intending to understand their role in the population's out-of-school performance. This neglected area is begging for research to expand the frontiers of knowledge, hence the present study.

### *Purpose of the Study*

This study was designed to precisely estimate:

1. the direct effects of alcohol consumption (AC), mental stress (MS), and psychotic experiences (PE) on graduates' job performance indicators such as teamwork (TW), communication competence (CC), customer service (CS), and job functions (JF);
2. the direct effect of AC on MS and PE, and MS on PE;
3. the joint mediation effect of MS and PE in linking AC to graduates' job performance indicators;
4. the partial mediation effect of MS and PE in the nexus between AC and graduates' job performance indices;
5. the mediation of PE in the link between MS and graduates' job performance variables;
6. the amount of variance in TW, CC, CS, and JF that AC, MS, and PE can jointly explain;
7. the degree of variation in PE that AC and MS can jointly explain.

## Methods

### *Design and Study Participants*

The cross-sectional survey research design was employed in this study (Hall 2008). All Nigerian graduates from higher education institutions who received their certificates or diplomas between 2015 and 2020 made up the study's population. A virtual cross-section of 3,862 graduates who self-reported having consumed alcohol in the past served as the study's sample. These individuals

answered a questionnaire that was sent to them electronically. The study's participants were 57 percent ($n$ = 2,201) males and 43 percent ($n$ = 1,661) females. The average age of the participants was 24.5 years. Regarding religion, 56 percent ($n$ = 2,163) were Christians, whereas 44 percent ($n$ = 1,699) were Muslims. Regarding educational qualifications, 40 percent ($n$ = 1,545) held a Higher National Diploma, 51 percent ($n$ = 1,970) and 9 percent ($n$ = 347) were Bachelor's and Master's degree holders respectively. The distribution for respondents' year of graduation was as follows: 2015 (10%, $n$ = 386), 2016 (13%, $n$ = 502), 2017 (16%, $n$ = 618), 2018 (23%, $n$ = 888), 2019 (15%, $n$ = 580), 2020 (23%, $n$ = 888).

### *Data Collection Instrument*

A questionnaire composed of five sections was used for data collection. Respondents' biographical information, including age, sex, religion, level of education, and year of school completion, was gathered in Section 1. The National Council on Alcoholism and Drug Dependence of the San Fernado Valley created the Michigan Alcohol Screening Test (MAST), which was the basis for the 15 questions in Section 2 (the Alcohol Consumption Scale [ACS]). The ACS uses patient self-reports of alcohol consumption to screen for alcohol difficulties in the general population with a 98 percent accuracy rate. As in the original form, the items on the AIS were scored using a dichotomous system (Yes = 1; No = 2). The sum of a person's scores on all fifteen items yields their degree of alcohol use.

Ten items measuring mental stress were included in Section 3 of the electronic survey (Mental Stress Scale [MSS]), which was based on the Perceived Stress Scale (PSS) created and verified by some researchers (Cohen, Kamarck, and Mermelstein 1983). The responses for the MSS items ranged from 0 to 5, according to the original (PSS) six-point Likert scale. The scores from the ten items were added together to provide a final mental stress score. Ten modified questions from the Questionnaire for Psychotic Experiences (QPE) made up Section 4 (Psychotic Experiences Scale [PES]) of the electronic survey. The same six-point Likert-type scale and response choice as the MSS was also used for the PES items.

There were 25 items in Section 5 (Graduates' Job Performance Scale [GJPS]) that assess graduates' performance on the job. We created items in Section 5 based on our expertise and information from a literature review. The 25 questions in Section 5 were grouped into 4 categories. These include job functions, communication competence, (each with seven items), teamwork (with six items) and customer service (with five items). A 6-point linear scale, ranging from 0 to 5, was used to grade each question in Section 5 of the online survey.

## Validity and Reliability of the Instrument

A paper version of the instrument was made and sent to nine specialists at three public universities in South-South Nigeria. The instrument was submitted as part of a suite that included a document outlining the primary goals and hypotheses of the study so that readers could comprehend the scope of the investigation. There were three specialists in the fields of psychology, three in the field of measurement and evaluation, and three in the field of health education. These independent assessors all had over eight years of work experience in their respective fields. We also considered these experts because they have demonstrated similar expertise to evaluate test items in the past. Therefore, Section 2 (ACS) and Section 3 (MSS) were the primary areas of concentration for the specialists in health education. Section 4 (PES) was for psychologists, and Section 5 (GJPS) was for measurement experts. The critical task for each expert was to rank the degree to which the items were understandable and pertinent when evaluating the variables in the target areas.

We employed expert evaluation reports to calculate the instrument's Item Content Validity Indices (I-CVIs) and Scale Content Validity Indices (S-CVIs). For relevance, I-CVI varied from .79 to .99 across all variables, whereas I-CVI ranged from .78 to .99 for clarity. S-CVI for all constructs

varied from .87 to .90 (for clarity) and .85 to .90 (for relevance). Eight recent higher education graduates who were not a part of the study's subjects participated in a focus group discussion (FGD) on the instrument's second iteration. The graduates qualitatively assessed each item to determine its acceptability, sufficiency, and the existence of any potential omissions. The final draft of the instrument was updated to include the focus group's recommendations. To assess the degree of internal consistency of the final instrument draft, fifty non-sample graduates participated in a trial test. The reliability test was carried out using the Cronbach's alpha internal consistency method, with coefficients ranging from .86 to .90.

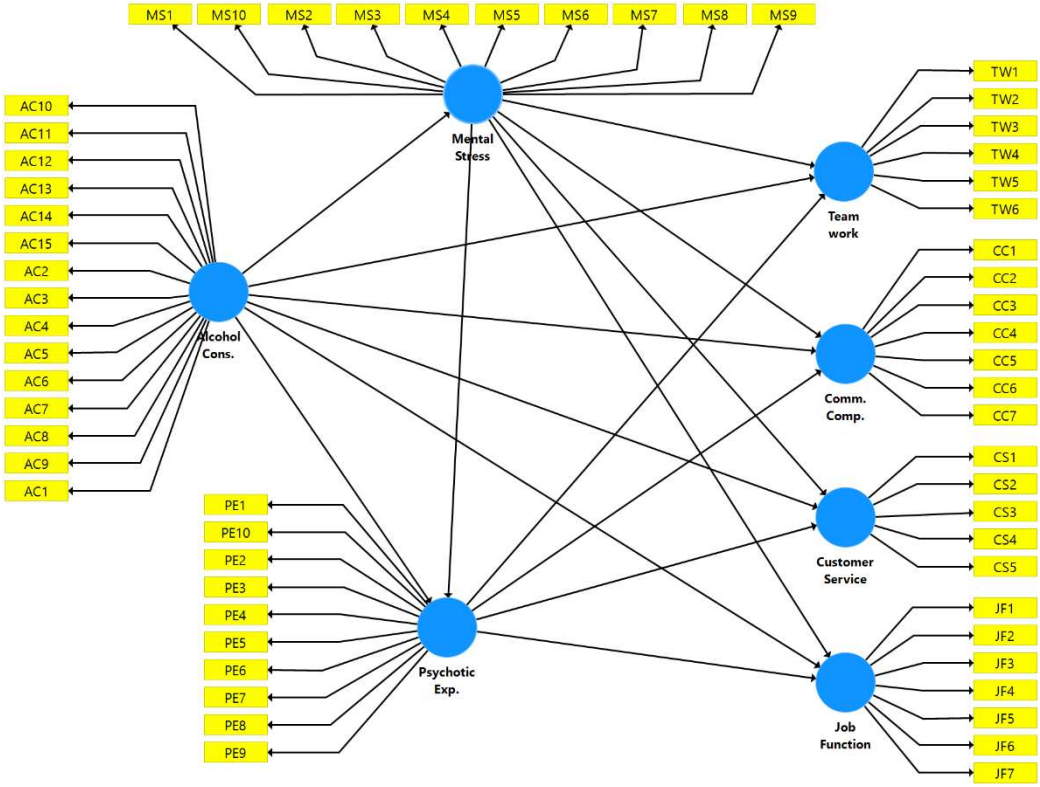


Figure 1: Hypothesized Causal Model of Alcohol Consumption, Mental Stress, Psychotic Experiences, and Graduates' Job Performance in Terms of Teamwork, Communication Competence, Customer Service, and Job Functions

### *Data Collection and Analysis*

The data for this study was gathered in two steps by the researchers. In the first phase, the researchers emailed the responders information about the study, its goals, and why they were asked to participate. A follow-up email with a link to the online survey created with Google Forms was sent after receiving written informed consent to participate. Three thousand eight hundred sixty-two unique replies were obtained during the 18-month data gathering project. The collected data were cleaned, wrangled, and converted to prepare them for analysis. With the use of SmartPLS software, partial least squares structural equation modeling (PLS-SEM) was employed for data analysis. PLS-SEM was chosen over the covariance-based SEM because our data failed the normality test, leading to distribution problems that only PLS-SEM has the comparative advantage to handle compared to other programs.

## Results

### *Hypothesis 1*

Alcohol consumption (AC), mental stress (MS), and psychotic experiences (PE) have significant direct effects on graduates' job performance in terms of teamwork (TW), communication competence (CC), customer service (CS), and job functions (JF). Table 1 reveals a significant direct negative effect of AC on graduates' job performance in terms of TW (β = –.25, 95%*CI*[–.31, –.19], $p < .000$), CC (β = –.42, 95%*CI*[–.48, –.35], $p < .001$), CS (β = –.46, 95%*CI*[–.53, –.40], $p < .000$), and JF (β = –.52, 95%*CI*[–.58, –.45], $p < .001$), respectively. Therefore, our hypothesis was supported (for AC). Table 1 also shows that MS has a significant direct negative effect on graduates' job performance in terms of TW (β = –.33, 95%*CI*[–.42, –.24], $p < .001$), CC (β = –.31, 95%*CI*[–.42, –.22], $p < .001$), CS (β = –.22, 95%*CI*[–.35, –.11], $p < .001$) and JF (β = –.28, 95%*CI*[–.41, –.16], $p < .001$). Thus, the hypothesis earlier formulated was upheld. Furthermore, Table 1 shows that PE has a nonsignificant direct positive effect on graduates' job performance in terms of TW (β = .01, 95%*CI*[–.10, .11], $p > .05$), CC (β = .10, 95%*CI*[–.02, .23], $p > .05$) and CS (β = .14, 95%*CI*[.00, .29], $p > .05$) respectively. However, PE has a significant direct positive effect on graduates' job performance in terms of JF (β = .27, 95%*CI*[.12, .42], $p < .001$). Following this result, our hypothesis was not supported for PE versus TW, CC, and CS; it was, however, supported for JF.

### *Hypothesis 2*

There is a significant direct effect of AC on MS and PE, respectively, while MS has a direct effect on PE. Table 1 reveals a significant direct positive effect of AC on MS (β = .81, 95%*CI*[.80, .82], $p < .001$) and PE (β = .26, 95%*CI*[.22, .30], $p < .001$) respectively. According to Figure 2, alcohol consumption is solely accountable for 65 percent ($R^2 = .65$, 95%*CI*[.63, .67], $p < .001$) of the total variance in graduates' mental stress. Thus, we can hold other predictors accountable for 35 percent of the unexplained proportion of variance in the graduates' mental stress. The coefficient of determination ($R^2$) was proven to be statistically significant; hence our hypothesis was empirically supported. Furthermore, Table 1 indicates that MS has a significant direct positive effect on PE (β = .70, 95%*CI*[.65, .74], $p < .001$). Our hypothesis for the effects of AC and MS was confirmed based on these results.

Table 1: Direct Effects of the Exogenous and Mediating Variables on Graduates' Job Performance Indicators

| *Hypotheses* | *β* | *95%CI* | *M* | *SD* | *t (β/SD)* | *p* |
|---|---|---|---|---|---|---|
| AC → CC | –.42*** | –.48, –.35 | –0.42 | 0.03 | 12.89 | .000 |
| AC → CS | –.46*** | –.53, –.40 | –0.47 | 0.03 | 13.64 | .000 |
| AC → JF | –.52*** | –.58, –.45 | –0.52 | 0.03 | 15.76 | .000 |
| AC → MS | .81*** | .80, .82 | 0.81 | 0.01 | 119.64 | .000 |
| AC → PE | .26*** | .22, .30 | 0.26 | 0.02 | 11.89 | .000 |
| AC → TW | –.25*** | –.31, –.19 | –0.25 | 0.03 | 7.72 | .000 |
| MS → CC | –.31*** | –.42, –.22 | –0.32 | 0.05 | 6.25 | .000 |
| MS → CS | –.22*** | –.35, –.11 | –0.23 | 0.06 | 3.60 | .000 |
| MS → JF | –.28*** | –.41, –.16 | –0.28 | 0.06 | 4.32 | .000 |
| MS → PE | .70*** | .65, .74 | 0.70 | 0.02 | 31.79 | .000 |
| MS → TW | –.33*** | –.42, –.24 | –0.33 | 0.04 | 7.67 | .000 |
| PE → CC | .10 | –.02, .23 | 0.10 | 0.07 | 1.54 | .120 |
| PE → CS | .14 | .00, .29 | 0.15 | 0.07 | 1.91 | .060 |
| PE → JF | .27*** | .12, .42 | 0.27 | 0.08 | 3.42 | .000 |
| PE → TW | .01 | –.10, .11 | 0.01 | 0.05 | 0.19 | .850 |

Note: ***Significant at the 0.001 alpha level

### *Hypothesis 3*

There is a significant joint mediation effect of MS and PE linking AC to graduates' job performance indicators. The results in Table 2 show a significant joint mediation effect of MS and PE in linking AC to graduates' job performance in terms of TW (β = –.26, 95%*CI*[–.32, –.21], $p < .001$), CC (β = –.17, 95%*CI*[–.22, –.12], $p < .001$), and CS (β = –.06, 95%*CI*[–.12, –.01], $p < .05$), respectively. However, MS and PE did not jointly mediate the relationship between AC and graduates' job performance in terms of JF to a significant extent (β = .00, 95%*CI*[–.07, .05], $p > .05$). Therefore, our hypothesis was supported for the link between AC and TW, CC and CS; whereas, it was not supported for the link between AC and JF.

Table 2: Joint Mediation Effects of Mental Stress and Psychotic Experiences on the Links between Alcohol Consumption and Graduates' Job Performance Variables

| *Hypotheses* | *B* | *95%CI* | *M* | *SD* | *t (β/SD)* | *p* |
|---|---|---|---|---|---|---|
| AC → CC | –.17*** | –.22, –.12 | –0.17 | 0.03 | 6.64 | .000 |
| AC → CS | –.06* | –.12, –.01 | –0.06 | 0.03 | 2.21 | .030 |
| AC →JF | .00 | –.07, .05 | –0.01 | 0.03 | 0.15 | .880 |
| AC → TW | –.26*** | –.32, –.21 | –0.26 | 0.03 | 9.7 | .000 |

Note: ***Significant at 0.001 level; *Significant at 0.05 alpha level

### *Hypothesis 4*

There is a significant partial mediation effect of MS and PE in the nexus between AC and graduates' job performance indices. Table 3 shows that mental stress has a significant partial mediation effect on the paths linking AC to graduates' job performance in terms of TW (β = –.27, 95%*CI*[–.34, –.20], $p < .001$), CC (β = –.25, 95%*CI*[–.33, –.17], $p < .001$), CS (β = –.18, 95%*CI*[–.27, –.09], $p < .001$), and JF (β = –.23, 95%*CI*[–.32, –.12], $p < .001$). Following this result, our hypothesis was supported by the evidence presented.

Table 3 also shows that PE has a significant partial mediation effect on the connection between AC and graduates' job performance in terms of JF (β = .07, 95%*CI*[.03, .11], $p < .001$). However, PE did not partially mediate AC's connection to graduates' job performance in terms of TW (β = .00, 95%*CI*[–.02, .03], $p > .05$), CC (β = .03, 95%*CI*[–.01, .06], $p > .05$), and CS (β = .04, 95%*CI*[.00, .07], $p = .05$). Therefore, our hypothesis was partly supported for PE's mediation effect on AC and JF. However, it was not supported for the link between AC and other graduates' job performance indices such as TW, CC, and CS.

Table 3: Partial Mediation Effects of Mental Stress and Psychotic Experiences

| *Mediation Hypotheses* | *β* | *95%CI* | *M* | *SD* | *t (β/SD)* | *p* |
|---|---|---|---|---|---|---|
| AC → MS → TW | –.27*** | –.34, –.20 | –0.27 | 0.04 | 7.59 | .000 |
| AC → MS → CC | –.25*** | –.33, –.17 | –0.25 | 0.04 | 6.31 | .000 |
| AC → MS → CS | –.18*** | –.27, –.09 | –0.18 | 0.05 | 3.71 | .000 |
| AC → MS → JF | –.23*** | –.32, –.12 | –0.22 | 0.05 | 4.22 | .000 |
| AC→ PE → TW | .00 | –.02, .03 | 0 | 0.01 | 0.18 | .850 |
| AC → PE → CC | .03 | –.01, .06 | 0.03 | 0.02 | 1.58 | .120 |
| AC → PE → CS | .04 | .00, .07 | 0.04 | 0.02 | 1.93 | .050 |
| AC → PE → JF | .07*** | .03, .11 | 0.07 | 0.02 | 3.39 | .000 |
| MS → PE → TW | .01 | –.07, .08 | 0.01 | 0.04 | 0.18 | .850 |
| MS → PE → CC | .07 | –.02, .15 | 0.07 | 0.04 | 1.59 | .110 |
| MS → PE → CS | .10 | .00, .19 | 0.1 | 0.05 | 1.97 | .050 |
| MS → PE → JF | .19*** | .08, .28 | 0.18 | 0.05 | 3.41 | .000 |

Note: ***Significant at the 0.001 level

### *Hypothesis 5*

The mediation of PE in the link between MS and graduates' job performance variables is statistically significant. Table 3 indicates that PE mediates the link between MS and graduates' job performance in terms of JF (β = .19, 95%*CI*[.08, .28], $p < .001$) to a significant extent. However, PE has no significant mediation effect in linking MS to graduates' job performance in terms of TW (β = .01, 95%*CI*[–.07, .08], $p > .05$), CC (β = .07, 95%*CI*[–.02, .15], $p > .05$) and CS (β = .10, 95%*CI*[.00, .19], $p = .05$). Based on this evidence, the hypothesis was partly supported for path MS → PE → JF. However, it was not supported for the following paths MS → PE → TW, MS → PE → CC, and MS → PE → CS.

### *Hypothesis 6*

There is a significant variance in TW, CC, CS, and JF that AC, MS, and PE can jointly explain. Figure 2 shows that the predictors (AC, MS, and PE) jointly accounted for 30 percent ($R^2 = .30$, 95%*CI*[.28, .32], $p < .001$), 37 percent ($R^2 = .37$, 95%*CI*[.35, .39], $p < .001$), 29 percent ($R^2 = .29$, 95%*CI*[.27, .31], $p < .001$), and 29 percent ($R^2 = .29$, 95%*CI*[.27, .31], $p < .001$) of the total variance in graduates' job performance in terms of teamwork, communication competence, customer service, and job functions, respectively. By implication, 70, 63, 71, and 71 percent of the unexplained variance in TW, CC, CS, and JF are attributable to other predictors not included in the model. According to the results, the proportion of variances in the endogenous explained jointly by the exogenous variables are all statistically significant. Therefore, our hypothesis received statistical support.

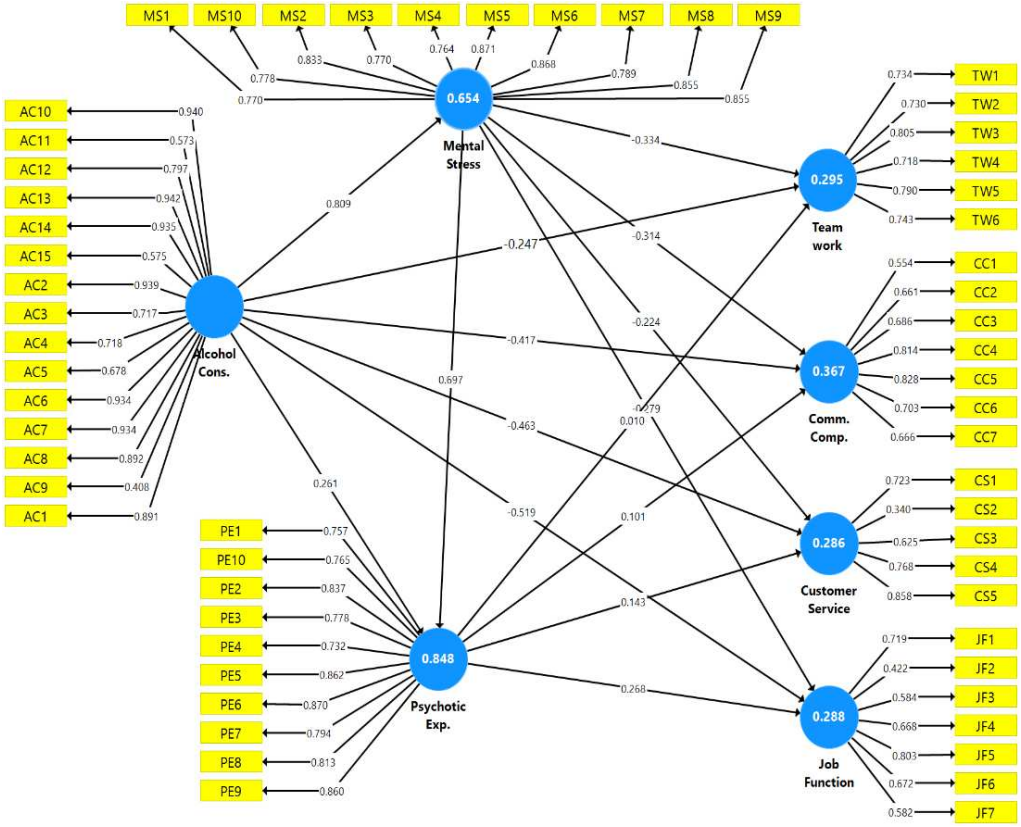


Figure 2: Fitted Structural Equation Model Showing the Direct and Mediation Linkages among AC, MS, PE, TW, CC, CS, and JF

### *Hypothesis 7*

The degree of variation in PE that AC and MS can jointly explain is significant. Figure 1 shows that alcohol consumption and mental stress jointly explained 85 percent ($R^2$ = .85, 95%*CI*[.83, .87], $p <$ .001) of the total variance in graduates' psychotic experiences . This result suggests that 15 percent of the unaccounted portion of the variance is explainable by other extraneous variables not included in the model. The variance explained was statistically significant; hence, our hypothesis was supported.

### *Quality Assessment: Construct, Discriminant Validity, and Reliability*

The construct validity of the outer model was evaluated using the Average Variance Extracted (AVE). AVE values greater than .50 indicate the attainment of construct validity following the Fornell-Lacker criterion (Owan, Emanghe, et al. 2022; Ab Hamid, Sami, and Mohmad Sidek 2017). As shown in Table 4, construct validity was achieved for all the latent variables since their AVE values are equal to or greater than .50. For discriminant validity, the Fornell-Lacker criterion (Fornell and Larcker 1981) was used. Table 4 shows that the square roots of the AVE values (in bolded fonts) along the diagonal are greater than the correlation coefficients with other latent constructs. Thus, discriminant validity is achieved under the Fornell-Larcker criterion (Leguina 2015). The Hetero-Trait Mono-Trait (HTMT) approach (Henseler, Ringle, and Sinkovics 2009) was also used to evaluate the outer model for discriminant validity. HTMT values must not exceed .90 to avoid discriminant validity concerns (Henseler, Ringle, and Sarstedt 2015; Owan, Ekpenyong, and Asuquo 2021). Table 4 shows that all the HTMT values (above the leading diagonal) are below the .90 threshold, indicating evidence of discriminant validity. The reliability of the outer model was assessed using Composite Reliability (CR) rho_A and Cronbach alpha. Values for these statistics must be greater than .70 for evidence of internal consistency (Owan, Odigwe, et al. 2022; Bassey et al. 2020). Table 4 shows that all the CR, rho_A, and Cronbach alpha values are above the .70 threshold. Thus, there is evidence of internal consistency across these three criteria.

Table 4: Construct Validity, Discriminant Validity, and Reliability

| *Variables* | *AVE* | *CR* | *rho_A* | *α* | *1* | *2* | *3* | *4* | *5* | *6* | *7* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AC (1) | .65 | .96 | .97 | .96 | **.91** | .85 | .88 | .51 | .61 | .56 | .53 |
| MS (2) | .67 | .95 | .95 | .94 | .81 | **.93** | .76 | .55 | .58 | .49 | .46 |
| PE (3) | .65 | .95 | .94 | .94 | .82 | .91 | **.81** | .52 | .55 | .46 | .42 |
| TW (4) | .57 | .89 | .87 | .85 | –.51 | –.52 | –.50 | **.94** | .73 | .04 | .76 |
| CC (5) | .50 | .87 | .87 | .84 | –.59 | –.56 | –.53 | .87 | **.88** | .14 | .16 |
| CS (6) | .55 | .81 | .85 | .71 | –.53 | –.47 | –.44 | .83 | .86 | **.79** | .87 |
| JF (7) | .52 | .83 | .87 | .77 | –.52 | –.46 | –.41 | .79 | .76 | .78 | **.65** |

Note: Bolded values along the diagonal are Fornell-Larcker Discriminant validity coefficients. Values above the diagonal are HTMT ratios. Values below the diagonal are latent variable correlations

### *Model Fit Assessment*

When it comes to the overall model fit assessment, researchers have been warned to interpret them cautiously since they are not fully developed (Hair, Hult, et al. 2017) and, as a result, have not gained universal agreement on their use, unlike those of covariance-based structural equation modeling (Owan, Emanghe, et al. 2022). Nevertheless, the model (Figure 2) was evaluated using the following fit indices—Standardized Root Mean Residual (SRMR), Normed Fit Index (NFI), exact fit criteria (d_ULS and d_G), and RMS_theta (See Table 5). The SRMR values for the saturated and estimated models were less than the .08 threshold. The NFI values of .98 for both models were also higher than the cut-off value of .90. Under the d_ULS criteria, the estimated model showed evidence of an acceptable fit since its value was less than the upper bound of the confidence interval. However, the d_ULS value for the saturated model was greater than the upper bound of the confidence interval. Nevertheless, the model was accepted because the estimated

model was more reasonable than the saturated model (Hair, Hollingsworth, et al. 2017; Dijkstra and Henseler 2015). The model also performed well under the d_G assessment since all the values are lower than the confidence interval's lower and upper bounds. RMS_theta should be less than 0.12 (Henseler and Sarstedt 2013). Table 5 shows an RMS_theta value of .058 (below the benchmark) and indicates the model's acceptability.

Table 5: Inner Model Fit Assessment

| *Fit Index* | *Threshold* | *Saturated Model* | *Estimated Model* |
|---|---|---|---|
| SRMR | < .08 | .008, CI [.008, .010] | .01, CI [.011, .013] |
| NFI | > .90 | .982 | .982 |
| d_ULS | Nil | .126 [.118, .198] | .192, CI [.219, .288] |
| d_G | Nil | .357, CI [.372, .450] | .357, CI [.375, .529] |
| RMS_theta | < .12 | .058 | |

## Discussion of Findings

The result of the first hypothesis showed a significant direct negative effect of alcohol consumption (AC) and mental stress (MS) on graduates' job performance in terms of teamwork (TW), communication competence (CC), customer Service (CS), and job functions (JF). These results imply that high levels of AC and MS are associated with low job performance among higher education graduates. Therefore, the more graduates consume alcohol or face MS, the less likely they will perform well across the five indicators. This result is not surprising because AC affects the cognitive performance of individuals (Gunn et al. 2018; Rehm et al. 2017). Thus, the cognitive displacement of individuals might affect their physical behavior, which can alter how victims relate with colleagues and other people at the workplace. This result corroborates other previous studies which have documented an unfavorable effect of excessive alcohol consumption on consumers' mood (Alford et al. 2020), workplace productivity (Łyszczarz 2019), and presenteeism (Buvik, Moan, and Halkjelsvik 2018; Lee, Hsing, and Li 2021). Past studies on mental stress have also documented its negative effect on job performance (Akah, Owan, Aduma, et al. 2022; Aduma et al. 2022) and other work-related variables such as productivity (Ma and Ye 2019; Ramos-Galarza and Acosta-Rodas 2019) and job satisfaction (An et al. 2020).

One major surprise in the result of the first hypothesis is the direct positive effect of psychotic experience (PE) on graduates' job performance in terms of TW, CC, CS, and JF, respectively. Although the effect was not substantial for all the job performance variables except JF, it is a surprise because an adverse effect was anticipated. The result suggests that graduates' job performance increases with their psychotic experiences and the other way around. The result is attributed to the temporary and inconsistent occurrence of PE, which could give room for graduates to refocus while at their duty posts. This result could also mean that the respondents of this study are not experiencing severe levels of psychosis. This result disagrees with the finding of some previous studies (Davies, Sullivan, and Zammit 2018; Wu, Liu, et al. 2021), revealing that PE is linked to worse performance in adolescents and adults. The variation in the results is attributable to the context, nature of respondents, and study designs.

The result of the second hypothesis revealed a significant direct positive effect of AC on MS and PE. AC solely accounted for 65 percent of the total variance in graduates' MS. The variance explained is high, making AC a substantial predictor of mental stress. This result implies that graduates that consume alcohol are also more likely to experience MS and PE. This result supports the finding of a previous study that alcohol use as a coping mechanism is associated with violent behaviors due to mental alterations (Bonomi et al. 2018). Similarly, another study found that alcohol use was associated with anxiety and depressive symptoms among males and females since COVID-19 started (Tran et al. 2020).

Furthermore, it was found that MS has a significant direct positive effect on PE. This aspect of the finding suggests that graduates who experience MS are also more likely to encounter psychosis. A reason for this result is the emotional and cognitive destabilization that follows

mentally stressed people. Consequently, there is a possibility that the harmful effects of mental stress on people may also be related to psychotic episodes, influencing individuals' work performance negatively. Previous studies have also documented a connection between psychological stress and people's experiences with psychosis (Bolhuis et al. 2018; Kelleher et al. 2015). This result further aligns with a previous study (Jones et al. 2020) which discovered that exposure to stressful events, alcohol, methamphetamine usage, and cannabis use were all linked to an increased likelihood of developing psychotic characteristics.

The evidence of the third hypothesis revealed a significant joint mediation effect of MS and PE in linking AC to graduates' job performance in terms of TW, CC, and CS, respectively. However, MS and PE did not jointly mediate the relationship between AC and graduates' JF significantly. Since the joint mediation effects were all adverse, graduates who consumed alcohol were more disposed to perform poorly if they jointly experienced mental stress and psychosis. This implies that MS and PE can strengthen the negative effect of AC on graduates' job performance. This finding is due to the negative effect of mental stress and psychotic experiences on graduates' job performance. This result corroborates another research which reported that academic stress significantly affects students' performance, impairs people's capacity to learn, work, and concentrate, all of which contribute to subpar work and performance (Pascoe, Hetrick, and Parker 2020).

This study's fourth hypothesis documented that mental stress has a significant partial mediation effect on the paths linking AC to all the graduates' job performance indicators. Similarly, PE proved to be a significant partial mediator of the connection between AC and graduates' JF. However, PE did not partially mediate AC's connection to graduates' TW, CC, and CS. The direction of the mediation effect of MS was negative, suggesting that mental stress can solely compound the negative contribution of AC to graduates' job performance to a significant extent. This finding is attributable to the adverse effects that mental stress partially induced on graduates, thus, affecting their performance negatively. This finding supports the study's result that stress significantly impacts graduate students' capacity to learn and perform in the workplace (Pascoe, Hetrick, and Parker 2020). A previous study also found that very high levels of persistent mental stress were linked to worse academic performance (Lee, Hsing, and Li 2021). The positive mediation of PE on the nexus between AC and TW may be attributed to mood. Previous studies have reported that people with mood swings are more likely to develop psychotic feelings (Smith and Dubovsky 2017; Zahodne et al. 2015). The mood may affect how they collaborate with team members to achieve collectively.

The fifth hypothesis of this study proved that PE significantly mediated the link between MS and JF to a significant extent. This result suggests that mentally stressed graduates with PE will function poorly in their jobs than those without PE. Thus, PE can catalyze the effect of MS on graduates' job functions. This aligns with a study which documented, after correcting for sex and age, that higher family functioning reduced the impact of perceived stress on psychotic-like symptoms (Wu, Zou, et al. 2021). However, in the current study, PE had no significant mediation effect linking MS to graduates' TW, CC, and CS. This result suggests that even though PE has a mediation effect, the magnitude of the effect is insignificant in altering the effect of MS on graduates' CC, TW, and CC. This means mentally stressed graduates are likely to communicate, collaborate, and render customer services at about the same level as those with MS and PE.

The result of the sixth hypothesis documented that AC, MS, and PE jointly accounted for a significant portion of variances in graduates' TW, CC, CS, and JF, respectively. Together, the three predictors significantly lowered all the graduates' job performance measures. The outcome points to a significant combined adverse influence from these three variables. This result is not unexpected, given that excessive alcohol use has been linked to lousy consumer outcomes in previous research (Rehm et al. 2017; Castellanos-Perilla et al. 2022; Atoyebi, Langat, and Xiong 2020). Mental stress, on the other hand, disrupts people's thoughts (Kaiser et al. 2015), reasoning (Hidalgo, Pulopulos, and Salvador 2019), and functioning (Yaribeygi et al. 2017). The current study confirms past findings from several studies that poorer academic performance in adolescents and adults correlates with psychotic events (Davies, Sullivan, and Zammit 2018;

Wu, Liu, et al. 2021). This explains why jointly possessing these three qualities simultaneously might be suicidal for a person, given the detrimental effects AC, MS, and PE have previously been shown to have on human welfare.

Through the seventh hypothesis, this study proved that AC and MS jointly explained a significant proportion of the variance in graduates' psychotic experiences. This finding suggests that graduates may encounter psychotic episodes more frequently when alcohol is used, and mental stress occurs. These findings are consistent with earlier research, which showed that people with alcoholism may also have a mental illness and that people with schizophrenia and other psychotic illnesses are more likely to have issues with alcohol and other drugs, with prevalence rates as high as 50 percent (Addington and Addington 2007; Petersen et al. 2007). The current study's findings confirm those of earlier research, revealing a clear association between routine exposure to stressful life events and psychotic episodes in a general population (Kelleher et al. 2015; Yates et al. 2019; DeVylder et al. 2020).

### *Limitations and Future Research Implications*

Just like every other study, this study faces some limitations. First, the study derived data from a cross-section of individuals that graduated between 2015 and 2020. This implies that the results of this study should be carefully generalized to those that graduated earlier or later. By using a cross-sectional design, this study is unable to tell when or what changes in the links among AC, MS, PE, and graduates' job performance are likely to occur in the long run. Therefore, future research should consider using a longitudinal approach to examine such links. Thirdly, the scope of this study did not allow for comparisons of the effect of AC, MS, and PE on job performance among graduates with different demographic characteristics. Thus, it is recommended that a multigroup analysis be conducted using structural equation modeling to address this weakness. Lastly, the result of this study is from the Nigerian context and might differ from the situations in other contexts. Therefore, applying this study's findings in another context should follow revalidation studies.

## Conclusion

This study used a partial least squares structural equation modeling to examine the joint and partial mediation effect of alcohol consumption on graduates' job performance across four indicators: teamwork, communication competence, customer service, and job functions. The study proved that alcohol consumption is negatively associated with graduates' job performance across all the proxies. Similarly, mental stress had an inverse association with graduates' job performance variables but maintained a positive link with alcohol consumption and psychotic experiences. Psychotic experiences demonstrated significant positive ties with alcohol consumption but had a negligible positive effect on all graduates' job performance indices except for job functions. Mental stress and psychotic experiences jointly and partially mediated the nexus between alcohol consumption and graduates' job performance across the four indicators.

This study can help improve the work effectiveness of graduates and has revealed some negative predictors. This study can also enable employers to develop strategies to reduce alcohol consumption among employees for positive job performance. Such strategies might include the provision of counseling and therapeutic services to alcohol addicts, mentally stressed workers, and those experiencing psychosis. Employers can also award outstanding employees for quality service delivery to enable workers to develop strategies to reach a similar milestone subsequently. Such strategies might include workers adjusting their drinking lifestyle and addressing their mental health and other underlying issues affecting their optimal service delivery.

Employers could also use strict measures to punish employees caught consuming alcohol to serve as a deterrent to others. Although this study focused on Nigerian graduates, the results could also be meaningful to graduates in other countries with similar socioeconomic characteristics as the

sample of this study. Since alcohol consumption is associated with mental stress and psychotic experiences, graduates should understand that their job performance decreases drastically when these three jointly occur through alcohol. Therefore, it is recommended that graduates avoid alcohol or only consume mild quantities of it to enable them to function effectively in the workplace.

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