WORK, INDUSTRIAL & ORGANIZATIONAL PSYCHOLOGY | SHORT COMMUNICATION

Using web-survey to collect data on psychological impacts of COVID-19 on hotel employees in Ghana: A methodological review

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Abstract: Increasing global Internet penetration and technological advancement have stimulated the adoption of online mode of data collection by scholars across different disciplines. Web-based surveys are popular in the Western world, however, their usage among Ghanaian hospitality and tourism scholars is rare despite the several advantages of web-based surveys. This research note compares the demographics of a web-based sample with previous hotel employee studies conducted in Ghana, and in so doing, highlights the advantages and limitations of using a web-based survey in a developing country context. Relative to paper-and-pencil questionnaires, it was less costly using the web-survey to investigate the psychological impact of COVID-19 on hotel employees in Ghana. Furthermore, the web-survey relatively produced quick results as well as reaching respondents in different locations in the country. The demographics of the web-survey appeared comparable to those reported in previous studies conducted in the country. However, employees with college degrees working in star-rated facilities were overly represented in the web-survey sample. Duplicate responses were also observed in the web-survey sample. Web-based surveys provide a viable option for hospitality and

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PUBLIC INTEREST STATEMENT

Increasing global Internet penetration and technological advancement have stimulated the adoption of online mode of data collection by scholars across different disciplines worldwide. However, the online mode of data collection is rarely used in Ghana and other developing countries in spite of the several advantages associated with the mode. Rather, the traditional on-site data collection using paper-and-pencil questionnaire dominates the survey landscape in developing countries. However, the emergence of the novel coronavirus (COVID-19) and its associated social distancing, lockdowns and closure of organizations appear to have suddenly spurred the use of online surveys in Ghana. It is, therefore, an opportune time to draw attention to the advantages and disadvantages of web-surveys. Consequently, this research note compares the demographics of a web-based sample with previous hotel employee studies conducted in Ghana, and in so doing, highlights the advantages and limitations of using a web-based survey in a developing country context.
tourism research work in Ghana, particularly in the period of COVID-19 and its associated social distancing, lockdowns, and high risk of infection. However, there are potential challenges regarding representativeness, sampling bias and multiple submissions.

Subjects: Hospitality; Tourism; Work & Organizational Psychology

Keywords: Web-survey; COVID-19; psychological impact; hotel employees; Ghana; methodological review

1. Introduction

The novel coronavirus (COVID-19) was first reported in Wuhan, China in December 2019 but has spread to almost every country and territory in the world. Presently, about 188 countries and territories have reported cases of COVID-19 with about 67,132,026 confirmed cases and total deaths of 1,537,260 (Johns Hopkins University, December 7, 2020). In Ghana, 52,274 confirmed cases have been reported in the country with 325 deaths (Ghana Health Service, December, 7, Ghana Health Service, 2020). Countries have implemented several measures to control the spread of the virus, and these have ranged from restrictions on both domestic and international travels, lock-downs, social distancing, border closures, mandatory quarantines, stay-at-home regulations, and a ban on social gatherings including festivals, sporting events, conferences and meetings, weddings, closure of educational institutions as well as attraction sites.

The impact of COVID-19 on the global economy has been phenomenal and described as the worse in recent history after the Great Depression of the 1930s. One of the sectors severely affected by COVID-19 is the hospitality and tourism industry. Airlines have been hit the hardest as international and domestic air flights have virtually ground to a halt, so have operations of restaurants and hotels been dissipated in a matter of weeks. Ghana’s accommodation sector has also suffered gravely from COVID-19, with low occupancy levels, cancellations of bookings, leading to the closure of hotels or considerable reduction in operational levels. Several employees have been laid-off, while others have been put on compulsory leave with or without pay. The loss of jobs and uncertainty about job positions are likely to cause a negative psychological impact on hotel employees. Consequently, an empirical study was undertaken to investigate the psychological effects of COVID-19 and its related job losses on hotel employees using a web survey, which is rarely used as a mode of data collection in Ghana and other developing countries.

The objective of this research note is to compare the demographic profile (gender, age, marital status, and educational level) of the web-based survey sample with previous hotel employee studies conducted in the country. This comparison has become necessary given concerns raised about the use of online surveys for data collection. These methodological concerns include representativeness, sampling bias, multiple responses, challenges with web-browsers, and slow Internet connectivity. Given social distancing, restrictions, lockdowns, hospitality, and tourism scholars in developing countries are likely to resort to online surveys to collect data for their research projects. This research note is therefore aimed at elucidating the likely advantages and methodological concerns regarding the use of online surveys to collect data for hospitality and tourism research in developing countries. This, research note, therefore, draws the attention of hospitality and tourism scholars to the downsides of using web surveys in a typical developing country and how to overcome these challenges.

Paper-and-pencil questionnaires have been predominantly used in hotel employee studies conducted in Ghana. Given the closure of hotels, unavailability of hotel employee database with contacts, web-survey was considered a viable means of reaching hotel employees for the study. The questionnaire was designed using google forms, while social networking sites (SNS), i.e., WhatsApp, were the mode of survey distribution by sharing a link that takes respondents directly to the questionnaire using a virtual snowball sampling approach (Baltar & Brunet, 2012). Wolfe et al. (2014) are of the view that
SNS holds great potential to serve as a survey distribution channel for collecting meaningful data. Guided by the approach of McRobert et al. (2018), the author shared the link to the questionnaire with former students who work in hotels, personal friends, and colleagues requesting that the link is shared with personal friends who work in hotels and on employee WhatsApp groups. Reminder messages were sent to all contacts after 2 weeks of sharing the questionnaire link. The sharing of the link started on 4th April and the data collection ended on 5 May 2020.

2. Profile of hotel workers in Ghana
This section depends on secondary data obtained from the Ghana Tourism Authority (GTA), the public sector institution responsible for the implementation of tourism and hospitality policies and strategies in the country. As of December 2018, there were 3,472 licensed accommodation facilities in Ghana. About 21.60% were classified star-rated while 78.40% as non-star-rated facilities. Most hotel employees in the country work in non-star rated facilities (67.94%) whereas those who work in star-rated facilities constituted about 32.06%. All over the world, females have been reported to outnumber males in hospitality and tourism work. However, this varies from country to country, and in Ghana, more males than females work in hotels (Mensah et al., 2020; Mensah, 2019). Out of 20,806 hotel employees, more than half (57.47%) were male, whereas females constituted 39.36% and this disparity is confirmed in most hotel employee studies conducted in Ghana (Amisah et al., 2016; Appah-Agbala et al., 2020; Mensah, 2019; Wireko-Gyebi & Akyeampong, 2014). Regarding age, based on GTA’s secondary data, out of 17,549 respondents, 31.29% of hotel employees in Ghana were aged between 30 and 49 years old while those in the 22–29 age bracket constitute 38.04%, those aged 21 and below are 7.11%. Employees aged 50 or more were in the minority in hotel workplaces (10.55%). In respect of education, hotel workplaces in the country are dominated by employees with secondary education background (60.63%) followed by those with basic/junior high education (21.60%) whereas those with post-secondary education (college, university/HND/Diploma) are in the minority (17.75%).

3. Web-survey versus paper-and-pencil questionnaire: sample demographics
In the web survey sample, 66.50% of the respondents were male while females constituted 33.5% of the sample (Table 1). The male respondents in the web-based survey were about 10 points higher than those reported in previous studies conducted on Ghanaian hotel employees. However, the gender distribution of the web-based sample is similar to those indicated by the Ghana Tourism Authority (GTA) (2019). In the case of education, the proportion of employees with basic education background was comparable to those reported in the previous studies conducted in Ghana.

However, contrary to the population of hotel employees in the country, secondary school leavers (23.70%) were lowly represented in the web-based sample compared to the previous hotel employee studies conducted in the country (Table 1). Rather, college graduates or post-secondary school leavers constituted a majority (71.70%) in the web-based sample, and this is uncharacteristic of the population of hotel workers in the country. Regarding age, the web-survey sample reported a lower proportion of respondents within the 20–29 age (49.10%) bracket compared to the other studies though the differences are marginal. A greater proportion of the web-based respondents were unmarried (68.2%), while married employees constituted about one-third of the sample (31.8%). The marital status of the web-survey respondents appears similar to those of the other studies. Unmarried workers usually dominate hotel workplaces in Ghana. In the web survey, only 14% of the respondents were affiliated with non-star rated facilities, whereas the rest (86%) were star-rated employees, and this does not reflect the population of hotel employees in the country as most of them work in non-star rated facilities (Ghana Tourism Authority [GTA], 2019).

4. Benefits of web-surveys
When compared with the traditional paper-and-pencil questionnaire, the use of the web-based survey to collect data for the study provided some advantages. As espoused in previous studies
| Variable     | Web-based survey | Mensah (2019) | Appaw-Agbola et al. (2020) | Amissah et al. (2016) | Wireko-Gyebi and Akyeampong (2014) | Gamor et al. (2018) |
|--------------|------------------|---------------|---------------------------|-----------------------|-----------------------------------|---------------------|
| Gender       |                  |               |                           |                       |                                   |                     |
| Male         | 66.5             | 51.1          | 50.3                      | 54.2                  | 55.7                             | 49.7                |
| Female       | 33.5             | 48.9          | 49.7                      | 45.8                  | 44.3                             | 50.3                |
| Education    |                  |               |                           |                       |                                   |                     |
| Basic        | 4.6              | 1.6           | 0.8                       | 4.7                   | 13.6                             | 4.5                 |
| Secondary    | 23.7             | 47.8          | 43.4                      | 32.1                  | 51.4                             | 35.6                |
| Tertiary     | 71.7             | 50.6          | 50.7                      | 63.2                  | 35.1                             | 59.9                |
| Age          |                  |               |                           |                       |                                   |                     |
| 20-29        | 49.1             | 59.3          | 60.7                      | 57.4                  | 79                               | 55.4                |
| 30-39        | 37.6             | 35.8          | 35.6                      | 31.1                  | 13.1                             | 31.1                |
| 40+          | 13.3             | 4.8           | 3.8                       | 11.6                  | 7.9                              | 13.5                |
| Marital status |                  |               |                           |                       |                                   |                     |
| Unmarried    | 68.2             | 69.8          | 56.0                      | 58.9                  | 75.0                             | 69.7                |
| Married      | 31.8             | 30.2          | 44.0                      | 41.1                  | 25                               | 30.3                |
(Evans & Mathur, 2005; Shannon et al., 2002), dissemination of the survey to prospective respondents and response time were very quick, unlike the paper-and-pencil questionnaire, thereby saving time (Couper, 2011). It would not have been possible to reach hotel employees had it not been for the web-survey as most hotels had closed down as of the time of data collection. In the absence of an effective address system as well as a database with the addresses and telephone contacts of hotel workers, the use of paper-and-pencil questionnaires was not a feasible option. Furthermore, with stay-at-home measures and the risk of COVID-19 infection, face-to-face data collection was out of the question.

Another benefit of using a web-based survey to collect data for the study was its reach. The geographical scope of the web-survey sample is unparalleled to previous studies (Amisah et al., 2016; Appaw-Agbola et al., 2020; Gamor et al., 2018; Mensah, 2019; Wireko-Gyebi & Akyeampong, 2014) conducted on hotel employees in Ghana, virtually, employees in different locations in the country were represented in the web-survey sample, i.e., 9 out of the 16 administrative regions of the country. It would have been laborious, time-consuming, expensive, and even impossible to achieve if paper-and-pencil questionnaires were used. The web-survey was a less expensive mode of collecting data for the study (Dillman, 2007; Roster, Rogers, Albaum, & Klein, 2004). The cost of printing a paper-and-pencil questionnaire was avoided. Furthermore, the usual transportation cost for delivery of paper-and-pencil questionnaires and the cost of engaging the services of research assistants were all avoided, hence making the web-survey less expensive. The usual tasks associated with data analysis involving paper-and-pencil questionnaires, such as coding, checking of questionnaires for completeness, data entry, and cleaning were all avoided. As pointed by Alessi and Martin (2010), the use of web-based surveys has rendered data cleaning and coding obsolete thereby reducing errors in data entry (Callegaro et al., 2015). The web-survey responses were downloaded in CSV file format and subsequently analysed using SPSS making turnaround time for the research short.

5. Limitations
Despite the benefits derived from the use of the web-based survey to solicit data for the study, some limitations were also observed that might compromise the quality of the collected data with implications on the validity of conclusions thereof. Similar to concerns expressed in the literature (Duda & Nobile, 2010; Lesser et al., 2011), one obvious challenge with the web-survey sample relates to the representativeness of the population of hotel workers in the country. The sample was overly represented by employees that work in star-rated facilities with less representation of employees that work in non-star rated facilities. This does not represent the population of hotel workers in the country, as there are more non-star rated employees in the country than star-rated employees. The use of social media to distribute the link to the questionnaire might have led to a possible bias of the sample (Alessi & Martin, 2010), hence over-representation of star-rated employees in the sample. Again, employees with college degrees dominated the sample, and this is not typical of hotel workers in the country. This limitation of the survey approach has been reported in similar studies related to web-based surveys (Graefe, Mowen, & Covelli, 2014; Tijdens, 2016; Tran & Lurong, 2020). Another major limitation with the web-survey relates to duplicate responses in the dataset as indicated in previous studies (Ball, 2019). Out of 191 responses, 30 (15%) were detected to be duplicates and subsequently deleted. The duplicate submissions could have occurred because the respondents did not receive confirmation messages due to poor Internet connectivity, compelling respondents to initiate another round of responding to the questionnaire. The average mobile Internet connection speed in Ghana is estimated to be 9.2 MBPS, which is about 12 points lower than the world average of 21.3MBPS, becoming a barrier to Internet use in Ghana. Another factor that might have contributed to the duplicate submission is poor digital illiteracy among the respondents. Digital skills have been reported to be low among adults in developing countries, including Ghana.
6. Conclusions
Indeed, online surveys provide an opportunity for data collection at a relatively cheaper cost given that most research works on the African continent undertaken by university faculty are not funded, and in this situation, any cheap method of data collection is therefore appealing. Online surveys reduce workload relating to data entry and cleaning. The turnaround time from data collection and analysis is greatly reduced by the use of online surveys. However, scholars in developing countries need to be mindful of the limitations, which are likely to be peculiar to Ghana and other developing countries. Although Internet penetration is expanding, quite a sizable proportion of Ghanaians and citizens of developing countries do not have access to the Internet. In many cases, Internet connectivity is poor. Given the poor Internet connectivity, quite a large proportion of people would be prevented from taking part in web surveys. This raises questions about the representativeness of samples. The cost of Internet data in Ghana and other developing countries is relatively high and therefore most potential respondents might receive links to surveys but are likely to be dissuaded from participation because of Internet data cost implications. Another issue that should guide decisions regarding the use of web surveys is the prevalence of low Internet literacy skills among Ghanaians and citizens of other developing countries. Most people might have access to smartphones; however, low technical ability to navigate an online questionnaire will discourage participation. Again, low digital skills will lead to errors in the completion of online questionnaires, incomplete responses, ignoring links to questionnaires, and submissions of duplicate responses.

Overall, hospitality and tourism scholars in Ghana and other developing countries will certainly benefit from the use of web-surveys in research projects involving university students, faculty, and other highly educated professional groups. The increasing use of social media especially WhatsApp provides a unique opportunity for the wider distribution of questionnaires. Nonetheless, using a web-based survey to investigate hospitality and tourism employees and residents will limit the generalizability of such studies due to unrepresentative and bias samples. Limited digital skills, low Internet penetration, and cost of Internet data are critical barriers to the use of web-surveys in Ghana and other developing countries. To enhance the quality of web-based survey data collected in Ghana, there is a need for state intervention to increase access to cheap internet in Ghana and other developing countries. This can be achieved through state-sponsored wireless projects focusing on poor communities and educational institutions. Given the limitations of web surveys, researchers could consider using telephone surveys, which are rarely utilized for data collection in Ghana. Admittedly, given the unavailability of reliable address directories in Ghana, researchers can use a snowballing sampling technique to select respondents for telephone surveys/interviews.

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