**Client: Bibitor, LLC**

**Workpaper Reference:** R-4

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**Purpose of this workpaper:**

Examine the accuracy, a subset of valuation, of the 2019 sales data provided by client management by performing a substantive analytical procedure to identify potentially risky items (total sales quantities by store by brand) for the 2019 sales data (AS 1215.05).

**Objective of the test:**

Identify anomalous items (total sales quantities by store by brand) of increased risk that suggest further investigation (AS 1215.06). These anomalous items fall under the definition of what a deviation is considered as for purposes of this test. We also want to examine the completeness of the data file provided by the client by running a test to verify that we received all the data.

**Deviation definition:**

A deviation is defined as any item (total sales quantity by store by brand) that exceeds 2 standard deviations above the mean for its respective brand’s total sales quantity. The average sales quantity by brand and standard deviation of the sales quantity by brand are based on total sales of each brand in each store. This deviation definition is justified because the mean and median are similar in value which allows us to assume a normal distribution. This means that the deviations consist of approximately the upper 2.5% of items. Any outliers below 2 times the standard deviation of the mean by brand were not considered deviations since we are worried about large sales quantities that could possibly overstate sales.

**Definition of the population/data to be examined and/or sampled, including steps to verify and validate data:**

The client’s management provided the audit team with the data files relating to the 2019 sales. To verify the completeness of the data, the total sales was tied to the financial statements of the client for 2019. See Workpaper: W-3B\_CompletenessTest

The items that we are investigating are total sales quantities for each store sorted by brand for the whole year. A test can then be ran to find out if some items (total sales quantities) are anomalous compared to what quantities have been sold by brand on average in all stores.

**Sampling technique:**

This test will cover 100% of the population, therefore sampling is not needed.

**Audit procedure performed:**

Alteryx workpaper 1 – Completeness assertion

To tie back sales to FS 2019: Workpaper: W-3B\_CompletenessTest

**Step 1:** Determine total sales by multiplying sales price by quantity sold.

**Step 2:** Verify completeness by tying results back to financial statements of 2019.

Alteryx workpaper 2 – Accuracy assertion

For Sales quantity analytical procedures: Workpaper: W-3A\_SalesError

**Step 1:** Determine total sales quantity of each brand in each store.

**Step 2:** Calculate standard deviation and average for each brand based on Step 1.

**Step 3:** Join tables to perform tests and find deviations by store by brand.

**Results:**

The completeness test shows that all data has been verified and provided by the client since the total sales ties back to the income statement of Bibitor.

Based on the substantive analytical test, there are 15,239 deviations that are above two standard deviations from the mean based on their respective brand. These records are described as deviations and therefore risky items that will require further investigation.

**Error analysis:**

The substantive analytical procedure performed indicates the risky sales quantities by store by brand. These risky sales quantities are defined as being 2 standard deviations above the mean for their respective brand. At first this deviation number seems high, but the client has over 70 stores and over 13,000 brands. A high deviation number is therefore normal.

**Root cause of errors:**

The errors/deviations are likely due to different demands in different areas. Some stores might sell more of one product based on demographics in a certain geographical region. A higher income region will most likely buy more expensive wines and liquors and vice versa. This will result in the data to be skewed for another store in another region.

**Conclusion:**

Based on the audit procedure performed, further substantive procedures need to be performed to achieve a level of confidence that is appropriate so we could say that the deviations resulting from the analytical procedure are accurate and not cause for more concern. Further audit procedures also need to be performed to possibly find the root cause of the errors.

*Brecht Van Buggenhout*